YAMAHA

CS1D

CONTROL SURFACE

Owner's Manual

PM1D

DIGITAL AUDIO MIXING SYSTEM

FCC INFORMATION (U.S.A.)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT! This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.
2. IMPORTANT: When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.
3. NOTE: This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures: Relocate either this product or the device that is being affected by the interference. Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s. In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to coaxial type cable. If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA 90620

   The above statements apply ONLY to those products distributed by Yamaha Corporation of America or its subsidiaries.

ADVARSEL!
Lithiumbatteri—Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandoren.

VARNING
Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

This product contains a battery that contains perchlorate material.
Perchlorate Material—special handling may apply,
See www.dtsc.ca.gov/hazardouswaste/perchlorate.

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA. (Perchlorate)

COMPLIANCE INFORMATION STATEMENT (DECLARATION OF CONFORMITY PROCEDURE)

Responsible Party :	Yamaha Corporation of America
Address :	6600 Orangethorpe Ave., Buena Park, Calif. 90620
Telephone :	714-522-9011
Type of Equipment :	Control Surface
Model Name :	CS1D

This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:
1) this device may not cause harmful interference, and
2) this device must accept any interference received including interference that may cause undesired operation.
See user manual instructions if interference to radio reception is suspected.

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA. (FCC DoC)

NEDERLAND / THE NETHERLANDS

- Dit apparaat bevat een lithium batterij voor geheugen back-up.
- This apparatus contains a lithium battery for memory back-up.
- Raadpleeg uw leverancier over de verwijdering van de batterij op het moment dat u het apparaat ann het einde van de levensduur of gelieve dan contact op te nemen met de vertegenwoordiging van Yamaha in uw land.
- For the removal of the battery at the moment of the disposal at the end of life please consult your retailer or Yamaha representative office in your country.
- Gooi de batterij niet weg, maar lever hem in als KCA.
- Do not throw away the battery. Instead, hand it in as small chemical waste.

(lithium disposal)

This product contains a high intensity lamp that contains a small amount of mercury. Disposal of this material may be regulated due to environmental considerations.
For disposal information in the United States, refer to the Electronic Industries Alliance web site:
www.eiae.org

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA. (mercury)

Important

Read the following before operating the CS1D

Warnings

- Do not allow water to enter this unit or allow the unit to become wet. Fire or electrical shock may result.
- Connect this unit's power cord only to an AC outlet of the type stated in this Owner's Manual or as marked on the unit. Failure to do so is a fire and electrical shock hazard.
- Do not place heavy objects, including this unit, on top of the power cord. A damaged power cord is a fire and electrical shock hazard. In particular, be careful not to place heavy objects on a power cord covered by a carpet.
- Do not modify the unit. Doing so is a fire and electrical shock hazard.
- Do not place a container with liquid or small metal objects on top of this unit. Liquid or metal objects inside this unit are a fire and electrical shock hazard.

Cautions

- This unit has ventilation holes at the top and bottom to prevent the internal temperature rising too high. Do not block them. Blocked ventilation holes are a fire hazard.
- Since this device is heavy, please use an appropriate number of people (two or more) when moving it.
- Before moving the CS1D, you must be sure to lower the display toward the back until it is fastened in position.
- Do not use the device or headphones for a long period of time at a high or uncomfortable volume level, since this can cause permanent hearing loss. If you experience any hearing loss or ringing in the ears, consult a physician.
- Do not apply oil, grease, or contact cleaner to the faders. Doing so may cause problems with electrical contact or fader motion.

Operating Notes

- The digital circuits of this unit may induce a slight noise into nearby radios and TVs. If noise occurs, relocate the affected equipment.
- Using a mobile telephone near this unit may induce noise. If noise occurs, use the telephone away from the unit.
- XLR-type connectors are wired as follows: pin 1: ground, pin 2: hot (+), and pin 3: cold (–).
- If the message "WARNING LOW BATTERY !" appears when you turn on this unit, contact your dealer as soon as possible about replacing the internal data backup battery. The unit will still operate correctly, but data other than the presets will be lost.
  We recommend that you save the data on an ATA-compatible PC flash storage card before replacing the battery.
- The performance of components with moving contacts, such switches, rotary controls, faders, fans, and connectors, deteriorates over time. The rate of deterioration depends on the operating environment and is unavoidable. Consult your dealer about replacing defective components.
- The CS1D is cooled by fan exhaust openings located on its rear panel. Check these regularly and use a vacuum cleaner etc. to ensure that the openings do not become clogged with dust. Before performing this maintenance, you must turn off the POWER switch of the PM1D power supply unit and make sure that the CS1D is not operating.
- The power must be turned on/off using the POWER switch of the PW1D power supply unit. Do not turn the power on/off by plugging in the power cable, or by using a power strip or circuit breaker. Doing so may cause malfunctions.
- Do not rapidly turn on and off the POWER switch of the PW1D power supply unit. Doing so may cause excessive current to damage the system. You must allow at least five seconds to elapse between power-on and power-off.

Handling the included PM1D System Software disc

The included PM1D System Software Disc is CD-R media containing documentation and software for the PM1D.
A computer with a connected CD drive is required in order to use this documentation and software.
For details on the contents, refer to the documentation on the disc.
Please observe the following points when handling the disc.
Failure to do so may cause problems such as the recorded data being lost, the drive to malfunction, or the printed label to become blurred.

- Do not place the disc in locations of direct sunlight, high temperature, or high humidity.
- Do not touch either surface of the disc.
  Hold the disc at the edges. Gently wipe dust or dirt off of the recording surface of the disc.

- Do not wipe the disc with chemicals or detergents.
- Do not bend or drop the disc.
- Use an air duster or cleaner to remove dust. Vigorously rubbing the surface of the disc with a dry cloth may scratch the disc.
- Do not write on the disc or affix labels to it.
- Keep water droplets or condensation off of the label surface.
- Yamaha Corporation makes no guarantee of a disc that is rendered unreadable due to careless handling.

CS1D Exclusion of Certain Responsibility

Manufacturer, importer, or dealer shall not be liable for any incidental damages including personal injury or any other damages caused by improper use or operation of the CS1D.

About the LCD display

The LCD screen built into the CS1D has the following characteristics. Please be aware that even if the following symptoms occur, this is not a malfunction or a defect.

- Since the LCD display is manufactured with extremely delicate technology, individual pixels may not display correctly. (A pixel may be constantly lit or constantly dark.)
- The LCD screen may be affected by changes in the ambient temperature.
- Depending on the environment of use, you may notice unevenness in brightness or small spots.
- Since the LCD screen uses a cold cathode tube for a backlight, the state of the display will gradually change over time.

Cautions when handling the track pad

- Place your hand and arm in a relaxed, natural position, and operate the track pad by moving your finger lightly across the surface or tapping it gently.
- This device is designed to be operated with one finger. It will not operate in the following situations.
  1) When operated by a gloved finger
  2) When operated with a pen, ballpoint pen, or pencil etc.
  3) When operated by two or more fingers
  4) When operated with an object placed on it
- The unit may not operate correctly if water droplets or condensation are present on the surface, or if operated using a soiled or sweaty finger. If condensation occurs, dry the unit thoroughly, or wipe it dry before use.
- To avoid malfunctions, please observe the following cautions.
  1) Do not drop objects on the unit, strike it, or subject it to strong physical shock.
  2) Do not spill coffee, juice, or other liquids on the unit.
- Do not operate the unit with a pointed metal object such as a pen, since this will damage the unit.
- If the surface becomes soiled, wipe it clean with a dry cloth. If the surface is severely soiled, wipe with a moist cloth, and dry carefully before use.
- Do not touch the surface while the por is being turned on.

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Yamaha website http://www.yamaha.co.jp/product/proaudio/homeenglish
Yamaha manual Library http://www2.yamaha.co.jp/manual/english/

YAMAHA

CS1D

CONTROL SURFACE

Operating Manual

PM1D

DIGITAL AUDIO MIXING SYSTEM

CS1D

CONTROL SURFACE

Operating Manual (Start-up)

PM1D

DIGITAL AUDIO MIXING SYSTEM

Contents

Introduction

About the "CS1D Operating Manual (Start-up)"

The "CS1D Operating Manual (Start-up)" is an introductory manual that explains how to connect the various components of the PM1D system and verify that the PM1D system is operating correctly.
When starting up the PM1D system for the first time, or if you have changed the configuration of the system such as when the PM1D system has been moved to another location and/or re-connected, we recommend that you follow the procedure described in this manual to verify that the system is operating correctly.

- This manual explains only the minimum operations. For details on operating the PM1D system, please refer to "CS1D Operating Manual (Basic operation)"
- For details on the specifications and functionality of the engine (DSP unit DSP1D-EX {DSP1D}) and I/O units, please refer to the owner's manual included with each device.
- For details on the function and operation of the controllers and connectors found on the top panel, rear panel, and front panel of the console (CS1D), refer to "CS1D Reference Manual (Hardware)."
- For details on the software in the display screen of the console (CS1D), refer to "CS1D Reference Manual (Software)."

⚠ Screen shots shown in this manual are taken from a prototype. Please be aware that they may differ slightly from the actual screens on your unit.

Printing conventions in "CS1D Operating Manual (Start-up)"

- **Differences between the 96 channel model and 48 channel model**
  In general, the "CS1D Operating Manual (Start-up)" is written with the 96 channel model PM1D system (the model with the DSP1D-EX as the engine) in mind. Where the functionality of the 96 channel model differs from the 48 channel model (the model with the DSP1D as the engine), the functionality of the 48 channel model is enclosed in curly brackets { }.

- **Standard mode and Mirror mode**
  The PM1D system has two operation modes (elements that determine system structure and connection method); "Standard mode" in which one console is connected to one engine, and "Mirror" mode in which one console is connected to two engines of which only one is used.

  Be aware that the mode used by the PM1D system will depend not only on the number of engines, but also on the type of connections and on the internal settings.

  Explanations that apply only to **Standard mode** will be indicated by the following symbol.

  DSP x1

  Explanations that apply only to **Mirror mode** will be indicated by the following symbol.

  DSP x2

⚠ The PM1D system version 1.0 does not support any other operation mode (i.e., other than Mirror mode) in which two engines are used.

- **Distinguishing between the controls of the CS1D and the on-screen knobs/buttons**
  Names of controls (switches, encoders, faders) on the top panel, rear panel, and front panel of the CS1D are enclosed in square brackets [ ] in order to distinguish them from the knobs and buttons etc. that are displayed in the screen.

  Example: Turn on the [TO ST] switch.
  (This indicates an operation on the top panel of the CS1D.)

  Example: Click the BASIC button.
  (This indicates an operation in the display screen.)

- **Various icons**
  The following icon is used to call your attention to various tips for operation or to reference pages.

  Hint

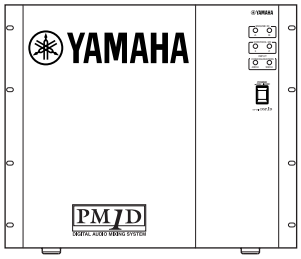
  The following icon is used to indicate particularly important items or operations that you must be aware of.

  ⚠

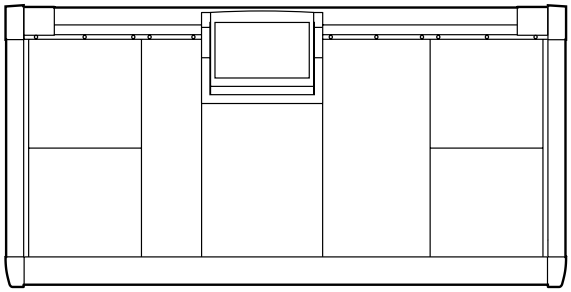
Introducing the various components

The PM1D system consists of the following types of components. (The components that are actually included will differ depending on your system.)

Engine (DSP1D-EX {DSP1D})
This is the DSP unit that performs the majority of the audio processing in the PM1D system, such as audio signal input/output, mixing, and effects. There are two models of engine: the **96 channel DSP1D-EX**, and the **48 channel DSP1D**.

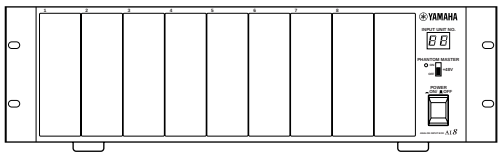


Console (CS1D)
The mixing operations, scene memory/library operations, and various editing operations of the PM1D system are performed from this console.



Power supply (PW1D)
This power supply provides power to the console.

Analog input unit (AI8)
This is an input unit that inputs analog audio signals to the engine, and can accommodate up to eight analog input cards.



The following types of cards can be installed in the AI8.

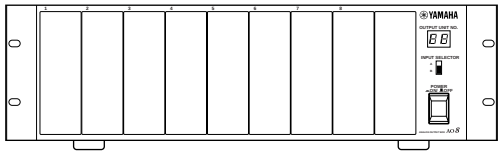
- **Mic/line input card (LMY2-ML)**
- **AD card (LMY4-AD)**

The following models of AI8 are available, depending on the type of analog input cards that are installed.

- **AI8-ML8**
  A unit with eight mic/line input cards installed
- **AI8-AD8**
  A unit with eight AD cards installed
- **AI8-ML4AD4**
  A unit with four mic/line input cards + four AD cards installed

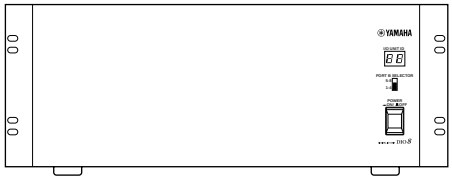
⚠ Cards can be installed in the AI8 only by a Yamaha service engineer. The user must never attempt to install a card himself.

Analog output unit (AO8)
This is an output unit that outputs analog audio signals from the engine, and can accommodate eight DA cards (LMY4-DA).



⚠ Cards can be installed in the AO8 only by a Yamaha service engineer. The user must never attempt to install a card himself.

Digital input/output unit (DIO8)



This unit performs input/output of ADAT, Tascam, and AES/EBU format digital audio signals and input/output of analog audio signals to and from the engine of the PM1D system. Each DIO8 unit can accommodate up to eight digital I/O cards or analog I/O cards.
The following types of card can be installed.

Card	Format	Input	Output
MY8-TD	TASCAM	8 IN	8 OUT
MY8-AT	ADAT	8 IN	8 OUT
MY8-AE	AES/EBU	8 IN	8 OUT
MY8-AD	ANALOG IN	8 IN	—
MY4-AD	ANALOG IN	4 IN	—
MY4-DA	ANALOG OUT	—	4 OUT
AP8AD*	ANALOG IN	8 IN	—
AP8DA*	ANALOG OUT	—	8 OUT

*: Manufactured by Apogee Corporation

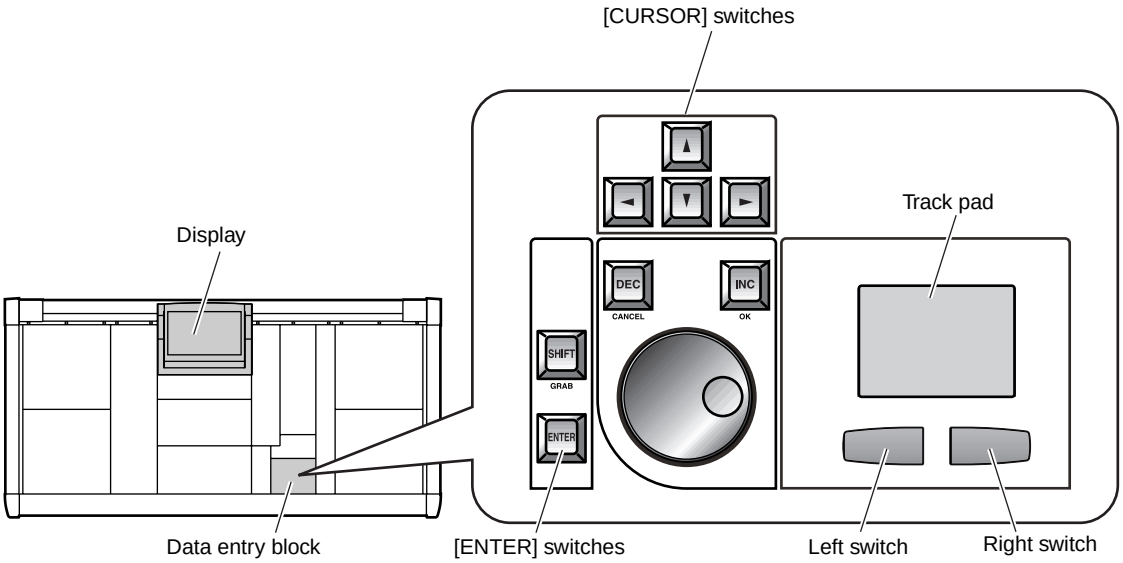
* As of September 1, 2000

⚠ It is not possible to install and use a total of five or more AP8AD/AP8DA cards. Also, if you are using AP8AD/AP8DA cards simultaneously with MY8-AD/MY4-AD/MY4-DA cards, there are restrictions on the number of cards, as described below. Never exceed the allowable number of cards, since attempting to use a greater number of cards than allowed may damage the DIO8 due to excessive current. If you are not using AP8AD or AP8DA cards, or if you are using AP8AD or AP8DA cards simultaneously with an MY8-TD/MY8-AT/MY8-AE card, there is no limitation on the number of MY8-TD/MY8-AT/MY8-AE cards that can be used.

[AP8AD] + [AP8DA] cards used	**[MY8-AD] + [MY4-AD] + [MY4-DA] cards used**	**[MY8-TD] + [MY8-AT] + [MY8-AE] cards used**
Total 0 cards	Up to a total of 8 cards	
Total 1 card	Up to 6 cards	Up to the number of vacant DIO8 slots
Total 2 cards	Up to 4 cards	Up to the number of vacant DIO8 slots
Total 3 cards	Up to 2 cards	Up to the number of vacant DIO8 slots
Total 4 card	Up to 1 card	Up to the number of vacant DIO8 slots
Total 5 or more cards cannot be used	—	—

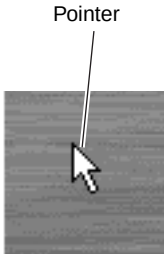
Terms used in the "CS1D Operating Manual (Start-up)"

Of the specialized terms used in operating the CS1D, this section will explain the terms that appear in "CS1D Operating Manual (Start-up)." For a more detailed explanation of terms, refer to "CS1D Operating Manual (Basic Operation)."

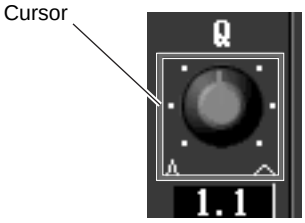


- **Display**
  This refers to the LCD display located in the upper center of the CS1D console. When you wish to change an internal setting of the CS1D, you can recall the appropriate screen in the display, and use the buttons or knobs in the display to edit the setting.

- **Pointer**
  The arrow shown in the display is called the "pointer," and is used to select the object that you wish to modify. You can move the pointer by pressing your finger on the track pad (located in the data entry block) and dragging it up/down/left/right.



- **Cursor**
  The red frame shown in the display is called the "cursor." An on-screen item will be enclosed by the cursor to indicate that this item is selected for modification.

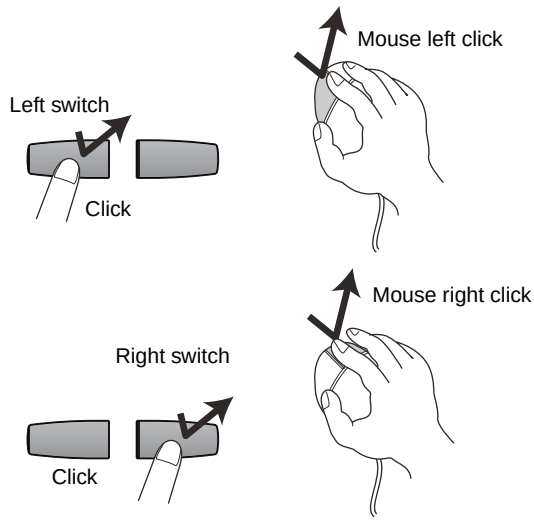


- **Click**
  "Click" refers to the action of placing the pointer on a specific item in the display, and pressing the left or right switch of the track pad (located in the data entry block). This action is used to turn an on-screen button on/off, or to move the cursor to a specific item.

  Using the [CURSOR] switches (located in the data entry block) to move the cursor to a specific item and then pressing the [ENTER] switch will have the same result as clicking on that item.

Hint

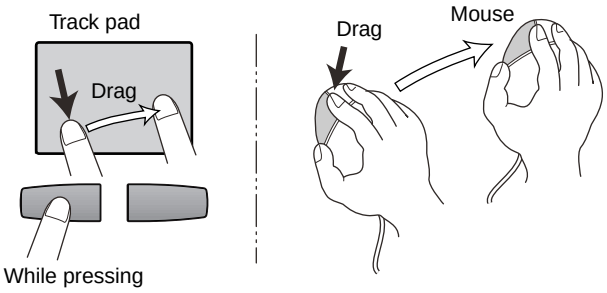
As alternative ways to perform this action, you can use a mouse connected to the MOUSE connector of the CS1D, or use the arrow keys and ENTER key of a keyboard connected to the KEYBOARD connector of the CS1D.



- **Drag**
  "Drag" refers to the action of placing the pointer over a specific object on the screen, and holding down the left or right switch while you slide your finger left/right/up/down across the track pad.
  This action is used to continuously adjust a knob or slider in the screen, or to move a specific item to another location.

  Hint

  As an alternative way to perform this action, you can use a mouse connected to the MOUSE connector of the CS1D.



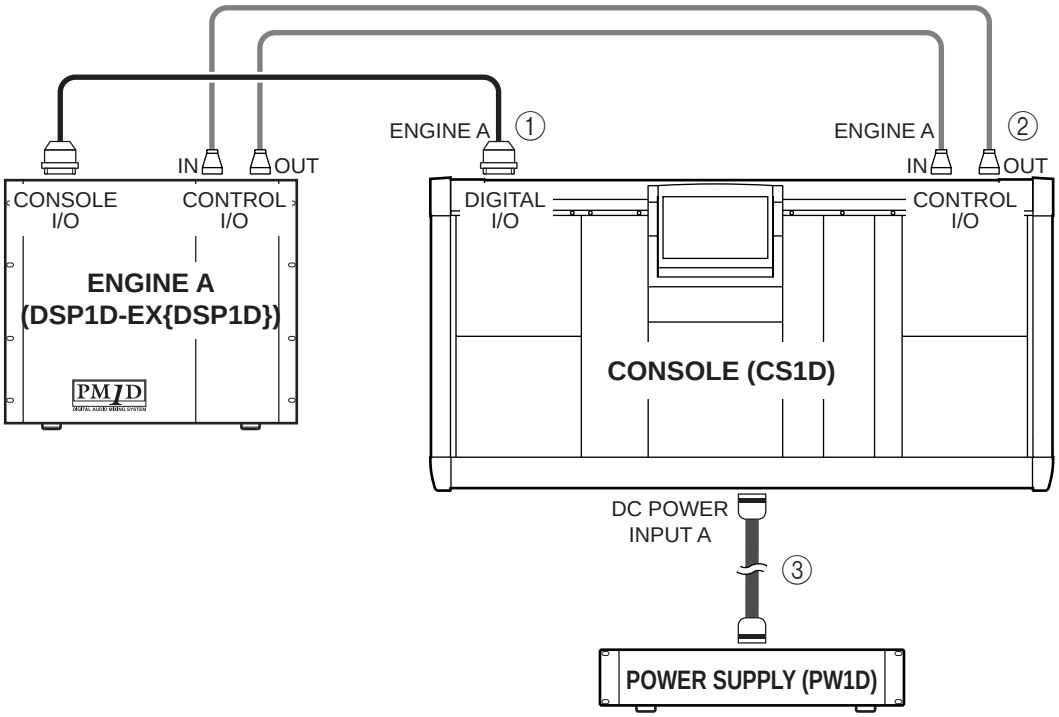
Connections (Standard mode)

DSP x 1

This section explains connections for Standard mode, in which one console (CS1D) is connected to one engine (DSP1D-EX {DSP1D}).

Connecting the console and engine (Standard mode)

The following diagram shows typical connections between the console and engine for Standard mode.



① **Digital input/output connections**
Use the included D-sub half pitch 68 pin cable to connect the DIGITAL I/O ENGINE A connector of the console to the CONSOLE I/O connector of the engine.

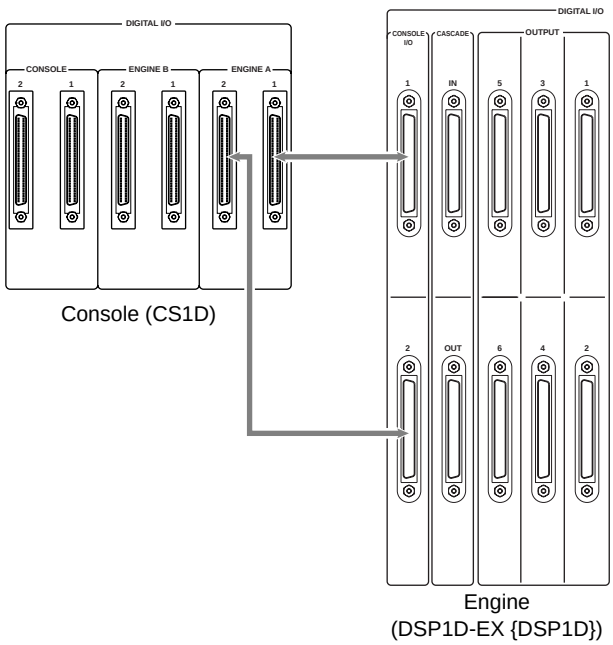
These connectors transmit and receive multi-channel digital audio signals.

The console and engine each have two identical digital input/output connectors, numbered 1 and 2.

These two sets of connectors are completely identical, and the system will operate normally if just one set is connected. However, you may connect both 1 and 2 so that one of them can be used as a backup.

⚠ You must connect the identically-numbered connectors of the console and engine to each other. If differently-numbered connectors are connected to each other, the system will not function correctly.

This method of connection is recommended for most cases.



Hint

If both digital input/output connectors 1 and 2 are connected, connector 1 will be given priority when the power is turned on.

If the word clock stops being supplied from either connector 1 or 2 (whichever is the currently-used connector), the receiving device will automatically switch to the other connector.

⚠

- Use only Yamaha-manufactured D-sub half pitch 68 pin cables to connect the digital input/output connectors. Operation cannot be guaranteed if any other cables are used.
- If you need a cable of a different length than the included D-sub half pitch 68 pin cable, please contact your dealer.

② **Control input/output connections**

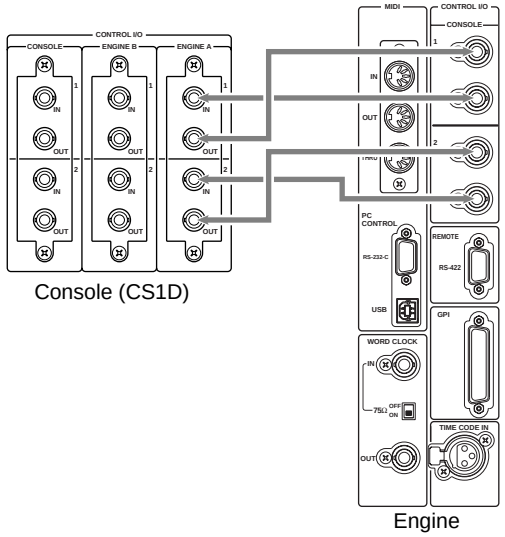
Use BNC cables (50 Ω) to connect the CONTROL I/O ENGINE A IN connector of the console to the CONTROL I/O OUT connector of the engine, and the CONTROL I/O ENGINE A OUT connector of the console to the CONTROL I/O IN connector of the engine.

These connectors transmit and receive control signals between the console and engine.

The console and engine each have two identical sets of connectors, numbered 1 and 2.

These two sets of connectors are completely identical, and the system will operate normally if just one set is connected. However, you may connect both 1 and 2 so that one of them can be used as a backup.

This method of connection is recommended for most cases.



Console (CS1D)

Engine
(DSP1D-EX {DSP1D})

⚠ You must connect the identically-numbered connectors of the console and engine to each other. If differently-numbered connectors are connected to each other, the system will not function correctly.

Hint

If both control input/output connectors 1 and 2 are connected, connector 1 will be given priority when the power is turned on.

If the currently-used control output connector stops functioning correctly, the receiving device will automatically switch to the other connector.

③ **Power supply connections**

Use the included special cable to connect the DC POWER INPUT connector of the console to the DC OUTPUT connector of the PW1D power supply.

The rear panel of the console has two DC POWER INPUT connectors, A and B.

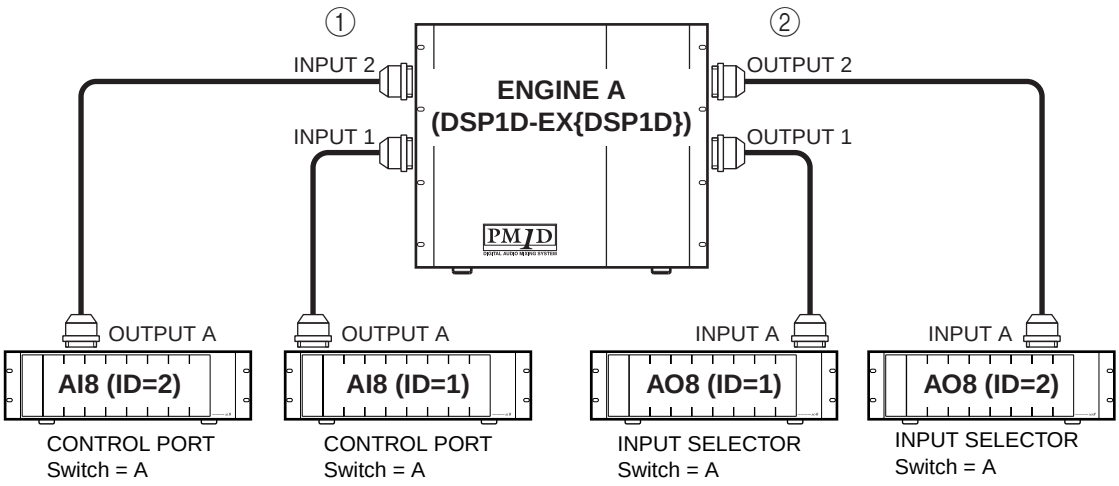
If you are using only one power supply, you may connect it to either DC POWER INPUT connector.

Hint

You can also connect two power supplies to the two DC POWER INPUT connectors A and B. If this connection method is used, the PM1D system will continue to operate even if one of the power supplies should unexpectedly fail, since the other power supply will continue to supply power to the system.

Connecting an analog input/output unit to the engine (Standard mode)

The following diagram shows a common way of making connections between the engine and analog input/output units for Standard mode.



① **Analog input unit AI8 connection**
Connect the OUTPUT A connector of the AI8 analog input unit to one of the INPUT 1–INPUT 10 connectors of the engine. Set the CONTROL PORT switch (located on the rear panel of the AI8) to the A position.

② **Analog output unit AO8 connection**
Connect the INPUT A connector of the AO8 analog output unit to one of the OUTPUT 1–OUTPUT 6 connectors of the engine. Set the INPUT SELECTOR switch (located on the front panel of the AO8) to the A position.

Hint

An AI8 analog input unit can be connected to any INPUT connector of the engine, and the number of that INPUT connector will be the ID number of that unit. Similarly, an AO8 analog output unit can be connected to any OUTPUT connector of the engine, and the number of that OUTPUT connector will be the ID number of that unit.

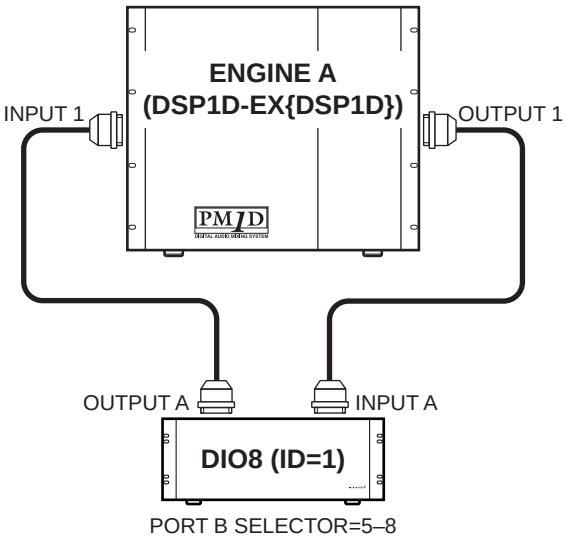
⚠ Be careful not to connect inputs and outputs in reverse. If such a connection is made, the unit will not be recognized and cannot be controlled.

Connecting a digital input/output unit to the engine (Standard mode)

When connecting a DIO8 digital input/output unit to the engine in Standard mode, the method will depend on whether you use only slots 1–4 (of the DIO8's slots 1–8) or slots 1–4 as well as slots 5–8.

① **If input/output cards are installed only in DIO8 slots 1–4**

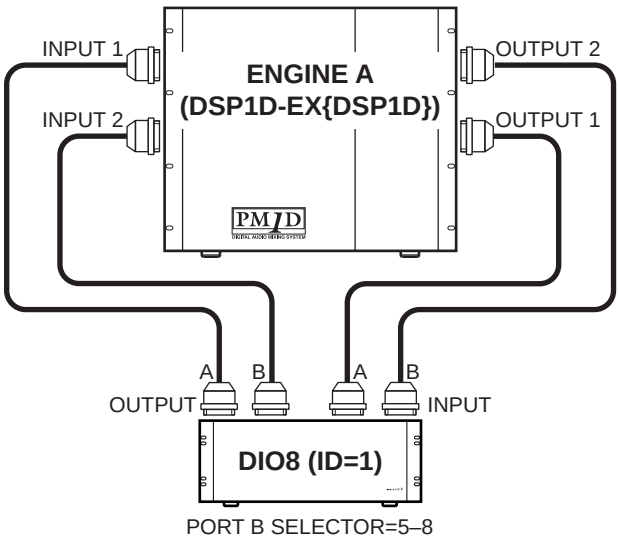
The following diagram shows example connections for when input/output cards are connected only to slots 1–4 of the DIO8.



Connect the OUTPUT A connector of the digital input/output unit to one of the INPUT 1–10 connectors of the engine, and connect the INPUT A connector of the digital input/output unit to one of the OUTPUT 1–6 connectors of the engine. In this case, set the PORT B SELECTOR switch (located on the front panel of the DIO8) to the 5-8 position.

② **If input/output cards are also installed in DIO8 slots 5–8**

The following diagram shows example connections for when input/output cards are installed in DIO8 slots 1–4 and also in slots 5–8.



Connect the OUTPUT connectors A/B of the digital input/output unit to the INPUT 1–10 connectors of the engine, and connect the INPUT connectors A/B of the digital input/output unit to OUTPUT 1–6 connectors of the engine. In this case, set the PORT B SELECTOR switch (located on the front panel of the DIO8) to the 5-8 position.

Hint

The DIO8 digital input/output unit can be connected to any INPUT connector/OUTPUT connector of the engine. The DIO8 will automatically select a control connector according to the status of connections, and the connector number of the engine connected to that connector will be displayed in the LED display as the unit ID. In the example shown above, the INPUT 1 connector number is the unit ID number.

⚠ Be careful not to connect inputs and outputs in reverse. If such a connection is made, the unit will not be recognized and cannot be controlled.

⚠ When using an MY8-AT card to handle ADAT format signals, synchronization may tend to be lost easily, depending on the device that is connected. For more reliable synchronization, we recommend that the word clock for the combination of digital audio equipment you are using be taken from other than the ADAT format connector.

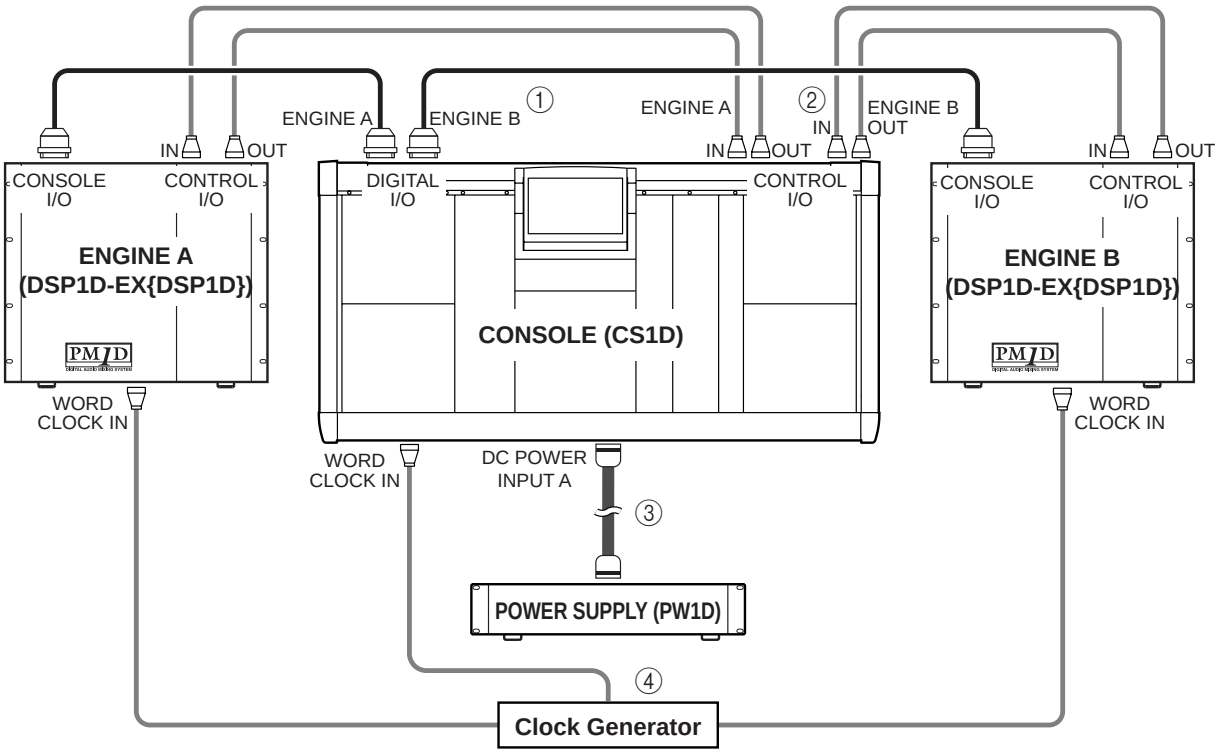
Connections (Mirror mode)

DSP x2

This section explains connections for Mirror mode, in which one console (CS1D) is connected to two engines (DSP1D-EX {DSP1D}).

Connecting the console and engines (Mirror mode)

The following diagram shows typical connections between the console and engines for Mirror mode.

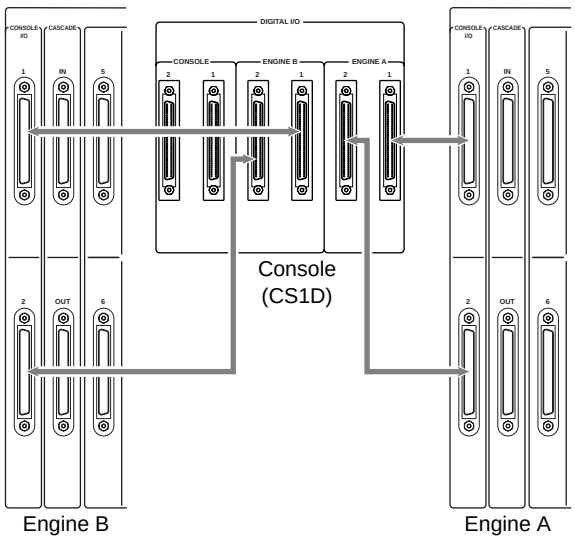


① **Digital input/output connections**
Use the included D-sub half pitch 68 pin cables to connect the DIGITAL I/O ENGINE A connector of the console to the CONSOLE I/O connector of engine A, and the DIGITAL I/O ENGINE B connector of the console to the CONSOLE I/O connector of engine B. These connectors transmit and receive multi-channel digital audio signals.

⚠

- Use only Yamaha-manufactured D-sub half pitch 68 pin cables to connect the digital input/output connectors. Operation cannot be guaranteed if any other cables are used.
- If you need cables of a different length than the included D-sub half pitch 68 pin cables, please contact your dealer.
- The console and engines A/B each have two identical sets of digital input/output connectors, numbered 1 and 2.
  These two sets of connectors are completely identical, and the system will operate normally if just one set is connected. However, you may connect both 1 and 2 so that one of them can be used as a backup.

  This method of connection is recommended for most cases.



Hint

If both digital input/output connectors 1 and 2 are connected, connector 1 will be given priority when the power is turned on.

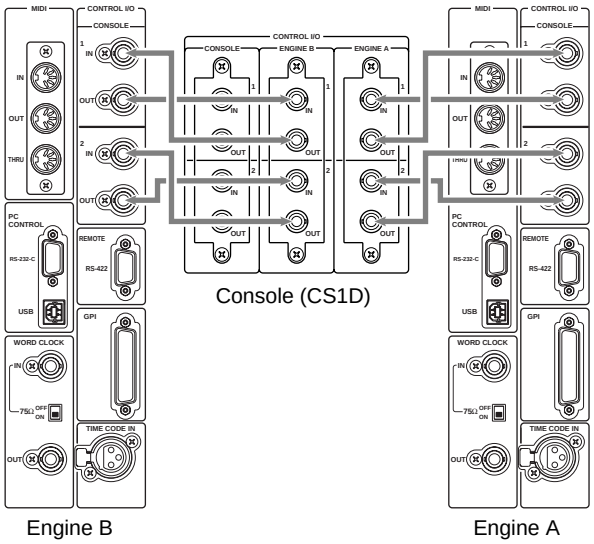
If the word clock stops being supplied from either connector 1 or 2 (whichever is the currently-used connector), the receiving device will automatically switch to the other connector.

② **Control input/output connections**

Use BNC cables (50Ω) to connect the CONTROL I/O ENGINE A IN and OUT connectors of the console to the CONTROL I/O OUT and IN connectors of engine A. In the same way, connect the CONTROL I/O ENGINE B IN and OUT connectors of the console to the CONTROL I/O OUT and IN connectors of engine B. These connectors transmit and receive control signals between the console and engines A/B.

The console and engines A/B each have two identical sets of connectors, numbered 1 and 2. These two sets of connectors are completely identical, and the system will operate normally if just one set is connected. However, you may connect both 1 and 2 so that one of them can be used as a backup.

This method of connection is recommended for most cases.



Hint

If both control input/output connectors 1 and 2 are connected, connector 1 will be given priority when the power is turned on.

Control output connectors 1/2 will always output the same signals. If the currently-used control output connector stops functioning correctly, the receiving device will automatically switch to the other connector.

⚠ You must connect the identically-numbered connectors of the console and engine to each other. If differently-numbered connectors are connected to each other, the system will not function correctly.

③ **Power supply connections**

Use the included special cable to connect the DC POWER INPUT connector of the console to the DC OUTPUT connector of the PW1D power supply.

The rear panel of the console has two DC POWER INPUT connectors, A and B. If you are using only one power supply, you may connect it to either DC POWER INPUT connector.

You can also connect two power supplies to the two DC POWER INPUT connectors A and B. If this connection method is used, the PM1D system will continue to operate even if one of the power supplies should unexpectedly fail, since the other power supply will continue to supply power to the system.

④ **Word clock connections**

Use BNC cables (75Ω) to connect the clock output connector of an external clock generator to the WORD CLOCK IN connector of the console, and to the WORD CLOCK IN connectors of engines A/B.

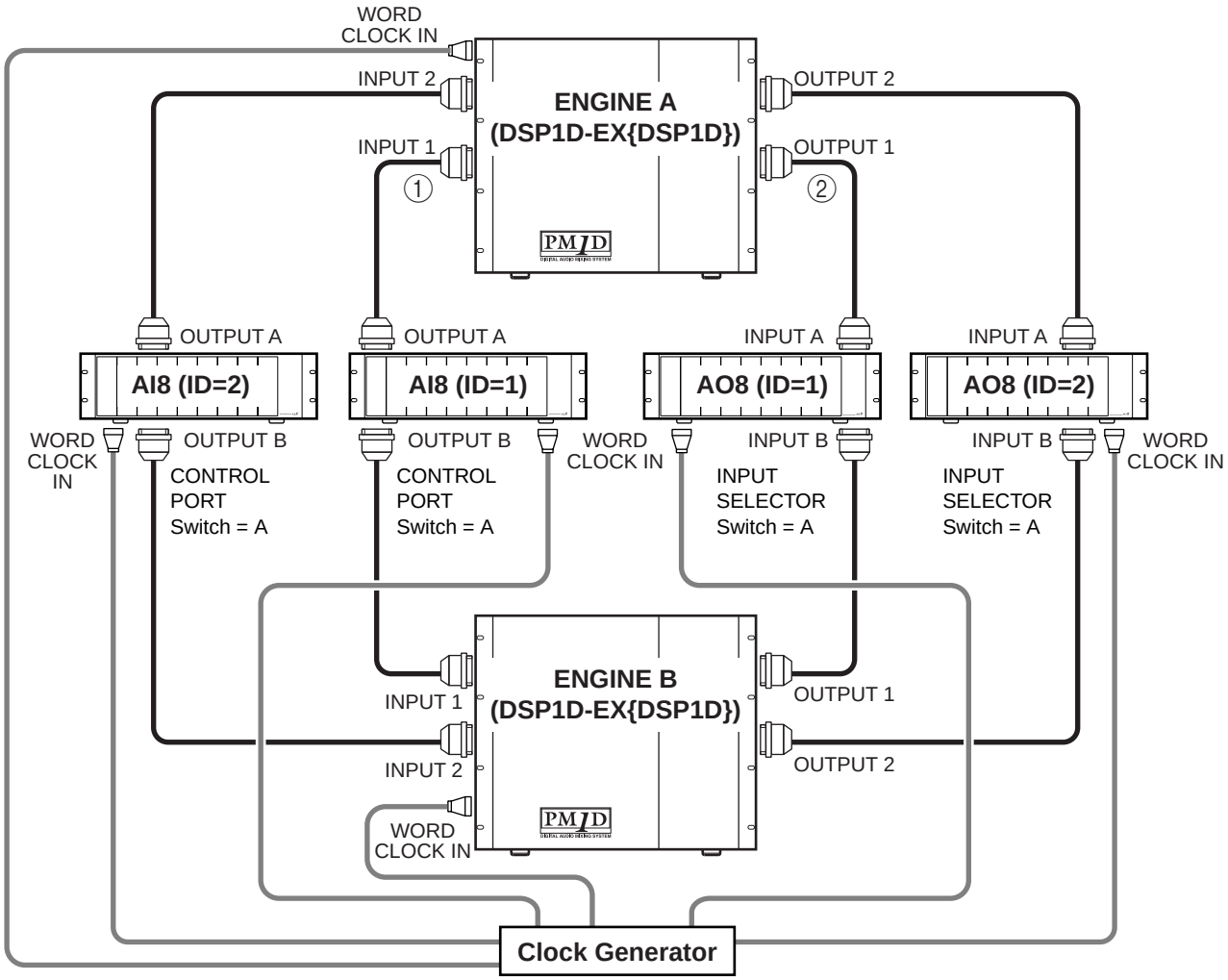
Connect the word clock transmitting and receiving devices in a one-to-one relationship, and turn on the 75 Ω screen for the receiving device.

⚠ The word clock transmission/reception circuit is designed with one-to-one connection in mind. For this reason, if you connect multiple receiving devices to a single clock transmission connector, performance may be impaired and the system may fail to operate correctly.
If you cannot avoid using this type of connection, turn on the 75 Ω switch for one of the receiving devices, and turn off the 75 Ω switches for all remaining devices.

⚠ In Mirror mode, you can also switch to the other engine manually if the currently-used engine experiences difficulties.
In order to minimize the clock switching time in such cases, we recommend that you supply a word clock from an external clock generator to the console and to engines A/B.
Of course, switching will occur even without this type of supply method.

Connecting an analog input/output unit to the engines (Mirror mode)

The following diagram shows a common way of making connections between the engine and analog input/output units for Mirror mode.



① **Analog input unit AI8 connection**
Connect the OUTPUT A connector of the AI8 analog input unit to one of the INPUT 1–INPUT 10 connectors of engine A, and connect the OUTPUT B connector of the AI8 to one of the INPUT 1–INPUT 10 connectors of engine B.

⚠

- When using Mirror mode, OUTPUT connectors A and B of the AI8 must be connected to the identically-numbered INPUT connector of engines A and B. Be aware that if these are connected to differently-numbered INPUT connectors, the content of the input signals will change when you switch between engines A and B.
- When using Mirror mode, leave the CONTROL PORT switch of the AI8 in the A position as the default setting.

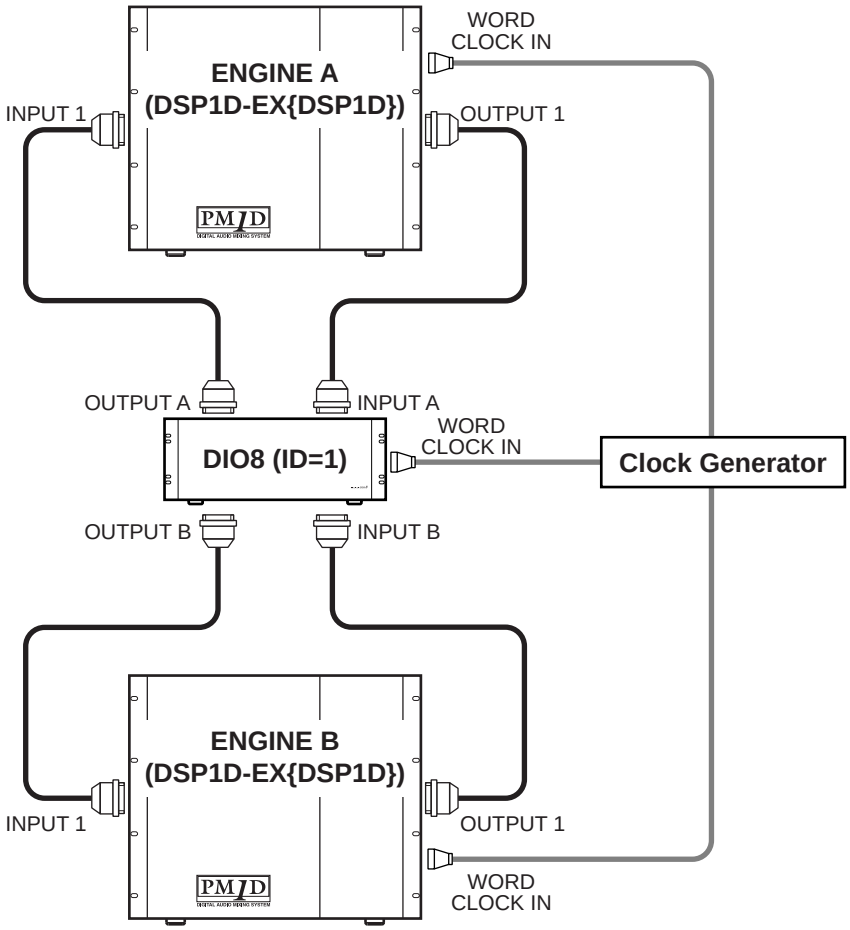
② **Analog output unit AO8 connection**
Connect the INPUT A connector of the AO8 analog output unit to one of the OUTPUT 1–OUTPUT 6 connectors of engine A. Connect the INPUT B connector of the AO8 to one of the OUTPUT 1–OUTPUT 6 connectors of engine B.

⚠

- When using Mirror mode, INPUT connectors A and B of the AO8 must be connected to the identically-numbered OUTPUT connector of engines A and B. Be aware that if these are connected to differently-numbered OUTPUT connectors, the content of the output signals will change when you switch between engines A and B.
- When using Mirror mode, leave the INPUT SELECTOR switch of the AO8 in the A position as the default setting.
- Be careful not to reverse the input and output. If you do so, the unit will not be recognized, and cannot be controlled.

Connecting a digital input/output unit to the engines (Mirror mode)

The following diagram shows the usual method of connecting the engines to a digital input/output unit in Mirror mode.



When using a DIO8 digital input/output unit in Mirror mode, only the input/output cards installed in slots 1–4 can be used.
Connect the OUTPUT A connector of the DIO8 digital input/output unit to one of the INPUT 1–10 connectors of engine A, and connect the OUTPUT B connector to an INPUT 1–10 connector of engine B. In the same way, connect the INPUT A connector of the DIO8 to one of the OUTPUT 1–6 connectors of engine A, and connect the INPUT B connector to an OUTPUT 1–6 connector of engine B.

⚠

- In Mirror mode, INPUT connectors A and B of the DIO8 must be connected to the identically-numbered OUTPUT connector of engines A and B. Similarly, OUTPUT connectors A and B of the DIO8 must be connected to the identically-numbered INPUT connector of engines A and B.
- Be aware that if differently-numbered connectors are used, the content of the input and output signals will change when you switch between engines A and B.
- When using the system in mirror mode, set the DIO8's front panel PORT B SELECTOR switch to 5–8 if you will be using connector A as the default, or to 1–4 if using connector B as the default.
- Be careful not to connect inputs and outputs in reverse. If you do so, the unit will not be recognized, and cannot be controlled.

⚠ When using an MY8-AT card to handle ADAT format signals, synchronization may tend to be lost easily, depending on the device that is connected. For more reliable synchronization, we recommend that the word clock for the combination of digital audio equipment you are using be taken from other than the ADAT format connector.

Turning on the power and verifying the connections

Here's how to turn on the power of the various components in the PM1D system, and verify that the devices are connected correctly.

⚠ Before you continue with the following procedure, connect the various components of the system as described on pages 6–13.

Hint

We recommend that you use the following procedure to verify the connections not only when starting-up the PM1D system for the first time, but also after you have moved the system to a different location or changed its configuration or connections.

Turning on the power

When you have finished connecting the various components of the PM1D system, turn on the power in the order of input/output units, engine(s), and the console power supply.

⚠ Before turning on the engine (DSP1D) or the console power supply (PW1D), you must wait at least five seconds after the power was turned off. Failing to observe this waiting period may cause malfunctions.

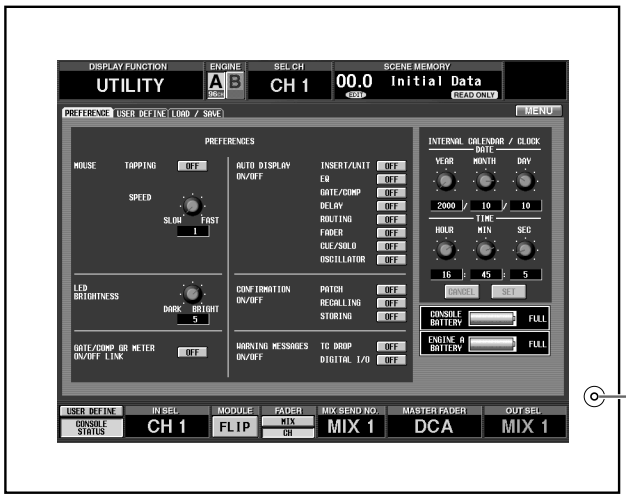
DSP x2

If you are using Mirror mode, turn on the power of the clock generator as well.

⚠

- The "PM1D Operating Manual (Start-up)" assumes that the various internal settings of the CS1D are in their default state. If you have already modified the settings of the CS1D from their initial state, or if you are not sure whether the settings are in their initial state, turn on the PW1D power supply, and when the opening title appears in the LCD screen, press both the left and right switches located below the CS1D track pad and hold them down until the MEMORY INITIALIZATION popup window appears. Refer to "CS1D Reference Manual (Software)."
  However, if you turn on the power in this way, the scene and library data that you saved will be lost. Be careful not to inadvertently erase important data.

After the opening screen appears in the CS1D display, the following screen will appear.



Adjust the brightness knob (located at the right of the display) so that the screen can be comfortably viewed at the angle from which you will operate the console.

⚠ Each device must be powered-on using the power switch of the device itself. You must also observe the correct sequence in which to power-on each device.

If the opening screen is followed by the "VERSION CHECK" popup window, it is possible that the PM1D system version is incorrect. Please unify the software version of all connected devices. For the procedure, refer to the explanation within the included PM1D System Software disc.

Hint

Normally, the display will show the screen that was accessed last when the power was turned off.

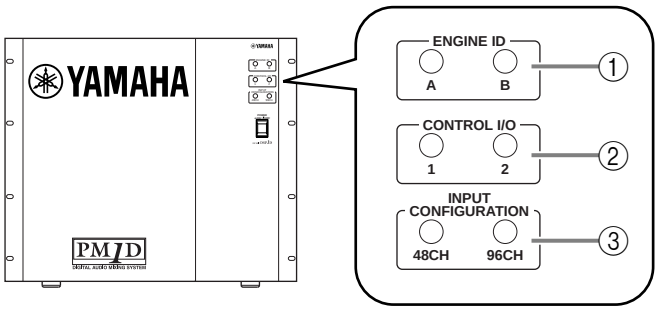
Checking the status of each device (Standard mode)

DSP x1

After you turn on the power of the PM1D system, you can use the LEDs and indicators of the various components to check that connections between components have been made appropriately. Check the status of each device as described below.
The checking method differs between Standard mode and Mirror mode. This section describes checking for Standard mode.
For Mirror mode, refer to "Checking the status of each device (Mirror mode)" (→p.18).

Checking the engine (Standard mode)

The front panel of the DSP1D-EX {DSP1D} engine shows the following information.



① **ENGINE ID**
These indicators show whether the engine (DSP1D-EX {DSP1D}) is connected to the ENGINE A or ENGINE B connectors (DIGITAL I/O, CONTROL I/O) of the console. In Standard mode, the A LED will always be lit.

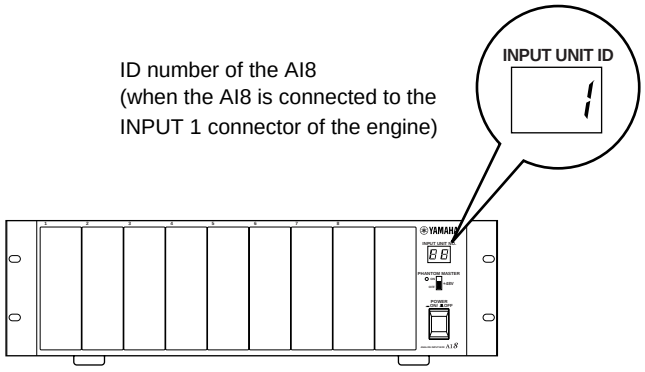
② **CONTROL I/O**
If the CONTROL I/O connectors of the engine and console are connected correctly, the LED for the currently-valid CONTROL I/O connector (either 1 or 2) will light.

③ **INPUT CONFIGURATION**
This indicates the number of monaural input channels that can be used on this engine. If the engine is the DSP1D-EX, the "96CH" LED will light. {For the DSP1D, the "48CH" LED will light.}

⚠ For details on the lit/dark status of each indicator, refer to the operating manual included with the DSP1D-EX {DSP1D}.

Checking the analog input unit (Standard mode)

If the AI8 input unit is correctly connected to the engine, the INPUT UNIT ID indicator of the AI8 will show the ID number of that unit (i.e., the number of the INPUT connector on the engine to which the AI8 is connected).

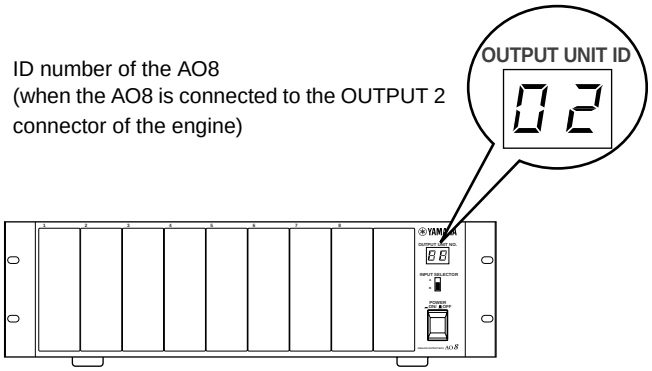


⚠ If the AI8 connections or word clock synchronization are faulty, one of the following error displays will appear in the INPUT UNIT ID indicator.

- **E1** .....The AI8 is connected to an OUTPUT connector of the engine. Re-connect it to an INPUT connector.
- **E3** .....Either the cable connected to the OUTPUT connector of the AI8 rear panel is disconnected, or the connection destination is incorrect. Please check the cable.
- **UL** (**unlocked**)....The word clock of the AI8 is not synchronized with the PM1D system.
  Check the connection for the WORD CLOCK IN connector of the AI8, or the CS1D word clock settings (→p.24).
- **UC** (**unconnected**) Control signals are not being received correctly. Make sure that the engine is powered-on.

Checking the analog output unit (Standard mode)

If the AO8 analog output unit is correctly connected to the engine, the OUTPUT UNIT ID indicator of the AO8 will display the ID number of that unit (i.e., the number of the OUTPUT connector on the engine to which the AO8 is connected).
If multiple connectors are connected, the number of the connector used by the engine to transmit and receive control signals will be displayed.

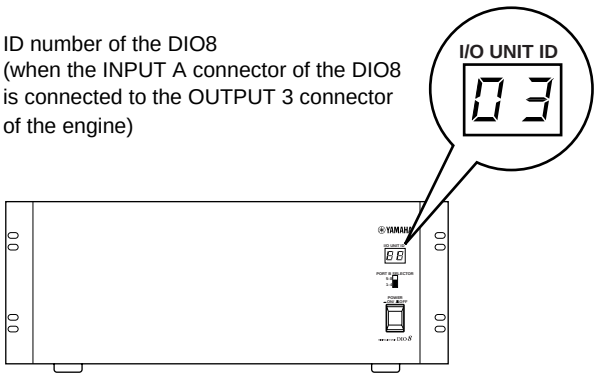


⚠ If the AO8 connections or word clock synchronization are faulty, one of the following error numbers will appear in the OUTPUT UNIT ID indicator.

- **E2**.....The AO8 is connected to an INPUT connector of the engine. Re-connect it to an OUTPUT connector.
- **E3**.....The cable connected to the INPUT connector on the AO8 rear panel has been disconnected or is connected to the wrong destination. Check the cable.
- **UL (unlocked)** ... The word clock of the AO8 is not synchronized with the PM1D system.
  Check the connection for the WORD CLOCK IN connector of the AO8, or the CS1D word clock settings (→p.24).
- **UC (unconnected)** . Control signals are not being received correctly. Make sure that the engine is powered-on.

Digital input/output unit (Standard mode)

If the DIO8 digital input/output unit is correctly connected to the engine, the I/O UNIT ID indicator of the DIO8 will show the ID number of that unit (i.e., the number of the OUTPUT connector on the engine to which the DIO8's INPUT A connector is connected).
If multiple connectors are connected, the number of the connector used by the engine to transmit and receive control signals will be displayed.



⚠ For details on the lit/dark status of the indicators of the AI8, AO8, and DIO8, refer to the owner's manuals included with each unit.

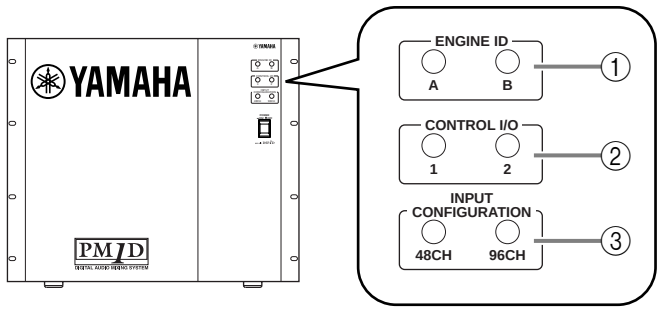
Checking the status of each device (Mirror mode)

DSP x2

Here's how to check the connection status of each device when using the PM1D system in Mirror mode.

Engines (Mirror mode)

The front panel of each DSP1D-EX {DSP1D} engine displays the following information.



① **ENGINE ID**
These indicators show whether the DSP1D-EX {DSP1D} is connected to the ENGINE A or the ENGINE B connectors (DIGITAL I/O, CONTROL I/O) of the console.

When either the A or the B LED is lit, the corresponding engine is in use. If one of the LEDs is blinking, the corresponding engine is ready.

⚠

- If the ENGINE ID LEDs for both engines A and B blink when the power is turned on even though engines A/B are both connected, please check the connections of each engine (digital input/output connectors, control input/output connectors).
- If both LEDs are dark, digital signals or control signals are not being passed between the engine and the console. Check the connections between engines A/B and the console, and between the console and the power supply.

② **CONTROL I/O**
If the CONTROL I/O connectors of the engine and console are correctly connected, the LED will light to indicate which of the two sets of CONTROL I/O connectors (1 and 2) is currently being used.

⚠

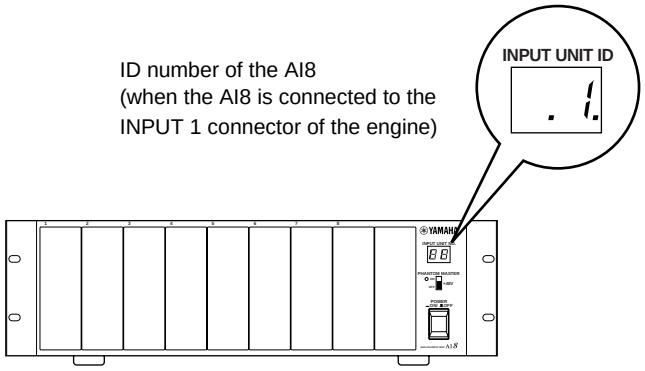
- When the power is turned on, engine A will be given priority. If LED 2 lights when the power is turned on even though connectors 1 and 2 are both connected, check the connections for connector 1.
- If LED 1 blinks, control signals are not being passed between the engine and the console. Check the CONTROL I/O connections between the DSP1D-EX {DSP1D} and the CS1D.

③ **INPUT CONFIGURATION**
This indicates the number of monaural input channels that can be used with this engine.

The "96CH" LED will light for the DSP1D-EX, and the "48CH" LED will light for the DSP1D.

Checking the analog input unit (Mirror mode)

If the AI8 analog input unit is correctly connected to the engine in Mirror mode, the INPUT UNIT ID indicator of the AI8 will show the ID number of that unit (i.e., the number of the INPUT connector on the engine to which the AI8 is connected), and the dot (.) will light on both sides of the ID number.

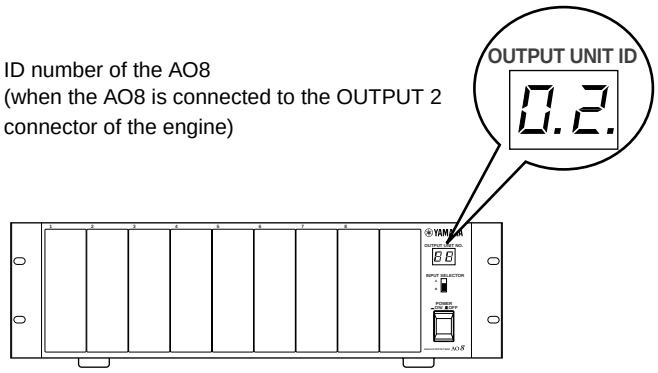


⚠ If the connections of the AI8, the setting of the CONTROL INPUT SELECTOR switch, or the word clock synchronization are not correct, one of the following error displays will appear in the INPUT UNIT ID indicator.

- **E1**.....The AI8 is connected to an OUTPUT connector of the engine. Re-connect it to an INPUT connector.
- **E3**.....The cable connected to the OUTPUT connector on the rear panel of the AI8 has been disconnected, or is connected to the wrong destination. Check the cable.
- **UL (unlocked)**....The word clock is not synchronized.
  Check the connections of the AI8's WORD CLOCK IN connector, or the word clock settings of the CS1D (→p.28).
- **UC (unconnected)**..Control signals are not being received correctly.
  Make sure that the engine is powered-on.
- **ID number and A (or b) displayed alternately**
  Since control signals from the CS1D forcibly switched the valid engine to A (or B), the setting of the CONTROL INPUT SELECTOR switch of the AI8 does not match the actual operation.
  This display does not signify an actual error. However as necessary, check the setting of the CONTROL INPUT SELECTOR switch or the setting of the CS1D.

Checking the analog output unit (Mirror mode)

In Mirror mode if the AO8 is correctly connected to the engine, the OUTPUT UNIT ID indicator of the AO8 will show the ID number of that unit (i.e., the number of the OUTPUT connector on the engine to which the AO8 is connected), and the dot (.) will light on both sides of the ID number.

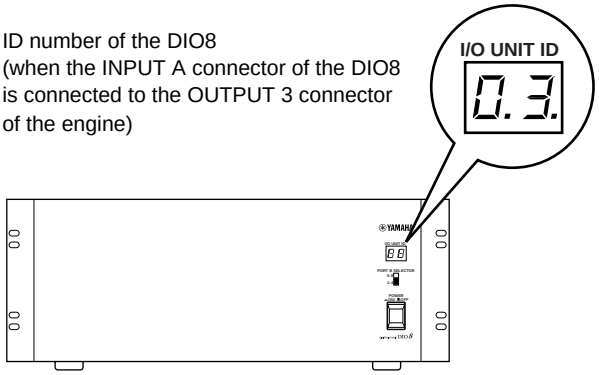


⚠ If the connections of the AO8, the setting of the INPUT SELECTOR switch, or the word clock synchronization are not correct, one of the following error displays will appear in the OUTPUT UNIT ID indicator.

- **E2** .....The AO8 is connected to an INPUT connector of the engine. Re-connect it to an OUTPUT connector.
- **E3** .....The cable connected to the INPUT connector on the rear panel of the AO8 has been disconnected, or is connected to the wrong destination. Check the cable.
- **UL (unlocked)** ....The word clock is not synchronized.
  Check the connections of the AO8's WORD CLOCK IN connector, or the word clock settings of the CS1D (→p.28).
- **UC (unconnected)**..Control signals are not being received correctly.
  Make sure that the engine is powered-on.
- **ID number and A (or b) displayed alternately**
  Since control signals from the CS1D forcibly switched the valid engine to A (or B), the setting of the INPUT SELECTOR switch of the AI8 does not match the actual operation.
  This display does not signify an actual error. However as necessary, check the setting of the INPUT SELECTOR switch or the setting of the CS1D.

Checking the digital input/output unit (Mirror mode)

If the output unit and the engine are correctly connected in Mirror mode and the PORT B SELECTOR of the DIO8 is in the 5-8 position, the I/O UNIT ID indicator will show the ID number of that unit (i.e., the number of the OUTPUT connector on the engine to which the INPUT A connector of the DIO8 is connected), and a dot (.) will be displayed at each side of the number.



⚠ If the PORT B SELECTOR switch of the DIO8 or the word clock synchronization are not correct, the I/O UNIT ID indicator of the DIO8 will show one of the following error displays.

- **UL (unlocked)** ....The word clock of the DIO8 is not synchronized with the PM1D system. Check the connections of the DIO8's WORD CLOCK IN connector, or the word clock setting of the CS1D (→p.28).
- **ID number and A (or b) displayed alternately**
  Since control signals from the CS1D forcibly switched the valid engine to A (or B), the setting of the PORT B SELECTOR switch of the DIO8 does not match the actual operation. This display does not signify an actual error. However as necessary, check the setting of the PORT B SELECTOR switch or the setting of the CS1D.

Basic settings (Standard mode)

DSP x1

When starting up the PM1D system for the first time, you will need to select the operation mode of the PM1D (which is what determines the system configuration and how the components are connected to each other), and set the word clock that will be shared by the entire system. Once these settings have been made, the PM1D system will automatically remember them. (However if you modify the configuration of the system, you may need to make settings again.)

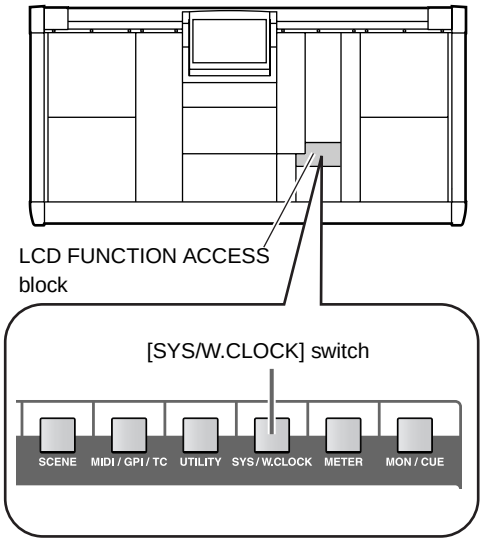
Be aware that the display screens and settings differ between Standard mode and Mirror mode. This section explains the basic settings for Standard mode. If you are using Mirror mode, please proceed to "Basic settings (Mirror mode)" (→p.26).

Selecting the operation mode (Standard mode)

The "operation mode" determines the configuration of the PM1D system and how the components are connected to each other. The PM1D system version 1.0 supports two modes: "Standard mode" in which one console is used with one engine, and "Mirror mode" in which one console is used with two engines.

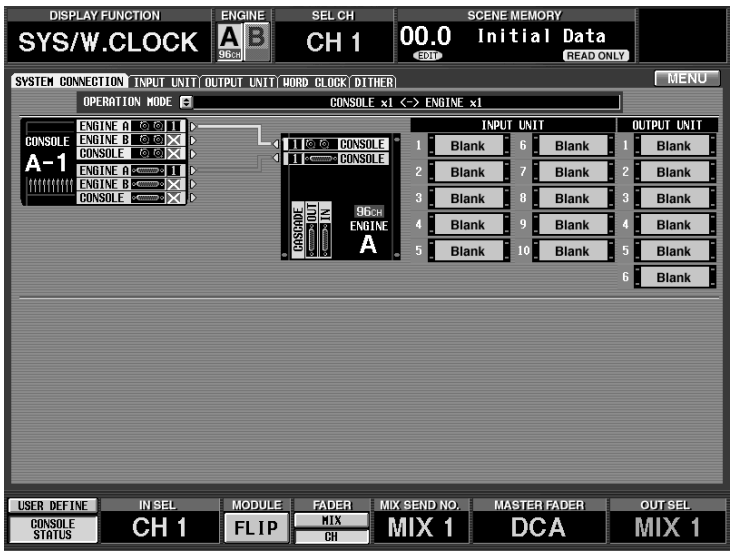
[Procedure]

1. **In the LED FUNCTION ACCESS block, press the [SYS/W.CLOCK] switch several times to access the screen shown on the following page.**



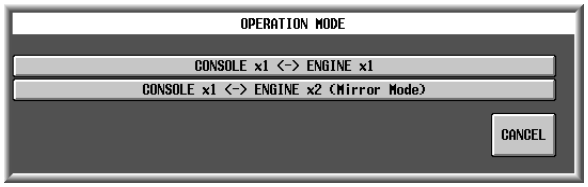
Hint

The switches of the LCD FUNCTION ACCESS block are used to access specific functions in the display. By pressing the same switch repeatedly, you can successively access different screens within that function.



This is the SYSTEM CONNECTION screen, in which you can check the connection status of the various components, and select the operation mode.

2. **Click the button located at the right of "OPERATION MODE."**
   The OPERATION MODE window will appear, in which you can select the operation mode.



3. **Click the button marked "CONSOLE x 1 <-> ENGINE x1."**
   Clicking "CONSOLE x 1 <-> ENGINE x1" will select "Standard mode," and you will then return to the previous screen.

Verify that the OPERATION MODE field indicates "CONSOLE x1 <-> ENGINE x1."

⚠ When you perform this switch, the word clock will be reset. At this time, noise may be produced from the output jacks of the CS1D or AO8 (in particular if an MY8-AT digital I/O card is installed in the DIO8). In order to protect your speakers, you must turn down the output of the power amp before changing this setting.

Hint

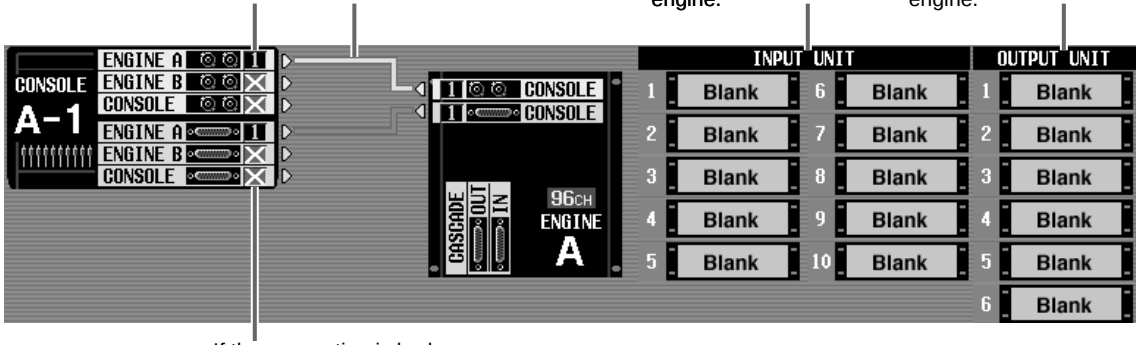
In the SYSTEM CONNECTION screen you can also check the cabling within the system and the status of each device.

If both sets of connectors (1/2) are connected, two lines will be displayed in the screen. In this case, the connector for the transmitting device in the graphic will show the number of the currently-valid connector.

This shows the connection status between the console and engine. The light blue line in the screen shows the control signal connection, and the red line shows the digital audio signal connection.

This indicates the type of input unit that is connected to each INPUT connector (1–10) of the engine.

This indicates the type of input unit that is connected to each OUTPUT connector (1–6) of the engine.



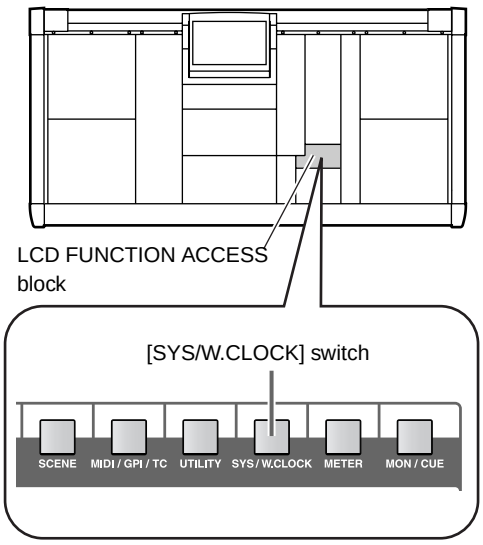
If the connection is broken, an "x" symbol will be displayed instead of the number.

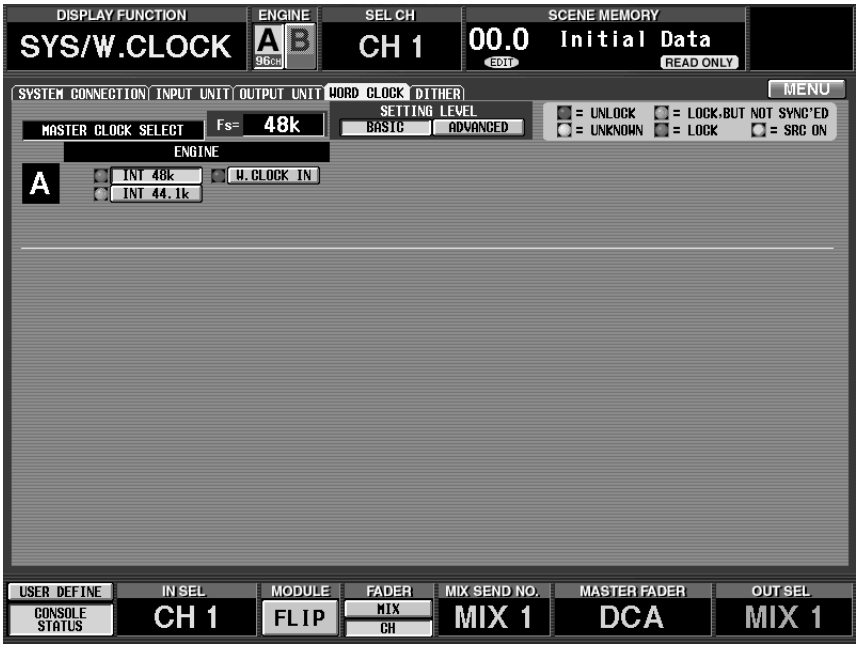
Setting the word clock (Standard mode)

In order for the PM1D system to function, word clock (audio system clock) synchronization must be established between all devices of the system. In this screen you can specify the word clock that will operate the PM1D system. In general, the frequency of this clock is referred to as the sampling rate or sampling frequency.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [SYS/W.CLOCK] switch several times to access the following screen.**





Settings for the word clock of the PM1D system are made in this screen.

2. **In the screen area marked "SETTING LEVEL," make sure that the BASIC button is on (displayed in green).**
If the ADVANCED button is on instead of the BASIC button, click the BASIC button.

Hint

When the ADVANCED button is on, you can make more detailed word clock settings.

3. **Click one of the following buttons to select the word clock source as the word clock master.**
In Standard mode you can select one of the following three choices as the word clock.

⚠ When you change the word clock settings, noise may be heard from the output jacks of the CS1D and AO8, particularly if an MY8-AT digital I/O card is installed in the DIO8. To protect your speaker system, you must turn down the power amp output before changing the word clock settings. Such a change in the word clock settings can occur not only when PM1D system internal settings are changed, but also when the word clock setting is switched on an external device (e.g., a CD player or a recording device).

■ **ENGINE A**

- **INT 48 k (Default setting)** The internal clock of the engine, 48 kHz
- **INT 44.1 k**.....The internal clock of the engine, 44.1 kHz
- **W.CLOCK IN** .....Supply a word clock to the WORD CLOCK IN connector of the engine

Normally you will select either INT 48 k or INT 44.1 k. If you are using an external clock generator as the master, select W.CLOCK IN, and supply a word clock to the WORD CLOCK IN jack of the engine/console.

⚠ If when you change the word clock settings, the AI8 or AO8 indicator shows "UL" or the display shows a message warning that the word clock is not synchronized, check the connections between the engine and console, and the connections between the engine and the input/output units.

Basic settings (Mirror mode)

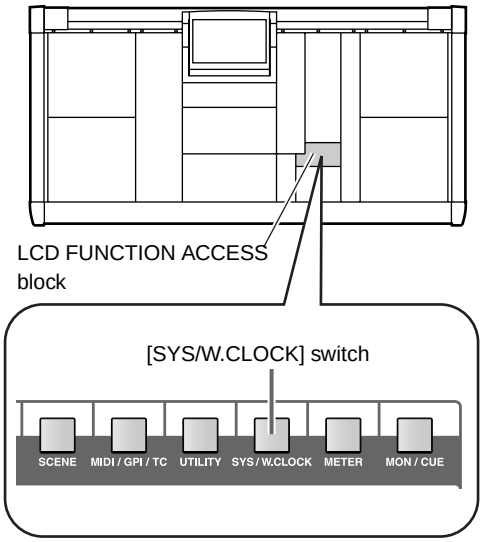
DSP x2

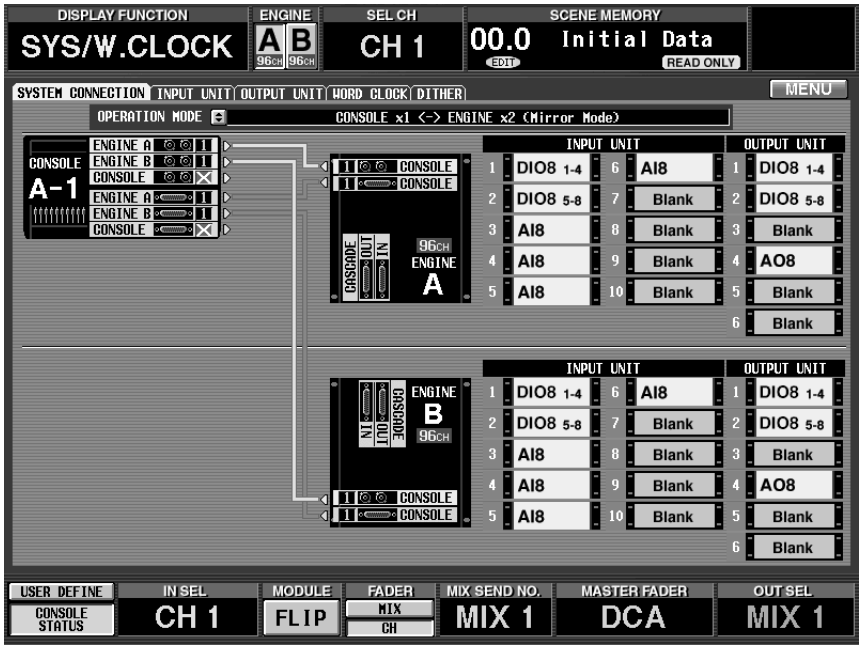
This section explains how to select the operation mode and word clock master when using the PM1D system in Mirror mode.

Selecting the operation mode (Mirror mode)

[Procedure]

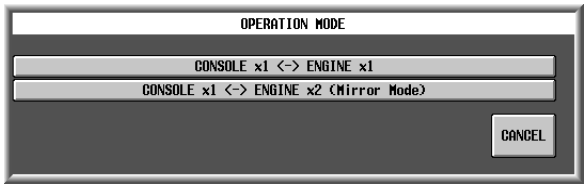
1. **In the LCD FUNCTION ACCESS block, press the [SYS/W.CLOCK] switch several times to access the following screen.**





This is the SYSTEM CONNECTION screen, in which you can check the connection status of each device, and select the operation mode.

2. **Click the button located at the right of "OPERATION MODE."**
   The OPERATION MODE window will appear, in which you can select the operation mode.



3. **Click the button marked "CONSOLE x 1 <-> ENGINE x2 (Mirror Mode)."**
   Clicking "CONSOLE x 1 <->ENGINE x2 (Mirror Mode)" will select "Mirror mode," and you will then return to the previous screen. Verify that the OPERATION MODE field indicates "CONSOLE x1 <-> ENGINE x2 (Mirror Mode)."

⚠ When you perform this switch, the word clock will be reset. At this time, noise may be produced from the output jacks of the CS1D or AO8 (in particular if an MY8-AT digital I/O card is installed in the DIO8). In order to protect your speakers, you must turn down the output of the power amp before changing this setting.

Hint

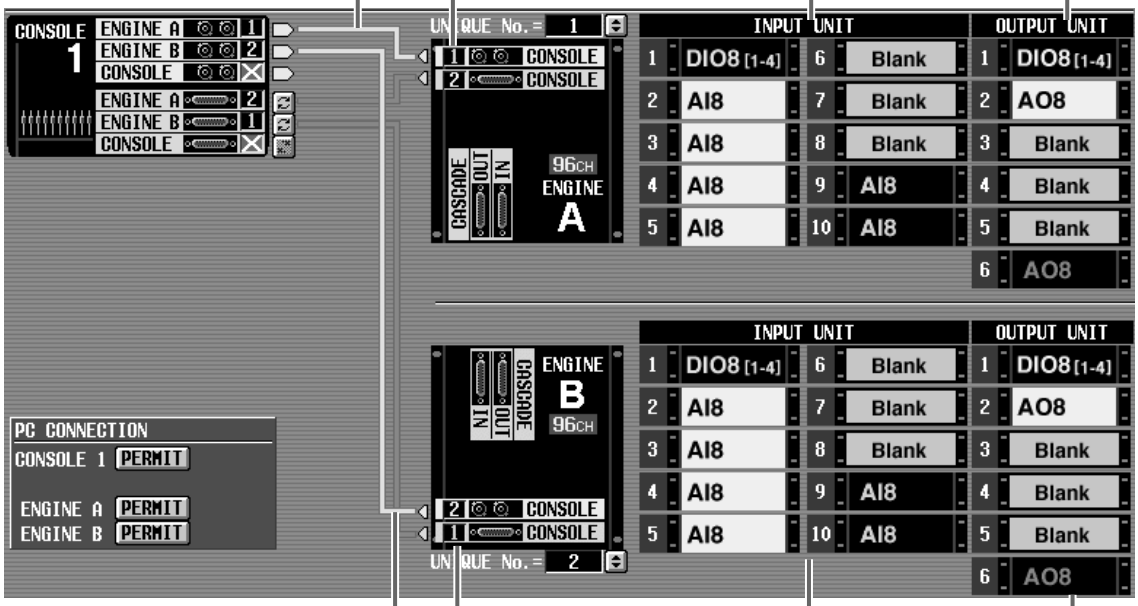
In the SYSTEM CONNECTION screen you can also check the cabling within the system and the status of each device.

This shows the connection status between the console and engine. The light blue lines in the screen show control signal connections, and the red lines show digital audio signal connections.

If both jacks (1/2) of the same type are connected, two lines will be displayed in the screen. You can click a button in the jack area to select the jack number (1 or 2) that is currently enabled. If the connection is broken, an "x" symbol will be displayed instead of the number.

This indicates the type of input unit that is connected to each INPUT connector (1–10) of the engine.

This indicates the type of input unit that is connected to each OUTPUT connector (1–6) of the engine.



This shows the connection status between the console and engine. The light blue lines in the screen show control signal connections, and the red lines show digital audio signal connections.

If both jacks (1/2) of the same type are connected, two lines will be displayed in the screen. You can click a button in the jack area to select the jack number (1 or 2) that is currently enabled. If the connection is broken, an "x" symbol will be displayed instead of the number.

This indicates the type of input unit that is connected to each INPUT connector (1–10) of the engine.

This indicates the type of input unit that is connected to each OUTPUT connector (1–6) of the engine.

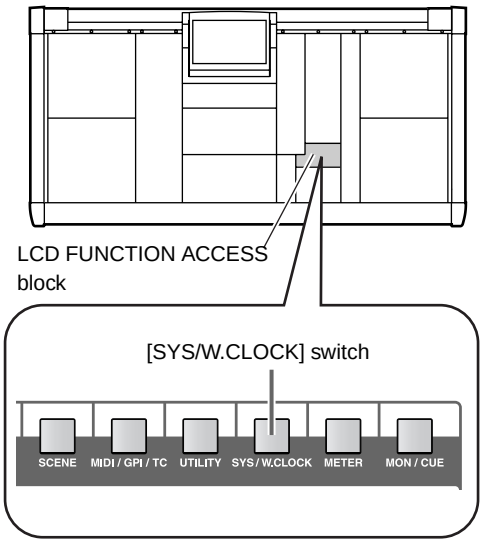
⚠ When using the PM1D system in Mirror mode, use this screen to verify that the same configuration of components is connected to the INPUT connectors and OUTPUT connectors of engines A and B. Be aware that if the two configurations are different, the signal flow will change when you switch between engine A and engine B, and the desired state will not be obtained.

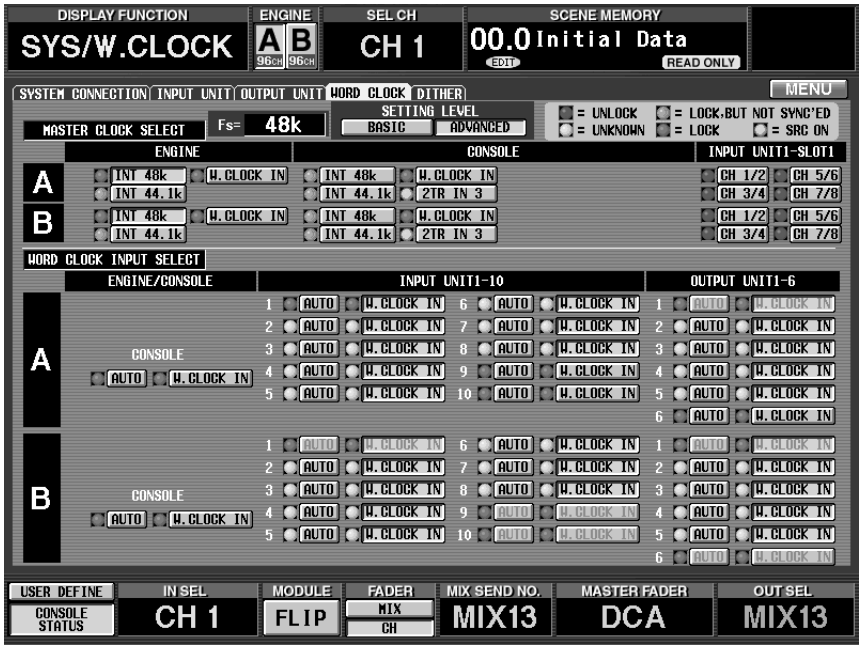
Setting the word clock (Mirror mode)

This section explains how to check whether the word clock settings are appropriate when using the PM1D system in mirror mode.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [SYS/W.CLOCK] switch several times to access the following screen.**





Settings for the word clock of the PM1D system are made in this screen.

2. **In the "SETTING LEVEL" section of the screen, make sure that the ADVANCED button is on (displayed in green).**
The ADVANCED button will automatically be on if you select "CONSOLE x1 <-> ENGINE x2 (Mirror Mode)" in the SYSTEM CONNECTION screen (→p.26).

- **ADVANCED button on**

3. Make sure that the master word clock and the word clock input select are set as follows.

MASTER CLOCK SELECT

- **The W.CLOCK of the engine or console is on**

WORD CLOCK INPUT SELECT

Console	W.CLOCK IN
Engine A/B	W.CLOCK IN
Each unit	W.CLOCK IN

Word clock settings will automatically be as shown above.

⚠ Although it is possible to change this setting manually, you should supply a word clock from an external clock generator to each device (→refer to the connection methods on p.10, 12), and use the system with the above settings to ensure that the system operates in a stable manner.

With these settings, the word clock from the external clock generator will be supplied directly to each device in the PM1D system even if you switch between engines A and B in case of problems, so that the clock itself will not be switched, and the change will occur in the shortest possible time.

⚠ If when you change the word clock settings, the AI8 or AO8 indicator shows "UL" or the display shows a message warning that the word clock is not synchronized, check the connections between the engines and console, and the connections between the engines and the input/output units.

Checking the operation of input units

This section explains how to check the operation of an input unit connected to the DSP1D-EX {DSP1D} engine. The general procedure is as follows.

Connect an input source to the input unit

⬇

Connect a monitor system (or headphones) to the MONITOR OUT A jacks of the console (or to the MONITOR A headphone jack)

⬇

Turn on the power in the order of input unit → DSP1D-EX {DSP1D} engine → CS1D console → monitor system

⬇

Patch the input unit to an input channel

⬇

Press the [CUE] switch of the input channel

⬇

Check whether the signal is output from the MONITOR OUT A jacks (or the MONITOR A headphone jack)

Preparations for checking

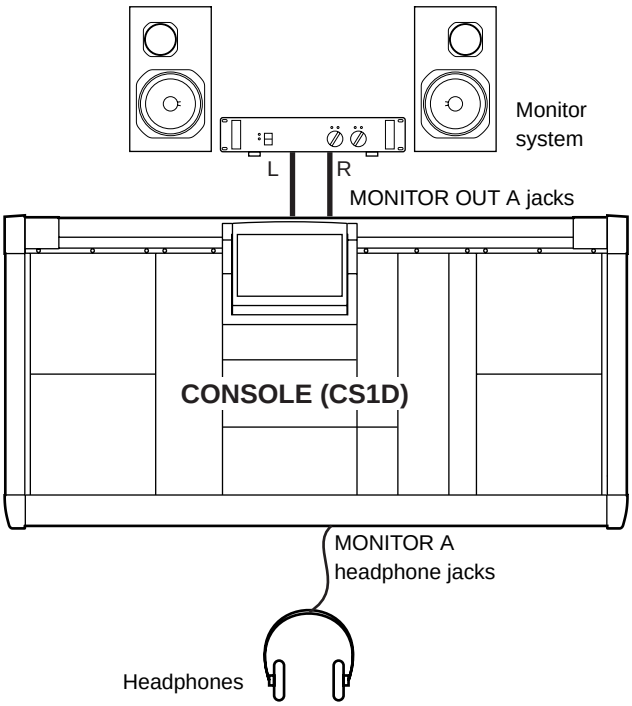
Before you begin checking the operation of the input unit, make sure that you have performed the following actions.

- **Connect the various components that are part of the PM1D system (→p.6–13)**
- **Use the indicators/LEDs of the input/output units and the engine to verify that the components are correctly connected to each other (→p.14–21)**
- **Set the operation mode and the word clock master as appropriate for the configuration of the PM1D system that you are using (→p.22–29).**

Connect the monitor system

In order to check the operation of an input unit, you must connect a monitor system such as powered monitor speakers or a power amp + speaker to the MONITOR OUT A jacks located on the rear panel of the CS1D console. (Since the purpose of this is to check the operation, high power monitors are not necessary.)

If you will be monitoring through headphones, connect them to the PHONES MONITOR A jack located on the front panel of the CS1D console.

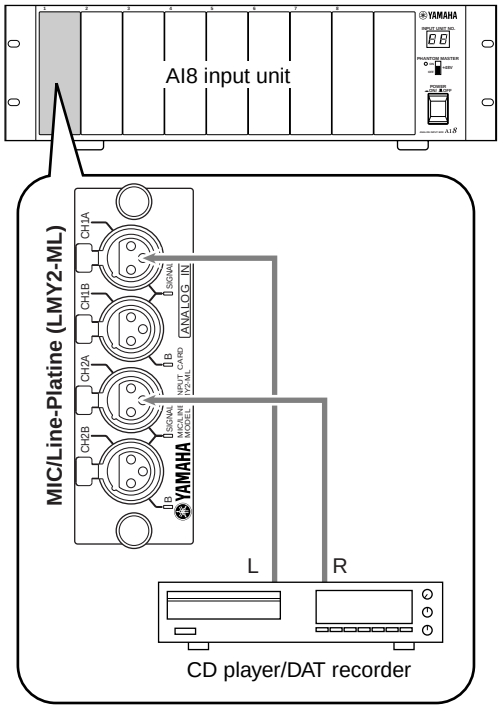


⚠ Please do not use the MONITOR A/B headphone jacks located on the top panel of the console (in the SELECTED INPUT CHANNEL block) simultaneously with the PHONES MONITOR A/B jacks located on the front panel. Doing so can cause the CS1D to malfunction due to excessive current.

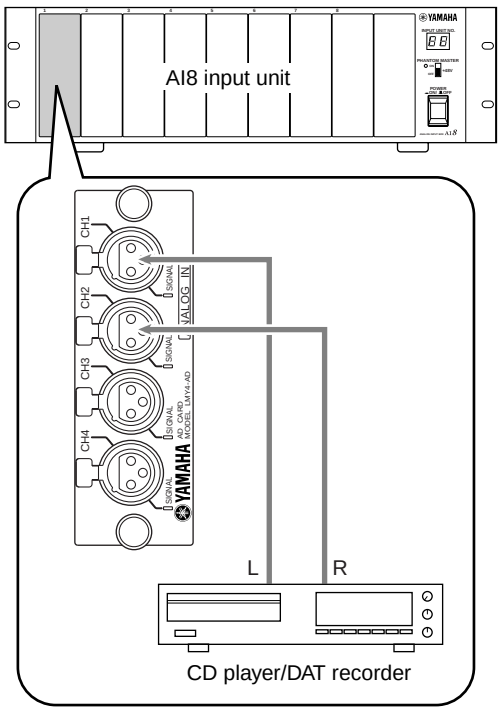
Connect an input source

Connect one of the following input sources according to the type of input unit or card that you wish to check.

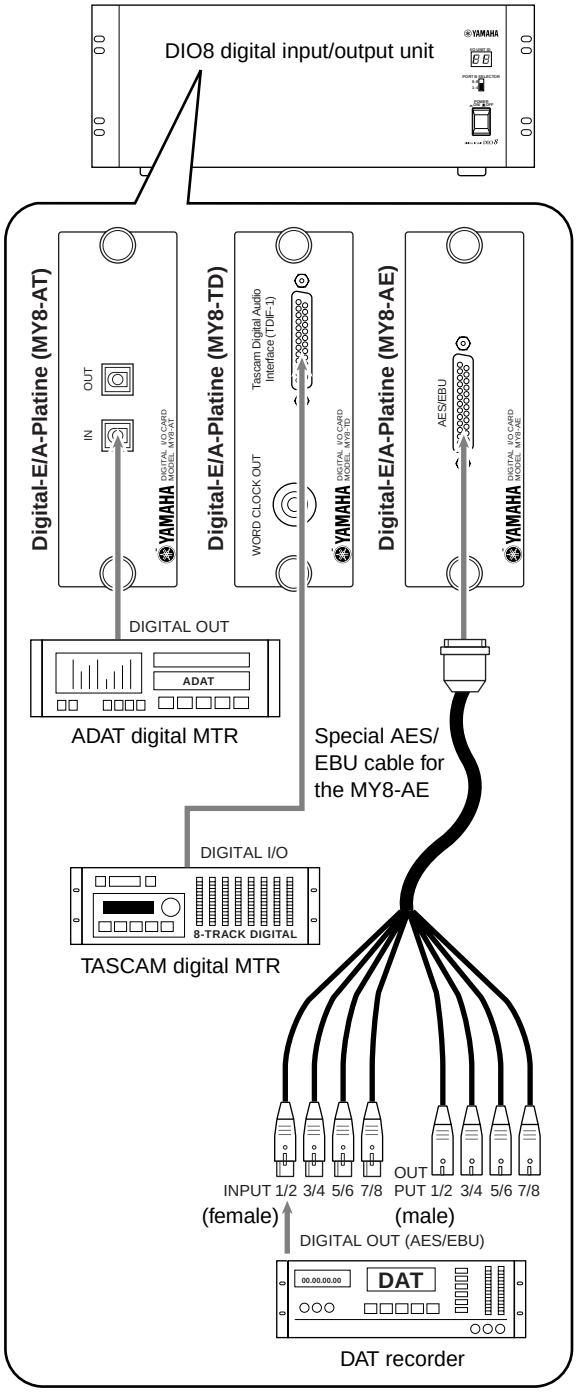
- **To check a mic/line input card (LMY2-ML) installed in the AI8**
  Connect a line output device such as a CD player or DAT recorder to input jacks 1A and 2A of the LMY2-ML.



- **To check an AD card (LMY4-AD) installed in the AI8**
  Connect a line output device such as a CD player or DAT recorder to input jacks 1/2 of the LMY4-AD.



- **To check an input channel of a digital I/O card (MY8-AT, MY8-TD, MY8-AE) installed in the DIO8**
  Connect the digital output connector of a DAT recorder or digital MTR (multi-track recorder) that matches the format of your digital I/O card. In this case, make connections and settings so that the signals are sent from the recorder to input channels 1/2 of the digital I/O card.

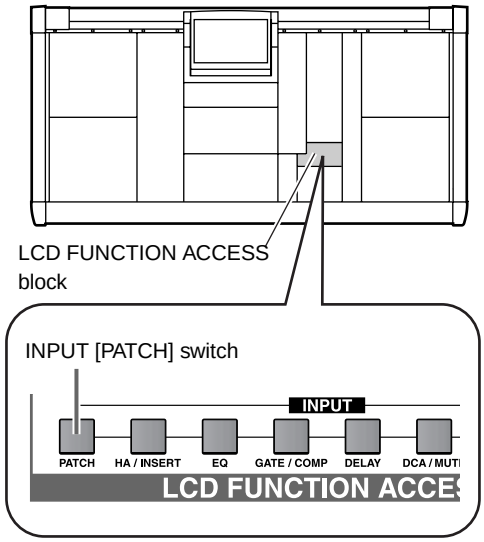


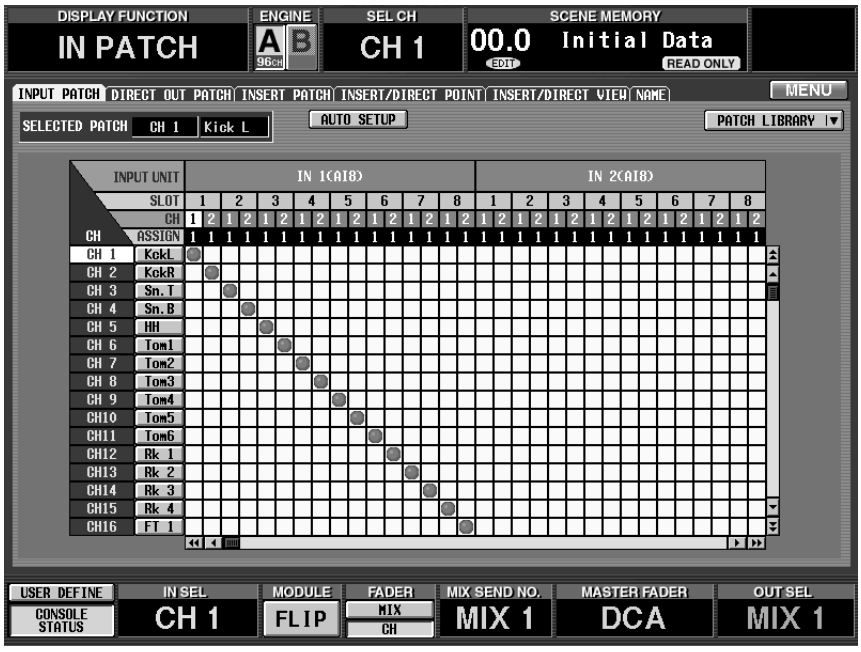
Patch the input unit to an input channel

Simply connecting a source to an input unit does not cause that signal to be input to the PM1D system. In order to send signals to the PM1D system, you must assign (patch) the input jacks of the input unit to input channels of the PM1D system. This operation is performed within the display of the CS1D console.

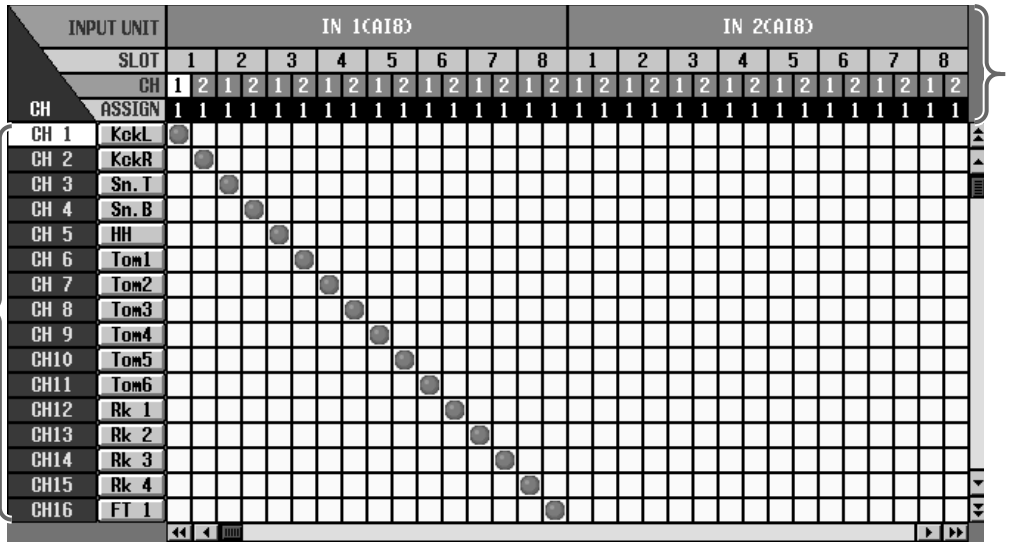
[Procedure]

1. **Turn on the power in the order of PM1D system → monitor system.**
2. **In the LCD FUNCTION ACCESS block, press the INPUT [PATCH] switch several times to access the following screen.**





This is the INPUT PATCH screen, where signals from an input unit or effect return can be patched to input channels.



Number of the patch destination input channel.

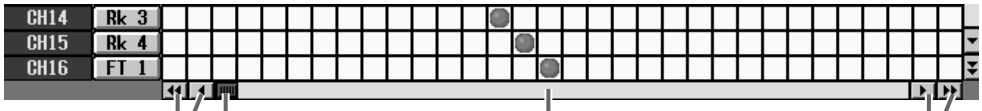
Patch source input jack. From the top row, the display shows the type and ID of the input unit, the number of the slot in which the input card is installed, and the number of the channel (jack) within the card.

In this grid, input jacks (horizontal rows) can be patched to input channels (vertical columns). A ● symbol is displayed to indicate a currently-patched grid location.

Hint

The switches in the LCD FUNCTION ACCESS block are used to access the desired function in the display. Each function is divided into multiple screens, and you can press the same switch repeatedly to cycle through the displayed screens.

3. **Move the left/right scroll bar so that the visible area of the horizontal rows (patch source) shows the input unit to which the input source is connected.**
   Use the left/right scroll bar to access input units that are not currently shown in the visible area.



Click the ◀◀/▶▶ buttons to switch the display in steps of a unit.
Click the ◀/▶ buttons to switch the display in steps of a slot.

Drag this box to move the displayed area to left or right.

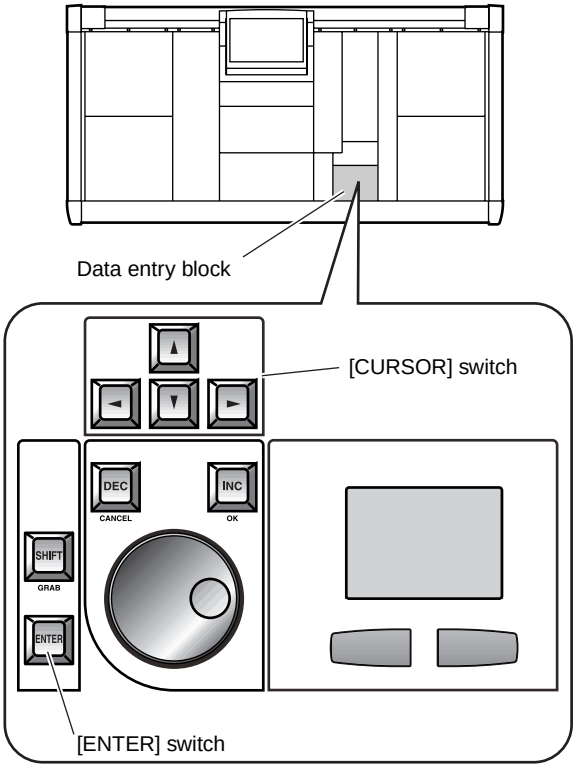
You can also click this area to move the displayed portion.

Click the ◀◀/▶▶ buttons to switch the display in steps of a unit.
Click the ◀/▶ buttons to switch the display in steps of a slot.

4. **Patch the input source to input channels 1/2.**
   In the IN PATCH screen, the jack to which the input source is connected can be patched to the desired input channel by making a ● symbol appear in the grid where the patch source intersects the patch destination. There are two ways to do this, as follows.

Using the switches of the console

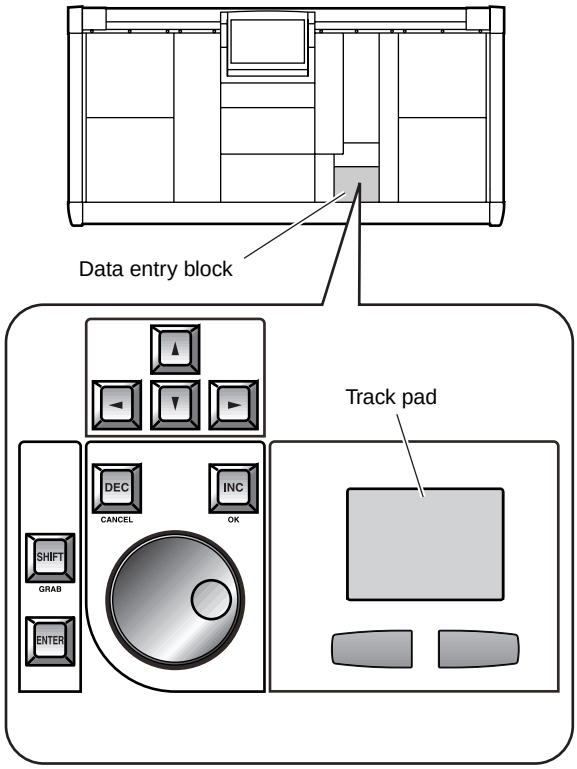
1. **Use the [CURSOR] switches in the data entry block to move the cursor (the red frame) in the display to the desired grid.**



2. **Press the [ENTER] switch to make a ● symbol appear.**

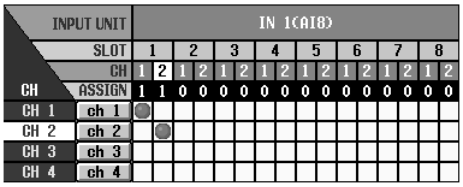
Using the track pad of the console

1. **Use the track pad to move the cursor to the desired grid. (The cursor will change to the shape of a finger.)**

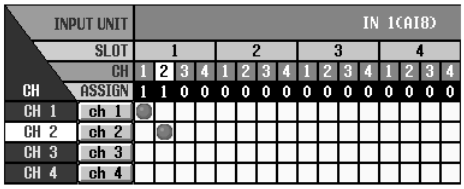


2. **Click the desired grid to make the ● symbol appear.**
   The screen will appear as follows when an input source has been patched to input channels 1/2.

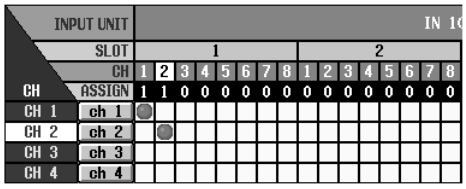
   - **For an AI8 with a mic/line input card (LMY2-ML) installed**



   - **For an AI8 with an AD card (LMY4-AD) installed**



   - **For a DIO8 with a digital I/O card installed**

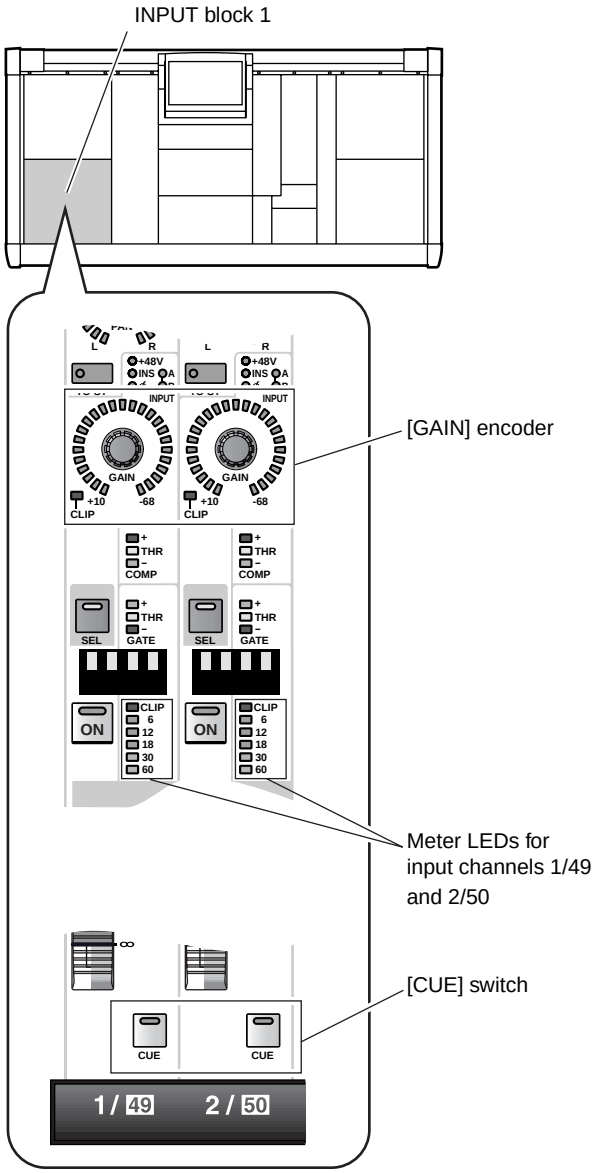


Monitor the input signal

After you have patched an input source to an input channel, press the [CUE] switch for that input channel and check whether it is output from the MONITOR OUT jacks.

[Procedure]

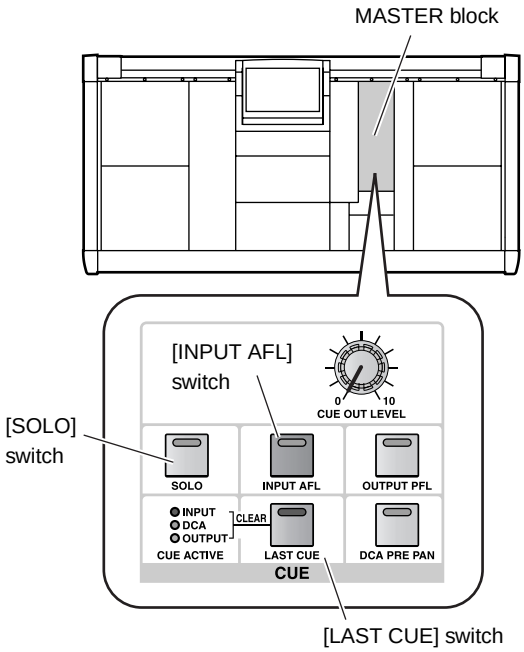
1. **Play back the input source, and check that the meter LEDs light for input channels 1/49 and 2/50 in INPUT block 1 of the console.**



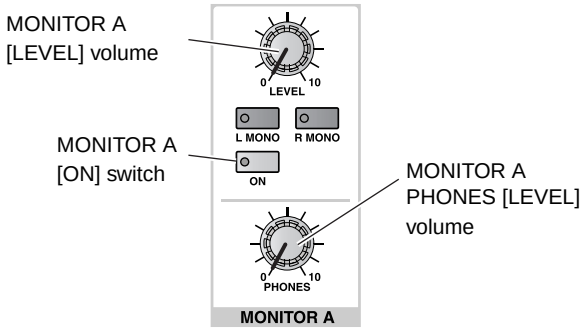
⚠ If the input source is connected to a mic/line input card (LMY2-ML), adjust the [GAIN] encoder so that the CLIP segment of the meter LED does not light.

2. **Press the [CUE] switches of input channels 1/49 and 2/50 to make the switch LEDs light.**
The input signals of input channels 1/2 will be sent to the monitoring bus (CUE bus).

⚠ In the CUE section of the MASTER block, make sure that the [SOLO] switch, the [INPUT AFL] switch, and the [LAST CUE] switch are off (LED dark). If any of these switches are on, it may not be possible to monitor the signal from the MONITOR OUT A jacks or the MONITOR A headphone jack even though the [CUE] switch of the input channel is pressed.
Monitoring will also be impossible if the CUE INTERRUPTION button has been turned off in the MON/CUE function MONITOR A screen. Please check whether this button has been turned off. (“CS1D Reference Manual (Software)” →p.71.)



3. **In the MONITOR A section of the MASTER block, turn on the MONITOR A [ON] switch and raise the MONITOR A [LEVEL] volume to an appropriate level. Also raise the volume of your monitor system.**



Hint

When monitoring through the MONITOR A headphone jack, raise the MONITOR A PHONES [LEVEL] volume (located in the MONITOR A section of the MASTER block) to an appropriate level.

If you are now able to monitor the signal, you have verified that the input unit/card to which the source is connected is operating normally.

4. As necessary, perform the same operational check for other input units or cards.

⚠ If you are unable to monitor an input source, check the following points.

Meter LEDs of the INPUT block do not light

- Is the input source connected appropriately?

→ Check the unit/card to which the input source is connected (→p.32)

- When using a mic/line input card (LMY2-ML), is the input source connected to input jacks 1A and 2A?

→ When the PM1D system is in the default state, input jacks 1B or 2B cannot be used without changing the settings. Re-connect to input jacks 1A and 2A (→p.32).

- Has the input unit/card to which the input source is connected been correctly patched to the input channel?

→ Check the settings of the IN PATCH screen (→p.33).

- In the SELECTED INPUT CHANNEL block, has the MODULE [FLIP] switch been turned on (LED lit)?

→ When the MODULE [FLIP] switch is on, the modules of INPUT blocks 1 and 2 will be exchanged. Press the MODULE [FLIP] switch to make the LED go dark. ("CS1D Reference Manual (Hardware)" →p.5)

- In the MASTER block GLOBAL LAYER section, has the [49-96] switch been turned on (LED lit)?

→ On the 96 channel model when the GLOBAL LAYER [49-96] switch is on (LED lit), channels 49–96 will be selected as the input channels that are controlled from the top panel of the CS1D. {This switch has no function on the 48 channel model.} To control channels 1–48, press the GLOBAL LAYER [1-48] switch. ("CS1D Reference Manual (Hardware)" →p.5)

Meter LEDs of the INPUT block do light, but the signal is not output from MONITOR OUT jacks A or the MONITOR A headphone jack

- Is your monitor system connected appropriately?

→ Check the connections of the monitor system/headphones.

- Is the monitor volume raised?

→ Raise the MONITOR A [LEVEL] or [PHONES] volume to an appropriate level.

- In the MASTER block CUE section, have the [SOLO], [INPUT AFL], or [LAST CUE] switches been turned off?

→ If any of these switches are on, it may not be possible for the signal of the input channel whose [CUE] switch was pressed to be monitored from MONITOR OUT jacks A or the MONITOR A headphone jack. You must turn off all of these switches. ("CS1D Reference Manual (Hardware)" →p.81)

The meter LEDs of the INPUT block are lit, and a signal is output from the MONITOR A headphone jack, but no signal is output from MONITOR OUT jacks A

- Is the CUE INTERRUPTION button (MON/CUE function MONITOR A screen) turned on?

→ Monitoring is not possible if the CUE INTERRUPTION button is turned off. Turn this button on. ("CS1D Reference Manual (Software)" →p.71)

Checking the operation of an output unit

This section explains the procedure for checking the operation of an output unit connected to the DSP1D-EX {DSP1D} engine. The general procedure is as follows.

Connect an input source to an input unit

⬇

Connect your monitor system to an output unit

⬇

Turn on the power in the order of input unit → DSP1D-EX {DSP1D} engine → CS1D console → monitor system

⬇

Patch the input unit to an input channel

⬇

Patch the output unit to the STEREO A channel

⬇

Send the input channel signal to the STEREO bus

⬇

Check whether the signal is output from the STEREO OUT A jacks

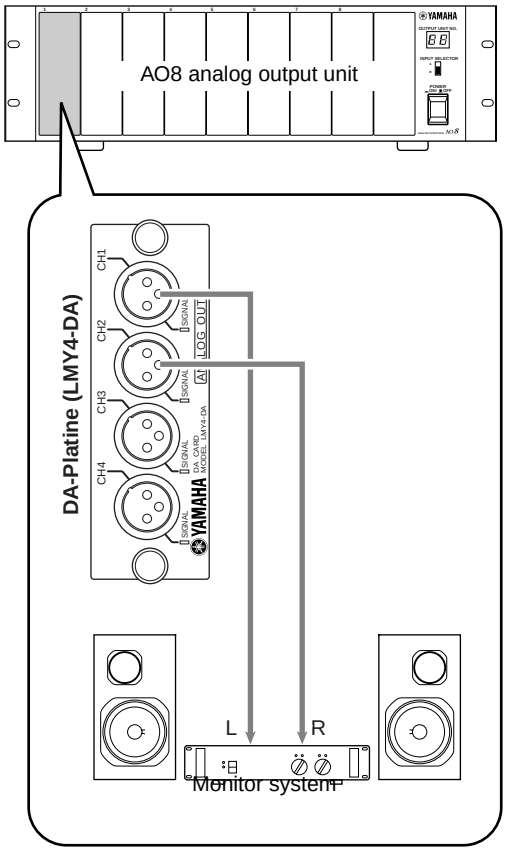
Preparations for checking

Before you begin checking the operation of an output unit, make sure that the following actions have been completed.

- **Connect the various components that are part of the PM1D system (→p.6–13)**
- **Use the indicators/LEDs of the input/output units and the engine to verify that the components are correctly connected to each other (→p.14–21)**
- **Set the operation mode and the word clock master as appropriate for the configuration of the PM1D system that you are using (→p.22–29).**

Connect the monitor system

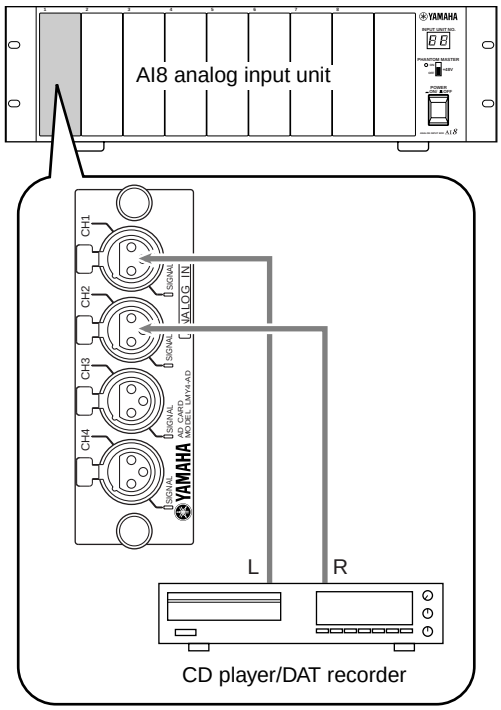
In order to check the operation of an analog output unit, you will need to connect a monitor system such as a set of powered speakers or a power amp + speakers to a DA card (LMY4-DA) installed in the AO8 analog output unit.



⚠ If you are checking the output channels of a DIO8 digital input/output unit, connect the output connector of the digital I/O card (MY8-AT, MY8-TD, MY8-AE) to the digital input connector of a DAT recorder or digital MTR (multi-track recorder) of the same format as that card. In this case, it will not be possible to directly monitor the signal via the monitor system, so you will need to arrange things so that the signal can be monitored via the headphone jack or analog output jacks of the recorder.

Connect an input source

As a sound source for checking, connect a line output device such as a CD player or DAT recorder to an input unit.

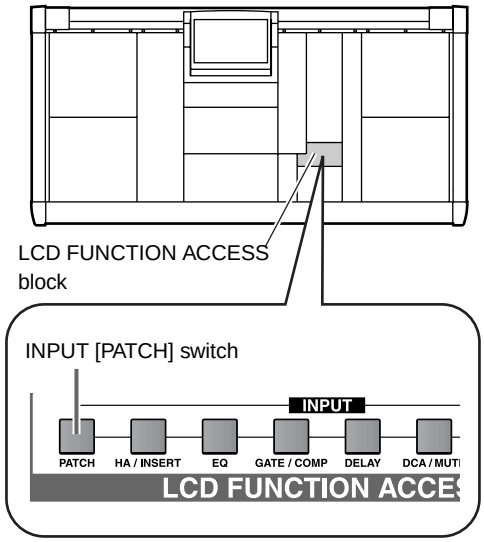


Patch the input unit to an input channel

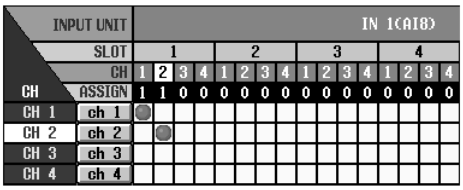
Patch the input jack to which you connected the input source to input channels 1/2. For details of the procedure, refer to page 33.

[Procedure]

1. **Turn on the power in the order of the PM1D system → monitor system.**
2. **In the LCD FUNCTION ACCESS block, press the INPUT [PATCH] switch several times to access the following screen.**



3. **Patch the input source to input channels 1/49 and 2/50.**
   The following illustration shows an example of when jacks 1/2 of an AD card (LMY4-AD) installed in slot 1 of the AI8 are patched to input channels 1/2.

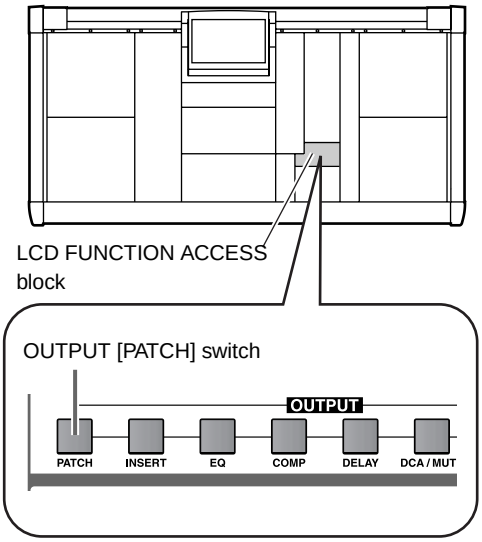


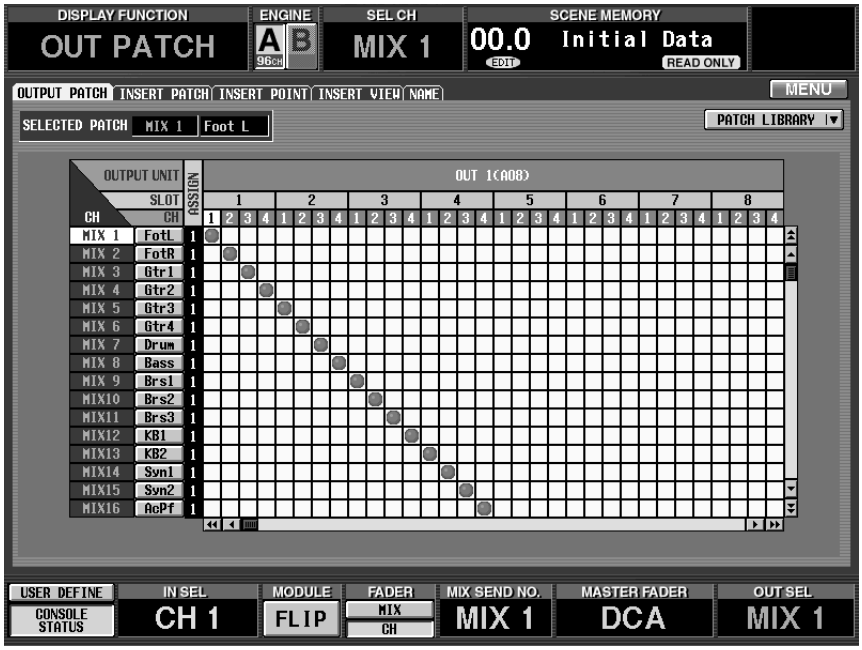
Patch the STEREO A channel to an output unit

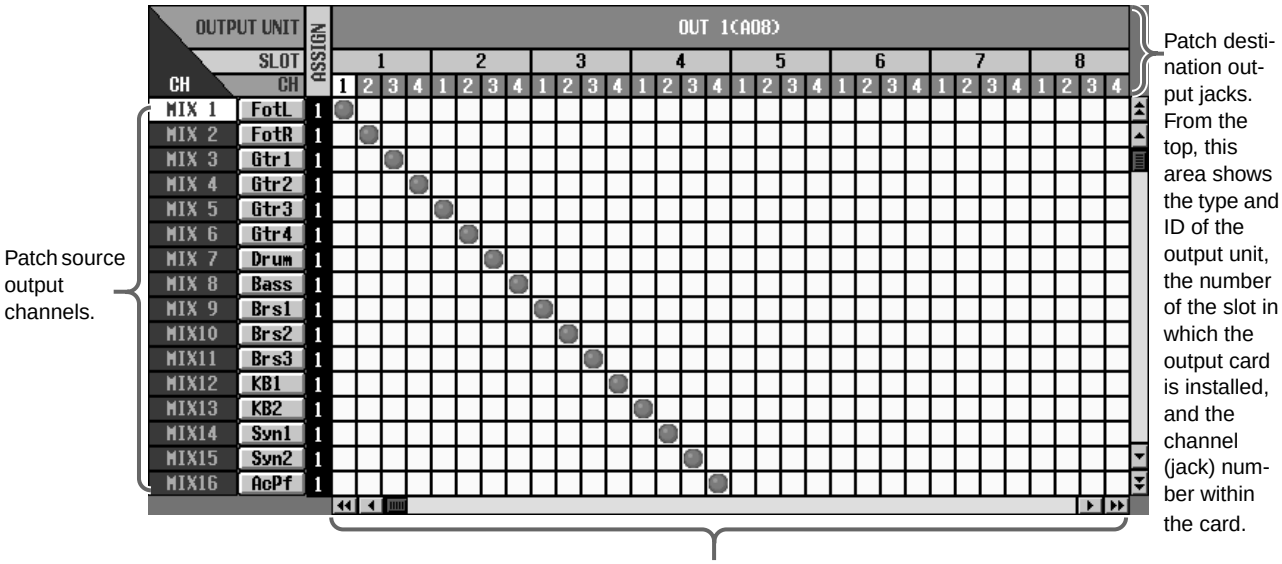
Similarly to the case for an input unit, outputting a signal from the PM1D system requires more than simply connecting your monitor system to an output unit. In order to output a signal, you must also assign (patch) an output channel (MIX channel, MATRIX channel, STEREO A/B channel) of the PM1D system to the jacks of an output unit. This action is performed within the display of the CS1D console.
Here's how to patch the STEREO A channel output signal to the output unit to which your monitor system is connected.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the OUTPUT [PATCH] switch several times to access the following screen.**



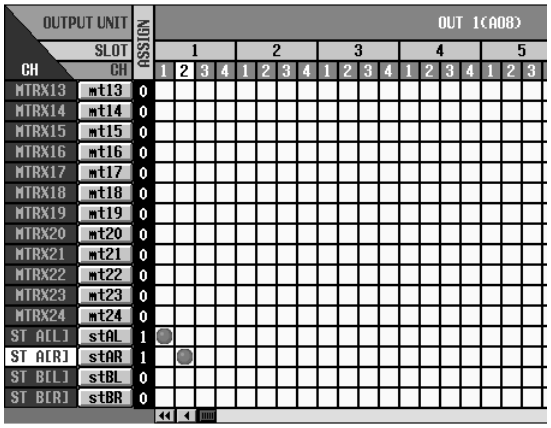




2. **Use the up/down scroll bars to make "ST A[L]" and "ST A[R]" appear in the vertical column (patch source) area.**
   Use the up/down scroll bar to see output channels that are not currently visible. "ST A[L]" and "ST A[R]" correspond to STEREO A channels L and R respectively.

3. **Use the left/right scroll bar to make the output unit to which your monitor system is connected appear in the horizontal row (patch destination) of the display.**

4. **Patch "ST A[L]" and "ST A[R]" to the jacks to which your monitor system is connected.**
   The following illustration shows the example of when jacks 1/2 of a DA card (LMY4-DA) installed in slot 1 of the AO8 are patched to the L/R channels of STEREO A.

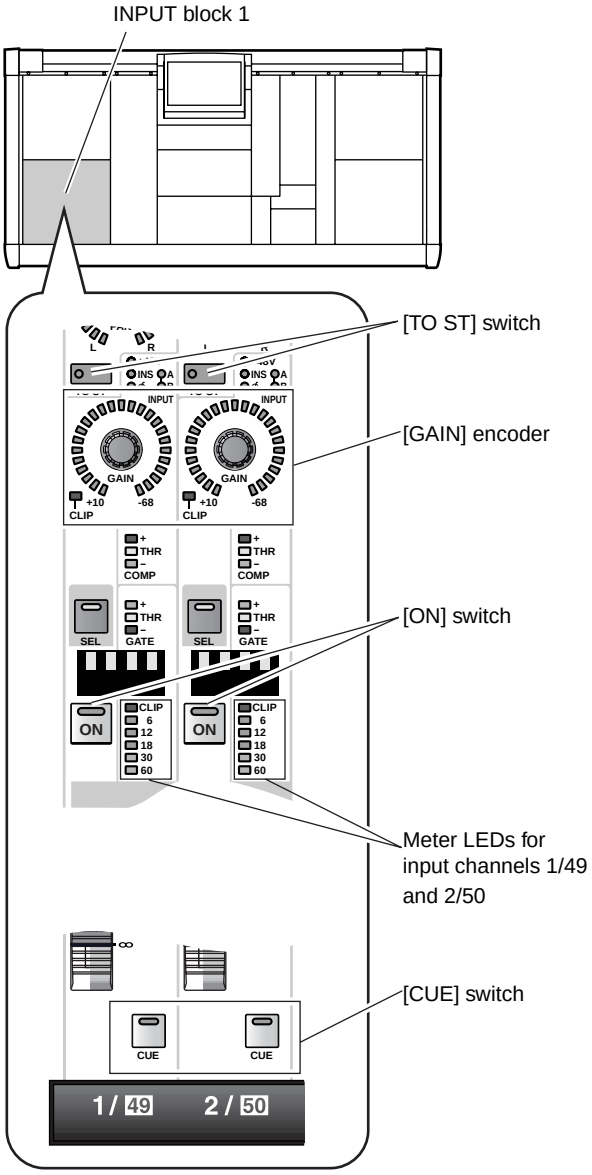


Send the input signals of input channels 1/2 to the STEREO bus

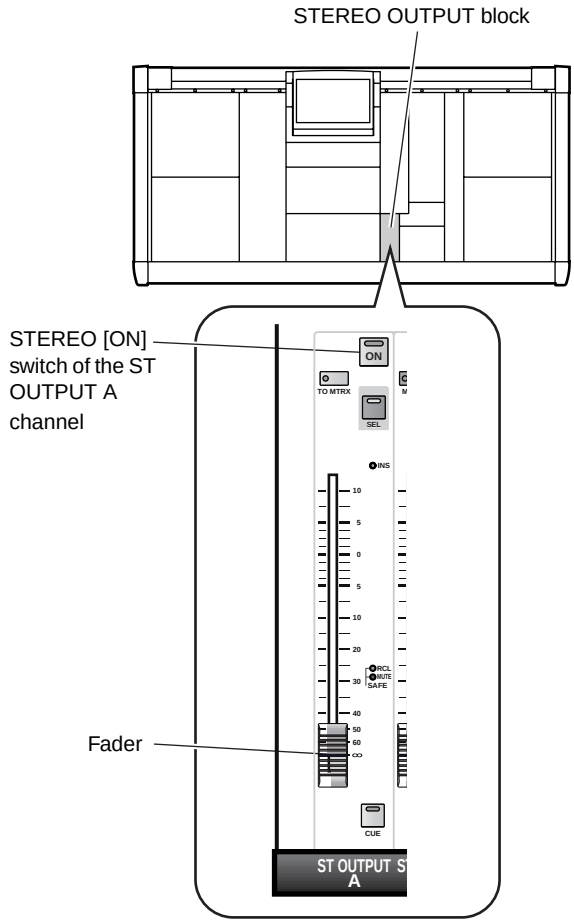
With the operations you have performed up to this point, the signals of the STEREO bus of the PM1D system will be output to the output jacks to which your monitor system is connected. Now we will send the signals of the input source to the STEREO bus to verify that they can be monitored via your monitor system.

[Procedure]

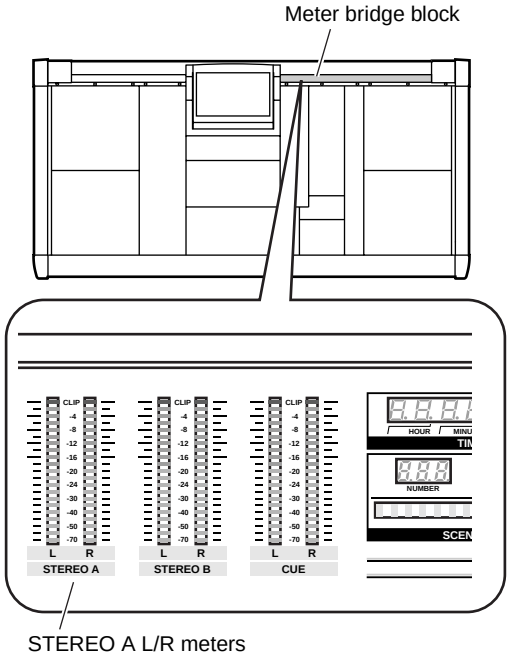
1. **Play back the input source. In INPUT block 1 of the console, verify that the meter LEDs light for input channels 1/49 and 2/50.**



2. **If the input source is connected to a mic/line input card (LMY2-ML), adjust the [GAIN] encoder so that the CLIP segment of the meter LED does not light.**
3. **Turn on the [ON] switches of input channels 1/49 and 2/50 (so that the LEDs are lit).**
4. **Turn on the [TO ST] switches of input channels 1/49 and 2/50.**
5. **Raise the faders of input channels 1/49 and 2/50 to the 0 position (nominal level).**
6. **In the STEREO OUTPUT block, turn on the STEREO [ON] switch of the ST OUTPUT A channel.**



7. In the STEREO OUTPUT block, raise the ST OUTPUT A channel fader.
At this time, the STEREO A L/R meters in the meter bridge block will show the output level of the STEREO A channel.



If the signal can now be heard from your monitor system, you have verified that the output unit/card to which the source is connected is functioning correctly.

8. As necessary, use the same procedure to check the operation of other output units or cards.

⚠ If the input source could not be monitored, check the following points.

Meter LEDs in the INPUT block do not light

- Is the input source connected appropriately?

→ Check the unit/card to which the input source is connected (→p.32).

- When using a mic/line input card (LMY2-ML), is the input source connected to input jacks 1A and 2A?

→ When the PM1D system is in the default state, input jacks 1B or 2B cannot be used without changing the settings. Re-connect to input jacks 1A and 2A (→p.32).

- Has the output unit/card to which the input source is connected been correctly patched to the input channel?

→ Check the settings of the IN PATCH screen (→p.33).

- In the SELECTED INPUT CHANNEL block, has the MODULE [FLIP] switch been turned on (LED lit)?

→ When the MODULE [FLIP] switch is on, the modules of INPUT blocks 1 and 2 will be exchanged. Press the MODULE [FLIP] switch to make the LED go dark. ("CS1D Reference Manual (Hardware)"→p.5)

- In the MASTER block GLOBAL LAYER section, has the [49-96] switch been turned on (LED lit)?

→ On the 96 channel model when the GLOBAL LAYER [49-96] switch is on (LED lit), channels 49–96 will be selected as the input channels that are controlled from the top panel of the CS1D. {This switch has no function on the 48 channel model.} To control channels 1–48, press the GLOBAL LAYER [1-48] switch. ("CS1D Reference Manual (Hardware)" →p.5)

STEREO A L/R meters in the meter bridge block do not light

- Is the input channel [ON] switch turned off?

→ In the INPUT block, turn on the [ON] switch for input channels 1/49 and 2/50 (→p.44).

- Is the [TO ST] switch of the input channel turned off?

→ In the INPUT block, turn on the [TO ST] switch for channels 1/49 and 2/50 (→p.44).

- Is the input channel fader lowered?

→ In the INPUT block, raise the faders for input channels 1/49 and 2/50 (→p.44).

STEREO A L/R meters in the meter bridge block are lit, but there is no output from the output unit

- Is the STEREO A channel STEREO [ON] switch turned off?

→ In the STEREO OUTPUT block, turn on the STEREO [ON] switch of the STEREO A channel (→p.44).

- Is the STEREO fader of the STEREO A channel lowered?

→ In the STEREO OUTPUT block, raise the STEREO fader of the STEREO A channel (→p.45).

- Is the monitor system connected appropriately?

→ Check the connections of the monitor system (→p.39).

- Are the output channels patched appropriately?

→ In the OUT PATCH screen, check whether the STEREO A L/R channels are appropriately patched to the output unit/card to which your monitor system is connected (→p.42).

- Is the Solo function turned on?

→If the [SOLO] switch is turned on in the MASTER block CUE section, and the [CUE] button of any channel is turned on, the signals of the other channels will be muted. Turn off the [SOLO] switch (“CS1D Reference Manual (Hardware)” →p.81).

Turn off the power

You have now finished the system check of the “CS1D Operating Manual (Start-up).”

We recommend that you store the current state as a scene memory before you turn off the power supply (PW1D). If the current unit connection state differs from the unit connection state the next time the power is turned on, patch settings etc. may be modified. For the procedure of storing a scene, refer to “CS1D Reference Manual (Hardware)” (→p.89) or “CS1D Reference Manual (Software)” (→p.18).

Lower the faders of the STEREO OUTPUT block, and turn off the power in the order of the monitor system → PM1D system.

⚠ Before you move the CS1D, you must tilt the display backward until it locks into place.

⚠ Before turning on the engine (DSP1D) or the console power supply (PW1D), you must wait at least five seconds after the power was turned off. Failing to observe this waiting period may cause malfunctions.

CS1D

CONTROL SURFACE

Operating Manual (Basic Operation)

PM1D

DIGITAL AUDIO MIXING SYSTEM

Contents

Chapter 1. Introduction

About the "CS1D Operation Manual (Basic Operation)"

The "CS1D Operation Manual (Basic Operation)" explains basic operation of the PM1D system, such as connecting the input sources and playback system, operating the CS1D console, and using the display of the CS1D to make various settings.

- The "CS1D Operation Manual (Basic Operation)" assumes that the various components of the PM1D system have been connected and are operating correctly. For details on connecting the components of the PM1D system and verifying that they are operating correctly, refer to "CS1D Operation Manual (Start-up)."
- For details on the specifications and functions of the engine (DSP unit DSP1D-EX {DSP1D}) and input/output units, refer to the manual included with each unit.
- For a more detailed explanation of the functions and operation of the controls and connectors on the top panel, rear panel, and front panel of the console (CS1D), refer to the "CS1D Reference Manual (Hardware)."
- For details on the functions and operation of the software in the display of the console (CS1D), refer to the "CS1D Reference Manual (Software)."

⚠ Screen shots shown in this manual are taken from a prototype. Please be aware that they may differ slightly from the actual screens on your unit.

Printing conventions in the "CS1D Operation Manual (Basic Operation)"

- **Differences between the 96 channel model and 48 channel model**
  The PM1D system is available either as a 48 channel model or a 96 channel model, which differ in the number of available input channels. In general, the "CS1D Operation Manual (Basic Operation)" is written for the 96 channel model of the PM1D system (the model that uses the DSP1D-EX as its engine). When the specifications differ between the 96 channel mode and the 48 channel model (the model that uses the DSP1D as its engine), the specifications of the 48 channel model are given in curly brackets { }.

  Example: A number 1–96 {1–48} will be displayed in the NUMBER indicator.

- **Standard mode and Mirror mode**
  The PM1D system supports two operation modes (an element that defines the structure and connection method for the system): "Standard mode" (in which one engine is connected to one console), or "Mirror mode" (in which two engines are connected to one console, but only one engine is used).

  Please note that the mode in which the PM1D system is used will affect not only the number of engines, but also the method of connections and the internal settings.

  Explanatory material that applies only to Standard mode is indicated by the following icon.

  DSP x1

  Explanatory material that applies only to Mirror mode is indicated by the following icon.

  DSP x2

⚠ Other than Mirror mode, version 1.0 of the PM1D system does not support an operation mode that uses two engines.

- **Distinguishing CS1D controllers from the on-screen knobs/buttons**
  Controllers (switches, encoders, volumes) on the top panel, rear panel, or front panel of the CS1D are enclosed in square brackets [ ] to distinguish them from knobs or buttons that appear in the display.

  Example: Turn on the [ON] switch.
  (This refers to an operation on the top panel of the CS1D.)

  Example: Click the BASIC button.
  (This refers to an operation in the display.)

- **Various icons**
  The following icon is used to indicate operating tips or pages to which you should refer.

  Hint

  The following icon is used to indicate particularly important points, or operations of which you must be careful.

  ⚠

Overview of the PM1D system

The PM1D system is a full-digital SR mixing system that consists of a CS1D console, PW1D power supply, DSP1D-EX {DSP1D} DSP unit(s), AI8 analog input unit(s), AO8 analog output unit(s), DIO8 digital input/output unit(s), and input/output cards. This section describes the ways in which the PM1D system differs from conventional analog mixing consoles.

Full-digital/separate type SR mixing system

The PM1D is a full-digital SR mixing system using cutting-edge digital audio processing technology. 28 bit linear equivalent AD converters and 27 bit linear equivalent DA converters are used to ensure a dynamic range of better than 120 dB, for astoundingly high quality.
The system is divided into components such as engine, console, and input/output units. The compact modules allow the system to be configured flexibly, provide an amazing number of inputs and outputs, and ensure excellent portability and operability.

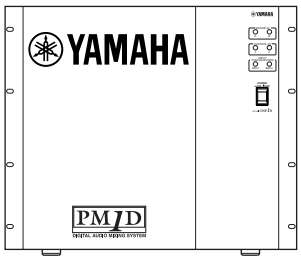
Component structure

The following types of components make up the PM1D system.

- **Engine (DSP1D-EX {DSP1D})**
  Up to ten input units and six output units can be connected to this DSP unit, which performs the majority of audio processing such as audio signal input/output, mixing, routing, and EQ/dynamics/effects.

  The PM1D system offers the following two types of engine.

Engine	Monaural input channels	Stereo input channels
DSP1D-EX	96	8
DSP1D	48	4



Hint

By installing an optional input DSP board (IDB1D) in the DSP1D, it can be upgraded to the same specifications as the DSP1D-EX.

⚠ The board must be installed by a Yamaha service engineer. Never attempt to install this board yourself.

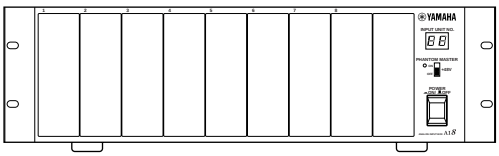
- **Analog input unit (AI8)**
  This input unit inputs analog audio signals to the engine. It has eight slots in which input cards can be installed.

  The following two types of cards can be installed in the AI8.

Card		Input jacks	Number of channels
LMY2-ML	Mic/line input card	1A, 1B, 2A, 2B	2 (select either A or B)
LMY4-AD	AD card	1–4	4

The following three models of AI8 are available, with different cards installed at the factory.

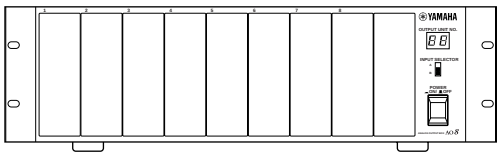
Input unit	Cards installed
AI8-ML8	LMY2-ML × 8 cards
AI8-AD8	LMY4-AD × 8 cards
AI8-ML4AD4	LMY2-ML × 4 cards, LMY4-AD × 4 cards



⚠ Cards must be installed in the AI8 by a Yamaha service engineer. Never attempt to install these cards yourself.

- **Analog output unit (AO8)**
  This output unit outputs analog audio signals from the engine. The AO8 has eight slots, with eight LMY4-DA DA cards installed at the factory.

Card		Output jacks	Number of channels
LMY4-DA	DA card	1–4	4



⚠ Cards must be installed in the AO8 by a Yamaha service engineer. Never attempt to install these cards yourself.

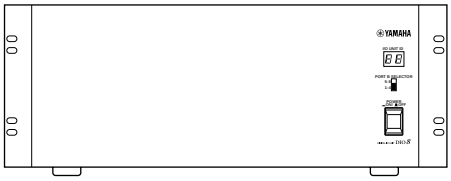
- **Digital input/output unit (DIO8)**
  This unit performs input/output of digital audio signals in ADAT, Tascam, AES/EBU formats, as well as analog audio signals, to and from the engine of the PM1D system. The DIO8 has eight slots which can accommodate digital I/O cards or analog I/O cards.

  The following eight types of card can be installed in the DIO8.

Card	Format	Input	Output
MY8-TD	TASCAM	8 IN	8 OUT
MY8-AT	ADAT	8 IN	8 OUT
MY8-AE	AES/EBU	8 IN	8 OUT
MY8-AD	ANALOG IN	8 IN	—
MY4-AD	ANALOG IN	4 IN	—
MY4-DA	ANALOG OUT	—	4 OUT
AP8AD*	ANALOG IN	8 IN	—
AP8DA*	ANALOG OUT	—	8 OUT

*: Manufactured by Apogee Corporation

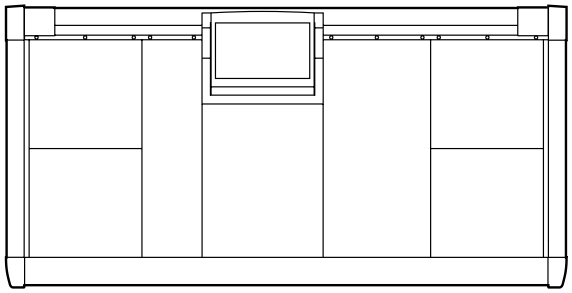
* As of September 1, 2000



⚠ It is not possible to install and use a total of five or more AP8AD/AP8DA cards. Also, if you are using AP8AD/AP8DA cards simultaneously with MY8-AD/MY4-AD/MY4-DA cards, there are restrictions on the number of cards, as described below. Never exceed the allowable number of cards, since attempting to use a greater number of cards than allowed may damage the DIO8 due to excessive current. If you are not using AP8AD or AP8DA cards, or if you are using AP8AD or AP8DA cards simultaneously with an MY8-TD/MY8-AT/MY8-AE card, there is no limitation on the number of MY8-TD/MY8-AT/MY8-AE cards that can be used.

[AP8AD] + [AP8DA] cards used	[MY8-AD] + [MY4-AD] + [MY4-DA] cards used	[MY8-TD] + [MY8-AT] + [MY8-AE] cards used
Total 0 cards	Up to a total of 8 cards	
Total 1 card	Up to 6 cards	Up to the number of vacant DIO8 slots
Total 2 cards	Up to 4 cards	Up to the number of vacant DIO8 slots
Total 3 cards	Up to 2 cards	Up to the number of vacant DIO8 slots
Total 4 card	Up to 1 card	Up to the number of vacant DIO8 slots
Total 5 or more cards cannot be used	—	—

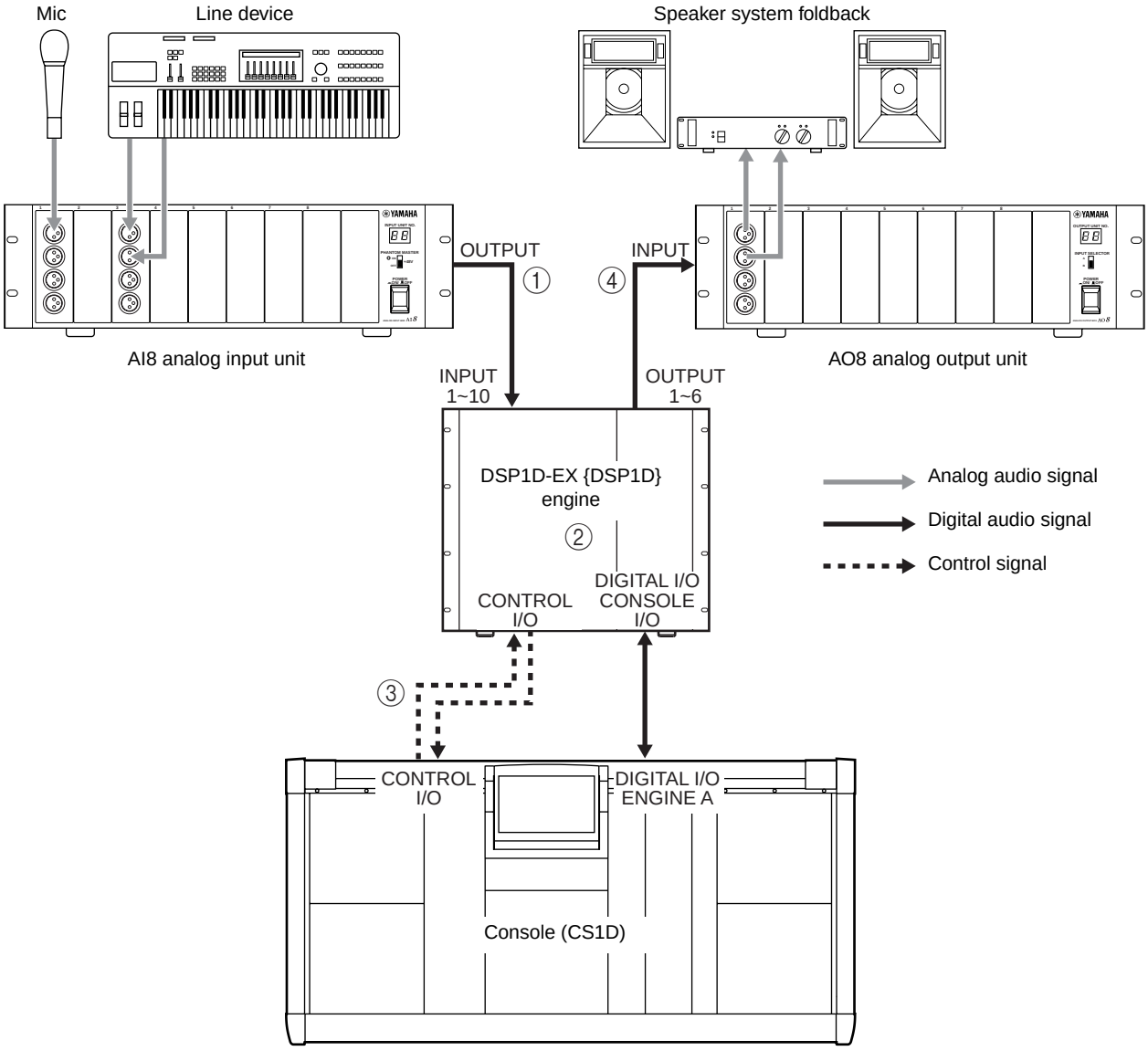
- **Console (CS1D)**
  This console controls the engine. Although it has the appearance of a conventional mixing console, the CS1D is simply a controller for controlling the engine. Please be aware that with the exception of some monitor signals, the audio signals of the PM1D system are handled by the engine.



- **Power supply (PW1D)**
  This is the power supply that provides power to the console.

Signal flow in the PM1D system

The following diagram shows the general signal flow within the PM1D system.



① The signals input to the AI8 analog input unit are AD converted, and then sent as multi-channel digital audio signals to the DSP1D-EX {DSP1D} engine.

② The signals sent to the DSP1D-EX {DSP1D} engine are processed by mixing, routing, EQ/dynamics/effects.

③ In general, the operation of the engine and of the input unit is controlled from the CS1D console.

Hint

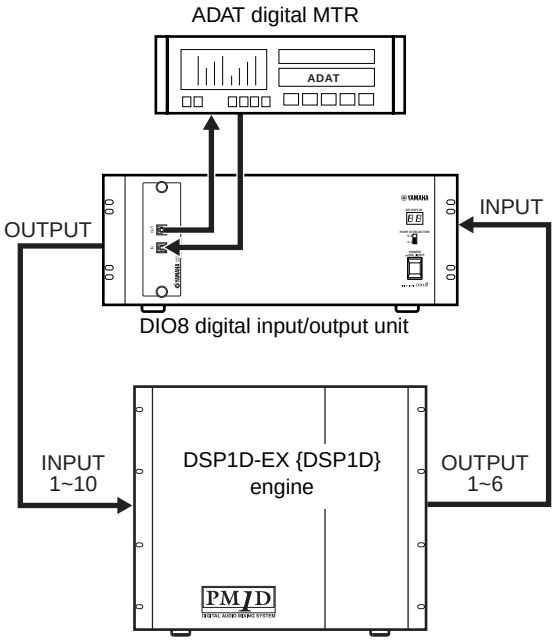
The signals that are input from the 2-TRACK IN DIGITAL jacks 1–6 and 2-TRACK IN ANALOG jacks 1/2 of the CS1D can also be sent to the engine.

④ The signals processed by the engine are DA converted by the output unit, and sent to the speaker system, foldback system, or recording system.

Hint

Signals can also be output from the STEREO OUT DIGITAL jacks or MONITOR OUT ANALOG jacks of the CS1D.

When a DIO8 digital input/output unit is used, the same unit will be used both as an input unit and output unit, so that the signal flow will be as shown on the next page.

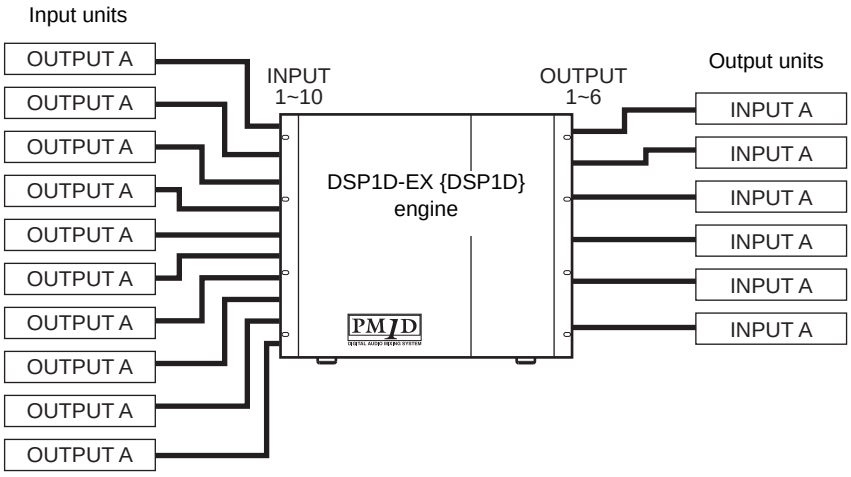

ADAT digital MTR
ADAT
OUTPUT
INPUT
DIO8 digital input/output unit
INPUT
1~10
DSP1D-EX {DSP1D}
engine
OUTPUT
1~6
PM1D

Number of inputs/outputs and channel structure

The DSP1D-EX {DSP1D} engine provides INPUT connectors 1–10 for connecting input units, and OUTPUT connectors 1–6 for connecting output units.

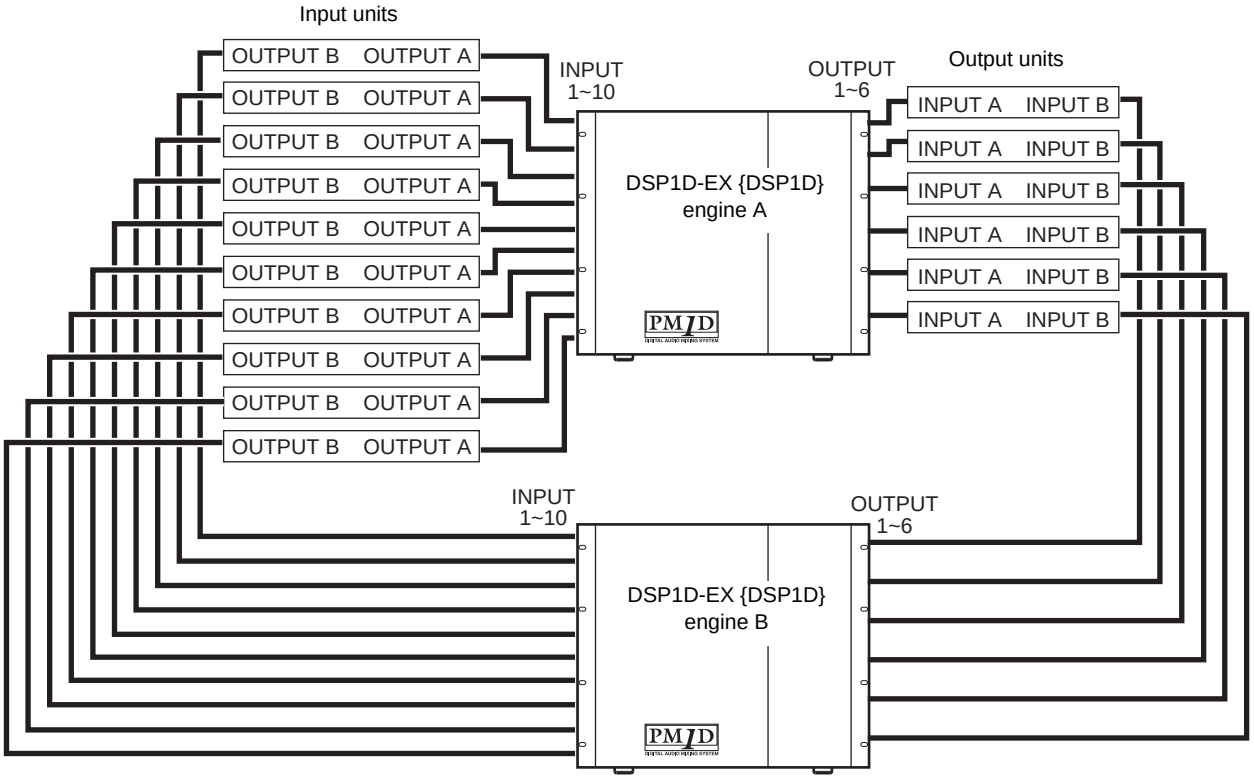
DSP x1

When the PM1D system is used in Standard mode, up to ten input units (maximum of 320 input connectors) and up to six output units (maximum of 192 output connectors) are connected to one engine.



DSP x2

When the PM1D system is used in Mirror mode, up to ten input units (maximum of 320 input connectors) and up to six output units (maximum of 192 output connectors) are connected to two engines.



In either mode, the input connectors of an input unit must be assigned (patched) in the CS1D display to an input channel in order to be used. Similarly, in order to use the output connectors of an output unit, you must assign them in the display to an output channel (MIX channel, MATRIX channel, STEREO A/B channel).

The following table shows the type and number of engines required when using the 48 channel model and 96 channel model in Standard mode or Mirror mode, and the number of input/output connectors and channels that can be used.

Number of inputs/outputs and channel structure

	Standard mode		Mirror mode	
Model	48 channel model	96 channel model	48 channel model	96 channel model
Engine	DSP1D × 1	DSP1D-EX × 1	DSP1D × 2	DSP1D-EX × 2
Input connectors	Maximum 320	Maximum 320	Maximum 320	Maximum 320
Output connectors	Maximum 192	Maximum 192	Maximum 192	Maximum 192
Monaural input channels	48	96	48	96
Stereo input channels	4	8	4	8
MIX channels	48	48	48	48
MATRIX channels	24	24	24	24
STEREO channels	2 (A, B)	2 (A, B)	2 (A, B)	2 (A, B)

Hint

The 96 channel model and 48 channel model differ in the number of available monaural input channels and stereo input channels. However, they have the same number of MIX channels, MATRIX channels, and STEREO A/B output channels.

In Mirror mode, one of the engines (A/B) is maintained as a backup, and you can manually switch between the units to use either one or the other. Thus, the number of input/output connectors and channels is the same as in Standard mode.

MIX buses/MATRIX buses

The PM1D system can send the input channel signals to MIX buses 1–48. The signals sent to a MIX bus is routed through a MIX channel that provides EQ, comp, and delay, and is output from the respective connector that is patched to MIX 1–48. At this time, you can choose to either fix the signal levels that are output from the input channels (**FIX mode**) or allow them to vary (**VARI mode**). MIX buses that are set to FIX mode can be used as group buses, and MIX buses that are set to VARI can be used as AUX buses.

In addition, the PM1D system has 24 independent MATRIX buses. Signals from MIX channels 1–48, STEREO A/B channels, and SUB IN can be mixed at the desired level and sent to a MATRIX bus. The signal sent to a MATRIX bus is routed through a MATRIX channel that provides EQ, comp, and delay, and is output from the respective output connector that is patched to MATRIX 1–24.

Scene memories/Libraries

The PM1D system can store the mix parameters of each channel and the settings of the entire PM1D system in memory as a scene. Scenes are assigned a number consisting of an integer portion in the range of 00–99, and a decimal portion in the range of .0–.9, for a total of 1,000 scenes from 00.0 to 99.9. (Ten of these scenes are read-only.)

Independently of scene memory, the PM1D system can store settings such as patch data, EQ data, compressor data, and effect data in libraries for later reuse.

Word clock synchronization

In order for digital audio signals to be accurately transmitted and received, all components of the PM1D system and the digital devices connected to the digital input/output units must be synchronized to the same word clock signal.

⚠ If any non-synchronized device is present, the input/output signals of that device may be muted, or may generate click noise.

DSP x1

In Standard mode, the internal clock of the engine is normally used as the word clock master, and the input/output units and console will be synchronized to this. It is also possible to use an external clock generator as the master that supplies a word clock to the engine, console, and input/output units.

DSP x2

In Mirror mode, you can also switch to the other engine manually if the currently-used engine experiences difficulties. In order to minimize the clock switching time in such cases, we recommend that you supply a word clock from an external clock generator to the console and to engines A/B. Of course, switching will occur even without this type of supply method.

Hint

For details on selecting the word clock master, refer to "CS1D Operation Manual (Start-up)" (→p.24) and to "CS1D Reference Manual (Software)" (→p.44).

Hint

As an exception, the 2-TRACK IN DIGITAL jacks 1–6 of the CS1D console have built-in sample rate converters, and will accept digital signals that are not synchronized with the PM1D system.

Chapter 2. The user interfaces of the CS1D

This chapter introduces the various user interfaces that control the software of the CS1D console, and explains how to use them.

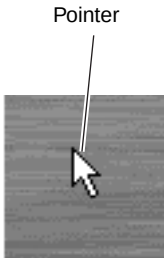
About the user interfaces

The PM1D system is designed so that basic parameters such as channel adjustments and mixing can be controlled using only the faders and encoders on the top panel of the CS1D. However if you wish to make more detailed settings, you will need to access a specific function and edit the parameter value in software. The following pages explain the various interfaces used to control the software in the display.

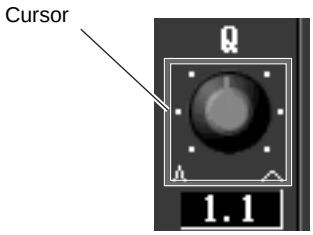
User interfaces within the display

The following user interfaces are used within the display of the CS1D.

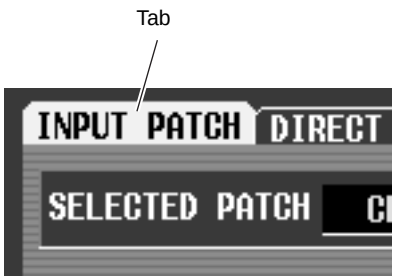
- **Pointer**
  The arrow shown in the display is called the "pointer." The pointer is used to select the element that you wish to control.



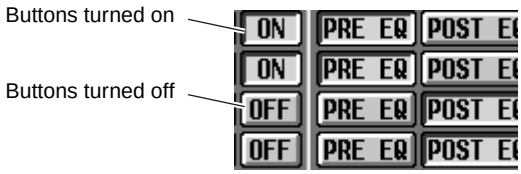
- **Cursor**
  The red frame shown in the display is called the "cursor." When an on-screen element is enclosed by the cursor, that element is selected for control.



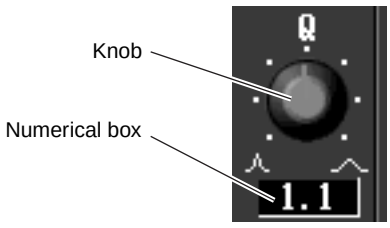
- **Tabs**
  The screen names shown at the upper left of the display are called "tabs." Tabs are used to switch between different screens within the same function.

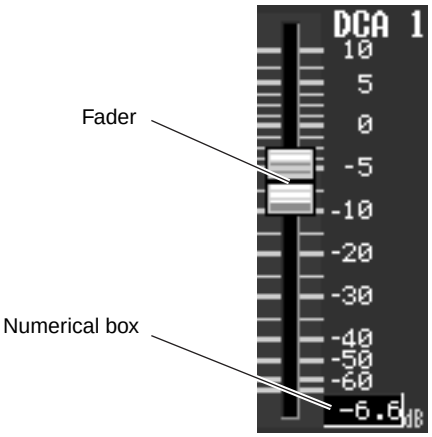


- **Buttons**
  Buttons in the display are used to switch parameters on/off, or to select one of multiple choices. Currently-on buttons are displayed in green, and buttons that are off are displayed in gray.



- **Knobs/faders/numerical boxes**
  Knobs/faders in the display are used to modify the value of a parameter. The current value can be verified in the numerical box.

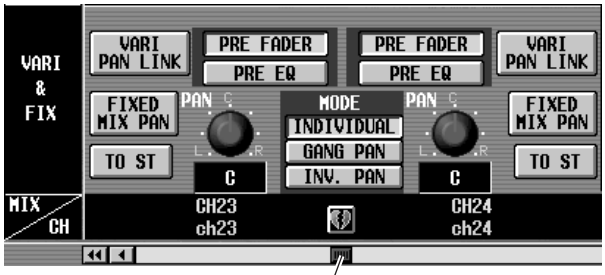




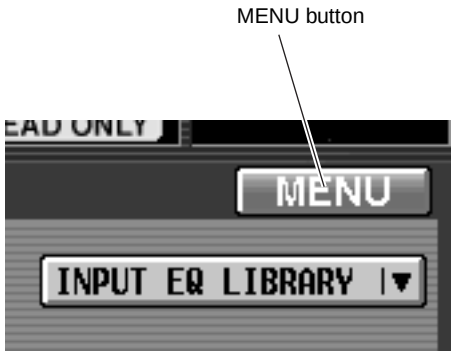
- **Text input box**
  These boxes are used to input characters/numerals/symbols when assigning a name to a channel or scene, etc.

- **Character palette**
  This is a virtual keyboard used to input characters/numerals/symbols into a text input box.

- **Scroll bar**
  When one screen is insufficient to display all of the items, this bar is used to access the portion that is currently not shown.



- **MENU button**
  This is a special button that accesses the function menu that is the starting point for operations in the display. With the exception of the function menu itself and various popup windows, this button is shown at the same location in all screens.

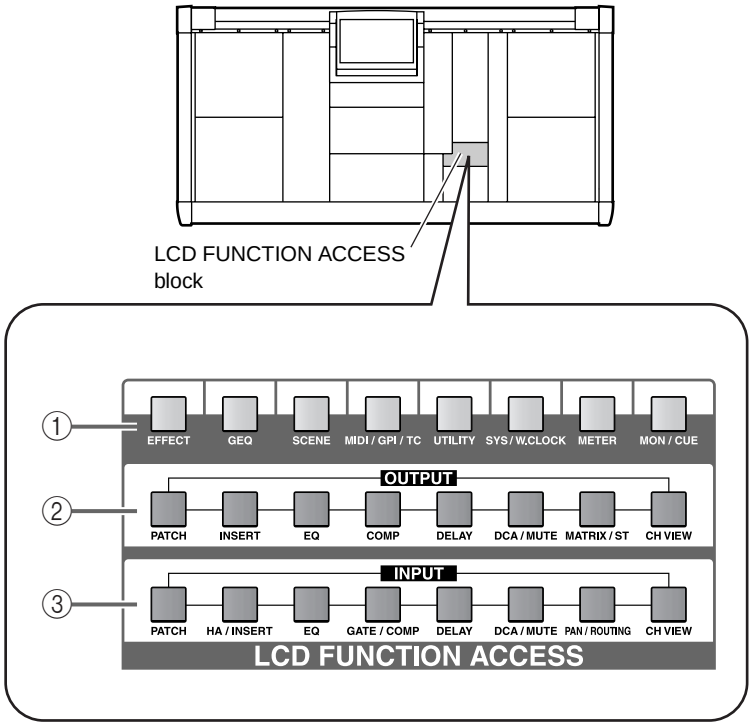


User interface on the top panel of the CS1D

The top panel of the CS1D provides the following controls used for operations in the display.

LCD FUNCTION ACCESS block

The LCD FUNCTION ACCESS block contains switches used to access the desired function or screen in the display.



① **Global functions**
These switches access functions that affect the entire PM1D system.

② **Output functions**
These switches access functions that affect the output channels.

③ **Input functions**
These switches access functions that affect the input channels.

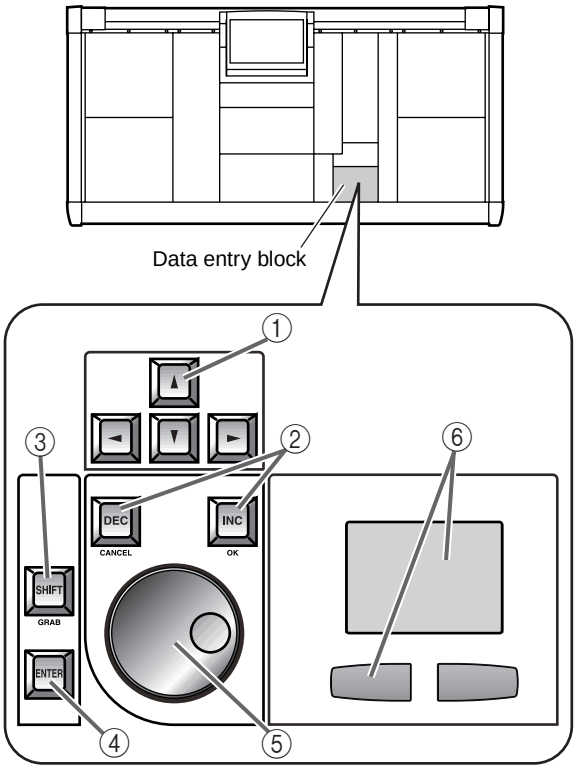
Press the switch for the desired function, and the screen for that function will appear in the display.

Hint

By holding down the [SHIFT/GRAB] switch and pressing one of these LCD FUNCTION ACCESS switches, you can cycle backward through the pages within that function (the Page Back function). The Page Back function will also operate if you continue holding these switches.

Data entry block

The data entry block contains controllers used to modify the settings and values in the display.



① **CURSOR [▲]/[▼]/[◄]/[►] switches**
These switches are used to move the cursor in the display to the desired parameter.

② **[DEC/CANCEL]/[INC/OK] switches**
These are used to increase or decrease the value of the parameter at which the cursor is located in the display. These switches can also be used instead of the CANCEL button or OK button shown in the window that asks you to confirm a Recall or Store operation before it is executed.

③ **[SHIFT/GRAB] switch**
When the cursor in the display is located at a knob-type parameter that has a broad range of adjustment, you can hold down this switch and use the [DEC/CANCEL]/[INC/OK] switches or rotate the [DATA] encoder to change the parameter value in larger steps.

In some screens, you can hold down this switch and use the CURSOR [▲]/[▼]/[◄]/[►] switches to move the cursor from its current location to another area. For details refer to the explanations of each screen in the reference manual (software section).

④ **[ENTER] switch**
This switch is used to turn on/off the button at the cursor location, or to open a popup window.

⑤ **[DATA] encoder**
This is used to increase or decrease the value of the parameter at which the cursor is located in the display. If you hold down the [SHIFT/GRAB] switch while you rotate the [DATA] encoder, the parameter value will change more rapidly.

⑥ **Track pad and left/right switches**
This is used to move the pointer in the display, or to select a specific parameter.

When you are operating a knob-type display parameter that has a broad range of adjustment, you can hold down the right switch of the track pad and operate the pad to change the parameter value in larger steps.

External user interfaces

As necessary, the following external user interfaces can be added to the PM1D system.

- **Mouse**
  A PS/2 compatible mouse can be connected to the MOUSE connector on the rear panel/top panel of the CS1D, and used in the same way as the track pad.

- **Keyboard**
  A PS/2 compatible keyboard can be connected to the KEYBOARD connector on the rear panel/top panel of the CS1D, and used to input characters/numerals/symbols in the same way as the character palette.

The function of each key is listed below. (Key layout is according to the English-language keyboard.)

Key	Function
PageDown	Same function as the [DEC/CANCEL] switch of the data entry block
PageDown	Same function as the [INC/OK] switch of the data entry block
← → ↑ ↓	Same function as the [CURSOR] switches
Numeric key-pad 4, 6, 2, 8 (NumLock key = off)	
Alt+PageUp	Same function as moving the [DATA] encoder in the INC direction

Key	Function
Alt+PageDown	Same function as moving the [DATA] encoder in the DEC direction
Return	Same function as [ENTER] switch
Enter	
Shift	Same function as [SHIFT/GRAB] switch
Ctrl+←, Ctrl+→	Same function as clicking the ◄► buttons in the character palette
Ctrl+c	Same function as clicking the COPY button in the character palette
Ctrl+v	Same function as clicking the PASTE button in the character palette
Insert	Same function as clicking the INS button in the character palette
Delete	Same function as clicking the DEL button in the character palette
BackSpace	Delete backward one character in the text input box (backspace function)
Ctrl+↑, Ctrl+↓, Tab	Switch the object of editing in the text input box
Esc	Same function as clicking the MENU button (normal screen)
	Same function as clicking the CANCEL button (popup windows with a CANCEL button). In screens with no CANCEL button, the same function as clicking the OK button or EXIT button.
Alt + 0~9, -,=	Switch pages within the same screen

⚠ Identical types of connectors on the rear panel and top panel cannot be used simultaneously. Only one connector of each type can be used.

- **Numeric keypad**
  If a PS/2 compatible numeric keypad is connected to the NUM KEY connector located on the rear panel or top panel of the CS1D, you can use the keypad to input numbers and recall scenes.

  The function of each key is as follows.

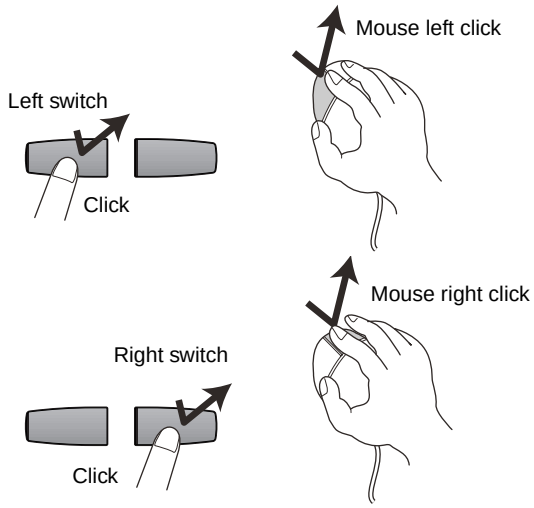
Key	Function
0–9	Same function as the SCENE MEMORY block [0]–[9] switches
Enter	Same function as the SCENE MEMORY block [RECALL] switch
+	Same function as the SCENE MEMORY block [▲/INC] switch + [ENTER] switch (recall the next-numbered scene)
-	Same function as the SCENE MEMORY block [▼/DEC] switch + [ENTER] switch (recall the previously-numbered scene)
/	Not used in the current version
*	

Various basic operations

This section explains the basic operations performed in the CS1D display. In general, operations in the CS1D software will consist of combinations of these actions.

Click

"Click" is the action of moving the pointer to a specific item in the screen, and pressing the left or right switch of the track pad (or if using an external mouse, pressing the left or right mouse button). Clicking is used to turn an on-screen button on/off, to move the cursor, or to make fine adjustments of a numeric value.

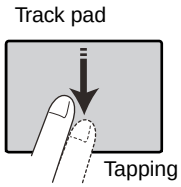


Hint

If you use the [CURSOR] switches of the data entry block to move the cursor to a specific item and press the [ENTER] switch, the result will be the same as if you had clicked that item. (The same is true if you use the arrow keys or ENTER key of an external keyboard.)

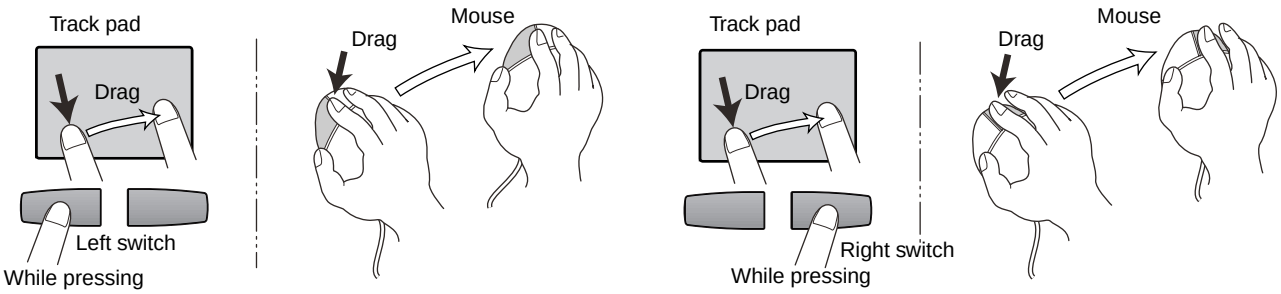
Hint

After moving the pointer to a specific item, you can tap the track pad to produce the same result. (This is called "tapping.")
To defeat this function, you must cancel tapping in the display (UTILITY function PREFERENCE screen). ("CS1D Reference Manual (Software)" →p.36)



Drag

"Drag" is the action of moving the pointer to a specific item in the screen, then pressing and holding the left or right switch and sliding your finger up/down/left/right on the track pad. To drag using the mouse, press and hold the left or right mouse button, and move it up/down/left/right. Dragging is used mainly to modify the value of an on-screen knob or fader.



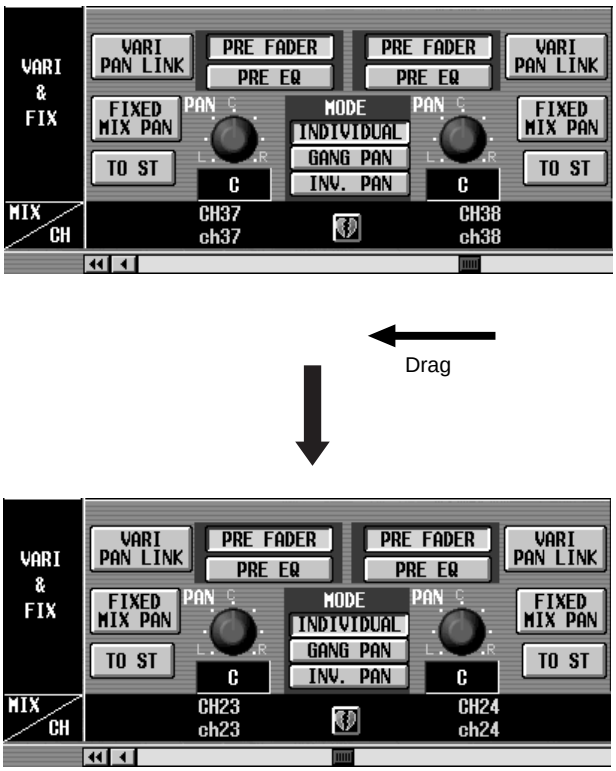
Drag and drop

"Drag and drop" is the action of moving the pointer to a specific item in the screen, dragging it to another location in the screen, and then releasing your finger. Drag and drop is used (for example) to copy EQ or dynamics processor settings to another channel.

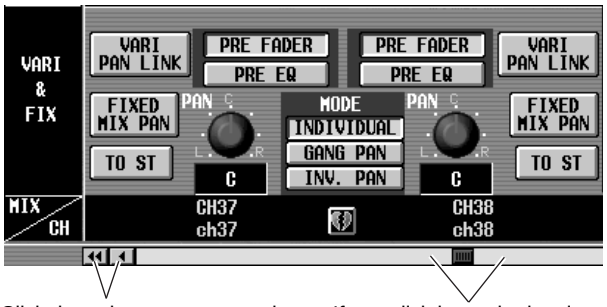
Scroll

When the number of items for display is greater than can be shown in a single screen, you can drag the box within the scroll bar to view the hidden portion.

- **Dragging the scroll bar box**



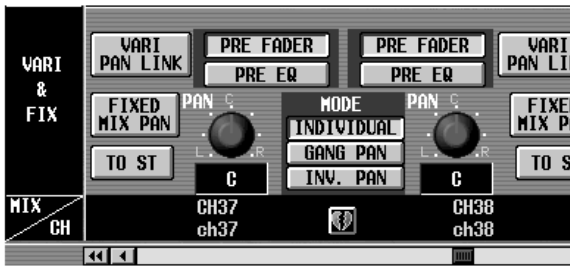
You can also scroll the screen by clicking the vacant portion of the scroll bar or the ◀/▶ buttons or ◀◀/▶▶ buttons located at the ends of the scroll bar.

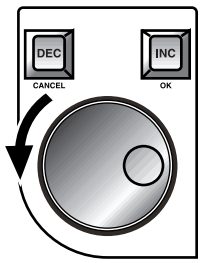


Click these buttons to move the scroll bar box in the direction of the arrow. Clicking ◀◀/▶▶ will produce greater movement than clicking ◀/▶.

If you click here, the box in the scroll bar will move in large steps toward the side you clicked, and the screen will scroll correspondingly.

- **Using the [DEC/CANCEL]/[INC/OK] switches or the [DATA] encoder to operate the scroll bar**





If you place the cursor on a scroll bar box and press the [DEC/CANCEL] switch or rotate the [DATA] encoder counter-clockwise, the screen will scroll toward the left (or upward, in the case of a vertical scroll bar). If you press the [INC/OK] switch or rotate the [DATA] encoder clockwise, the screen will scroll toward the right (or downward, in the case of a vertical scroll bar).

Hint

If the cursor is at the box of a scroll bar, you can hold down the [SHIFT/GRAB] switch and rotate the [DATA] encoder to produce the same result as pressing the ◀◀ button or ▶▶ button (depending on the direction of rotation).

Accessing the desired screen

There are two ways to access the desired function/screen in the display.

Using the LCD FUNCTION ACCESS block

[Procedure]

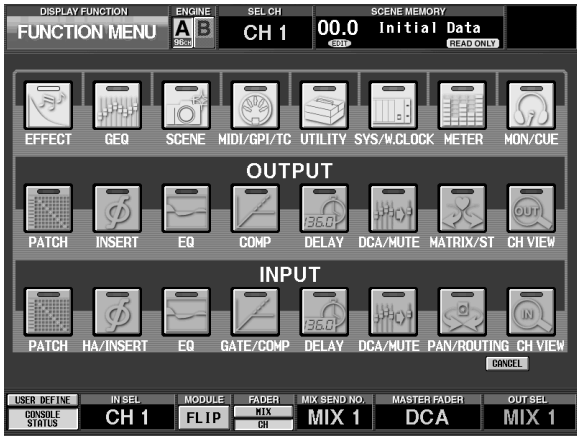
1. **Of the switches in the LCD FUNCTION ACCESS block, press the switch for the desired function.**
   The last-operated screen of the corresponding function will be accessed.
2. **To switch screens within the same function, repeatedly press the same switch as in step 1.**
   Most functions have several screens.

   If you hold down the [SHIFT/GRAB] switch of the data entry block and press the same switch as in step 1, you will return to the previous screen of the same function.

Using the buttons within the display

[Procedure]

1. **In any screen, click the MENU button.**
   When you click the MENU button, the function menu screen will appear. When you wish to select a specific screen from the display, you will start from this screen.



Hint

The MENU button will be located at the same place in all screens, with the exception of the function menu itself and various popup windows.

2. **In the function menu screen, click the button for the desired function.**
   The last-operated screen of the corresponding function will be accessed.
3. **If the function includes more than one screen, click the tabs at the upper part of the screen to select the desired screen.**

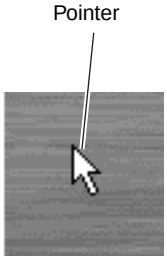
Button operations

Buttons within the display are used to turn specific parameters on/off, or to choose one of multiple choices. Buttons can be operated in the following ways.

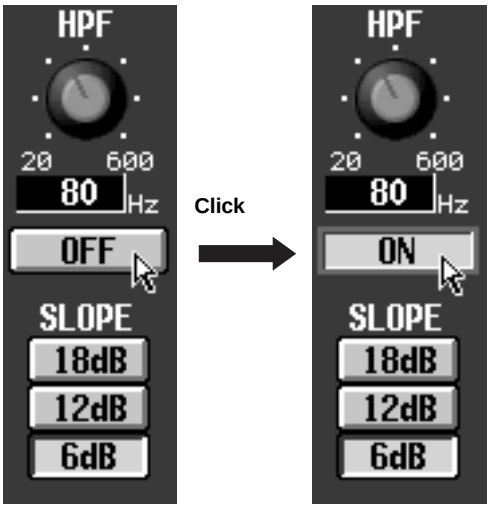
Using the track pad (mouse)

[Procedure]

1. **Drag the track pad (mouse) to move the pointer to the desired button.**



2. **Use the left or right switch of the track pad (mouse) to click the button.**
   The button will be switched on/off. (Alternatively, the corresponding button will be selected.)
   - **Switching a button on/off**



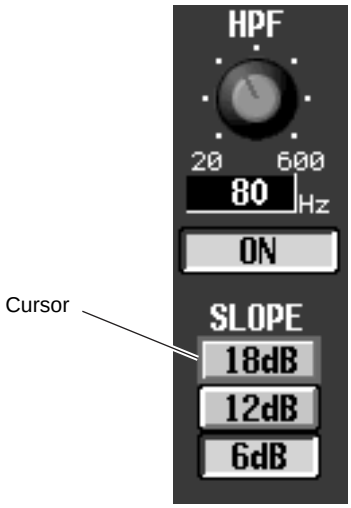
Hint

If tapping in the display is enabled (UTILITY function PREFERENCE screen), you can also click by tapping the track pad. In this case, the operation will be the same as if you pressed the left switch of the track pad (mouse). ("CS1D Reference Manual (Software)" →p.36)

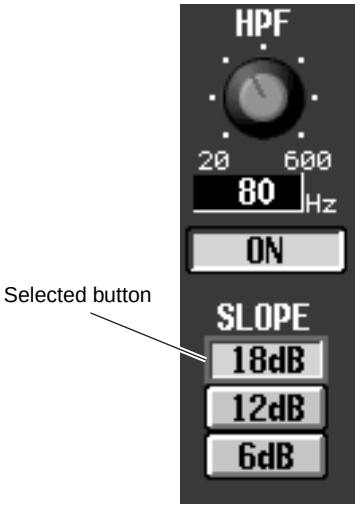
Using the data entry block switches /keyboard

[Procedure]

1. **Use the [CURSOR] switches (or the arrow keys of the keyboard) to move the cursor to the desired button.**



2. **Press the [ENTER] switch (or the ENTER key of the keyboard).**
   The button will be switched on/off. (Alternatively, the corresponding button will be selected.)



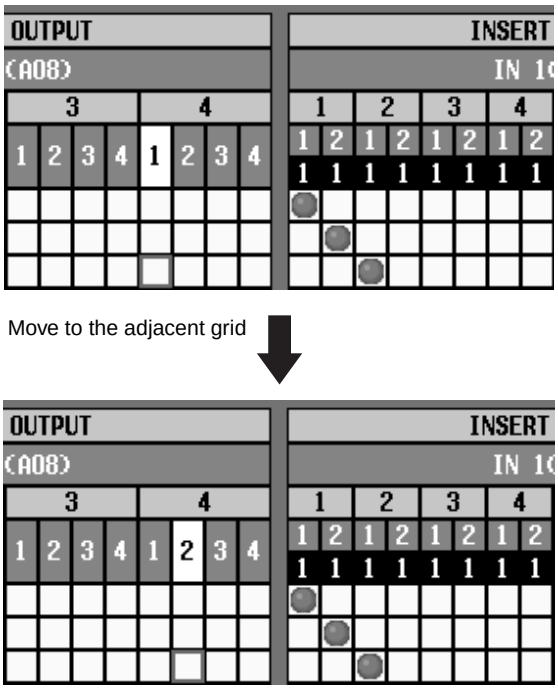
Moving the cursor

Here's how to move the cursor (red box) in order to select the display parameter that you wish to edit.

Moving the cursor

[Procedure]

1. **Press a CURSOR [▲]/[▼]/[◄]/[►] switch. The cursor in the display will move in the direction of the switch you pressed.**
   However, the cursor will not move if no parameter exists in the direction of that switch.



Hint

If the cursor is on a grid such as in the PATCH screen, rotating the [DATA] encoder clockwise will move the cursor toward the right, and rotating it counterclockwise will move the cursor toward the left. If you hold down the [SHIFT/GRAB] switch, rotating the [DATA] encoder clockwise will move the cursor downward, and rotating it counterclockwise will move the cursor upward.

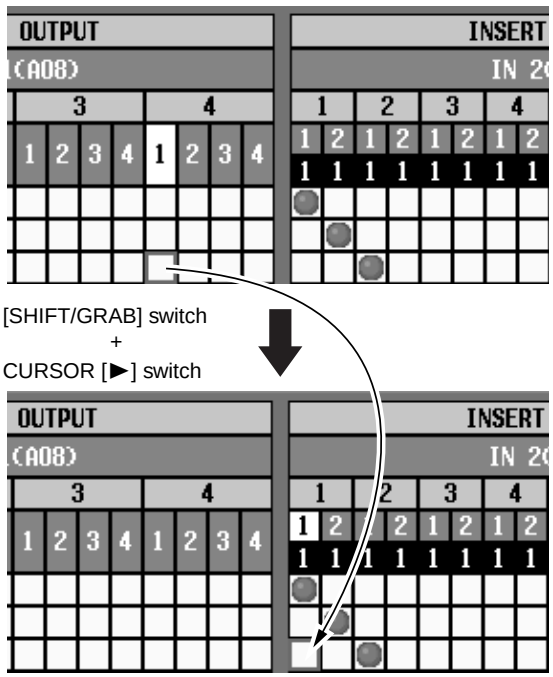
Moving the cursor from a scroll window

[Procedure]

1. **Hold down the [SHIFT/GRAB] switch, and press a CURSOR [▲]/[▼]/[◄]/[►] switch.**
   The cursor will move out of the scroll window (where which it was located) in the direction of the switch you pressed.

   This technique can be used in screens that have a scroll window (e.g., the IN/OUT PATCH function INSERT PATCH screen) or in screens that have a list window (e.g., the SCENE function MEMORY screen).

   - Using the [SHIFT/GRAB] switch and the CURSOR [◄]/[►] switches to move the cursor



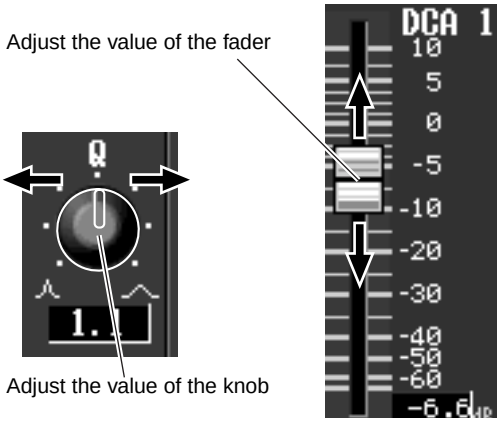
Adjusting the value of a knob or fader

Knobs and faders within the display are used to adjust the value of specific parameters. Knobs and faders can be adjusted in the following ways.

Using the track pad (mouse)

[Procedure]

1. **Move the pointer to the desired knob/fader, and use the left or right switch of the track pad (mouse) to click the knob/fader.**
   The cursor will move to that location.
2. **To increase or decrease the value in steps of one, use the right switch or left switch of the track pad (mouse) to click the knob/fader.**
   Clicking the right switch will increase the value by one, and clicking the left switch will decrease the value by one.
3. **To increase or decrease the value continuously, use the track pad (mouse) to drag the knob/fader.**
   You can change the value continuously by dragging the knob or fader in the left/right or up/down direction. In the case of a knob with a broad range of adjustment, you can drag while holding down the right switch of the track pad (mouse). This makes the value change more rapidly than when the left switch is held down. This method is convenient when you wish to change the value rapidly.



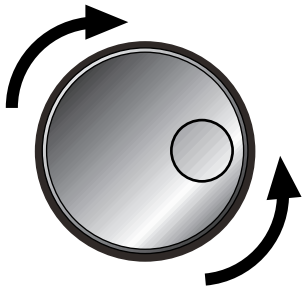
Using the data entry block switches (keyboard) and encoder

[Procedure]

1. **Use the [CURSOR] switches (or the arrow keys of the keyboard) to move the cursor to the desired knob/fader.**
   - **Move the cursor to a knob**

2. **To increase or decrease the value in steps of one, use the [DEC/CANCEL]/[INC/OK] switches (or keys that have the same function as the [DEC/CANCEL]/[INC/OK] switches, such as the PageUp/PageDown keys of your keyboard).**
   - **Change the value in steps of 1**

3. **To raise or lower the value continuously, rotate the [DATA] encoder.**



   - **Change the value continuously**

Hint

If the parameter being adjusted by the knob has a broad range of adjustment, you can increase the rate of change by holding down the [SHIFT/GRAB] switch and using the [DEC/CANCEL]/][INC/OK] keys or rotating the [DATA] encoder.

Assigning a name

The PM1D system allows you to assign names (long name, short name) to individual channels, and to assign titles to scenes and libraries. For example, the screen shown below is the LIBRARY STORE popup window in which you can name and store a library.

Characters can be input in this screen in the following ways.

- **LIBRARY STORE popup window**

1. **Use the text palette (or the keyboard) to input characters.**
   When you click the text palette, the corresponding character/symbol/numeral will be input to the text input box, and the highlighted area will move to the right.

2. **Input the remaining characters in the same way.**

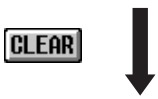
Various buttons within the text palette can be used while entering text.

These buttons have the following functions.

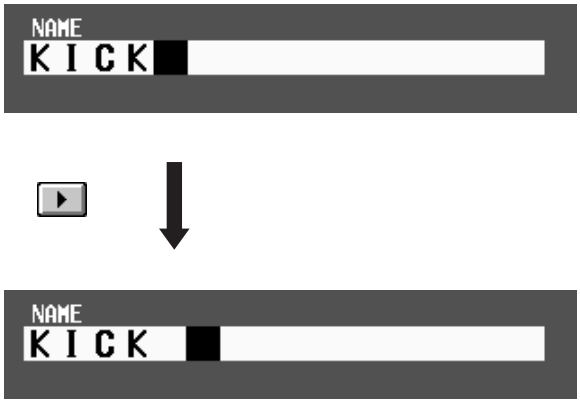
- **INS button**.....Insert a space (blank) at the highlighted area. The same result will occur if you press the Insert key of the keyboard.

- **DEL button**..... Delete the highlighted character. The same result will occur if you press the Delete key of the keyboard.

- **CLEAR button**... Erase all characters that had been input in the text box.



- ◄ ► buttons.....Move the highlighted area to left or right.



- **PASTE button** ....The text string that had been copied to the buffer by the COPY button will be pasted.
- **COPY button** .....The specified text string will be copied from the text box into the buffer.
- **CAPS LOCK button** Switch between uppercase and lowercase alphabetical characters. When this button is on, uppercase characters can be input.

3. **When you have input the name, click the STORE button.**
   The name that you input will be finalized, and saved in the library.

Hint

The same type of screen will be displayed in the IN PATCH/OUT PATCH function NAME screen where you assign a name (long name, short name) to each channel, and the basic operation is the same.

⚠ The number of characters that can be used will depend on the item that you are attempting to save. It is not possible to insert characters or move the highlighted portion in excess of the maximum length for each text string.

Hint

If you connect the keyboard of a personal computer, you can input text from the keyboard.

⚠ It is not possible to paste into the file name field of the FILE SAVE popup window.

Chapter 3. Audio connections and patching

This chapter explains how to connect input/output devices such as mics and speaker systems to the input/output units and to the CS1D console, and patch them to input channels and output channels.

⚠ The "CS1D Operation Manual (Basic Operation)" assumes that the components of the PM1D system are connected appropriately, and that all components are operating correctly. For details on connecting the components of the PM1D system and checking their operation, refer to the "CS1D Operation Manual (Start-up)."

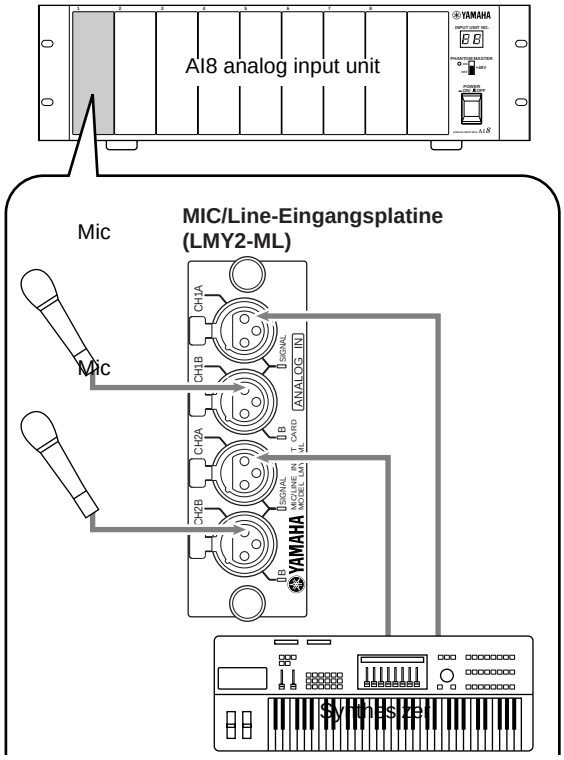
Audio connections

This section explains how to make audio connections for the input/output units and the console.

Audio connections for an analog input unit

Two types of input card can be installed in the AI8 analog input unit: the LMY2-ML mic/line input card and the LMY4-AD AD card. The two cards differ in specifications and number of channels.

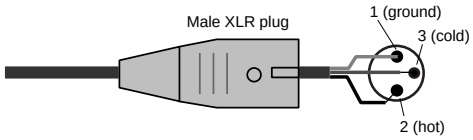
- **Mic/line input card (LMY2-ML)**
  The LMY2-ML provides two (A and B) XLR-3-31 (balanced) input jacks for each of input channels 1 and 2. However, only one jack (A or B) at a time can be used for each channel. (You can switch between A and B in the SELECTED INPUT CHANNEL block or in the display.)
  - **LMY2-ML connection**



Sources ranging from mics to line level devices can be connected to these jacks.

The pin wiring is as follows.

- **Input jack wiring**

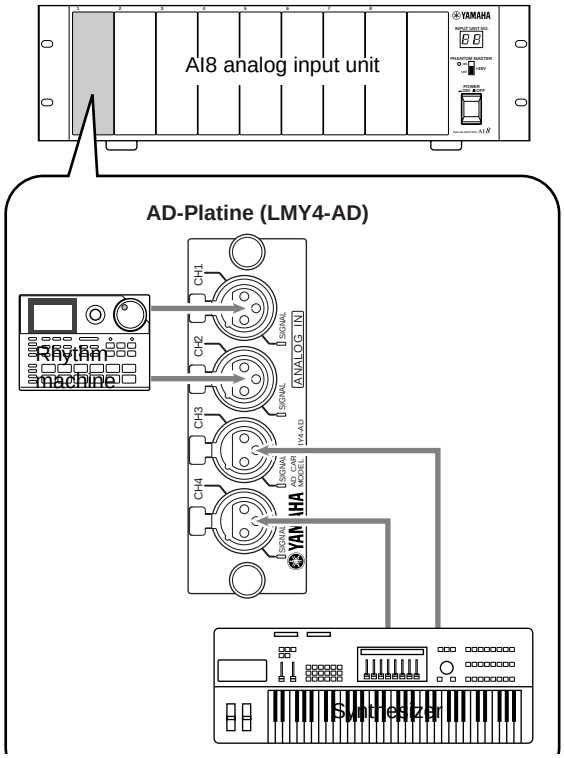


Hint

If you wish to supply +48 V phantom power to the connected device, turn on the PHANTOM MASTER switch (located on the front panel of the AI8), and also turn on the [+48V] switch for the corresponding input channel (→p.46).

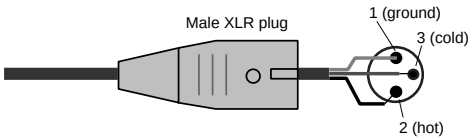
If different sets of audio sources (that you will not use simultaneously) are connected to LMY2-ML jacks 1A and 1B, and to 2A and 2B, they can share input channels of different settings simply by switching between A and B on the CS1D console.

- **AD card (LMY4-AD)**
  The LMY4-AD provides four channels of XLR-3-31 (balanced) input jacks that can be used simultaneously.
  - **LMY4-AD connections**



The pin wiring is as follows.

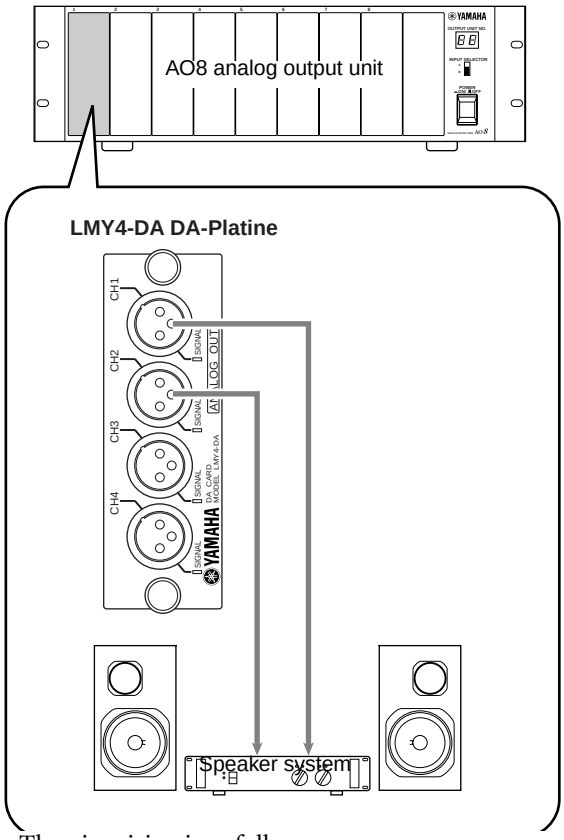
- **Input jack wiring**



Audio connections for an analog output unit

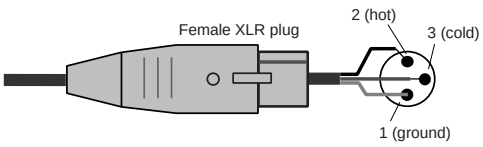
An LMY4-DA DA card installed in the AO8 analog output unit provides four channels of XLR-3-32 (balanced) output jacks.

- **LMY4-DA connections**



The pin wiring is as follows.

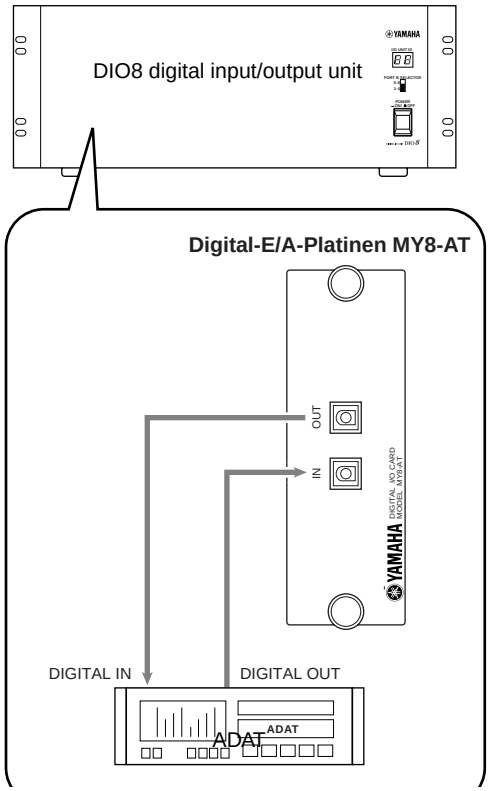
- **Output jack wiring**



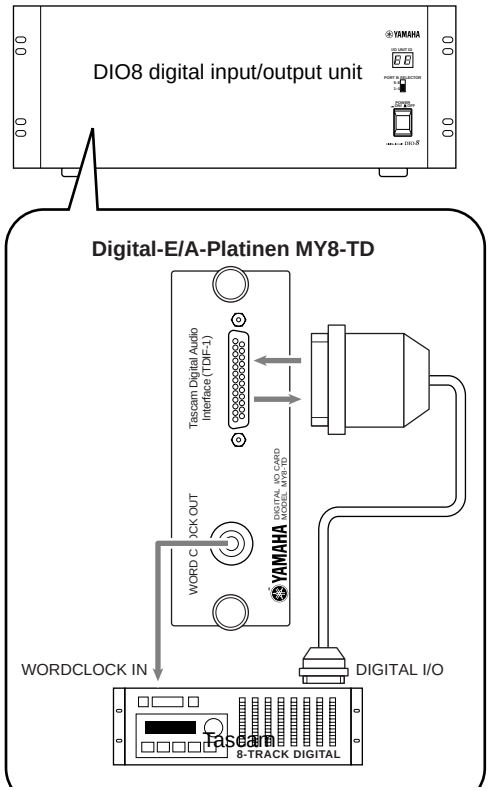
Audio connections for a digital input/output unit

The DIO8 digital input/output unit can accommodate up to eight digital I/O cards or analog I/O cards, according to your system. The following diagrams show examples of connecting the DIO8 to digital recorders in ADAT, Tascam, and AES/EBU formats.

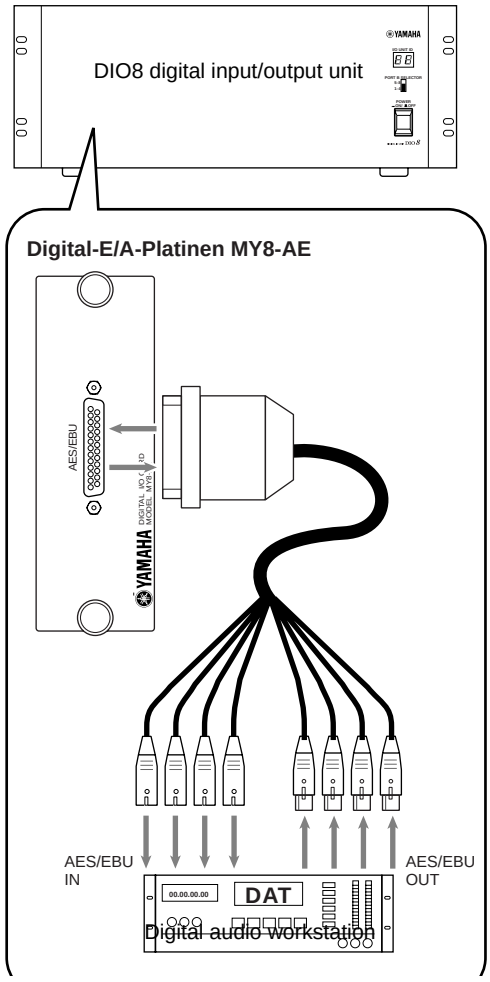
- **Connecting an ADAT format digital device**



- **Connecting a Tascam format digital device**



- **Connecting an AES/EBU format digital device**



⚠

- When connecting a digital device via a digital I/O card installed in the DIO8, the PM1D system and the digital device must be synchronized to the same word clock. (If they are not synchronized, the input/output signal of that device may be muted, or may produce click noise.)
- For details on the settings required to use a digital device as a slave, refer to the manual for that device.
- When using an MY8-AT card to handle ADAT format signals, synchronization may tend to be lost easily, depending on the device that is connected. For more reliable synchronization, we recommend that the word clock for the combination of digital audio equipment you are using be taken from other than the ADAT format connector.

Audio connections for the console

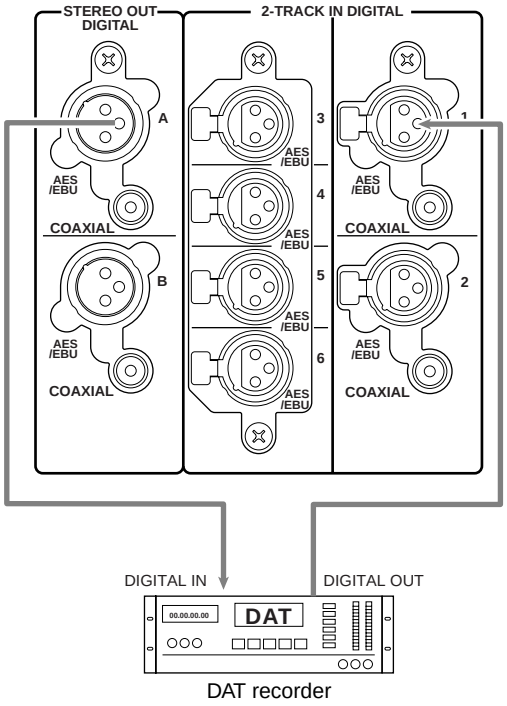
In the PM1D system, most of the signal processing is performed in the input/output units and in the engine, and the console simply controls their operation. However as exceptions, the CS1D also has the following input/output jacks.

- **2-TRACK IN DIGITAL AES/EBU jacks (1–6)**
  These are AES/EBU (XLR-3-31) jacks for inputting AES/EBU format digital sources from an external device such as a CD player or DAT recorder.
- **2-TRACK IN DIGITAL COAXIAL jacks (1–2 only)**
  These are coaxial (RCA phono) jacks for inputting consumer format (IEC60958) digital sources from an external device such as a CD player or DAT recorder.
- **2-TRACK IN ANALOG L/R jacks (1–2)**
  These are XLR-3-31 (balanced) input jacks for inputting stereo analog signals from an external device.

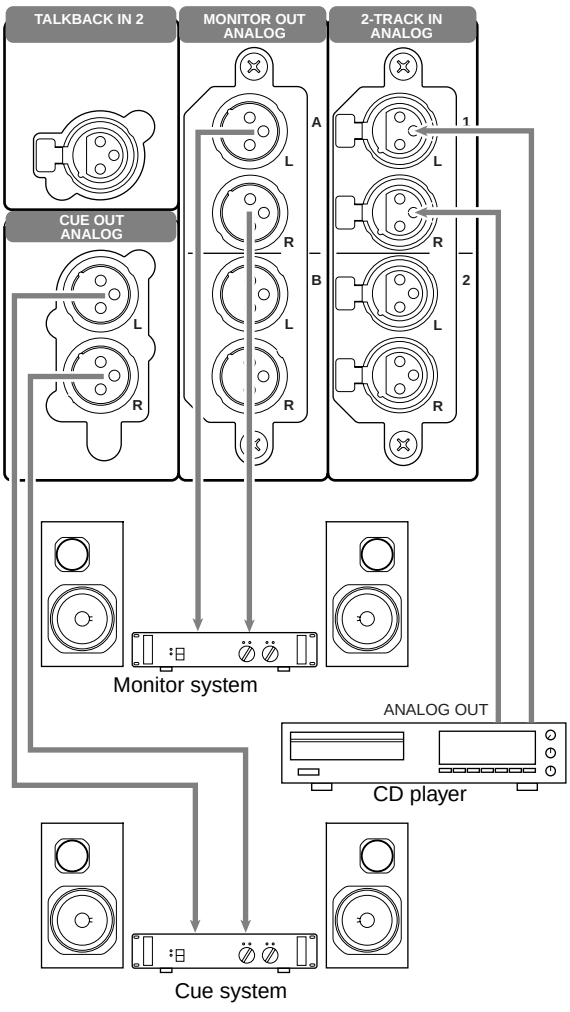
⚠ For 2-TRACK IN DIGITAL AES/EBU jacks 1/2 and 2-TRACK IN DIGITAL COAXIAL jacks 1/2, only one type of jack can be used simultaneously. The type of jack that will be used can be selected in the display (MON/CUE function 2TR IN screen).

- **STEREO OUT DIGITAL AES/EBU jacks (A/B)**
  These are AES/EBU (XLR-3-32) jacks that digitally output the STEREO A/B channel signals in AES/EBU format.
- **STEREO OUT DIGITAL COAXIAL jacks (A/B)**
  These are COAXIAL (RCA phono) jacks that digitally output the STEREO A/B channel signals in consumer format (IEC60958).
- **MONITOR OUT ANALOG jacks (A/B)**
  These are XLR-3-32 (balanced) jacks that output the monitor A/B signals.
- **CUE OUT ANALOG jacks (A/B)**
  These are XLR-3-32 (balanced) jacks that output the cue signals.

- **Audio connections for the console ①**

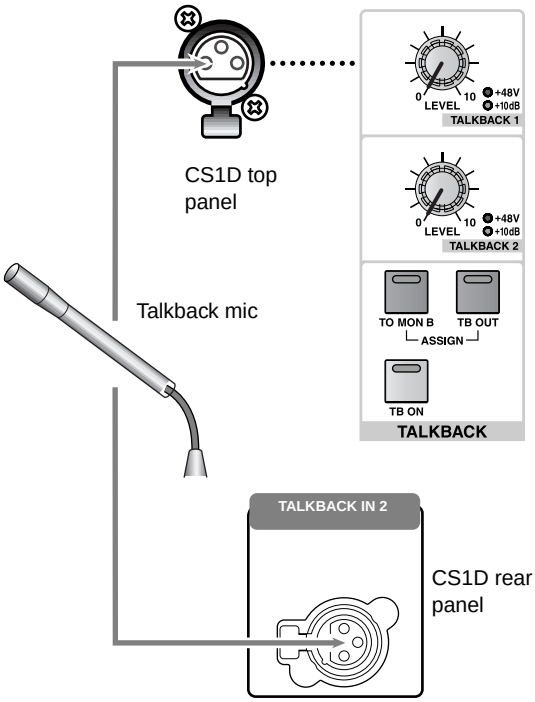


- **Audio connections for the console ②**



- **TALKBACK IN 1 jack (top panel)**
- **TALKBACK IN 2 jack (rear panel)**
  These are XLR-3-31 (balanced) jacks for connecting talkback mics. These two jacks can be used simultaneously.

- **Audio connections for the console** ③



Patching

Simply connecting an external device to an input/output unit does not cause the signal to be input to (or output from) the engine. In order to transfer signals to and from the engine, you must assign (patch) each connector of the input/output unit to a channel of the PM1D system.

Hint

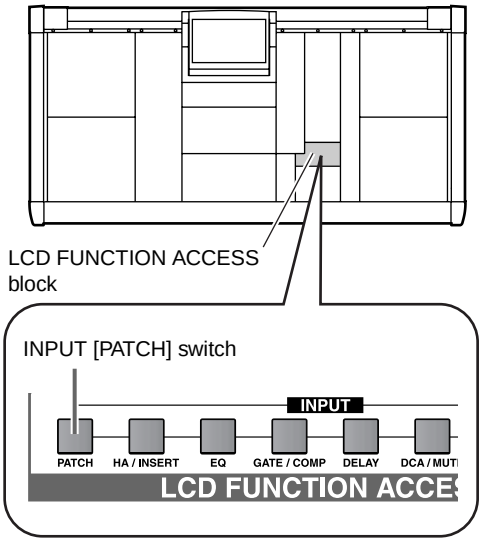
As exceptions, patching is not necessary for the output jacks of the CS1D console itself (the STEREO OUT DIGITAL AES/EBU, STEREO OUT DIGITAL COAXIAL, MONITOR OUT ANALOG, and CUE OUT ANALOG jacks).

Input channel patching

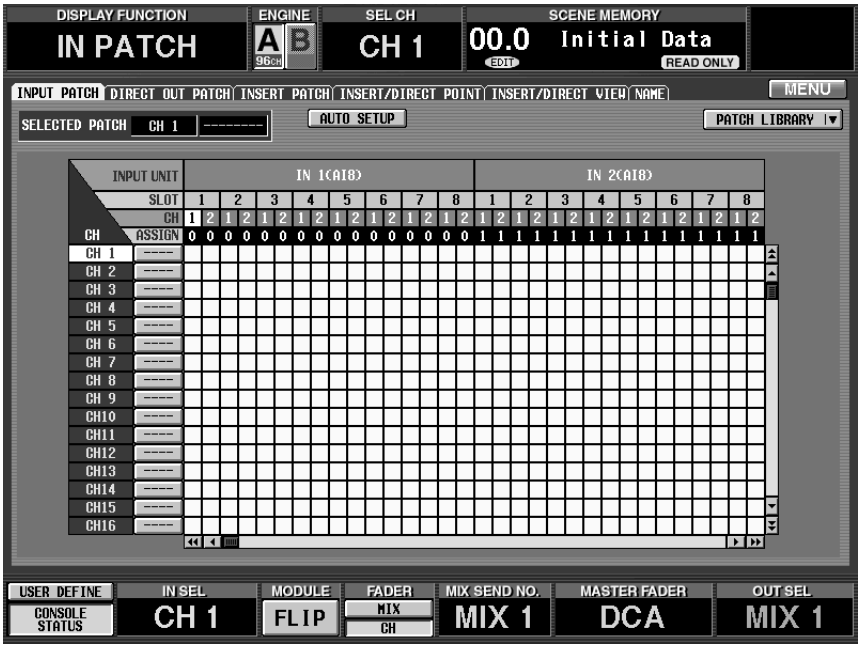
Here's how to patch an input unit to an input channel, and assign a name.

[Procedure]

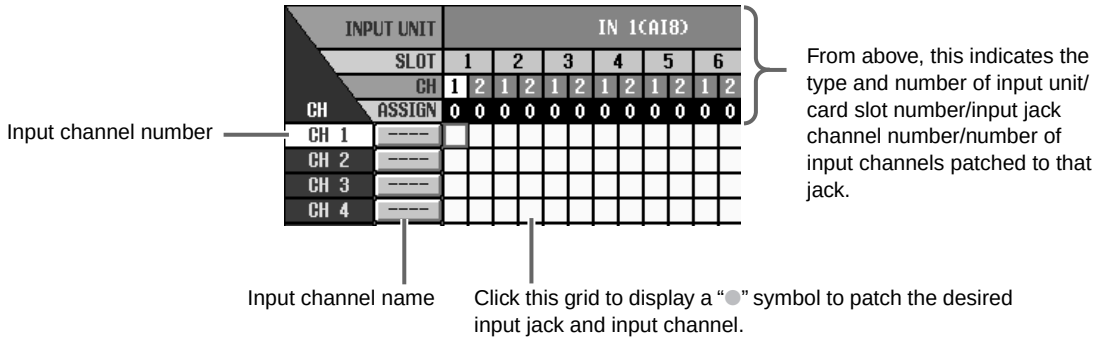
1. **In the LCD FUNCTION ACCESS block, press the INPUT [PATCH] switch several times to access the following screen.**



This is the INPUT PATCH screen, in which you can patch the various input jacks and the return signals from the internal effects to the desired input channel (monaural/stereo).



2. **Use the horizontal scroll bar to access the patch source input unit.**
   The horizontal axis of the screen shows the input unit ID number/card slot number/input jack channel number. To view a unit/card/input jack that is not currently visible, use the horizontal scroll bar.



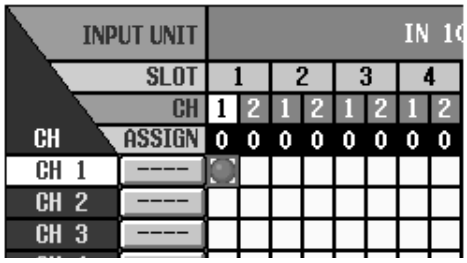
Hint

By clicking the ◀◀/▶▶ buttons you can scroll the display by units. By clicking the ◀/▶ buttons you can scroll the display by slots.

3. **Use the vertical scroll bar to access the patch destination input channel.**
   The vertical axis of the screen shows the patch destination input channel 1–96 (monaural) or the ST IN channel 1–8 (stereo). To view a portion that is not currently visible, use the vertical scroll bar.

4. **Click the grid where the patch source and patch destination intersect.**
   To patch an input jack to an input channel, click the grid where the patch source and patch destination intersect. Grids that are patched will be indicated by a "●" symbol. (If you click the same grid once again, the patch will be defeated and the "●" symbol will disappear.)

   • **An example where an input jack is patched to input channel 1**



5. **In the same way, patch other units/cards/input jacks to input channels.**

⚠ Although it is possible to patch a single input jack to multiple input channels, it is not possible to patch multiple input jacks to a single input channel.

6. **To assign a name to an input channel, click the button located at the right of the channel number.**
   A short name (maximum 4 characters) and a long name (maximum 8 characters) can be assigned to each input channel.

   When you click the button located at the right of the channel number, a NAME EDIT popup window will appear in which you can input the name.

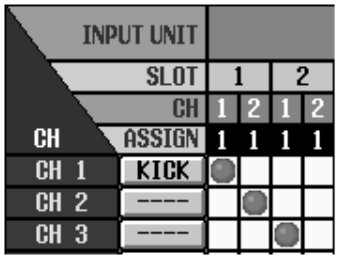
   • **NAME EDIT popup window**

7. **In the NAME EDIT popup window, move the cursor to the SHORT or LONG text input box, and input the desired name. (For the procedure refer to p.20.)**

Hint

By clicking the ▲/▼ buttons located between the two text input boxes, you can copy the short name to the first four characters of the long name (or vice versa).

8. **When you have input the name, click the OK button.**
   You will return to the INPUT PATCH screen, and the name will be displayed at the right of the channel number.



Hint

The short name you assign to each channel will be displayed in various screens of the display and in the [NAME] indicator of the CS1D console.

9. As necessary, assign names to other channels as well.

Hint

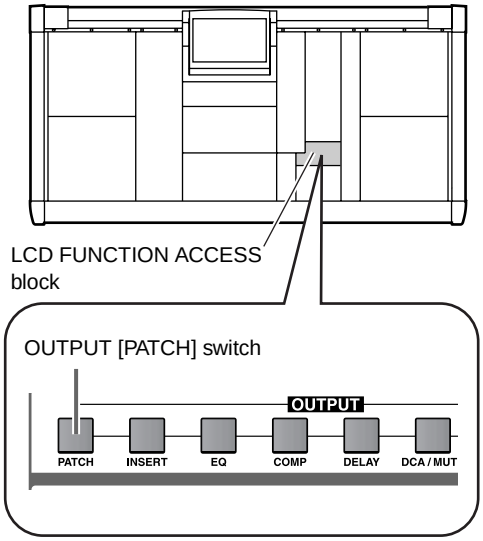
If you wish to assign names to numerous channels at once, it is convenient to use the IN PATCH function NAME screen. ("CS1D Reference Manual (Software)" →p.128)

Output channel patching

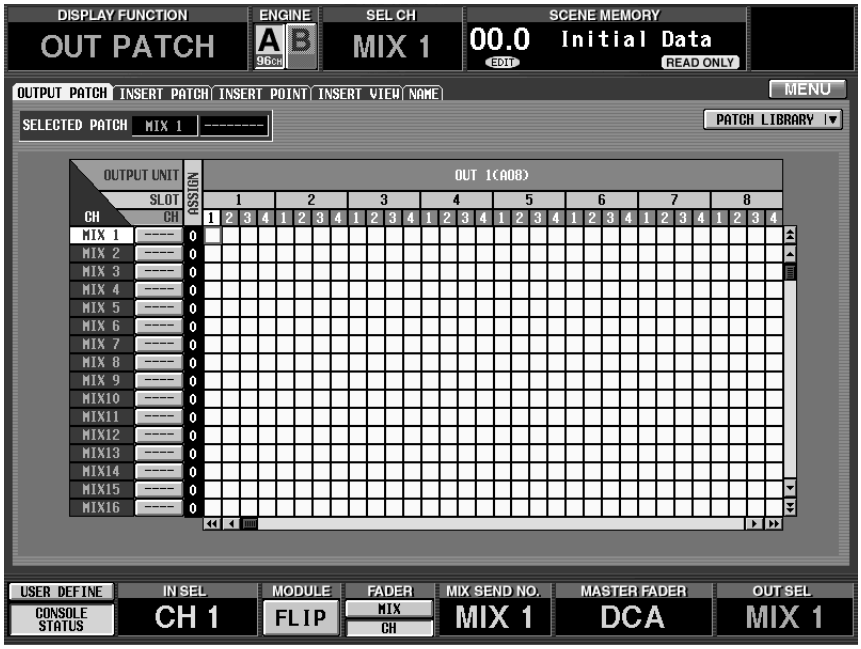
Here's how to patch an output unit to an output channel (MIX channel, MATRIX channel, STEREO A/B channel) and assign a name. The procedure is essentially the same as input channel patching.

[Procedure]

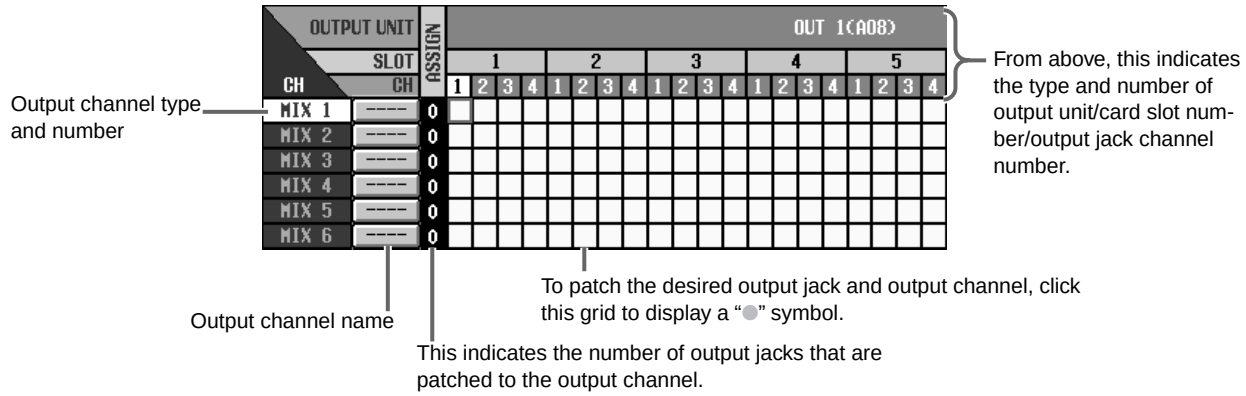
1. In the LCD FUNCTION ACCESS block, press the OUTPUT [PATCH] switch several times to access the following screen.



This is the OUTPUT PATCH screen, in which you can patch the various output channels to the desired output jacks or to the inputs of the internal effects.



2. **Use the vertical scroll bar to access the patch source output channel.**
   The vertical axis of the screen shows the patch source MIX channel (MIX 1–48), MATRIX channel (MTRX 1–24), or STEREO A/B channel (ST AL/AR, ST BL/BR). To view a portion that is not currently visible, use the vertical scroll bar.



3. **Use the horizontal scroll bar to access the patch destination output unit.**
   The horizontal axis of the screen shows the output unit ID number/card slot number/input jack channel number. To view a unit/card/input jack that is not currently visible, use the horizontal scroll bar.

Hint

By clicking the ◀◀/▶▶ buttons you can scroll the display by units. By clicking the ◀/▶ buttons you can scroll the display by slots.

4. **Click the grid where the patch source and patch destination intersect.**
5. **In the same way, patch other units/cards/output jacks to output channels.**

⚠ Although it is possible to patch a single output channel to multiple output jacks, it is not possible to patch multiple output channels to a single output jack.

6. **To assign a name to an output channel, click the button located at the right of the channel number.**
   The NAME EDIT popup window will appear in which you can input the name.
7. **In the NAME EDIT popup window, move the cursor to the SHORT or LONG text input box, and input the desired name. (For the procedure refer to p.20.)**
8. **When you have input the name, click the STORE button.**
   You will return to the OUTPUT PATCH screen, and the name will be displayed at the right of the channel number.

Hint

The short name you assign to each channel will be displayed in various screens of the display and in the [NAME] indicator of the CS1D console.

9. **As necessary, assign names to other channels as well.**

Hint

If you wish to assign names to numerous output channels at once, it is convenient to use the OUT PATCH function NAME screen. ("CS1D Reference Manual (Software)" →p.83)

Chapter 4. Basic operation for input channels

This chapter explains basic operation for input channels/ST IN channels.

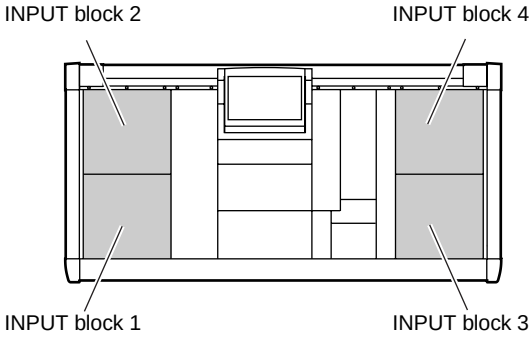
About input channels

Blocks used to control input channels

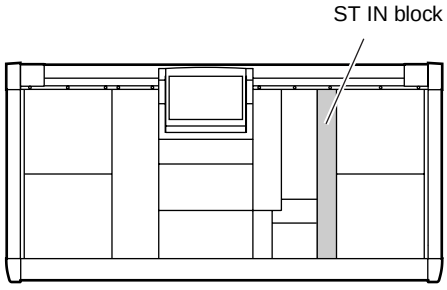
On the PM1D system, you can use 96 {48} monaural input channels and 8 {4} stereo ST IN channels. A signal patched to one of these input channels passes through the internal four-band EQ/compressor/gate, and is sent to the STEREO bus or MIX bus.

The following blocks on the CS1D console are used to control input channels.

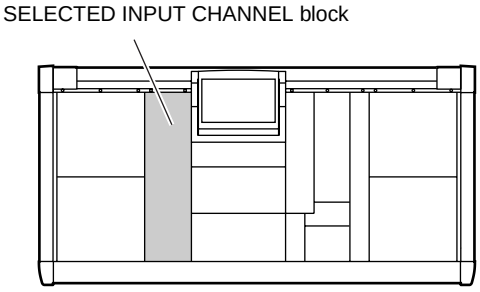
- **INPUT blocks 1–4**
  These blocks adjust the pan and level etc. of monaural input channels 1–96 {1–48} and send them to the STEREO bus or MIX bus. Each block contains 12 channels of modules.



- **ST IN block**
  This block adjusts the pan and level etc. of the stereo ST IN channels 1–8 {1–4} and send them to the STEREO bus or MIX bus.



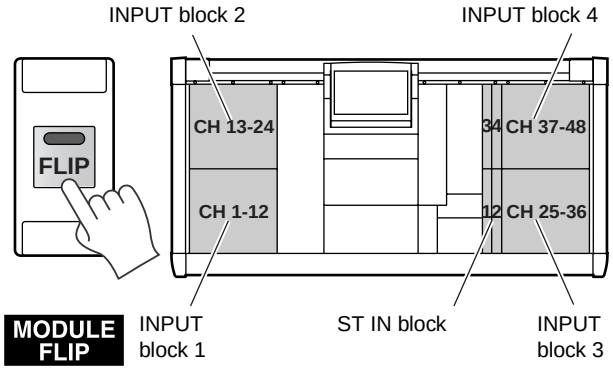
- **SELECTED INPUT CHANNEL block**
  This block controls most of the mix parameters for the selected input channel or for the L or R channel of a ST IN channel, such as head amp settings, EQ/compressor/gate settings, and send to the STEREO bus or MIX bus.

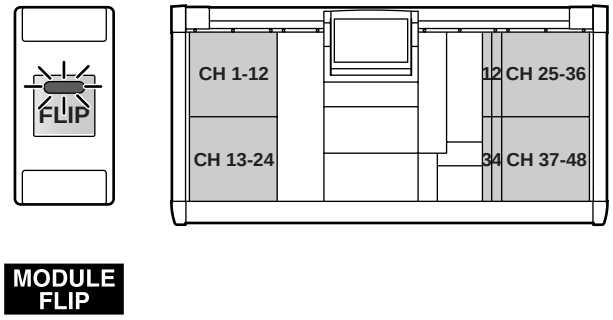


Changing the channel assignments

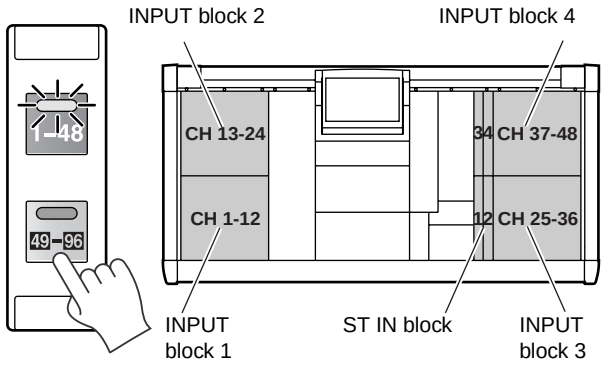
When the PM1D system is in its default state, INPUT blocks 1–4 are assigned input channels 1–12, 13–24, 25–36, and 37–48 respectively. Similarly, ST IN channels 1–4 are assigned to the ST IN block.
However, you can change these assignments by using the SELECTED INPUT CHANNEL block MODULE [FLIP] switch and the MASTER block GLOBAL LAYER [1-48]/[49-96] switches, as described below. {On the 48 channel model, the GLOBAL LAYER [49-96] switch cannot be selected. Only the GLOBAL LAYER [1-48] switch is valid.}

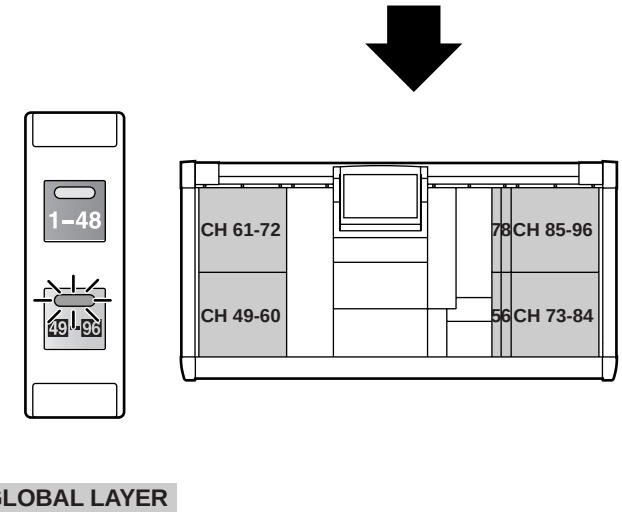
- **Using the MODULE [FLIP] switch to change the channel assignments**





- **Using the GLOBAL LAYER [1-48]/[49-96] switches to change the channel assignments (96 channel model only)**





⚠ If operating the INPUT block/ST IN block does not produce the expected result, make sure that the above switches are set appropriately.

Basic operation INPUT blocks/ST IN block

This section explains basic input channel operation using the INPUT blocks/ST IN block.

⚠ Since multiple channels are controlled simultaneously in the INPUT blocks/ST IN block, the number of controllable parameters is limited to the necessary minimum. This means that there are some parameters that cannot be controlled unless you use the display or the SELECTED INPUT CHANNEL block.

INPUT block/ST IN block controls and functions

This section explains the various controls and functions of the INPUT block and ST IN block.

INPUT block

INPUT [MIX] encoder and LEDs
This encoder sets the send level of the signal that is sent from the input channel to a VARI type MIX bus. The peripheral LEDs will light to indicate the approximate current value.

INPUT MIX [ON] LED
This LED indicates the on/off status of the signal that is sent from the input channel to the MIX bus.

INPUT [PAN] encoder and LEDs
This encoder sets the stereo position of the signal that is sent from the input channel to the STEREO bus. The approximate current value is shown by the perimeter LEDs.

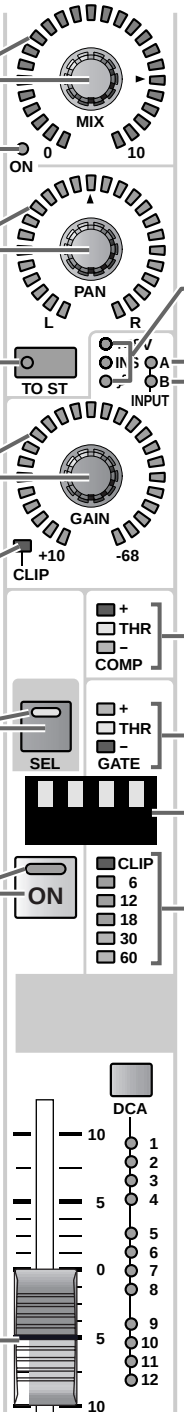
INPUT [TO ST] switch and LED
This is an on/off switch for the signal that is sent from that input channel to the STEREO bus.

INPUT [GAIN] encoder and LEDs
This encoder adjusts the input sensitivity of the head amp for an input channel to which a mic/line input card (LMY2-ML) has been patched. The peripheral LEDs will light to indicate the approximate current value.

INPUT [CLIP] LED
This LED will light when the input signal clips for that input channel.

INPUT [SEL] switch and LED
This switch selects the input channel that will be controlled in the SELECTED INPUT CHANNEL block and in the display.

INPUT [ON] switch and LED
This turns the input channel on/off. If this switch is turned off, no signal will be sent from this input channel to the STEREO bus or MIX buses.



INPUT [+48V]/[INS]/[ø] LEDs
These respectively indicate the on/off status of phantom power, insertion, and phase.

INPUT [A]/[B] LEDs
For an input channel to which a mic/line input card (LMY2-ML) has been patched, these indicate whether input jack A or B is enabled.

COMP [+]/[THR]/[–] LEDs
These LEDs show the operating status of the internal compressor. For details on the meaning of each LED, refer to "CS1D Reference Manual (Software)."

GATE [+]/[THR]/[–] LEDs
These LEDs show the operating status of the internal noise gate. For details on the meaning of each LED, refer to "CS1D Reference Manual (Software)."

INPUT [NAME] indicator
This shows the short name of the input channel.

Meter LEDs
This is a six-point LED meter that indicates the input level of the input channel.

INPUT fader
This is a 100 mm fader that adjusts the input level of the input channel.

ST IN block

ST IN STATUS [L]/[R] LEDs
These LEDs indicate which channel (L or R) is currently displayed by this ST IN channel module.

ST IN [MIX] encoder and LEDs
This encoder sets the send level of the signal that is sent from the ST IN channel to a VARI type MIX bus. The peripheral LEDs will light to indicate the approximate current value.

ST IN MIX [ON] LED
This LED indicates the on/off status of the signal that is sent from the ST IN channel to the MIX bus.

ST IN [PAN] encoder and LEDs
This encoder sets the stereo position of the signal that is sent from the ST IN channel to the STEREO bus. The approximate current value is shown by the perimeter LEDs.

ST IN [TO ST] switch and LED
This is an on/off switch for the signal that is sent from the ST IN channel to the STEREO bus.

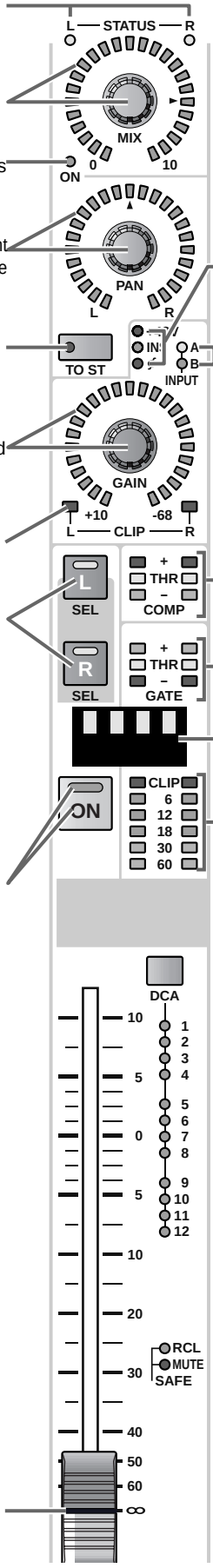
ST IN [GAIN] encoder and LEDs
This encoder adjusts the input sensitivity of the head amp for a ST IN channel to which a mic/line input card (LMY2-ML) has been patched. The peripheral LEDs will light to indicate the approximate current value.

ST IN [CLIP] LED
This LED will light when the input signal clips for that ST IN channel.

ST IN SEL [L]/[R] switches and LEDs
These switches select the channel (L or R of the corresponding ST IN channel) that will be controlled in the SELECTED INPUT CHANNEL block and in the display.

⚠ For a ST IN channel, the L/R channel parameters will generally operate in tandem. For this reason, using the ST IN SEL [L]/[R] switches to select either L or R and moving the encoders and fader of the ST IN block will cause the other channel (R or L) to change accordingly. However, head amp parameters and pan/delay related parameters must be set independently.

ST IN [ON] switch and LED
This turns the ST IN channel on/off. If this switch is turned off, no signal will be sent from this ST IN channel to the STEREO bus or MIX buses.



ST IN [+48V]/[INS]/[ø] LEDs
These respectively indicate the on/off status of phantom power, insertion, and phase.

ST IN [A]/[B] LEDs
For a ST IN channel to which a mic/line input card (LMY2-ML) has been patched, these indicate whether input jack A or B is enabled.

COMP [+]/[THR]/[–] LEDs
These LEDs show the operating status of the internal compressor. For details on the meaning of each LED, refer to "CS1D Reference Manual (Software)."

GATE [+]/[THR]/[–] LEDs
These LEDs show the operating status of the internal noise gate. For details on the meaning of each LED, refer to "CS1D Reference Manual (Software)."

ST IN [NAME] indicator
This shows the short name of the ST IN channel.

Meter LEDs
These are six-point LED meters that independently indicate the L and R input levels of the ST IN channel.

ST IN fader
This is a 100 mm fader that adjusts the input level of the ST IN channel.

Head amp settings

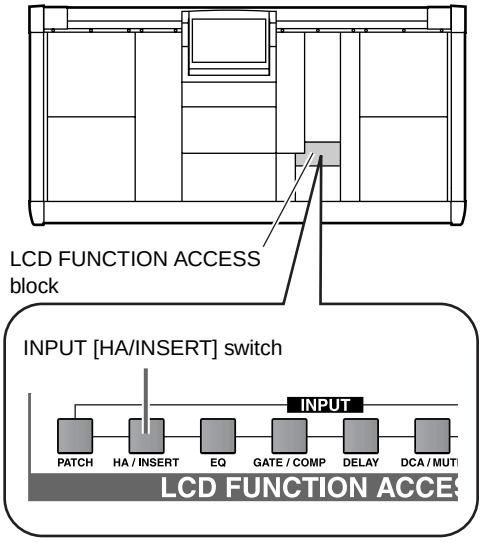
For channels to which a mic/line amp card (LMY2-ML) has been patched, you must complete various settings for the head amp (e.g., select input jacks A/B, turn phantom power on/off) before you continue.

Hint

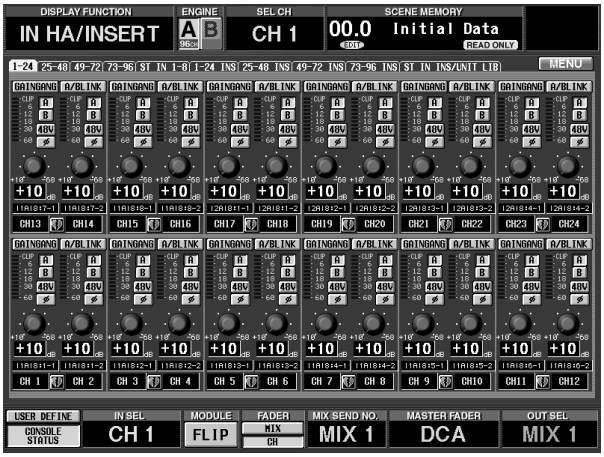
This section explains the procedure for an input channel. If you are using a ST IN channel, head amp settings must be made separately for L and R. Use the ST IN SEL [L]/[R] switches to select each channel and make settings.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the INPUT [HA/INSERT] switch several times to access one of the following screens.**



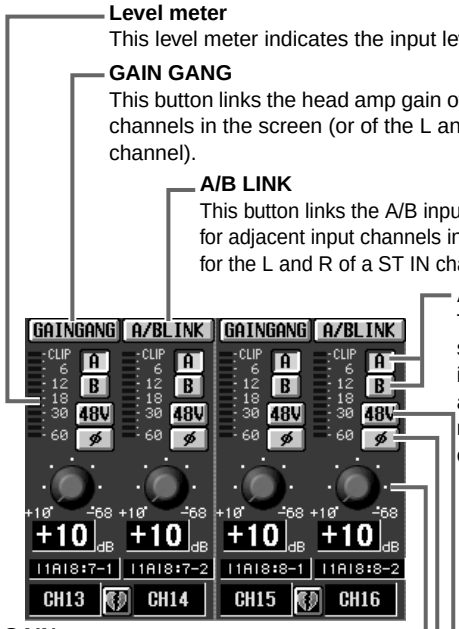
- **1-24/25-48/49-72/73-96**
  In these screens you can make settings for input cards that have been patched to input channels 1–24/25–48/49–72/73–96 respectively. {On the 48 channel model, the 49-72 and 73-96 screens are not valid.}
- **ST IN 1–8**
  In this screen you can make settings for input cards that have been patched to ST IN channels 1–8 {1–4}.
- **1–24 screen (IN HA/INSERT function)**



⚠ Within the IN HA/INSERT function screen, the "INS" tab is a screen where you can make settings for the input cards patched to an Insert In point. Please do not confuse this with the screens listed above.

The following parameters will be displayed for a channel to which an LMY2-ML mic/line input card has been patched.

- **Display for a channel to which an LMY2-ML has been patched**



2. **Use the A/B button in the screen to select the input jack (A/B) of the card that each channel will use.**
3. **Use the ø and +48V buttons in the screen to switch the phase and phantom power on/off for each channel.**
   If the ø button is turned on, the phase of the input signal will be reversed. If the +48V button is turned on, +48V phantom power will be supplied to the corresponding input jack.

⚠ If you wish to use phantom power, you must also turn on the +48V switch located on the front panel of the AI8 input unit. If this switch is off, no phantom power will be supplied to the cards installed in that unit.

4. **While watching the level meter, drag the on-screen GAIN knob to adjust the input sensitivity of the channel.**
   The GAIN knob adjusts the input sensitivity of the head amp. The supported range of levels is 10 dB — –68 dB, and the current value is shown in the numerical box located immediately below.

   Hint
   As an alternative to the on-screen knob, you can also adjust the input sensitivity using the INPUT [GAIN] encoder of the INPUT block. In this case, the peripheral LEDs around the encoder will indicate the approximate value.

⚠ The PAD will be internally switched on or off when the gain of the LMY4-MLF card (including the AI8-ML8F unit) internal head amp is adjusted between –8 dB and –7 dB. Keep in mind that noise may be generated if there is a difference between the Hot and Cold output impedance of the external device connected to the card when using phantom power.

5. **If you want the gain or input jack A/B selection to be linked between adjacent input channels in the screen, turn on the GAIN GANG button and A/B LINK button for each channel.**
   If the GAIN GANG button is on, gain settings will be linked while preserving the level difference between channels. If the A/B LINK button is on, the A/B input jack selection will be linked. Be aware that even if the A/B LINK button is on, link will not be valid until the A/B button is switched for one of the channels.

Sending a signal from an input channel to a STEREO bus

Here's how to use the INPUT block/ST IN block to send an input channel signal to a STEREO bus.

Hint

The procedure described here uses the example of an input channel, but virtually the same procedure applies to ST IN channels as well.

[Procedure]

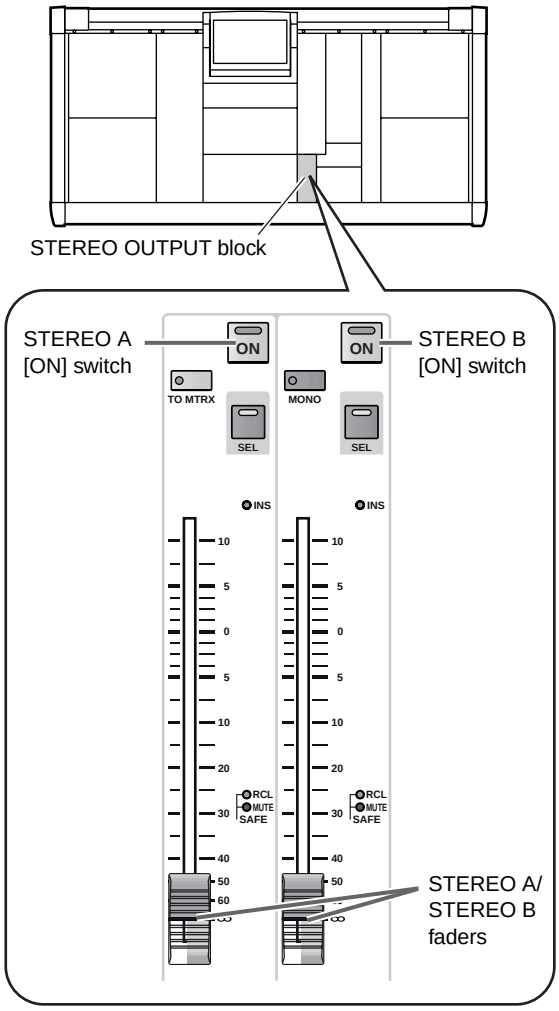
1. **Make sure that an input source is correctly patched to the input channel, and that the head amp is set appropriately.**
2. **In the INPUT block, turn on the INPUT [ON] switch.**
3. **Turn on the INPUT [TO ST] switch.**
4. **Raise the INPUT fader.**
   The input channel signal will now be sent to the STEREO buses.

   Hint

   If the PM1D system is in its initial state, the STEREO A/STEREO B section of the meter bridge block will show the level of the signals sent to the STEREO bus (the pre-attenuator level of STEREO A/B channels).
5. **As necessary, use the INPUT [PAN] encoder to adjust the panning of the signal.**
   The peripheral LEDs will indicate the approximate current value. If the ▲ LED is lit, this indicates that the signal is panned to the center.

⚠ When sending signals from a ST IN channel to the STEREO bus, use the ST IN SEL [L]/[R] switches to select each channel separately, and set the ST IN [PAN] encoder separately for L and R.

6. **In the STEREO OUTPUT block, turn on the STEREO A [ON] or STEREO B [ON] switch.**
   The STEREO OUTPUT block is where signals sent to the STEREO bus are output via the STEREO A/B channels to an output unit.



7. **In the STEREO OUTPUT block, raise the STEREO A or STEREO B fader.**
   The signal sent from the input channel to the STEREO bus will be output from the output jack(s) patched to the STEREO A or STEREO B channel.

Sending a signal from an input channel to a MIX bus

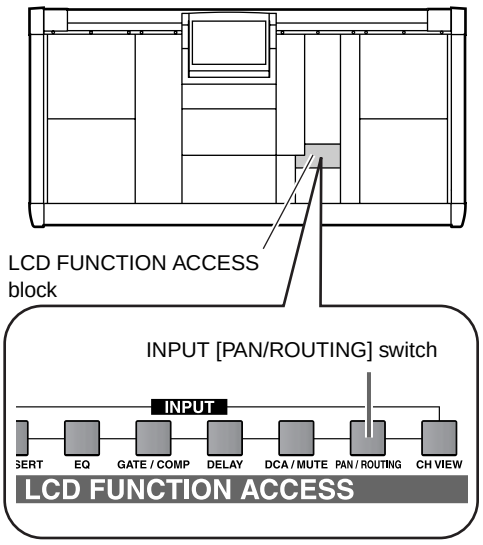
Here's how to use the INPUT block/ST IN block to send an input channel signal to a MIX bus.

Hint

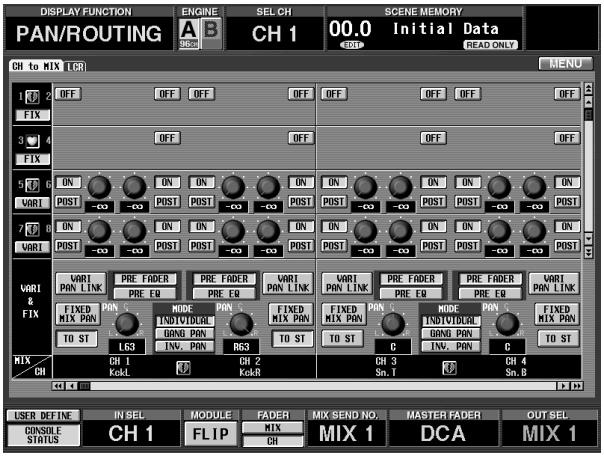
If the send destination is a MIX bus, the type of MIX bus (FIX or VARI) that you wish to use must first be selected in the display. Then you can set the send level for each channel. MIX buses set to FIX type can be used as group buses, and MIX buses set to VARI type can be used as AUX buses.
The procedure described here uses the example of an input channel, but the procedure is virtually identical for a ST IN channel as well.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the INPUT [PAN/ROUTING] switch several times to access the following CH to MIX screen.**

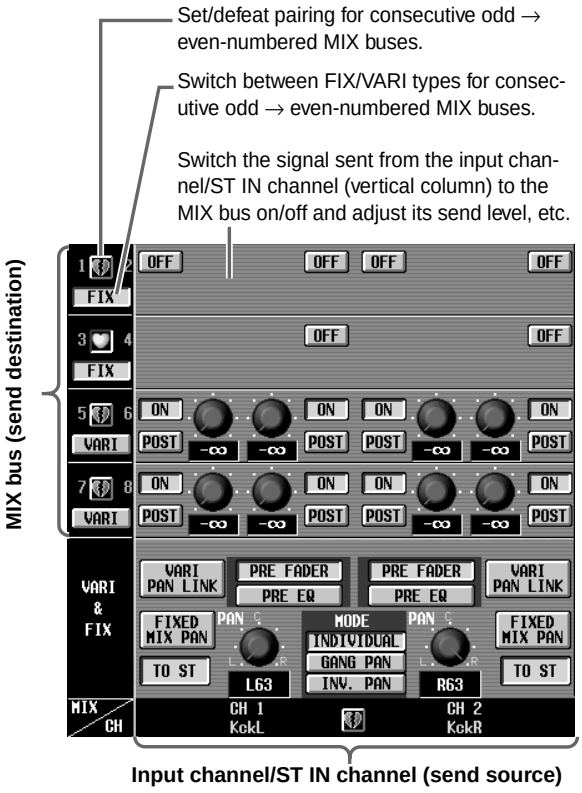


- **CH to MIX screen (PAN/ROUTING function)**



In the CH to MIX screen you can make settings for the signal that is sent from an input channel/ST IN channel to the MIX bus.

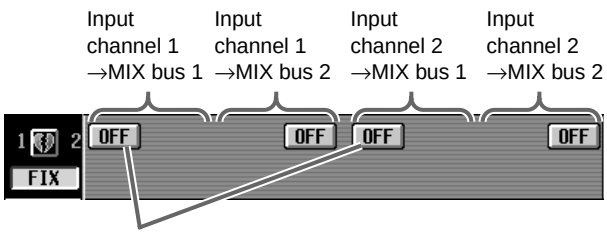
The vertical column in the upper part of the screen shows the send destination MIX bus, and the horizontal rows show the send source input channel/ST IN channel.



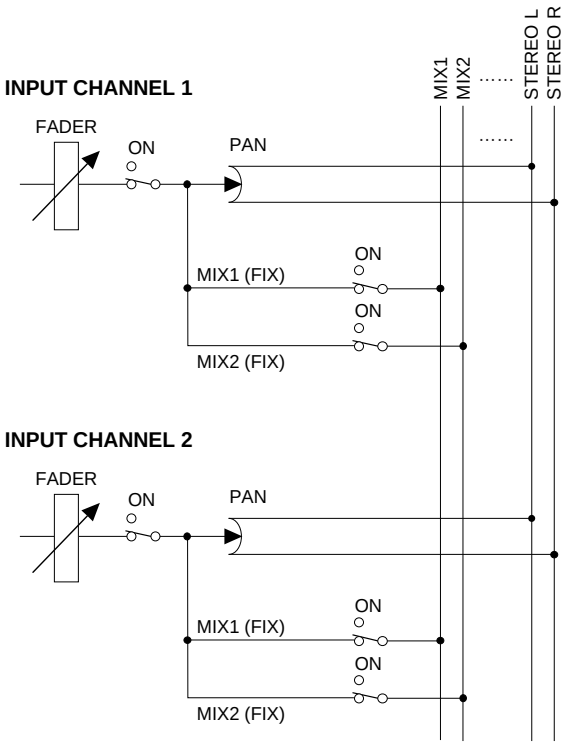
2. Use the on-screen FIX/VARI buttons to select either FIX type or VARI type for adjacent odd-numbered → even-numbered MIX buses.

When you switch between FIX type and VARI type, the screen and signal flow will change as follows.

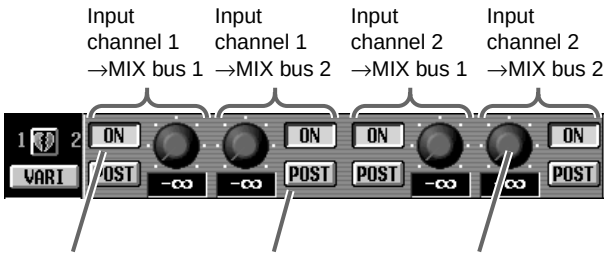
- **FIX type MIX buses**



ON/OFF buttons
These are on/off switches for the signal that is sent from the input channel/ST IN channel to each MIX bus.



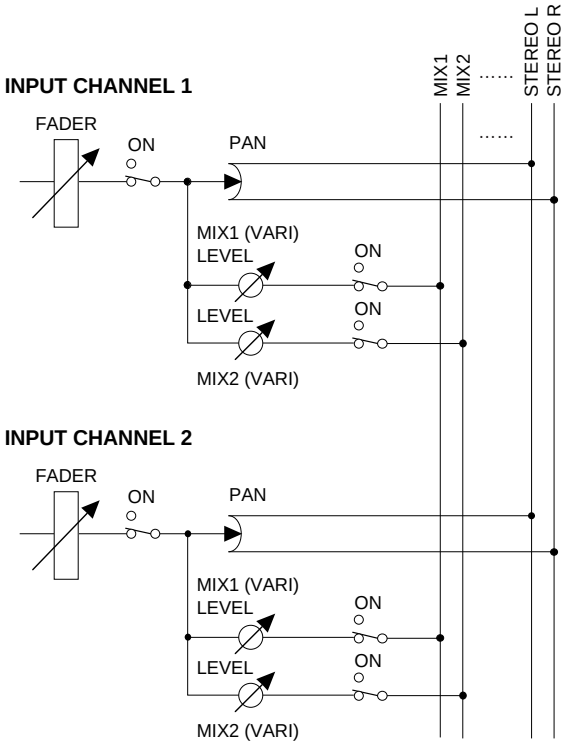
- **VARI type MIX buses**



ON/OFF buttons
These are on/off switches for the signal that is sent from the input channel/ST IN channel to each MIX bus.

PRE/POST buttons
These buttons select either PRE or POST (post fader) as the send point from which the signal will be sent from the input channel/ST IN channel to each MIX bus. If PRE is selected, you can also use the PRE FADER/PRE EQ buttons to select either pre-fader or pre-EQ.

LEVEL knobs
These knobs adjust the send level of the signal that is sent from the input channel/ST IN channel to each MIX bus.



3. **Use the on-screen ON/OFF buttons to switch the signal sent from each input channel to the MIX bus on/off.**
   In the case of a FIX type MIX bus, this is all you need to do for the nominal-level signal of each channel to be sent to the corresponding MIX bus.

   Hint
   The signal that is sent from each input channel to the MIX bus cannot be switched on/off by operations in the INPUT block/ST IN block.

⚠ If Recall Safe is specified for only one of two adjacent odd-numbered→even-numbered MIX channels, it is possible that the VARI/FIX settings may differ between the odd-numbered and even-numbered channels after a scene is recalled. In such cases, the settings after the recall will take priority.

4. **Use the on-screen PRE/POST buttons to select the location (PRE/POST) from which the signal of each input channel will be sent to the VARI type MIX bus.**
   If POST is selected, the post-fader signal will be sent.

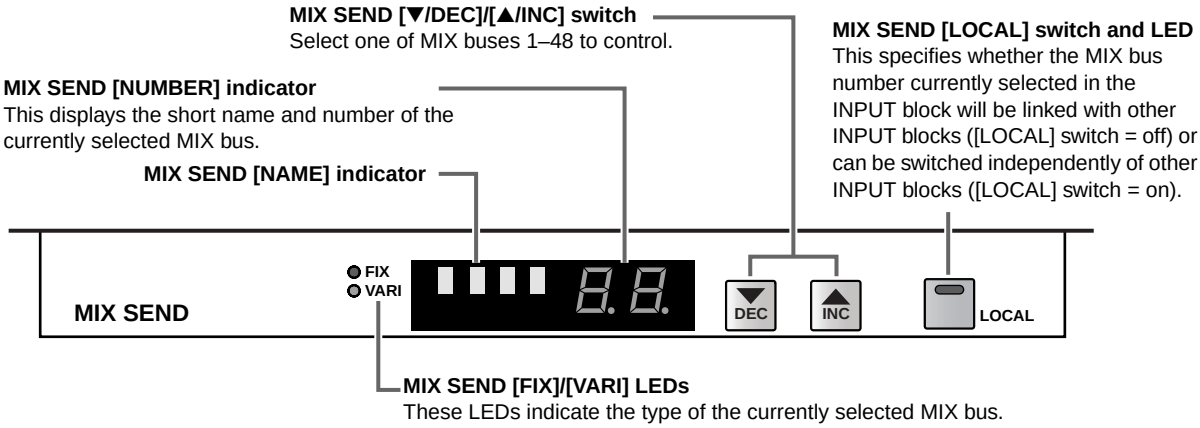
   If PRE is selected, you can also use the buttons of the VARI & FIX section (located at the bottom of the screen) to select either PRE FADER or PRE EQ.

   - **VARI & FIX section**

   Hint
   In addition, the CH to MIX screen allows you to make various settings, such as to specify pairing for adjacent odd-numbered → even-numbered MIX buses, and to cause the [PAN] encoder of the input channel be reflected for the MIX bus as well. For details refer to "CS1D Reference Manual (Software)."

5. **In the INPUT block MIX SEND section, use the [▼/DEC]/[▲/INC] switches to select a MIX bus that you set to the VARI type.**
   If you wish to use the INPUT block to adjust the send level to a VARI type MIX bus, you must first use the MIX SEND section to select the MIX bus that will be affected.

• **INPUT block MIX SEND section**



Hint

As alternate ways to select the MIX bus that your operations will affect, you can also use the MIX OUT block MIX [SEL] switch, or the SELECTED OUTPUT CHANNEL block CHANNEL SELECT [▼/DEC]/[▲/INC] switches. Since a ST IN channel does not have a section corresponding to the MIX SEND section, you can use these methods.

When the PM1D system is in its initial state, selecting a MIX bus in one INPUT block will cause this selection to be reflected for the other INPUT blocks as well.
However, MIX buses can be selected independently for INPUT blocks whose MIX SEND [LOCAL] switch is turned on.

6. **Use the INPUT [MIX] encoder of the input channel to adjust the send level of the signal that is sent from that channel to the desired MIX bus.**
The approximate current value is indicated by the peripheral LEDs around the encoder. If the LED at the ► mark is lit, the level is nominal (0 dB).

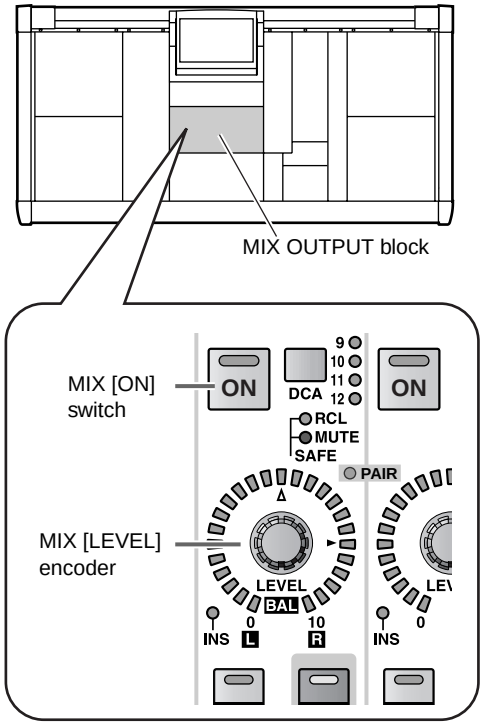
⚠ If a FIX type MIX bus is selected, the INPUT [MIX] encoder has no effect, and only the nominal level LED will be lit.

Hint

When the PM1D system is in its initial state, the MIX OUT 1–24 and MIX OUT 25–48 sections of the meter bridge block will indicate the level of the signals sent to each MIX bus (the pre-attenuator level of the MIX channel).

It is also possible to temporarily exchange the functions of the [MIX] encoders and faders of the input channel/ST IN channels, so that you can use the faders to set the send levels. For details refer to "CS1D Reference Manual (Software)."

7. **In the MIX OUTPUT block, turn on the MIX [ON] switch for the corresponding MIX channel.**
The MIX OUTPUT block is where the signals sent to each MIX bus are sent via the MIX channel to the output unit.



8. **In the MIX OUTPUT block, raise the MIX [LEVEL] encoder for the appropriate MIX channel.**
The signal sent from the input channel to the MIX bus will be output from the output unit patched to the corresponding MIX channel.

Pairing settings

Monaural input channels can be paired so that their principal parameters are linked.

[Procedure]

1. **For adjacent odd-numbered → even-numbered input channels, hold down one of the [SEL] switches and press the other [SEL] switch.**
   The direction in which the channel parameters are copied will depend on the order in which the [SEL] switches are pressed. When you create a pair, the parameters of the channel you pressed first will be copied to the channel that you pressed next, and will subsequently be linked.

   For example if you pair CH 1 and CH 2, holding down the CH 1 [SEL] switch and then the CH 2 [SEL] switch will cause the state of CH 1 to be copied to CH 2. For details on the parameters that are copied/linked when paired, refer to "CS1D Reference Manual (Appendices)" (→p.45). If you wish to reset the parameters, do so from the screen.

2. **To cancel pairing, hold down the [SEL] switch of one of the paired channels and press the [SEL] switch for the other channel.**

   Hint
   It is also possible to set/cancel pairing within the display.

Basic operation in the SELECTED INPUT CHANNEL block

Here we will explain how to control an input channel using the SELECTED INPUT CHANNEL block. The SELECTED INPUT CHANNEL block controls only the currently selected channel. In exchange for being limited to only one channel, you can manually control virtually all of the mix parameters for the input channel, from head amp settings to EQ/compressor/gate settings, and sends to the STEREO bus and MIX buses.

Controls and functions of the SELECTED INPUT CHANNEL block

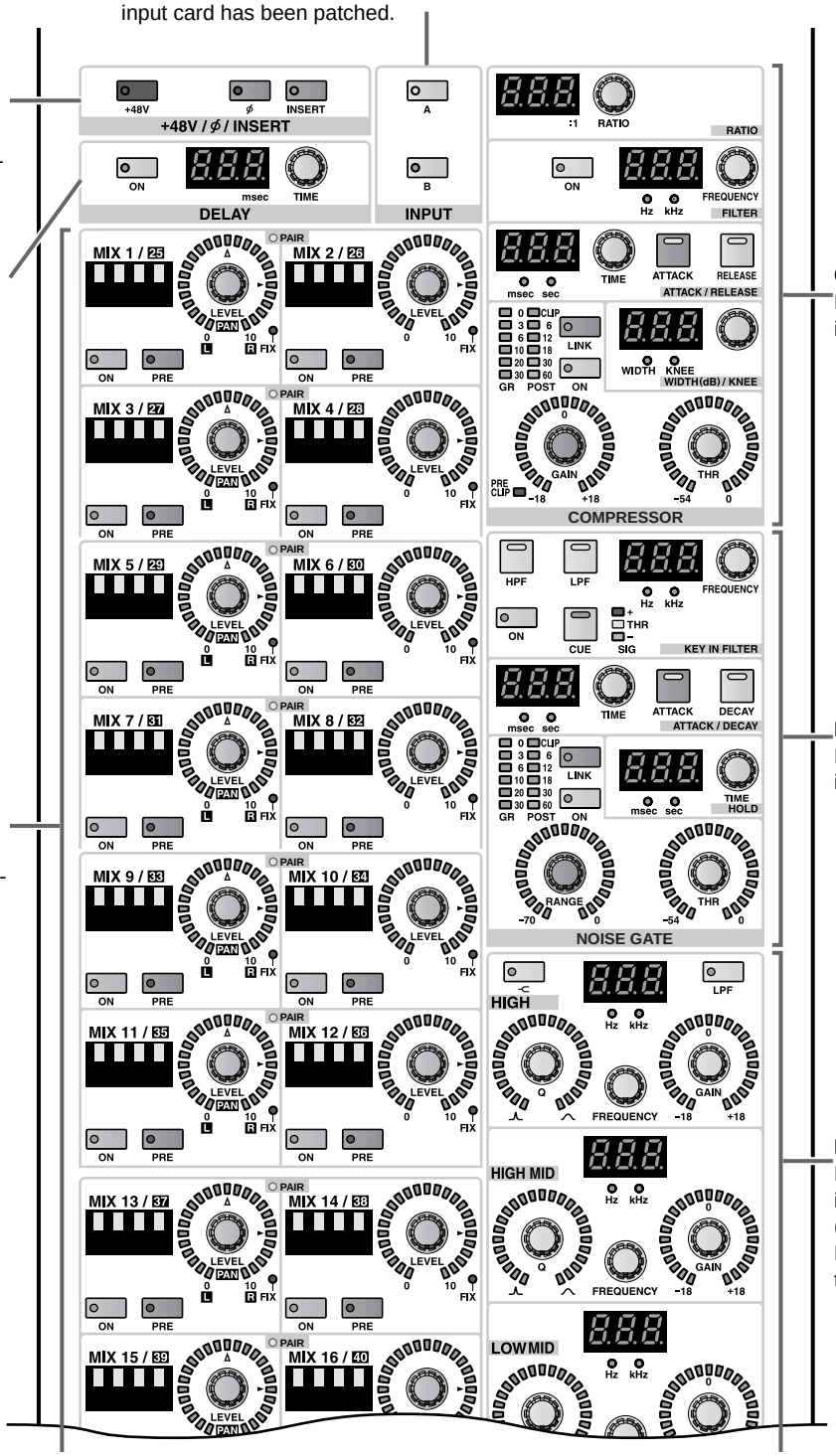
Here we will provide a brief explanation of the controls and functions within the SELECTED INPUT CHANNEL block.

INPUT section
Switch between input jacks A/B for channels to which an LMY2-ML mic/line input card has been patched.

+48/ø/INSERT section
Switch phantom power on/off (valid only for channels that are patched to an LMY2-ML mic/line input card), switch the phase, and turn insertion on/off.

DELAY section
Make settings for the internal delay function.

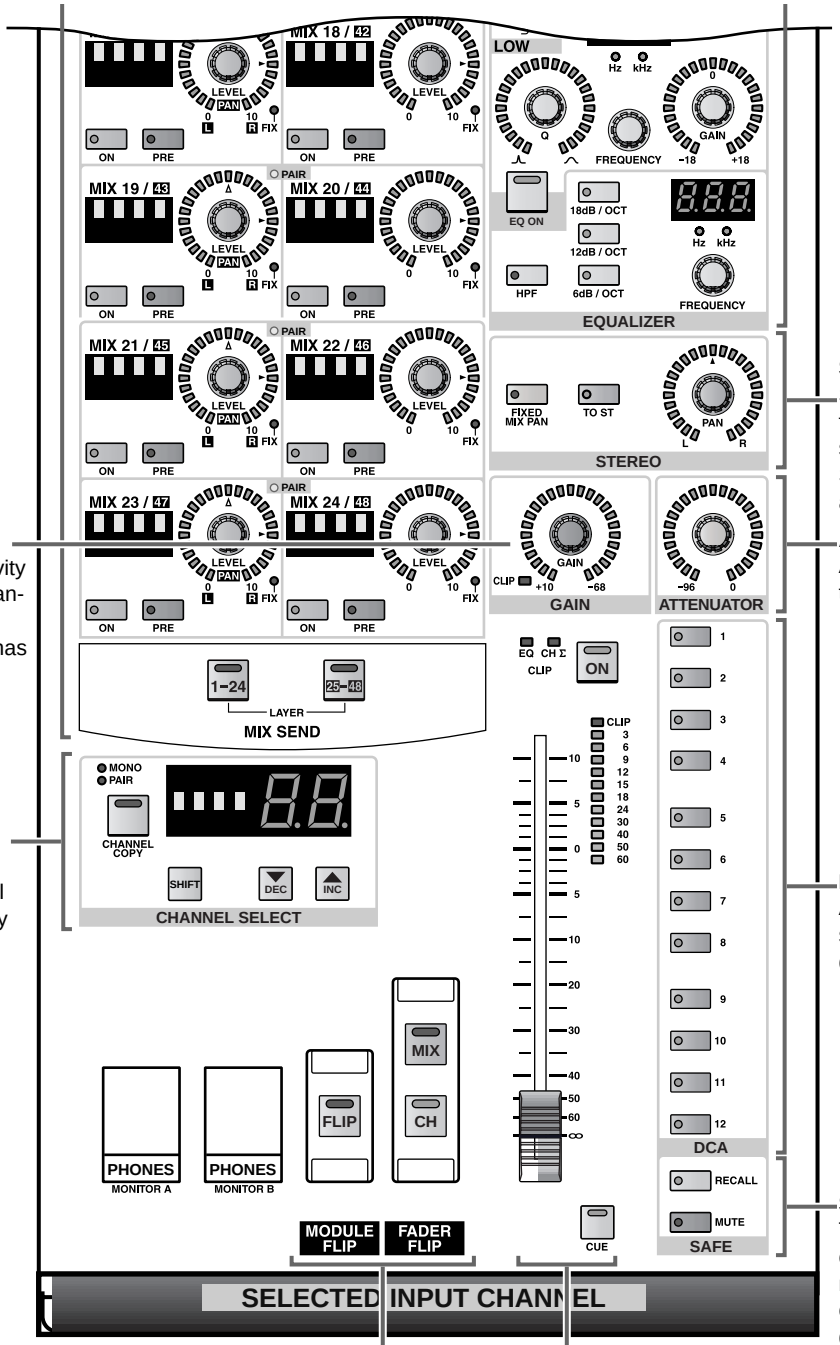
MIX SEND section
Make on/off settings and adjust the send levels for the signals that are sent from the currently selected channel to MIX buses 1–48.



COMPRESSOR section
Make settings for the internal compressor.

NOISE GATE section
Make settings for the internal noise gate.

EQUALIZER section
Make settings for the internal four-band EQ (HIGH, HIGH MID, LOW MID, LOW) and the HPF.



GAIN section
Adjust the input sensitivity of the head amp for channels to which a mic/line input card (LMY2-ML) has been patched.

CHANNEL SELECT section
Select/view the channel that will be controlled by the SELECTED INPUT CHANNEL block.

STEREO section
Switch the signal sent from the currently selected channel to the STEREO bus on/off and adjust its panning.

ATTENUATOR
Attenuate the level of the pre-EQ signal.

DCA section
Assign the currently selected channel to the desired DCA group(s).

SAFE section
Temporarily exclude the currently selected channel from scene recall operations or mute group operations.

GLOBAL CONTROL section
Exchange (flip) faders and modules.

FADER section
Switch the currently selected channel on/off and adjust its input level.

Head amp settings

Here's how to use the SELECTED INPUT CHANNEL block to make head amp settings for an input channel to which a mic/line input card (LMY2-ML) has been patched.

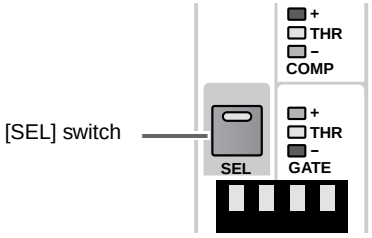
Hint

Even for ST IN channels or input channels that have been paired, head amp settings must be made independently. Select each channel in turn, and make settings for it.

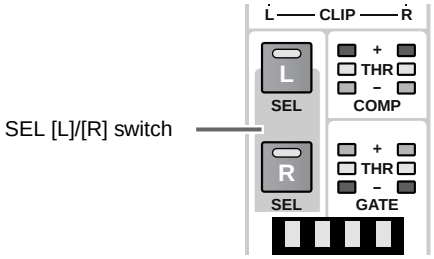
[Procedure]

1. **Use the INPUT block [SEL] switches or the ST IN block [L]/[R] switches to select the input channel that you wish to control.**
   In order to use the SELECTED INPUT CHANNEL block, you must first select the input channel (or ST IN channel L/R) that you wish to control.

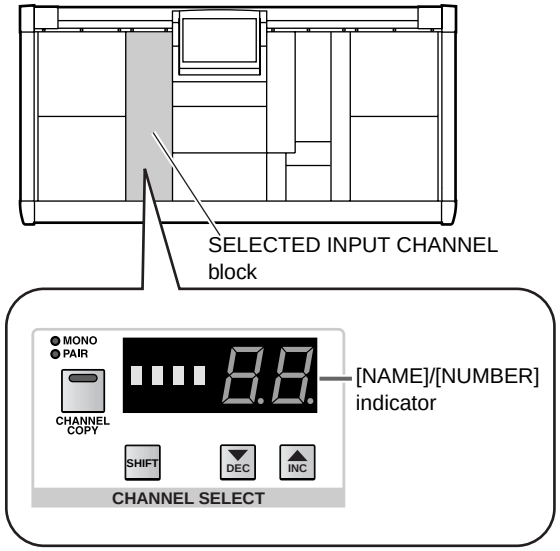
   - **INPUT block**



   - **ST IN block**



   When you select a channel, the LEDs and indicators of the SELECTED INPUT CHANNEL block will show the settings of the various parameters for that channel. The number and short name of that channel will be displayed in the CHANNEL SELECT section by the [NAME]/[NUMBER] indicator.



   ⚠ [NAME] will not be displayed for channels that are not patched to an input unit.

   The number shown by the [NUMBER] indicator corresponds to the channel as follows.

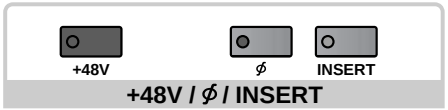
   - **1–96 {1–48}**..... Monaural input channels 1–96 {1–48}
   - **1L, 1R ... 8L, 8R** .. ST IN channels 1–8 {1–4} L or R

   Hint

   You can also use the CHANNEL SELECT [▼/DEC]/[▲/INC] switches of the SELECTED INPUT CHANNEL block to select the channel. For details refer to "CS1D Reference Manual (Hardware)" (→p.34).

2. **In the SELECTED INPUT CHANNEL block, use the +48/ø/INSERT section to switch the phase and phantom power on/off for the selected channel.**
   If the [+48V] switch is on, +48V phantom power will be supplied to the corresponding input jack. If the [ø] switch is on, the phase of the input signal will be reversed.

   - **+48/ø/INSERT section**



   ⚠ [+48V] or [ø] may not be operable, depending on the type of input unit that is patched. The +48V switch located on the front panel of the AI8 input unit functions as the master phantom switch for the entire unit. This means that if the master phantom switch is off, phantom power cannot be used for that unit.

3. **In the SELECTED INPUT CHANNEL block, use the INPUT section to select either input jack A or B of the mic/line input card.**
   The switch LED for the currently selected input jack (A/B) will light.

   ⚠ This may not be operable, depending on the type of input unit that is patched.

4. **While watching the level meter in the fader section of the SELECTED INPUT CHANNEL block, use the GAIN section [GAIN] encoder to adjust the input sensitivity of the channel.**
   The peripheral LEDs of the encoder will indicate the approximate value.

⚠ This may not be operable, depending on the type of input unit that is patched.

⚠ If you wish to link the gain or A/B input jack selection between odd-numbered → even-numbered input channels, use the on-screen GAIN GANG button or A/B LINK button located in the IN HA/INSERT function screen (→p.36).

These operations cannot be performed in the SELECTED INPUT CHANNEL block.

⚠ The PAD will be internally switched on or off when the gain of the LMY4-MLF card (including the AI8-ML8F unit) internal head amp is adjusted between –8 dB and –7 dB. Keep in mind that noise may be generated if there is a difference between the Hot and Cold output impedance of the external device connected to the card when using phantom power.

5. **In the same way, make head amp settings for other input channels as well.**

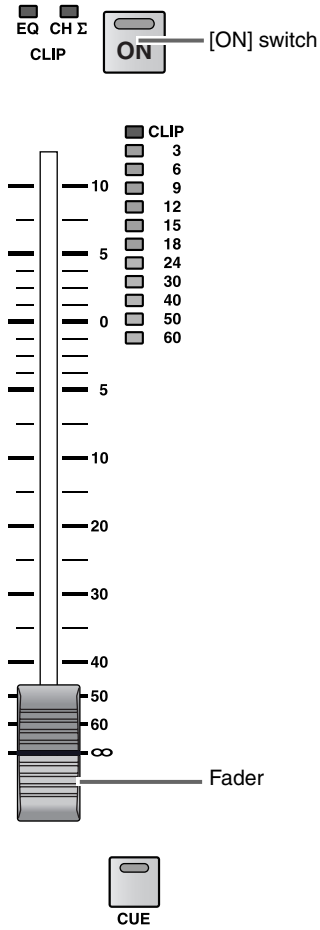
Sending signals from an input channel to the STEREO bus

Here's how to use the SELECTED INPUT CHANNEL block to send the signal of an input channel to the STEREO bus.

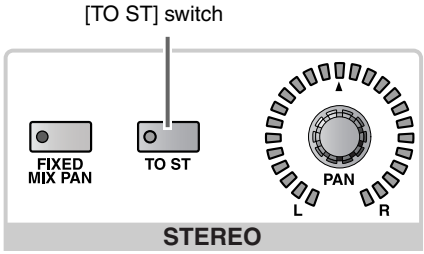
[Procedure]

1. **Use the INPUT block [SEL] switches or the ST IN block [L]/[R] switches to select the input channel that you wish to control.**

2. **Turn on the [ON] switch located in the fader section of the SELECTED INPUT CHANNEL block.**
   - **Fader section**



3. **Turn on the [TO ST] switch located in the STEREO section of the SELECTED INPUT CHANNEL block.**
   - **STEREO section**



⚠ Please be aware that if either the [ON] switch or the [TO ST] switch is turned off, no signal will be sent from that channel to the STEREO bus.

4. **Raise the fader in the SELECTED INPUT CHANNEL block.**
   Now the signal of the input channel will be sent to the STEREO bus.

Hint

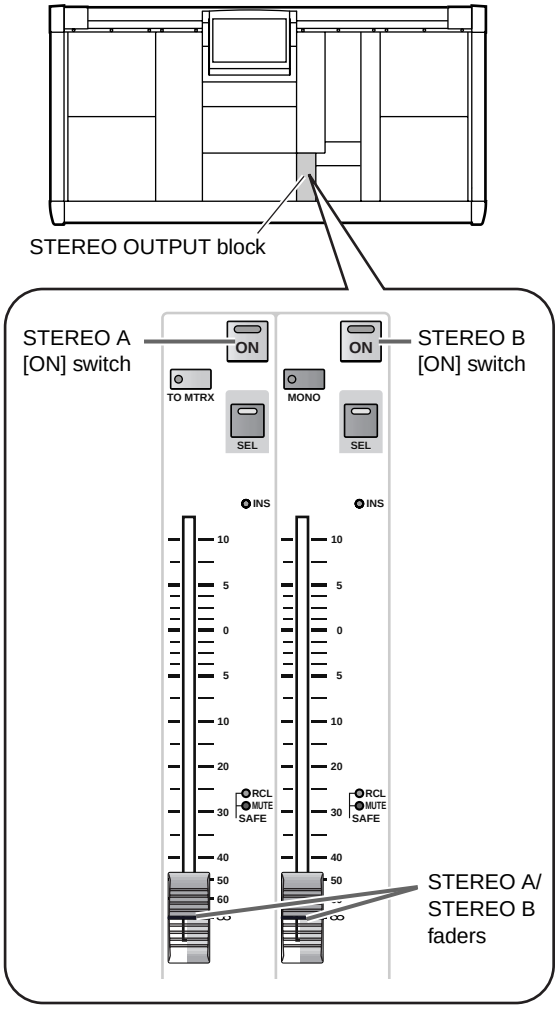
When the PM1D system is in its initial state, the STEREO A/STEREO B section of the meter bridge block will indicate the level of the signal that is sent to the STEREO bus (i.e., the pre-attenuator level of the STEREO A/B channel).

5. **Use the STEREO section [PAN] encoder to adjust the pan of the signal.**
   The peripheral LEDs will indicate the approximate current value. When the LED at the ▲ mark is lit, the signal is panned to the center.

Hint

Even for a ST IN channel or for input channels that are paired, pan settings must be made independently. Select each channel in turn, and make the setting for each.

6. In the STEREO OUTPUT block, turn on the STEREO A [ON] or STEREO B [ON] switch.



7. In the STEREO OUTPUT block, raise the STEREO A or STEREO B fader.
The signal sent from the input channel to the STEREO BUS will be output from the output jack that is patched to the STEREO A or STEREO B channel.

Sending signals from an input channel to a MIX bus

Here's how to use the SELECTED INPUT CHANNEL block to send an input channel signal to a MIX bus.
By using the SELECTED INPUT CHANNEL block, you can simultaneously control the signals that are sent from a specific input channel to multiple MIX buses.

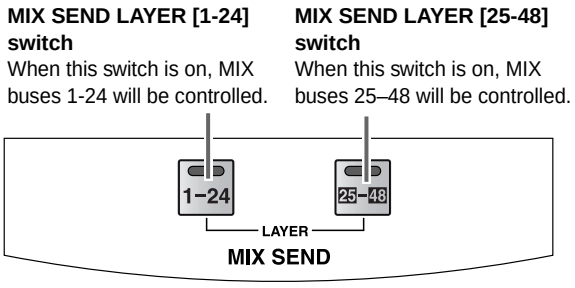
[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the INPUT [PAN/ROUTING] switch several times to access the CH to MIX screen. For each of the MIX buses arranged in odd-numbered → even-numbered pairs, select the type (FIX/VARI) (→p.40).**

   Hint
   If necessary, you can use the CH to MIX screen to pair adjacent odd-numbered → even-numbered MIX buses. In this case, the on/off setting, send level, and PRE/POST selection will be linked for the signals sent from each channel to the paired MIX buses.

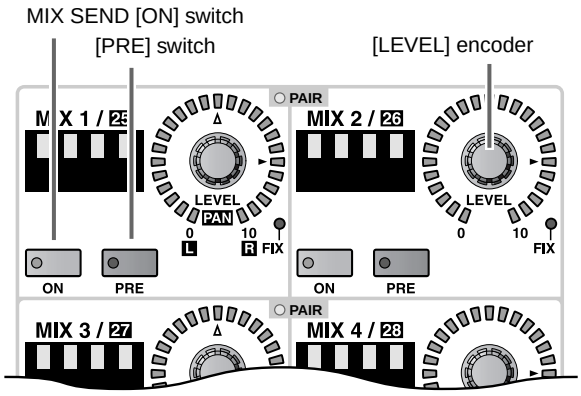
2. **Use the INPUT block [SEL] switch or the ST IN block SEL [L]/[R] switch to select the input channel from which the signal will be sent.**

3. **Use the SELECTED INPUT CHANNEL block MIX SEND LAYER [1-24]/[25-48] switches to select either MIX buses 1–24 or MIX buses 25–48 as the MIX buses that you wish to control.**
   In the SELECTED INPUT CHANNEL block MIX SEND section, use the MIX SEND LAYER [1-24]/[25-48] switches to select the MIX buses that you wish to control.



4. **Use the [ON] switches of the MIX SEND section to turn the signal sent from the currently selected channel to each MIX bus on or off.**

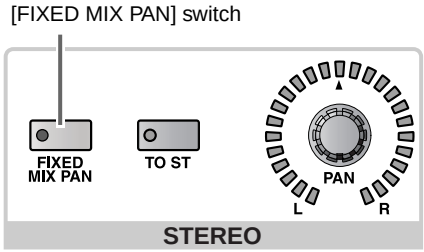
   • **MIX SEND section**



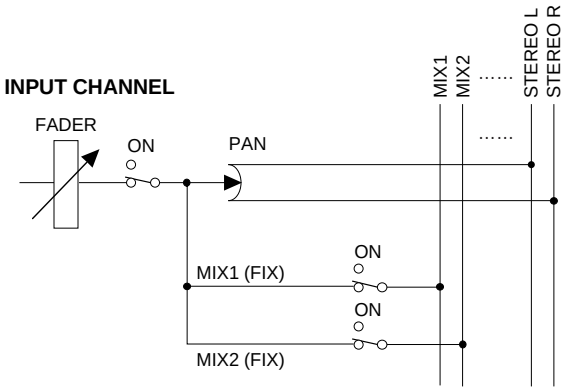
If the send destination MIX bus is a FIX type, this step is sufficient to send a nominal level from the currently selected channel.

Hint
If you turn on the [FIXED MIX PAN] switch located in the STEREO section of the SELECTED INPUT CHANNEL block, the signal from after the [PAN] encoder of that channel will be sent to the FIX type MIX bus. This method is convenient when you want the pan setting of the [PAN] encoder to be reflected in the MIX bus as well.

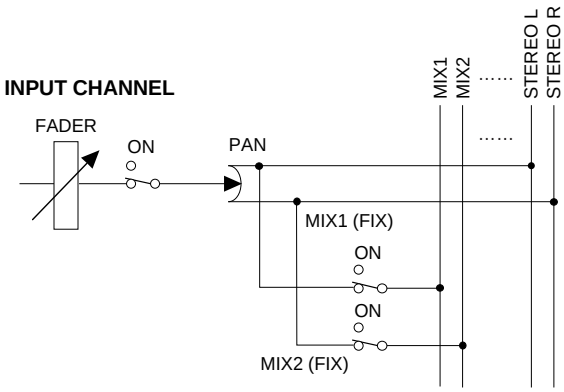
• **STEREO section**



• **Signal flow when the [FIXED MIX PAN] switch is off**



• **Signal flow when the [FIXED MIX PAN] switch is on**



5. **Use the MIX SEND section [PRE] switches to select the location (PRE/POST) from which the signal will be sent to VARI type MIX buses.**
   If the PM1D system is in its initial state, the pre-fader signal will be sent to MIX buses whose MIX SEND [PRE] switch LED is lit, and the post-fader signal will be sent to MIX buses for which this switch LED is dark.

   Hint

   It is also possible to send the pre-EQ signal when the [PRE] switch LED is lit. However, this setting cannot be made in the SELECTED INPUT CHANNEL block. Make this setting in the PAN/ROUTING function CH to MIX screen (→p.41).

   If the send destination MIX buses have been paired, the MIX SEND [ON] switches and MIX SEND [PRE] switches will be linked for adjacent odd-numbered → even-numbered MIX buses.

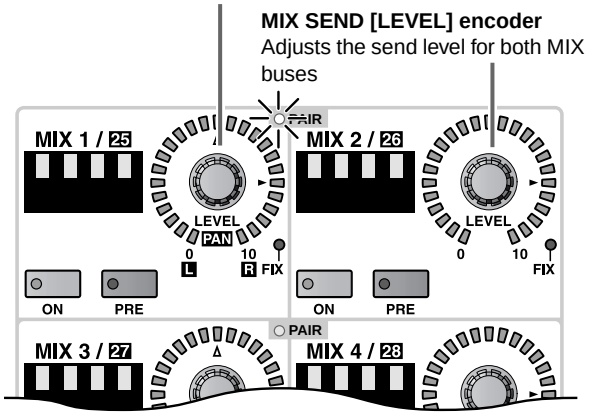
6. **Use the [LEVEL] encoders of the MIX SEND section to set the send level of the signals that are sent to VARI type MIX buses.**
   Use the MIX SEND [LEVEL] encoders to set the level of the signals that are sent from the currently selected channel to VARI type MIX buses. The range is – ∞ dB – +10 dB, and the perimeter LEDs of the encoder will indicate the approximate current value. When the LED at the ► symbol is lit, the signal is at nominal level (0 dB).

   ⚠

   - If a FIX type MIX bus is selected, the MIX SEND [LEVEL] encoder will have no effect, and only the nominal level LED will be lit.
   - If FIX type MIX buses are paired, adjacent [ON] switches at the left and right of each other in the MIX SEND section will be linked.
   - If VARI type MIX buses are paired, adjacent [ON] switches and [PRE] switches at the left and right of each other in the MIX SEND section will be linked. Also, the left (odd-numbered) MIX SEND [LEVEL] encoder will function as a MIX SEND [PAN] encoder to adjust the pan of the signal sent to the two MIX buses, and the right (even-numbered) MIX SEND [LEVEL] encoder will function as the MIX SEND [LEVEL] encoder for both MIX buses.

MIX SEND [PAN] encoder
Adjusts the pan of the signal sent to the two MIX buses

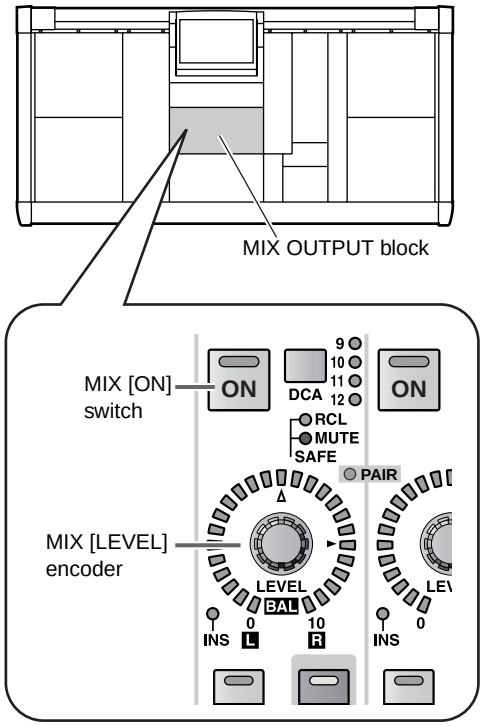
MIX SEND [LEVEL] encoder
Adjusts the send level for both MIX buses



Hint

When the PM1D is in its initial state, the MIX OUT 1–24 and MIX OUT 25–48 sections of the meter bridge block will show the levels of the signals sent to each MIX bus (i.e., the pre-attenuator level of the MIX channel).

7. **In the MIX OUTPUT block, turn on the MIX [ON] switch for the appropriate MIX channel.**



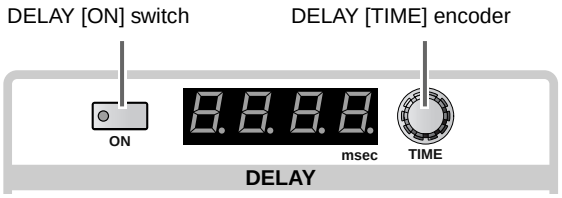
8. **In the MIX OUTPUT block, raise the MIX [LEVEL] encoder for the appropriate MIX channel.**
   The signal that is sent from the input channel to the MIX bus will be output from the output jack that is patched to the corresponding MIX channel.

Using the delay

By using the DELAY section of the SELECTED INPUT CHANNEL block, you can delay the input signal of an input channel by a specified interval. For example, this is useful when you wish to compensate for time differences between mic placed at a distance from each other.

[Procedure]

1. **Use the INPUT block [SEL] switches or the ST IN block [L]/[R] switches to select the input channel that you wish to control.**
2. **In the DELAY section of the SELECTED INPUT CHANNEL block, turn on the DELAY [ON] switch.**



The switch LED will light, and the delay function will be active for that channel.

3. **Use the DELAY [TIME] encoder to set the delay time.**
The delay time can be set in a range of 0–250 msec.

Hint

Even for a ST IN channel or for paired input channels, delay settings must be set individually. Select each channel in turn, and make separate settings for each channel.

Using the compressor

By using the COMPRESSOR section of the SELECTED INPUT CHANNEL block, you can manually operate nearly all of the compressor parameters.

Hint

The compressors provided by the PM1D system allow you to choose from three types: COMP (compressor), EXPANDER, and COMPANDER. However, the choice of type cannot be made from the top panel. For this reason, you must first load compressor data that uses the desired type from the library, and then use the SELECTED INPUT CHANNEL block to adjust the parameters as necessary.

The COMPRESSOR section contains the following controls and functions.

COMPRESSOR [RATIO] encoder and [VALUE] indicator
The [RATIO] encoder located at the right sets the ratio of the compressor. The current value is shown by the [VALUE] indicator at left.

COMPRESSOR FILTER [ON] switch and LED

COMPRESSOR ATTACK/RELEASE [TIME] encoder and [VALUE] indicator
This sets the attack time/release time of the compressor. Use the switch located at the right to select either ATTACK or RELEASE, and use the [TIME] encoder to adjust the value. The current value is shown by the [VALUE] indicator.

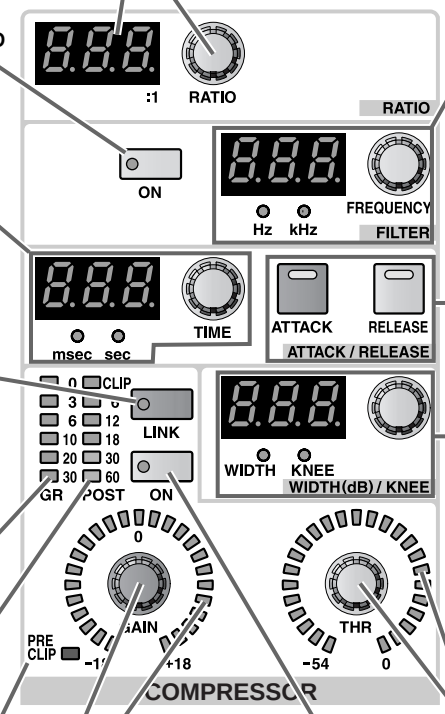
COMPRESSOR [LINK] switch and LED
This specifies whether compressor operation for pairable input channels will be linked by the key-in signal (link=on) or whether the compressors will operate independently (link=off). (The LED will light if link is on.) For details refer to "CS1D Reference Manual (Hardware)" →p.26.

COMPRESSOR [GR] meter LEDs
These LEDs indicate the amount of gain reduction produced by the internal compressor.

COMPRESSOR [POST] meter LEDs
These LEDs indicate the level of the signal after being processed by the compressor.

COMPRESSOR [PRE CLIP] LED
This LED will light when the signal clips before entering the compressor.

COMPRESSOR [GAIN] encoder and LED
This encoder sets the GAIN parameter of the internal compressor. The approximate current value is shown by the perimeter LEDs.



COMPRESSOR FILTER [FREQUENCY] encoder and [VALUE] indicator
Use the [ON] switch located at the left to switch on/off the HPF or LPF placed before the internal compressor, and use the [FREQUENCY] encoder at the right to set its cutoff frequency. The current value is shown by the [VALUE] indicator.

Hint The HPF and LPF cannot be used simultaneously. The selection of either HPF or LPF is made in the display (IN GATE/COMP function COMP PRM screen).

COMPRESSOR [ATTACK]/[RELEASE] switches and LEDs

COMPRESSOR [WIDTH (dB)/KNEE] encoder and [VALUE] indicator

If the compressor type is COMP or EXPANDER
Use the [WIDTH (dB)/KNEE] encoder to set the KNEE parameter of the COMP or EXPANDER. (The [KNEE] LED will light.)

If the compressor type is COMPANDER
Use the [TIME] encoder to set the WIDTH parameter of the COMPANDER.

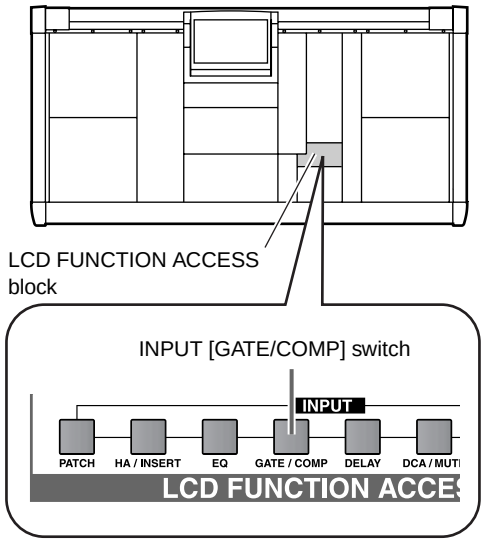
COMPRESSOR [ON] switch and LED
This switches the internal compressor on/off.

COMPRESSOR [THR] encoder and LEDs
This sets the THRESHOLD LEVEL parameter of the internal compressor. The approximate current value is shown by the perimeter LEDs.

[Procedure]

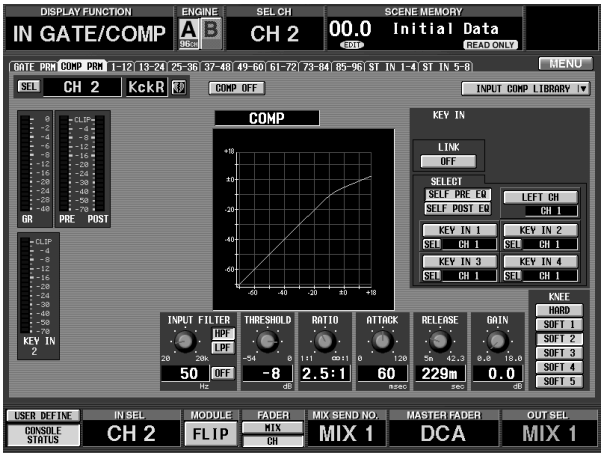
1. **Use the INPUT block [SEL] switches or the ST IN block [L]/[R] switches to select the input channel that you wish to control.**

2. **In the LCD FUNCTION ACCESS block, press the INPUT [GATE/COMP] switch several times to access the following COMP PRM screen.**



In the COMP PRM screen you can make compressor settings for the currently selected input channel.

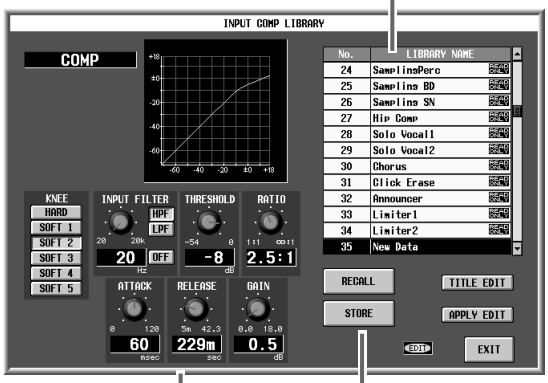
- **COMP PRM screen**



3. **In the upper right of the screen, click the INPUT COMP LIBRARY button.**
The following INPUT COMP LIBRARY popup window will appear. In this window you can store input channel compressor settings (input compressor data) in the library, or recall (load) existing data from the library.

- **INPUT COMP LIBRARY popup window**

Library list
This list shows the input compressor data that has been stored in memory. The highlighted row is currently selected for operations.



Edit section
This shows the settings of the input compressor data currently selected in the library list.

These buttons are used for Store or Recall operations.

4. **From the library list, select data that uses the desired type.**
When you click a row in the library list, that row will be highlighted, and the compressor type used in that data and the parameter settings will be displayed in the edit section.

Hint

Rows numbered 01-34 are displayed as "READ ONLY," and contain read-only preset data. Initially, it is a good idea to recall preset data that is close to the settings you wish, and then modify the parameters as necessary.

5. **Click the RECALL button located in the lower left of the library list.**
The data you selected in step 4 will be recalled into the input channel you selected in step 1.

You will exit the INPUT COMP LIBRARY popup window and return to the previous COMP PRM screen.

Hint

If a ST IN channel or either input channel of a pair is selected, the same data will be loaded into both channels.

In the COMP PRM screen, you can also select the key-in signal (the reference signal that operates the compressor), and select either LPF or HPF as the filter that processes the input signal of the compressor. For details refer to "CS1D Reference Manual (Software)" (→p.142).

6. **In the COMPRESSOR section of the SELECTED INPUT CHANNEL block, turn on the COMPRESSOR [ON] switch.**
   The compressor will be turned on for the corresponding channel.

7. **Use the knobs and encoders in the COMPRESSOR section to adjust parameters such as ATTACK, RELEASE, THRESHOLD LEVEL, and GAIN.**

   Hint

   For details on the parameters of each type, refer to "CS1D Reference Manual (Appendices)" (→p.11).

   You can also make settings so that the relevant screen appears when you operate the COMPRESSOR section. This setting is made in the UTILITY function PREFERENCE screen ("CS1D Reference Manual (Software)" →p.37).

Using the noise gate

As with the compressor, most parameters of the built-in noise gate of the PM1D system can be controlled manually by using the NOISE GATE section of the SELECTED INPUT CHANNEL block.

Hint

The noise gate of the PM1D system allows you to select one of two types: GATE or DUCKING. However, the type cannot be selected by operations in the front panel. For this reason, you must first load noise gate data that uses the desired type from the library, and then use the SELECTED INPUT CHANNEL block to edit the parameters as necessary.

The NOISE GATE section contains the following controls and functions.

NOISE GATE KEY IN FILTER [ON] switch and LED
This controls the filter (HPF or LPF) that is provided for the key-in signal of the noise gate. Use the [HPF]/[LPF] switches located at the upper left to select the type of filter that you wish to control. Then use the [ON] switch located at the lower left to turn it on/off, and use the [KEY IN FILTER] encoder at the upper right to adjust the cutoff frequency. The HPF and LPF can be used simultaneously.

Hint The HPF and LPF apply only to the key-in signal that is sent to the noise gate. They do not affect the signal that is sent to the STEREO bus or the MIX bus.

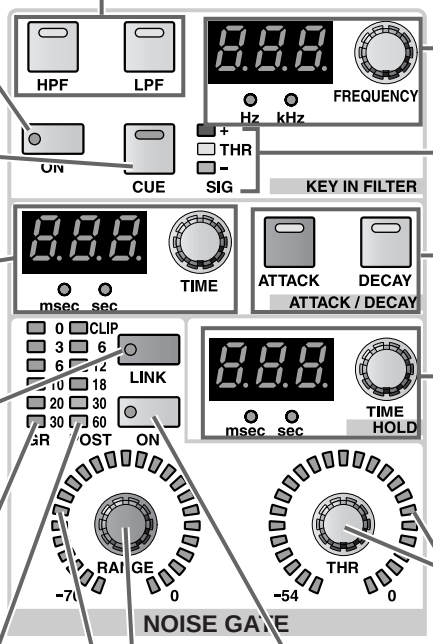
NOISE GATE KEY IN [CUE] switch and LED
This monitors the key-in signal after it has passed through the filter.

NOISE GATE ATTACK/DECAY [TIME] encoder and [VALUE] indicator
This sets the attack time/release time of the noise gate. Use the switch located at the right to select either ATTACK or RELEASE, and use the [TIME] encoder to adjust the value. The current value is shown by the [VALUE] indicator.

NOISE GATE [LINK] switch and LED
For pairable input channels, this specifies whether noise gate operation will be linked by the key-in signal (link=on) or whether the noise gates will operate with independent key-in signals (link=off). (The LED will light if link is on.) For details refer to "CS1D Reference Manual (Hardware)".

NOISE GATE [GR] meter LEDs
These LEDs indicate the amount of gain reduction produced by the internal noise gate.

NOISE GATE [POST] meter LEDs
These LEDs indicate the level of the signal after it has passed through the noise gate.



NOISE GATE KEY IN FILTER [HPF]/[LPF] switch

NOISE GATE [FREQUENCY] encoder and [VALUE] indicator

NOISE GATE SIG [+]/[THR]/[–] LEDs
These indicate the level of the noise gate key-in signal (after passing through the filters). For details on the meaning of each LED, refer to "CS1D Reference Manual (Hardware)".

NOISE GATE [ATTACK]/[DECAY] switches and LEDs

NOISE GATE HOLD [TIME] encoder and LEDs
This sets the HOLD TIME parameter of the internal noise gate. The current value is shown by the [VALUE] indicator.

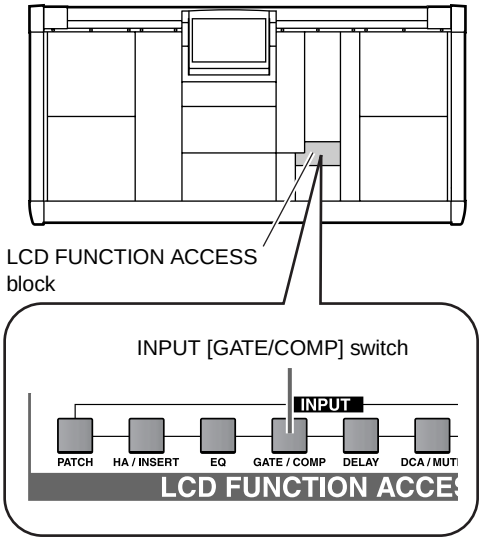
NOISE GATE [THR] encoder and LEDs
This sets the THRESHOLD LEVEL parameter of the internal noise gate. The approximate current value is shown by the perimeter LEDs.

NOISE GATE [ON] switch and LED
This switches the internal noise gate on/off.

NOISE GATE [RANGE] encoder and LEDs
This sets the RANGE parameter of the internal noise gate. The approximate current value is shown by the perimeter LEDs.

[Procedure]

1. **Use the INPUT block [SEL] switches or the ST IN block [L]/[R] switches to select the input channel that you wish to control.**
2. **In the LCD FUNCTION ACCESS block, press the INPUT [GATE/COMP] switch several times to access the following GATE PRM screen.**



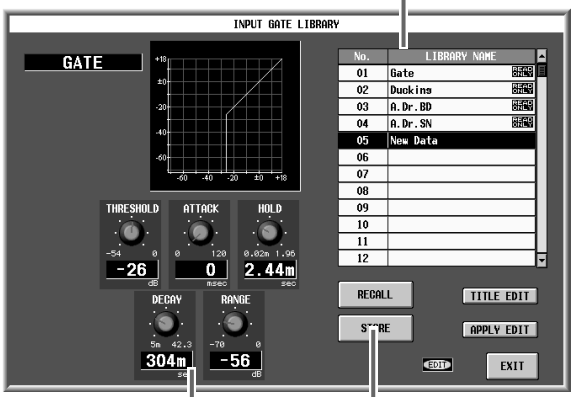
In the GATE PRM screen you can make noise gate settings for the currently selected input channel.

- **GATE PRM screen**

3. **Click the INPUT GATE LIBRARY button located in the upper right of the screen.**
   The following INPUT GATE LIBRARY popup window will appear. In this window you can store input channel noise gate settings (input noise gate data) in the library, or recall existing data from the library.

- **INPUT GATE LIBRARY popup window**

Library list
This shows a list of the input noise gate data that has been stored in memory. The highlighted row is currently selected for operations. Rows numbered 01-04 are displayed as "READ ONLY," and contain read-only preset data.



Edit section
This shows the settings of the input noise gate data currently selected in the library list.

These buttons are used for Store or Recall operations.

4. **From the library list, select data that uses the desired type.**
   When you click a row in the library list, that row will be highlighted, and the noise gate type used in that data and the parameter settings will be displayed in the edit section.
5. **Click the RECALL button located in the lower left of the library list.**
   The data you selected in step 4 will be recalled into the input channel you selected in step 1.

   You will exit the INPUT GATE LIBRARY popup window and return to the previous GATE PRM screen.

Hint

If a ST IN channel or either input channel of a pair is selected, the same data will be loaded into both channels.

In the GATE PRM screen you can also select the key-in signal (the reference signal that operates the noise gate).

6. **In the NOISE GATE section of the SELECTED INPUT CHANNEL block, turn on the NOISE GATE [ON] switch.**
   The noise gate will be turned on for the corresponding channel.
7. **Use the knobs and encoders in the NOISE GATE section to adjust parameters such as ATTACK, RELEASE, THRESHOLD LEVEL, and GAIN.**

Hint

For details on the parameters of each type, refer to "CS1D Reference Manual (Appendices)" (→p.16).

You can also make settings so that the relevant screen appears when you operate the NOISE GATE section. This setting is made in the UTILITY function PREFERENCE screen ("CS1D Reference Manual (Software)" →p.37).

Using the 4 band EQ/HPF

Here's how to use the EQUALIZER section of the SELECTED INPUT CHANNEL block to control the 4 band EQ and the HPF.

EQ [⊂] switch and LED (HIGH/LOW bands only)
This switches the type of the HIGH/LOW band EQ between peaking and shelving. If this switch is on, the HIGH band [Q] encoder will have no effect.

EQ [LPF] switch and LED (HIGH band only)
This switches the HIGH band EQ type to LPF. If this switch is on, the HIHG band [Q]/[GAIN] encoders will have no effect.

EQ [FREQUENCY] encoder and [VALUE] indicator
This sets the center frequency of each band. The adjustable range for each band is 20 Hz – 20 kHz, and the current value is shown by the [VALUE] indicator.

EQ [Q] encoder and LEDs
This sets the Q (steepness) of each band. The approximate current value is shown by the perimeter LEDs.

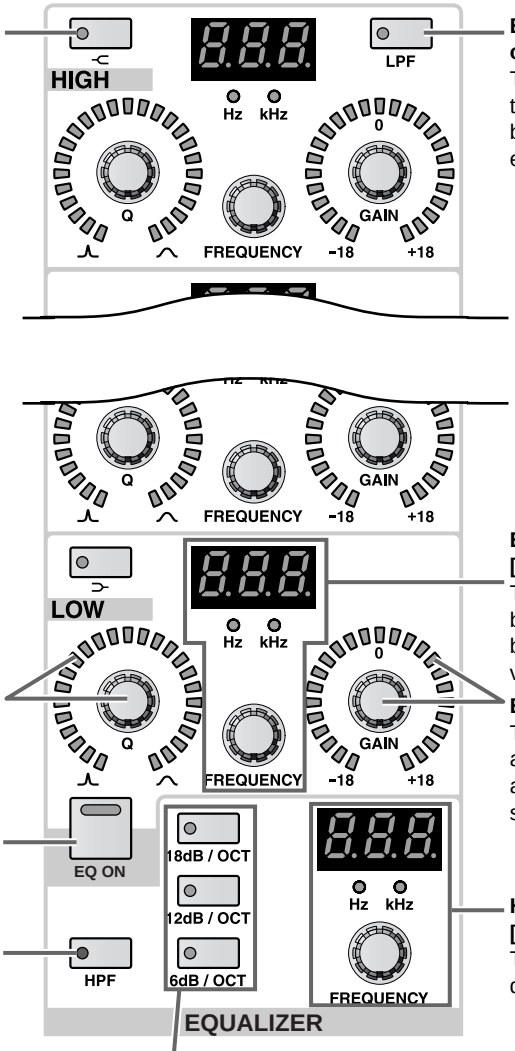
EQ [GAIN] encoder and LEDs
This sets the gain of each band. The adjustable range is –18 dB – +18 dB, and the approximate current value is shown by the perimeter LEDs.

[EQ ON] switch
This turns the entire EQ on/off.

[HPF] switch and LED

HPF [FREQUENCY] encoder and [VALUE] indicator
This controls the HPF, which is independent of the 4 band EQ.

HPF [6 dB/OCT]/[12 dB/OCT]/[18 dB/OCT] switches and LEDs

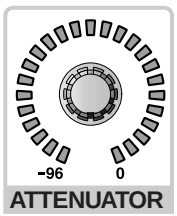


[Procedure]

1. **Use the INPUT block [SEL] switches or the ST IN block [L]/[R] switches to select the input channel that you wish to control.**
2. **In the EQUALIZER section of the SELECTED INPUT CHANNEL block, turn on the [EQ ON] switch.**
   The 4 band EQ of the corresponding channel will be turned on.
3. **For each band, use the [Q] encoder, [F] encoder, and [GAIN] encoder to set the steepness, center frequency, and gain respectively.**

   Hint
   If boosting by the EQ causes the input signal to clip, lower the [ATTENUATOR] encoder of the SELECTED INPUT CHANNEL block. This encoder adjusts the pre-EQ level of the signal.

   - **[ATTENUATOR] encoder (SELECTED INPUT CHANNEL block)**



4. **If you wish to use the HIGH band or LOW band as shelving type EQ, turn on the [⊂] switch for the appropriate band.**
5. **If you wish to use the HIGH band as a LPF, turn on the [LPF] switch of the HIGH band.**
6. **If you wish to use the HPF, turn on the [HPF] switch.**
   The EQUALIZER section in the SELECTED INPUT CHANNEL block contains an HPF that is independent of the EQ.

   Turn on the [HPF] switch, and use the HPF [6dB/OCT]/[12dB/OCT]/[18dB/OCT] switches and the HPF [F] encoder to adjust the slope and cutoff frequency of the HPF.

   Hint
   You can also make settings so that the relevant screen appears when you operate the EQUALIZER section. This setting is made in the UTILITY function PREFERENCE screen (“CS1D Reference Manual (Software)” →p.37).

   As with the compressor and noise gate, EQ settings can also be stored in or recalled from a dedicated EQ library.

Chapter 5. Basic operation for output channels

This chapter explains basic operation for MIX channels, MATRIX channels, and STEREO A/B channels.

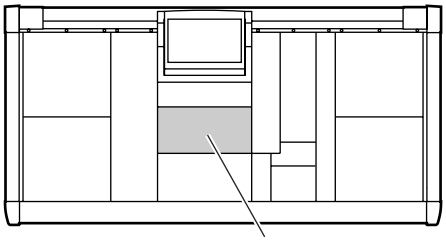
About the output channels

Blocks used to control the output channels

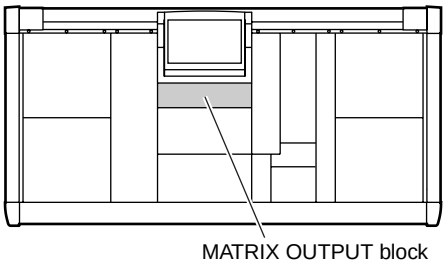
The PM1D system provides MIX channels 1–48, MATRIX channels 1–24, and the STEREO A/B channels as output channels for MIX buses 1–48, MATRIX buses 1–24, and the STEREO bus. The signals sent to these output channels is routed through the internal six-band EQ and compressor, and is sent from the output jack that is patched by the OUT PATCH function.

The following blocks of the CS1D console are used to control output channels.

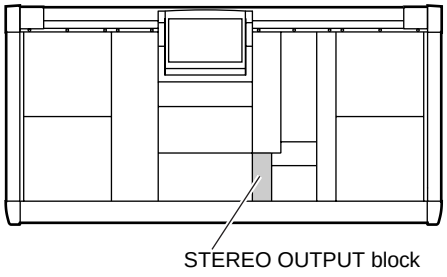
- **MIX OUTPUT block**
  This block specifies the level and on/off setting of the signals that are sent from the input channels and ST IN channels to MIX buses 1–48, and sends them to the output units patched to MIX channels, to the STEREO bus, and to the MATRIX buses.



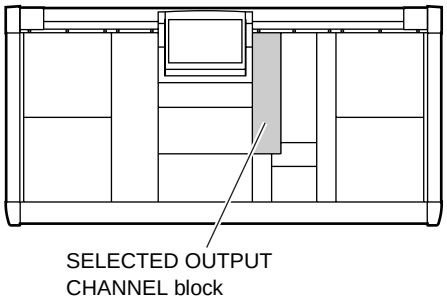
- **MATRIX OUTPUT block**
  This block specifies the level and on/off setting of the signals that are sent from MIX channels 1–48, the STEREO A channel, and the SUB IN channels to MATRIX buses 1–24, and outputs them from the output units that are patched to the channels.



- **STEREO OUTPUT block**
  This block mixes the signals that are sent from the input channels/output channels to the STEREO bus, and outputs them from the output units that are patched to the STEREO A/B channels.



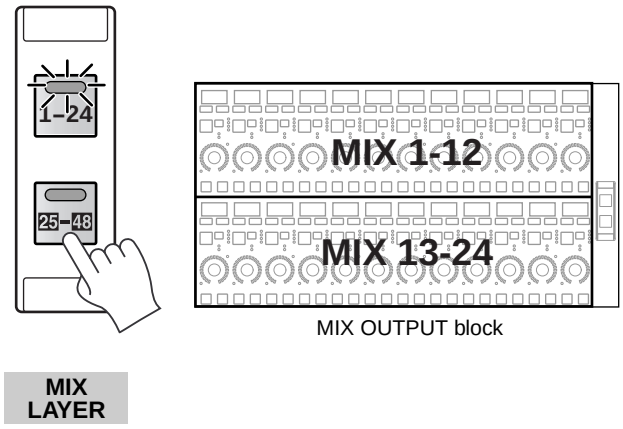
- **SELECTED OUTPUT CHANNEL block**
  This block selects the desired MIX channel, MATRIX channel, or STEREO A/B channel L or R, and specifies its on/off setting, EQ/compressor settings, and output level.

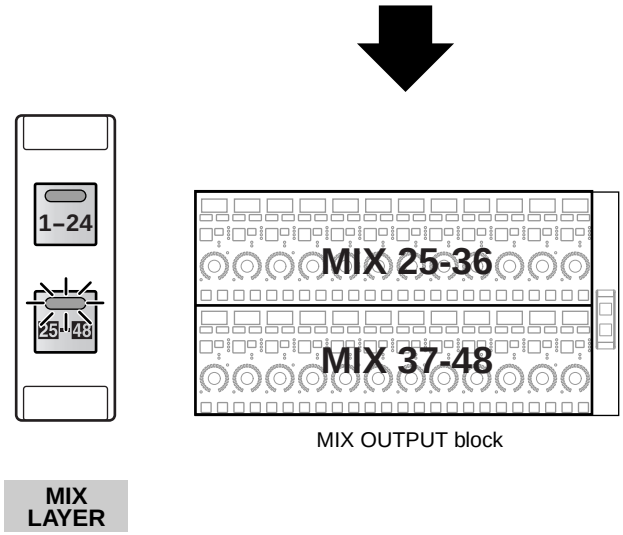


Switching the channel assignments

When the PM1D system is in its initial state, MIX channels 1–24 are assigned to the MIX OUTPUT block. However, this assignment can be changed as follows by the MIX LAYER [1-24]/[25-48] switches of the MIX OUTPUT block.

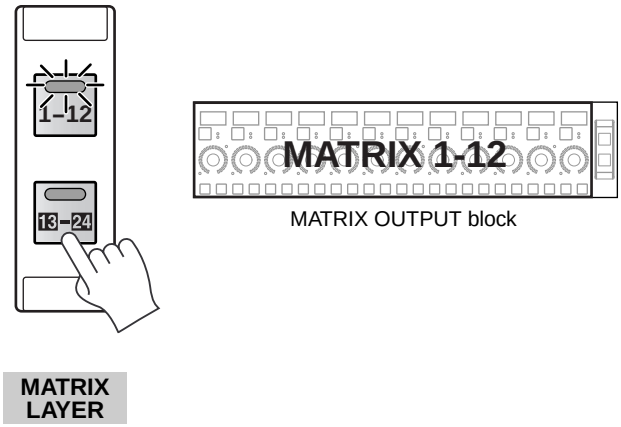
- **Using the MIX LAYER [1-24]/[25-48] switches to change the channel assignments**

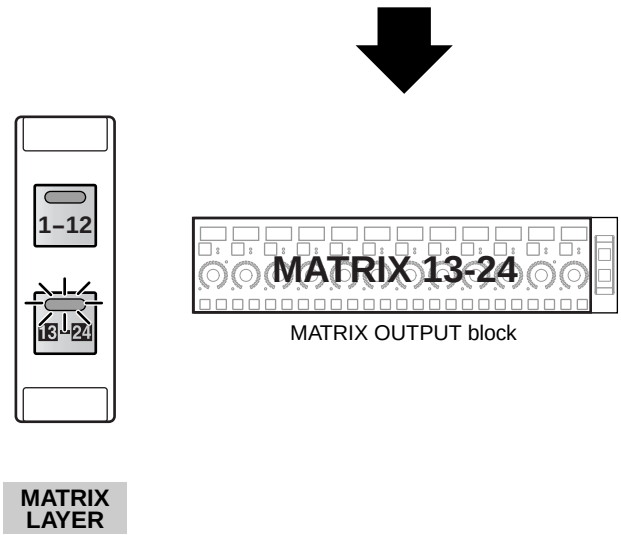




Similarly, MATRIX channels 1–12 are assigned to the MATRIX block when the PM1D system is in its initial state, but this assignment can be changed as follows by the MATRIX LAYER [1-12]/]13-24] switches of the MATRIX OUTPUT block.

- **Using the MATRIX LAYER [1-12]/[13-24] switches to change the channel assignments**



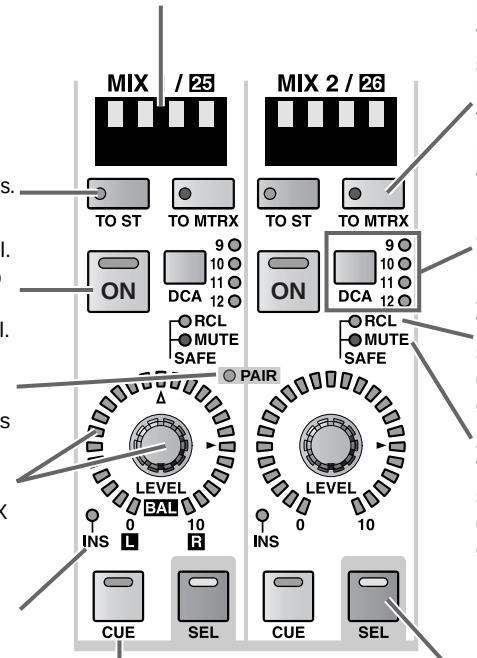


⚠ If operating the MIX OUTPUT block/MATRIX OUTPUT block does not produce the result you expect, check that the above switches are set appropriately.

Basic operation of the MIX OUTPUT block

This section explains basic operation of the MIX OUTPUT block.

Controls and functions of the MIX OUTPUT block



MIX [NAME] indicator
This shows the short name of the MIX channel.

MIX [TO ST] switch and LED
This is an on/off switch for the signal that is sent from the MIX channel to the STEREO bus.

MIX [ON] switch and LED
This is an on/off switch for the MIX channel. If this switch is off, no signal will be sent to the channel of the output unit that is patched to the corresponding MIX channel.

MIX [PAIR] LED
This LED will light if the two adjacent odd-numbered → even-numbered MIX channels have been paired.

MIX [LEVEL/BAL] encoder and LEDs
These encoders set the output level of MIX channels 1–48.

[INS] LED
This LED will light if insertion is on for the MIX channel.

MIX [TO MTRX] switch and LED
This is an on/off switch for the signal that is sent from the MIX channel to the MATRIX buses. If this switch is off, no signal will be sent from that MIX channel to any MATRIX bus.

MIX [DCA] switch and LEDs
This switch assigns each MIX channel to DCA faders 9–12. When a MIX channel is assigned to a DCA fader, the corresponding LED will light.

SAFE [RCL] LED
This LED will light for MIX channels that are set to Recall Safe (a condition in which the channel is independent of scene recall operations).

SAFE [MUTE] LED
This LED will light for MIX channels that are set to Mute Safe (a condition in which the channel is independent of mute group operations).

MIX [SEL] switch and LED
This switch selects the MIX channel that your operations will affect. The MIX [SEL] LED of the currently selected MIX channel will light.

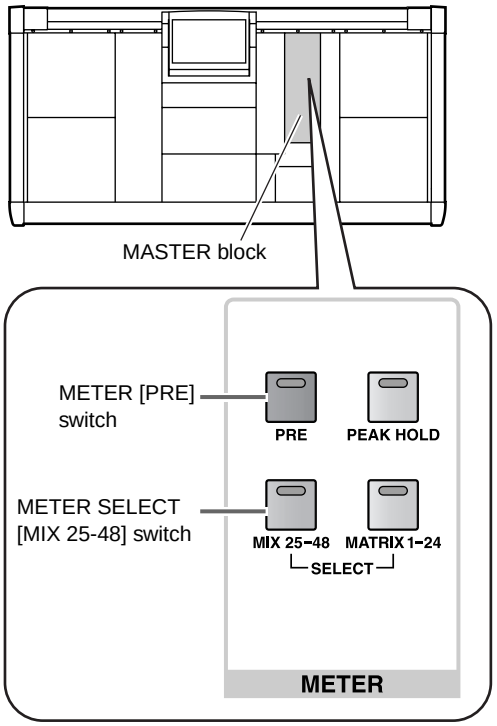
MIX [CUE] switch and LED
This switch monitors the currently selected MIX channel.

Sending a signal from a MIX channel to an output unit

Here's how the signal sent from an input channel to the MIX bus can be output from the output unit patched to the corresponding MIX channel.

[Procedure]

1. **Make sure that an appropriate signal is being sent from the input channel to the MIX bus. Also make sure that a valid output unit is patched to the corresponding MIX channel.**
2. **In the MIX OUTPUT block, turn on the MIX [ON] switch for the MIX channel of the output unit to which the signal will be sent.**
3. **In the MIX OUTPUT block, raise the MIX [LEVEL] encoder.**
   The signal of the corresponding MIX channel will be output from the output unit that is patched to that channel.
4. **In order to use the meter bridge to check the (post-fader) level of the signal sent from the MIX bus to the output unit, go to the METER section in the MASTER block of the console, turn on the METER SELECT [MIX 25-48] switch, and turn off the METER [PRE] switch.**
   With these settings, the 48 meters in the left and right sides of the meter bridge will show the post-fader levels of the MIX channels.



Hint

The detection point (metering point) shown in the meters can be specified in greater detail. For details refer to the section "Setting the metering point" in "Chapter 16. Various settings."

Sending a signal from a MIX channel to a MATRIX bus

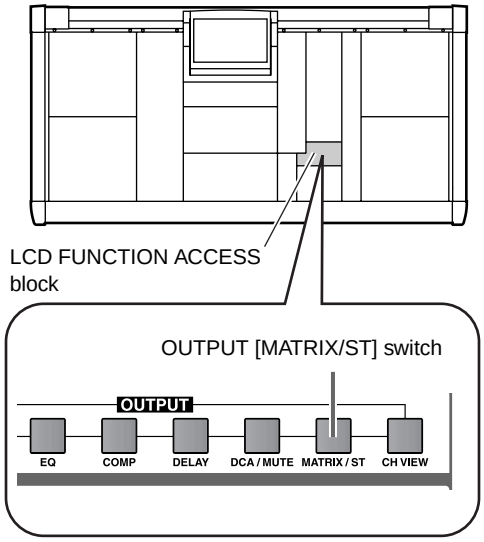
Here's how the signal sent from an input channel to a MIX bus can be output to a MATRIX bus.

[Procedure]

1. **Make sure that an appropriate signal is being sent from an input channel to a MIX bus.**
2. **In the MIX OUTPUT block, turn on the MIX [TO MTRX] switch of the MIX channel whose signal you wish to send to the MATRIX bus.**

⚠ If this switch is off, no signal will be sent from that channel to the MATRIX bus.

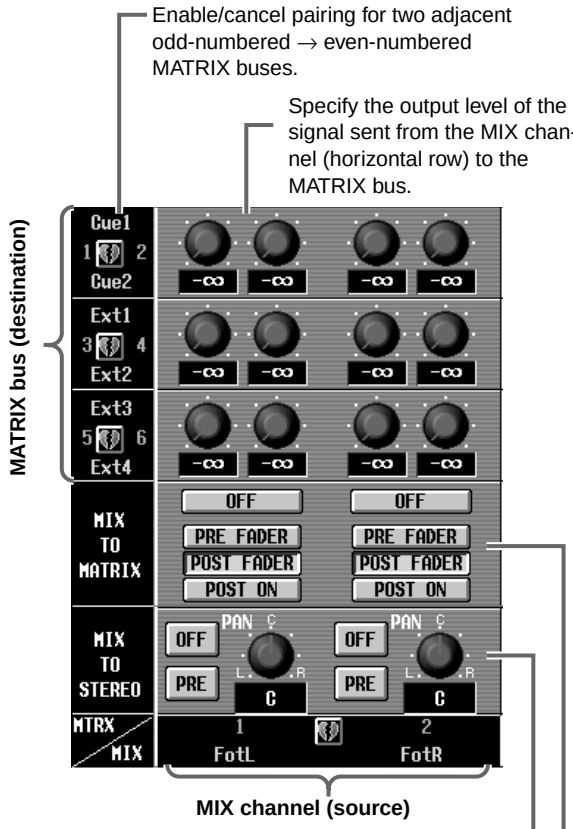
3. **In the LCD FUNCTION ACCESS block, press the OUTPUT [MATRIX/ST] switch several times to access the following MATRIX/ST ROUTING screen.**



- **MATRIX/ST ROUTING screen (MATRIX/ST function)**

In the MATRIX/ST ROUTING screen you can make settings for the signals sent from the MIX channels to the MATRIX buses/STEREO bus. The vertical column in the upper part of the screen is the destination MATRIX bus, and the horizontal row is the source MIX channel.

- **Detail of MATRIX/ST ROUTING**



MIX TO STEREO
This is an on/off switch and destination selection for the signal sent from the MIX channel (horizontal row) to the STEREO bus.

MIX TO MATRIX
This is an on/off switch and a destination selection for the signal sent from the MIX channel (horizontal row) to the MATRIX bus.

4. **Use the on-screen buttons in the MIX TO MATRIX section to select the destination of the signal sent from the MIX channel to the MATRIX channel.**
   The following buttons can be used.
   - **PRE FADER** ..... Immediately before the MIX [LEVEL] encoder
   - **POST FADER** .... Immediately after the MIX [LEVEL] encoder
   - **POST ON** ..... Immediately after the MIX [ON] switch

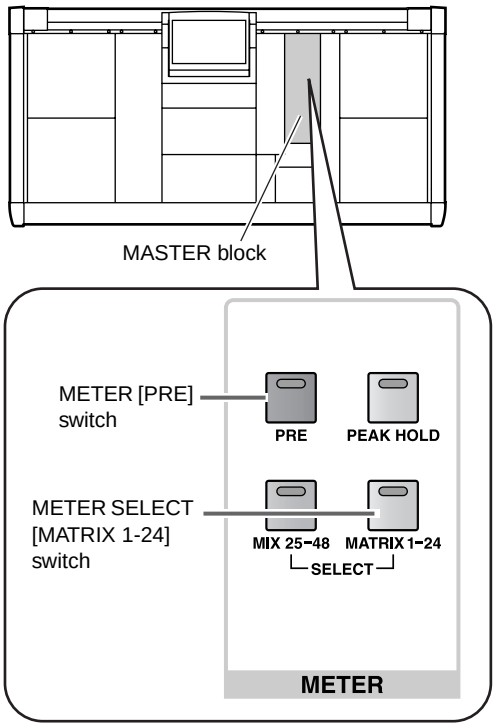
Hint

The ON/OFF switches in the MIX TO MATRIX section are on/off switches for the signal sent from the MIX channel to the MATRIX bus. They are linked with the MIX [TO MTRX] switches of the MIX OUTPUT block.

5. **In the screen, drag the knob located at the intersection of the source MIX channel and the destination MATRIX bus to adjust the level of the signal sent from each MIX channel to the MATRIX bus.**
   The current value is shown in the numerical box below the knob.

⚠ This parameter can be controlled only in the display.

6. **In order to use the meter bridge to check the (pre-fader) level of the signals sent to the MATRIX buses, go to the METER section in the MASTER block of the console, and turn on the METER [PRE] switch and the METER SELECT [MATRIX 1-24] switch.**

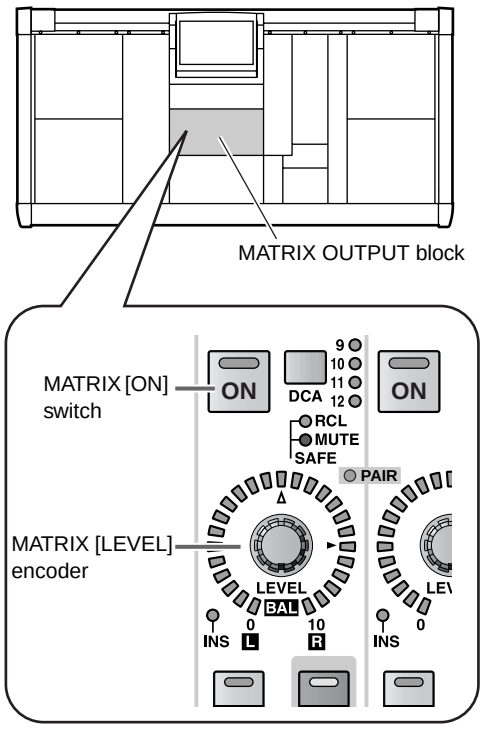


With these settings, the 24 meters at the right side of the meter bridge will show the pre-fader levels of the MATRIX channels.

Hint

The detection point (metering point) shown in the meters can be specified in greater detail. For details refer to the section "Setting the metering point" in "Chapter 16. Various settings."

7. **In the MATRIX OUTPUT block, turn on the MATRIX [ON] switch for the appropriate MATRIX channel.**



8. **In the MATRIX OUTPUT block, raise the MATRIX [LEVEL] encoder of the appropriate MATRIX channel.**
   The signal sent from the MIX channel to the MATRIX bus will be output from the output jack patched to that MATRIX channel.

9. **In order to use the meter bridge to view the (post-fader) levels of the signals output from the MATRIX channels, turn off the METER [PRE] switch in the METER section of the MASTER block of the console.**

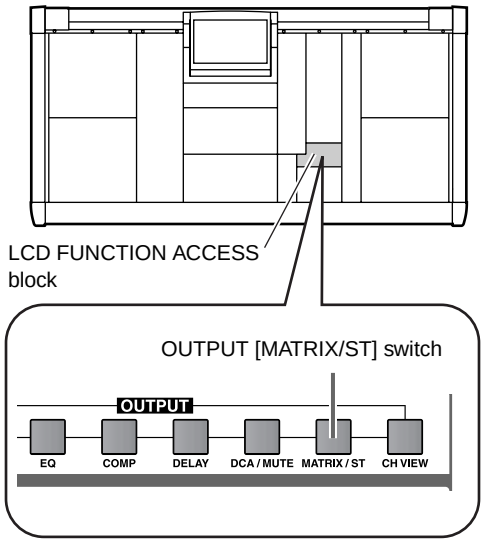
Sending a signal from a MIX channel to the STEREO bus

Here's how the signal sent from an input channel to a MIX bus can be output to the STEREO bus.

[Procedure]

1. **Make sure that an appropriate signal is being sent from an input channel to the corresponding MIX bus.**
2. **In the MIX OUTPUT block, turn on the MIX [ON] switch.**
3. **Turn on the MIX [TO ST] switch.**

   ⚠ If MIX [TO ST] switch is off, the signal from that MIX channel will not be sent to the STEREO bus.
4. **Raise the MIX [LEVEL] encoder.**
5. **To adjust the panning of the signal sent from the MIX channel to the STEREO bus, press the LCD FUNCTION ACCESS block OUTPUT [MATRIX/ST] switch several times to access the following MATRIX/ST ROUTING screen.**



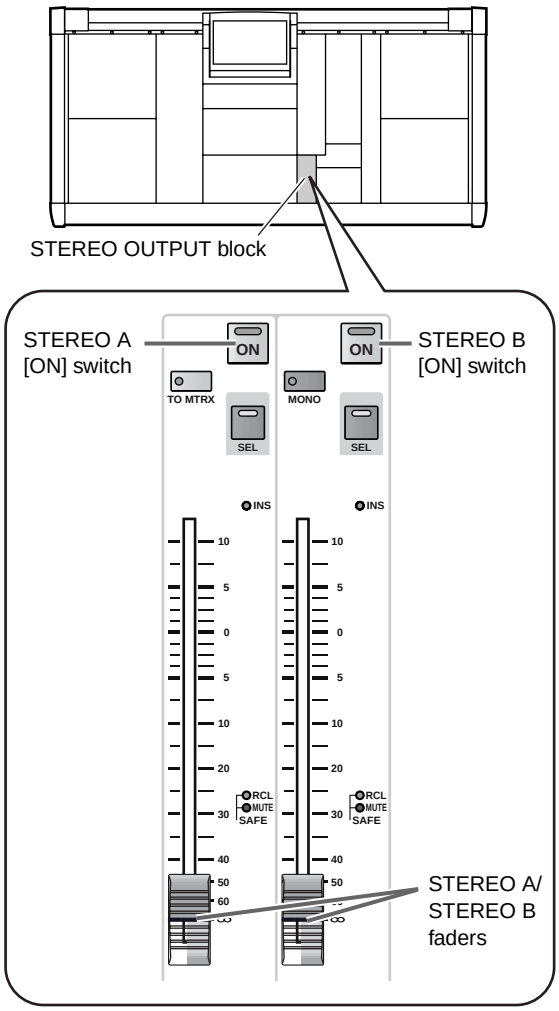
- **MATRIX/ST ROUTING screen (MATRIX/ST function)**

6. **Drag the PAN knobs located in the MIX TO STEREO section to adjust the panning of the signal sent from each MIX channel to the STEREO bus.**
   The current value is shown in the numerical box located below the knob.

Hint

By clicking the PRE button in the MIX TO STEREO section, you can send the signal to the STEREO bus from a point immediately before the [ON] switch of the MIX OUTPUT block. This method is convenient when you wish to send the MIX channel signal only to the STEREO bus without sending it to an output unit.

7. **In the STEREO OUTPUT block, turn on the STEREO A [ON] or STEREO B [ON] switch.**



8. **In the STEREO OUTPUT block, raise the STEREO A or STEREO B fader.**
   The signal sent from the MIX channel to the STEREO bus will be output from the output jack patched to the STEREO A or STEREO B channel.
9. **So that the level of the signal output from the STEREO A/B channel (post-fader) can be viewed in the meter bridge, turn off the METER [PRE] switch located in the METER section of the MASTER block.**

Pairing MIX channels

Adjacent odd-numbered → even-numbered MIX channels can be paired. All parameters except for pan and delay will be linked for the two paired channels.

[Procedure]

1. **In the MIX OUTPUT block, hold down the [SEL] switch for one of two adjacent odd-numbered → even-numbered MIX channels, and then press the other [SEL] switch.**
   The direction in which the channel parameters are copied will depend on the order in which the [SEL] switches are pressed. When you create a pair, the parameters of the channel you pressed first will be copied to the channel that you pressed next, and will subsequently be linked.

   For example if you pair MIX 1 and MIX 2, holding down the MIX 1 [SEL] switch and then the MIX 2 [SEL] switch will cause the state of MIX 1 to be copied to MIX 2. For details on the parameters that are copied/linked when paired, refer to "CS1D Reference Manual (Appendices)" (→p.45).

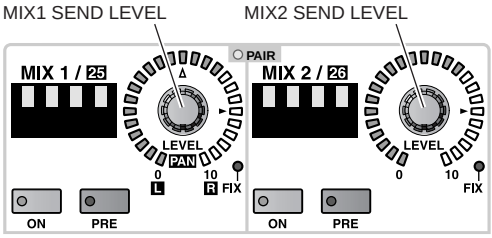
   If you wish to reset the parameters, do so from the screen.

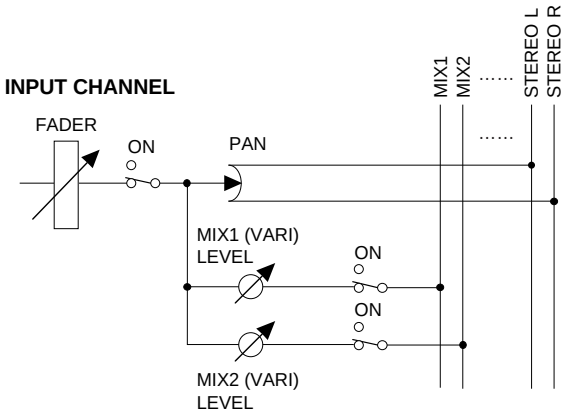
   When MIX channels are paired, the functions of the controllers on the CS1D console and the parameters in the display will change as follows.

   ■ SELECTED INPUT CHANNEL block
   If VARI type MIX buses are paired, the left (odd-numbered) encoder of the MIX SEND section will function as a [PAN] encoder to set the panning, and the right (even-numbered) encoder will function as the [LEVEL] encoder for both MIX buses.

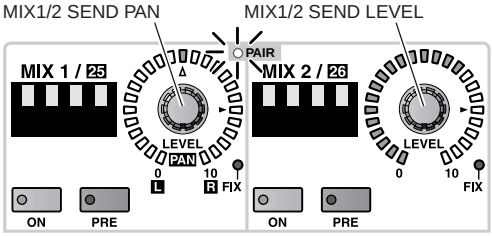
   Adjacent odd-numbered → even-numbered MIX SEND [ON] switches and MIX SEND [PRE] switches will be linked.

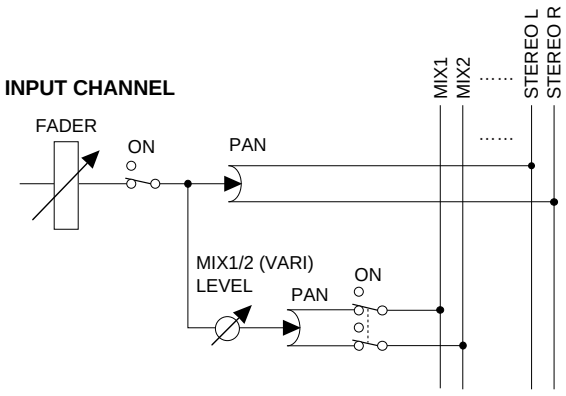
- **When VARI type MIX buses are not paired**





- **When VARI type MIX buses are paired**



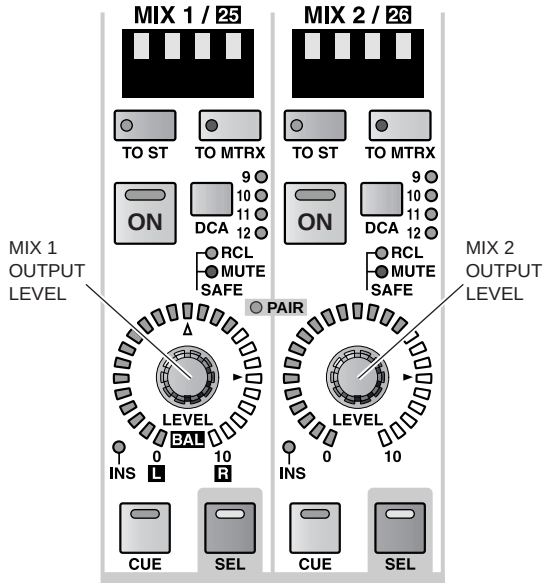


■ MIX OUTPUT block

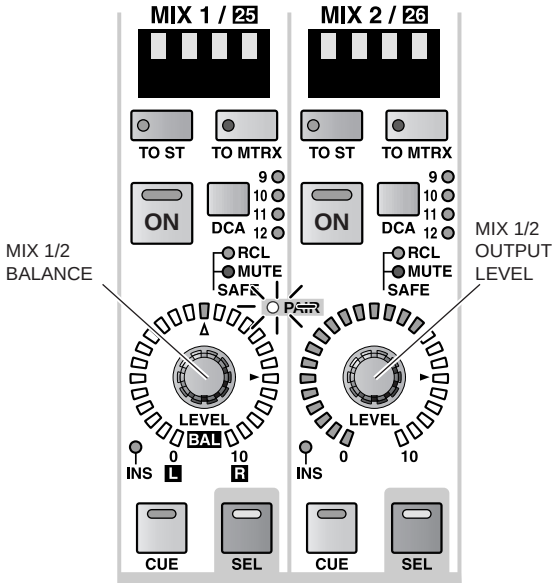
If MIX channels are paired, the left (odd-numbered) encoder will function as a [BAL] encoder to set the volume balance between the two MIX channels, and the right (even-numbered) encoder will function as a [LEVEL] encoder for both MIX channels.

The operation of other adjacent odd-numbered → even-numbered switches will also be linked.

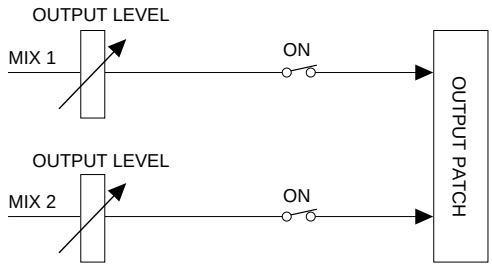
- **When MIX channels are not paired**



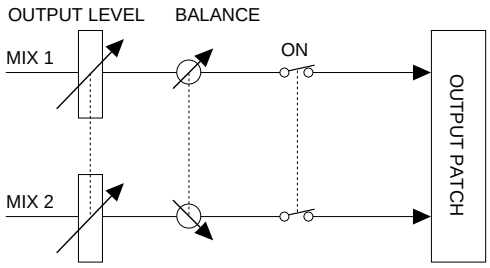
- **When MIX channels are paired**



MIX CHANNEL



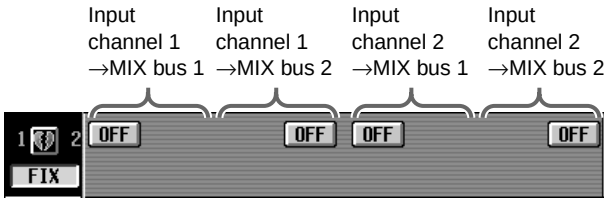
MIX CHANNEL



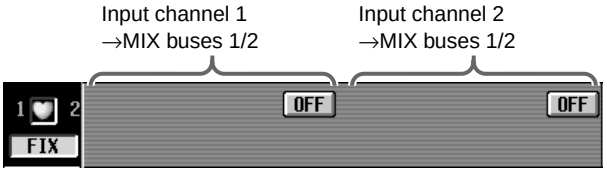
■ **CH to MIX screen**

In the row of paired MIX buses, the PRE buttons and ON/OFF buttons will be consolidated for odd → even numbers. Of the two adjacent odd-numbered → even-numbered knobs of VARI type MIX channels, the left (odd-numbered) knob will function as a PAN knob to set the panning between the two MIX buses, and the right (even-numbered) knob will function as a LEVEL knob for both MIX buses.

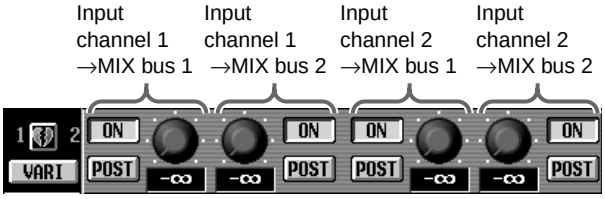
- **When FIX type MIX buses are not paired**



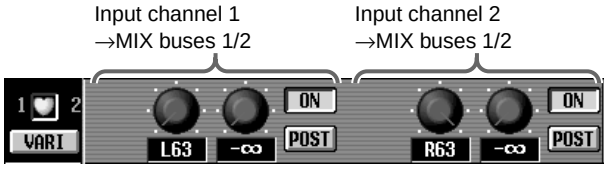
- **When FIX type MIX buses are paired**



- **When VARI type MIX buses are not paired**



- **When VARI type MIX buses are paired**



■ **MATRIX/ST ROUTING screen**

The two adjacent odd-numbered → even-numbered knobs of the source MIX channels will be linked.

2. **To defeat pairing, hold down the [SEL] switch for one of the paired MIX channels, and then press the [SEL] switch of the other channel.**

Hint

You can also set/defeat pairing by clicking the heart symbol displayed beside the MIX channel number in various display screens.

Basic operation of the MATRIX OUTPUT block

This section explains basic operation of the MATRIX OUTPUT block.

Controls and functions of the MATRIX OUTPUT block

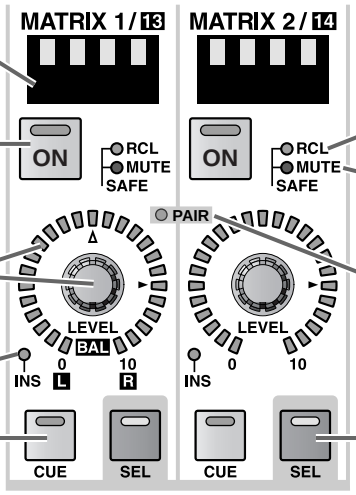
MATRIX [NAME] indicator
This displays the short name of the MATRIX channel.

MATRIX [ON] switch and LED
This switch turns the MATRIX channel on/off. If this switch is off, the signal will not be sent to the output unit patched to the corresponding MATRIX channel.

MATRIX [LEVEL/BAL] encoder and LEDs
These encoders set the output level of each MATRIX channel 1–24.

[INS] LED
This LED will light when insertion is on for the MATRIX channel.

MATRIX [CUE] switch and LED
This switch monitors the currently selected MATRIX channel.



SAFE [RCL] LED
This LED will light for MATRIX channels that are set to Recall Safe (a condition in which the channel is independent of scene recall operations).

SAFE [MUTE] LED
This LED will light for MATRIX channels that are set to Mute Safe (a condition in which the channel is independent of mute group operations).

MATRIX [PAIR] LED
This LED will light for adjacent odd-numbered → even-numbered MATRIX channels that are paired.

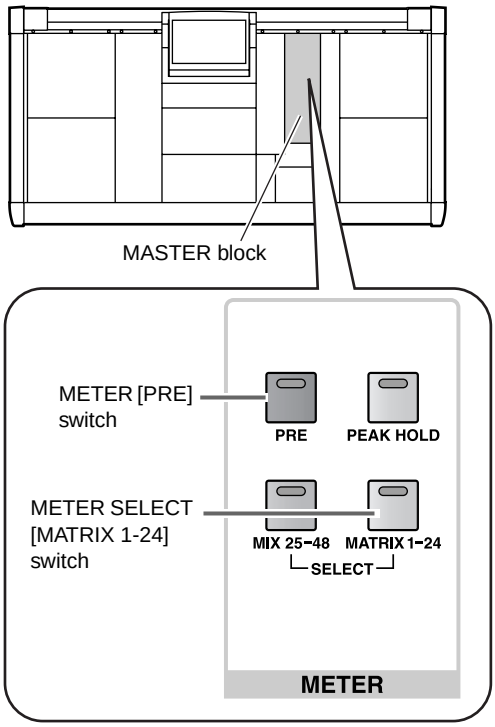
MATRIX [SEL] select and LED
This switch selects the MATRIX channel that will be controlled. The MATRIX [SEL] LED of the currently selected MATRIX channel will light.

Sending a signal from a MATRIX channel to an output unit

Here's how the signal sent from a MIX channel or the STEREO A channel to the MATRIX bus can be output from an output unit patched to the corresponding MATRIX channel.

[Procedure]

1. **Make sure that an appropriate signal is being sent from a MIX channel or the STEREO A channel to a MATRIX bus. Also make sure that a valid output unit is patched to the corresponding MATRIX channel.**
2. **In the MATRIX OUTPUT block, turn on the MATRIX [ON] switch for the MATRIX channel.**
3. **In the MATRIX OUTPUT block, raise the MATRIX [LEVEL] encoder.**
   The signal of the corresponding MATRIX channel will be output from the output unit patched to that channel.
4. **So that the (post-fader) signal sent from the MATRIX bus to the output unit can be monitored in the meter bridge, go to the METER section in the MASTER block of the console, turn on the METER SELECT [MATRIX 1-24] switch and turn off the METER [PRE] switch.**
   With these settings, the 24 meters at the right of the meter bridge will indicate the post-fader signal levels of the MATRIX channels.



Hint

The detection point (metering point) shown in the meters can be specified in greater detail. For details refer to the section "Setting the metering point" in "Chapter 16. Various settings."

Pairing MATRIX channels

Adjacent odd-numbered → even-numbered MATRIX channels can be paired. All parameters except for pan and delay will be linked for the two paired channels.

[Procedure]

1. **In the MATRIX OUTPUT block, hold down the [SEL] switch for one of two adjacent odd-numbered → even-numbered MATRIX channels, and then press the other [SEL] switch.**
   The direction in which the channel parameters are copied will depend on the order in which the [SEL] switches are pressed. When you create a pair, the parameters of the channel you pressed first will be copied to the channel that you pressed next, and will subsequently be linked.

   For example if you pair MATRIX 1 and MATRIX 2, holding down the MATRIX 1 [SEL] switch and then the MATRIX 2 [SEL] switch will cause the state of MATRIX 1 to be copied to MATRIX 2. For details on the parameters that are copied/linked when paired, refer to "CS1D Reference Manual (Appendices)" (→p.45).

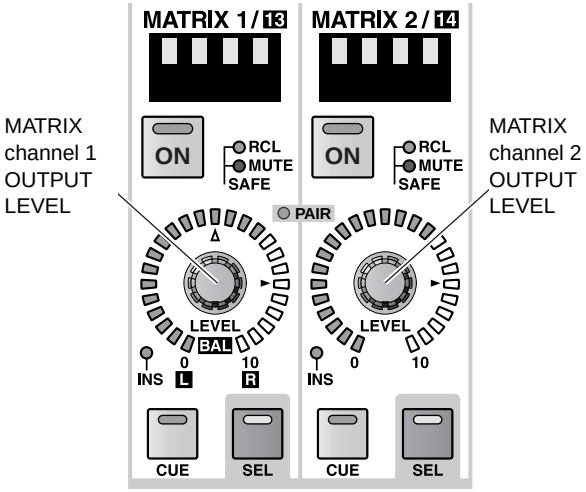
   If you wish to reset the parameters, do so from the screen.

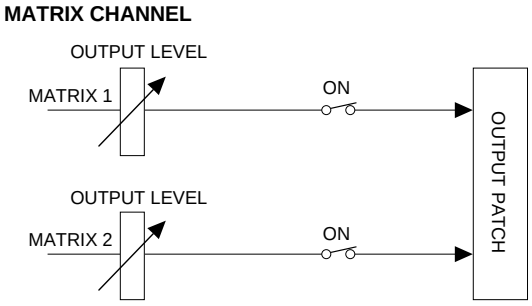
   When MATRIX channels are paired, the functions of the controllers on the CS1D console and the parameters in the display will change as follows.

   ■ MATRIX OUTPUT block
   If MATRIX channels are paired, the left (odd-numbered) encoder will function as a [BAL] encoder to set the volume balance between the two MATRIX channels, and the right (even-numbered) encoder will function as a [LEVEL] encoder for both MATRIX channels.

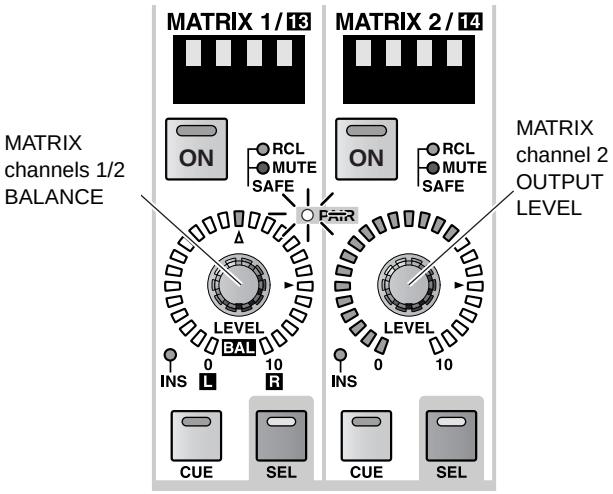
   The operation of other adjacent odd-numbered → even-numbered switches will also be linked.

- **When MATRIX channels are not paired**

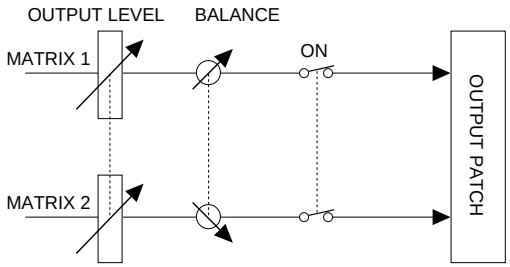




• **When MATRIX channels are paired**



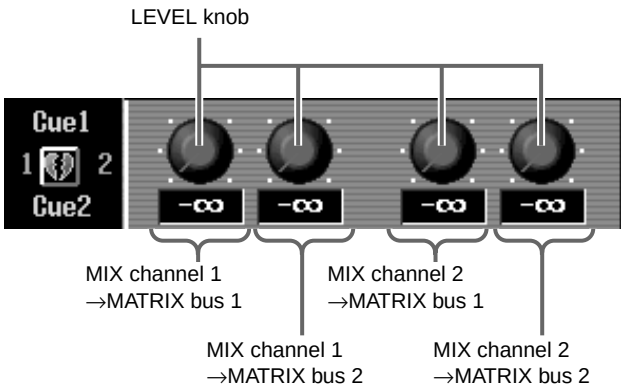
MATRIX CHANNEL

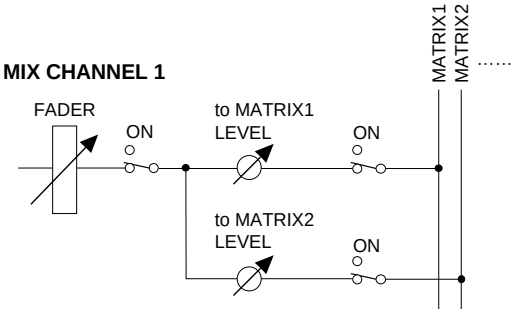


■ **MATRIX/ST ROUTING screen**

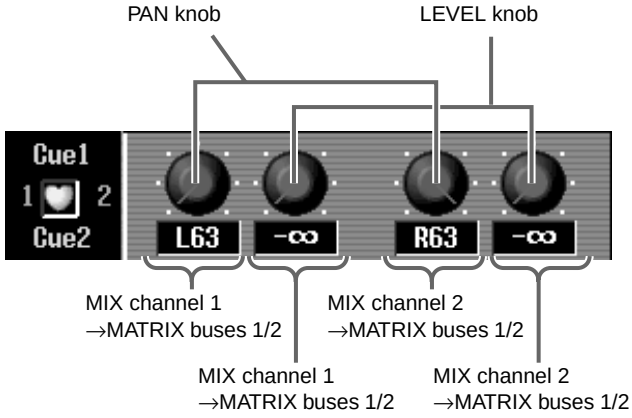
In the row of paired MATRIX buses, the left (odd-numbered) knob of the two adjacent odd-numbered → even-numbered knobs will function as a PAN knob to set the panning between the two MATRIX buses, and the right (even-numbered) knob will function as a LEVEL knob for both MATRIX buses.

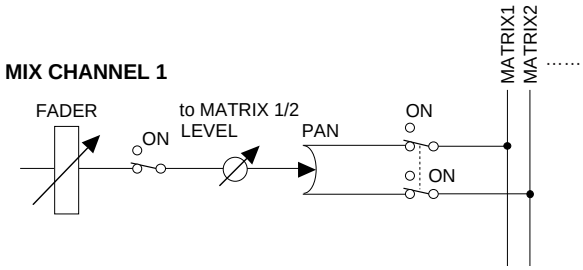
• **When MATRIX buses are not paired**





• **When MATRIX buses are paired**





2. To defeat pairing, hold down the [SEL] switch for one of the paired MATRIX channels, and then press the [SEL] switch of the other channel.

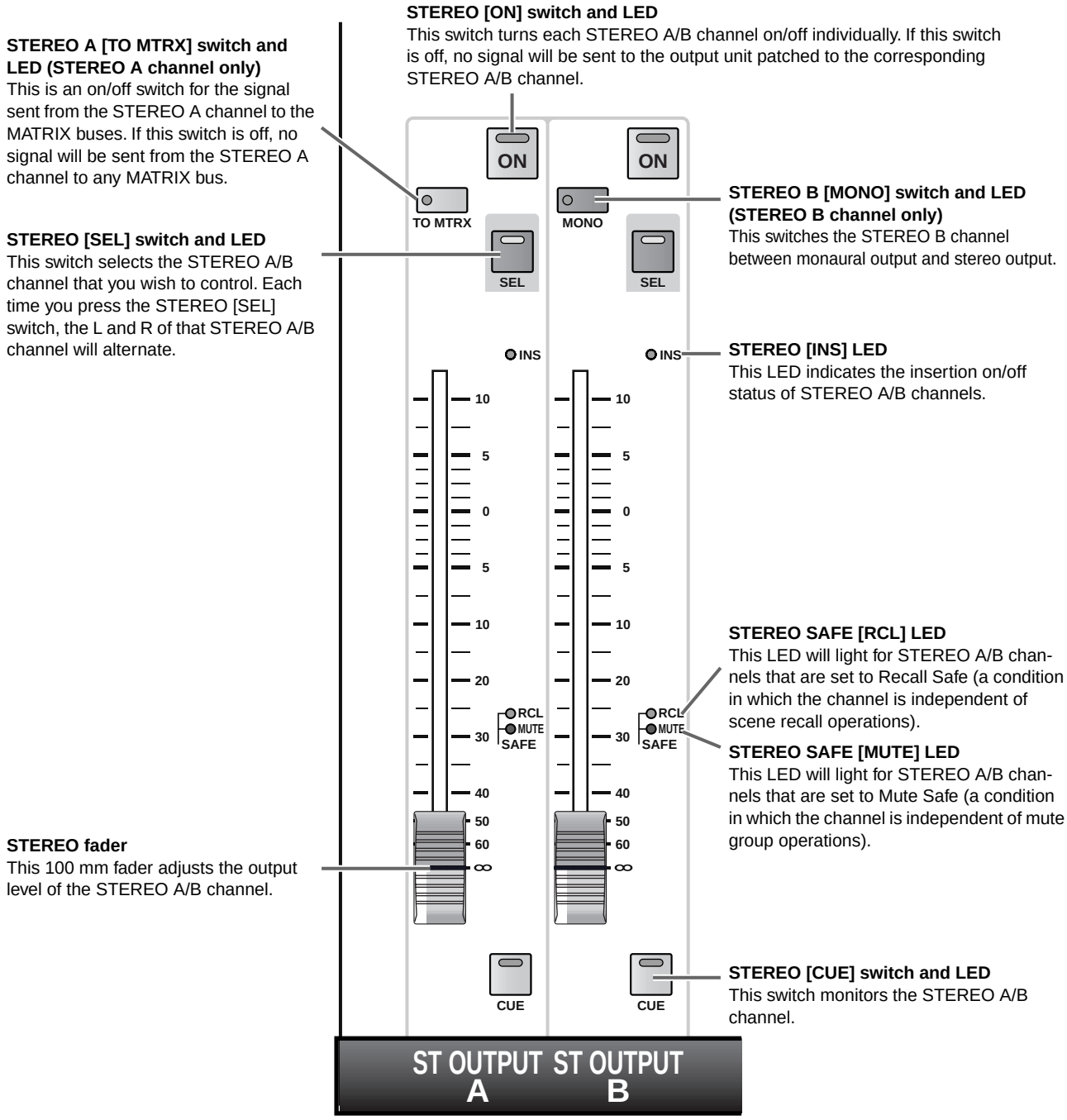
Hint

You can also set/defeat pairing by clicking the heart symbol displayed beside the MATRIX channel number in various display screens.

Basic operation of the STEREO OUTPUT block

This section explains basic operation of the STEREO OUTPUT block.

Controls and functions of the STEREO OUTPUT block



STEREO [ON] switch and LED
This switch turns each STEREO A/B channel on/off individually. If this switch is off, no signal will be sent to the output unit patched to the corresponding STEREO A/B channel.

STEREO A [TO MTRX] switch and LED (STEREO A channel only)
This is an on/off switch for the signal sent from the STEREO A channel to the MATRIX buses. If this switch is off, no signal will be sent from the STEREO A channel to any MATRIX bus.

STEREO B [MONO] switch and LED (STEREO B channel only)
This switches the STEREO B channel between monaural output and stereo output.

STEREO [SEL] switch and LED
This switch selects the STEREO A/B channel that you wish to control. Each time you press the STEREO [SEL] switch, the L and R of that STEREO A/B channel will alternate.

STEREO [INS] LED
This LED indicates the insertion on/off status of STEREO A/B channels.

STEREO SAFE [RCL] LED
This LED will light for STEREO A/B channels that are set to Recall Safe (a condition in which the channel is independent of scene recall operations).

STEREO SAFE [MUTE] LED
This LED will light for STEREO A/B channels that are set to Mute Safe (a condition in which the channel is independent of mute group operations).

STEREO fader
This 100 mm fader adjusts the output level of the STEREO A/B channel.

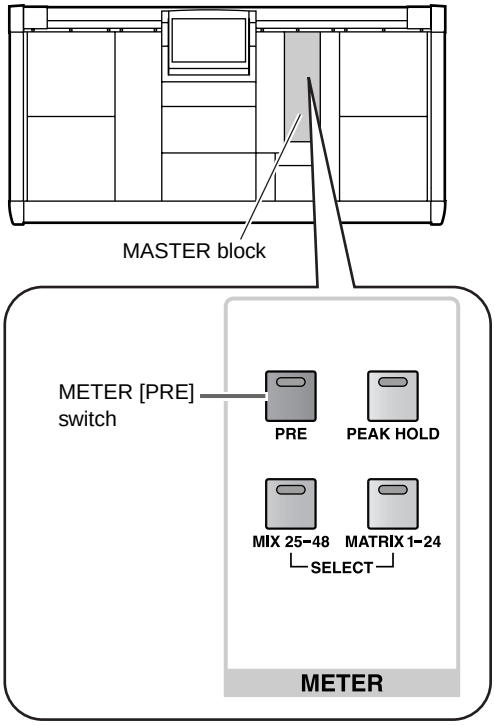
STEREO [CUE] switch and LED
This switch monitors the STEREO A/B channel.

Sending a signal from a STEREO A/B channel to an output unit

Here's how a signal sent from an input channel or MIX channel to the STEREO bus can be output from an output unit patched to a STEREO A/B channel.

[Procedure]

1. **Make sure that an appropriate signal is being sent from the channels to the STEREO bus. Also make sure that a valid output unit is patched to a STEREO A/B channel.**
2. **In the STEREO OUTPUT block, turn on the STEREO [ON] switch for the STEREO A or B channel.**
3. **In the STEREO OUTPUT block, raise the STEREO A or B channel fader.**
   The signal of the STEREO A/B channel will be output from the output unit that is patched to that channel.
4. **So that the (post-fader) level of the signal sent from the STEREO bus to the output unit can be viewed in the meter bridge, turn off the METER [PRE] switch located in the METER section of the MASTER block on the console.**
   With this setting, the STEREO A/B meters of the meter bridge will show the post-fader signal levels of the STEREO A/B channels.



Hint

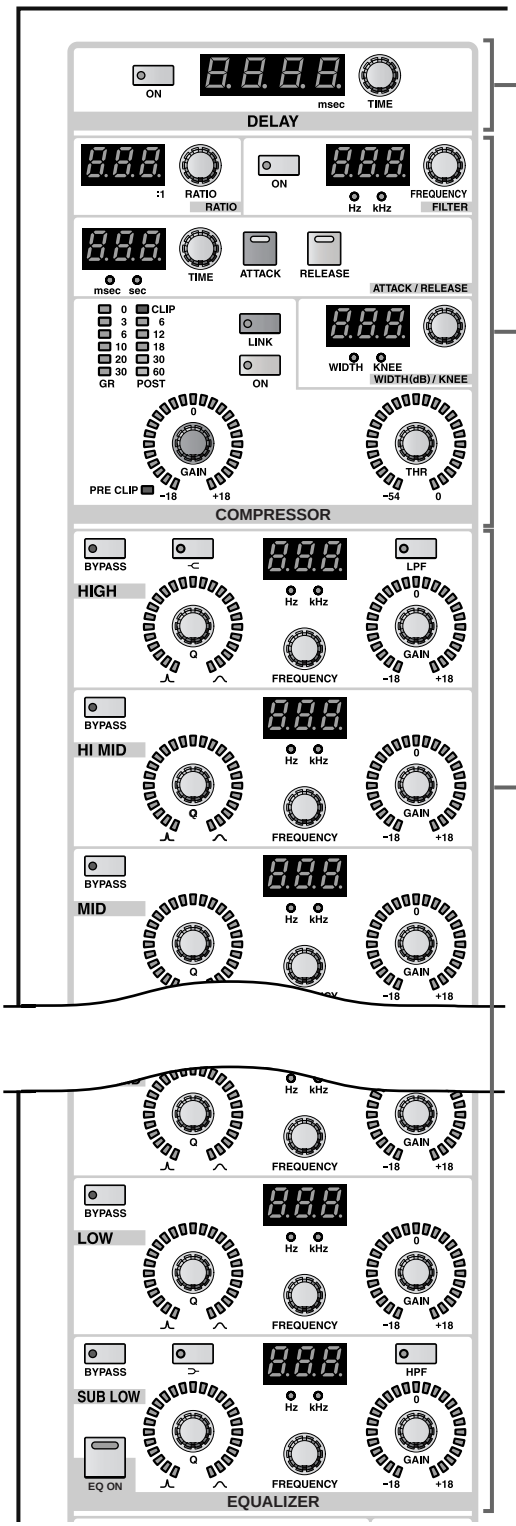
The detection point (metering point) shown in the meters can be specified in greater detail. For details refer to the section "Setting the metering point" in "Chapter 16. Various settings."

Basic operation of the SELECTED OUTPUT CHANNEL block

This section explains how to use the SELECTED OUTPUT CHANNEL block to control an output channel. In the SELECTED OUTPUT CHANNEL block, you can select one channel from the MIX channels, MATRIX channels, or L/R of the STEREO A/B channels, and use the EQ and compressor to process the signal before outputting it to an output unit or to another bus.

Controls and functions of the SELECTED OUTPUT CHANNEL block

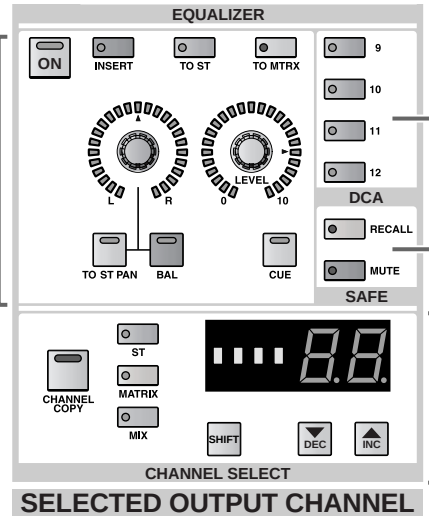
The controls and functions of the SELECTED OUTPUT CHANNEL block are summarized below.



DELAY section
Make settings for the internal delay function.

COMPRESSOR section
Make settings for the internal compressor.

EQUALIZER section
Make settings for the internal 6 band EQ (HIGH, HIGH MID, MID, LOW MID, LOW, SUB LOW).



OUTPUT section
Control the output level and on/off status of the signal sent from the currently selected channel to the output unit or STEREO bus/MATRIX bus.

DCA section
Assign the currently selected channel to the desired DCA group.

SAFE section
Temporarily exclude the currently selected select from Scene Recall operations or Mute Group operations.

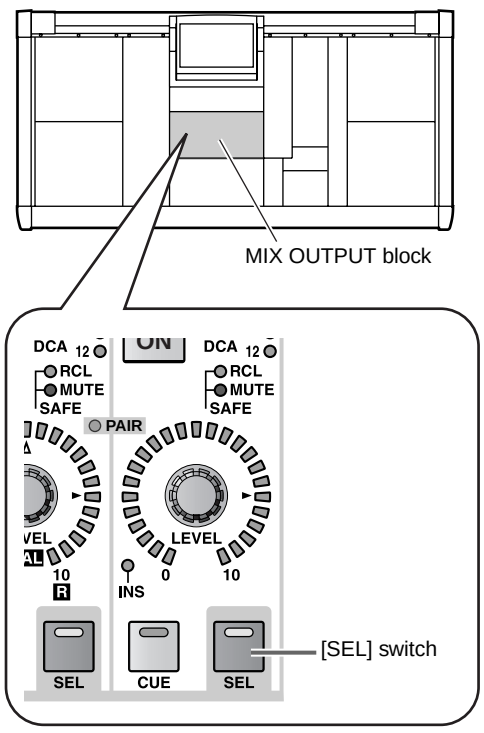
CHANNEL SELECT section
Select/view the channel that will be controlled in the SELECTED OUTPUT CHANNEL block.

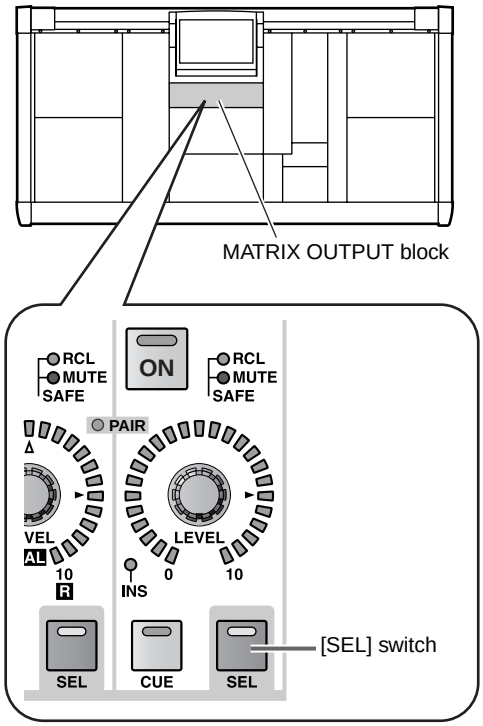
Sending a signal from an output channel to an output unit

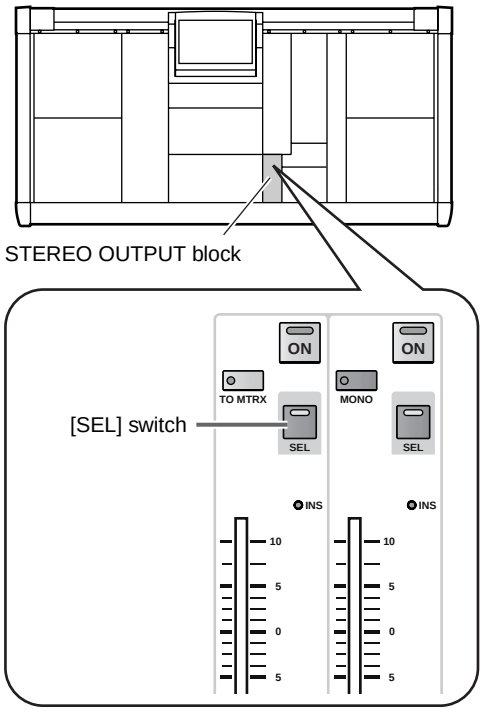
Here's how the SELECTED OUTPUT CHANNEL block can be used to send the signal of an output channel from the output unit that is patched to that channel.

[Procedure]

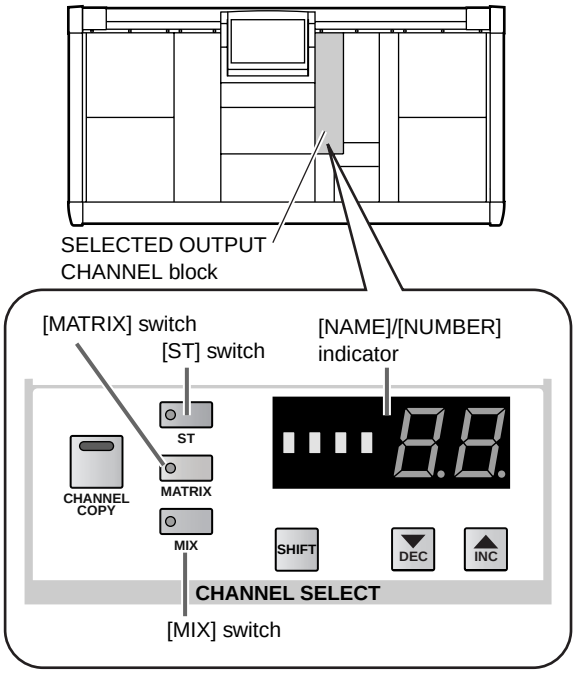
1. **Use the [SEL] switches of the MIX OUTPUT block, MATRIX OUTPUT block, or STEREO OUTPUT block to select the output channel that you wish to control.**
   Before using the SELECTED OUTPUT CHANNEL block, you must first select the output channel that you wish to control (a MIX channel, MATRIX channel, or L/R of the STEREO A/B channel).







When you select a channel, the LEDs and indicators of the SELECTED OUTPUT CHANNEL will show the settings of the various parameters for that channel. The type, number, and short name are shown by the switches and [NAME]/[NUMBER] indicator of the CHANNEL SELECT section.



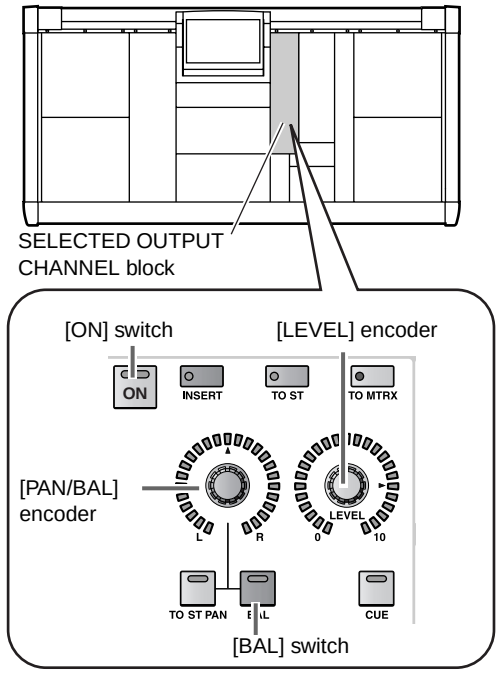
- **When a STEREO A/B is selected**
  The [ST] switch LED will light, and the [NUMBER] indicator will show either AL (L channel of STEREO A), Ar (R channel of STEREO B), bL (L channel of STEREO B), or br (R channel of STEREO B).
- **When a MATRIX channel is selected**
  The [MATRIX] switch LED will light, and the [NUMBER] indicator will show a number in the range of 1–24.
- **When a MIX channel is selected**
  The [MIX] switch LED will light, and the [NUMBER] indicator will show a number in the range of 1–48.

Hint

It is also possible to select a channel by using the SELECTED OUTPUT CHANNEL block CHANNEL SELECT [▼/DEC]/[▲/INC] switches. For details refer to "CS1D Reference Manual (Hardware)" (→p.66).

By repeatedly pressing a [SEL] switch of the STEREO OUTPUT block, you can alternate between the L channel and the R channel.

2. **In the SELECTED OUTPUT CHANNEL block OUTPUT section, turn on the [ON] switch.**



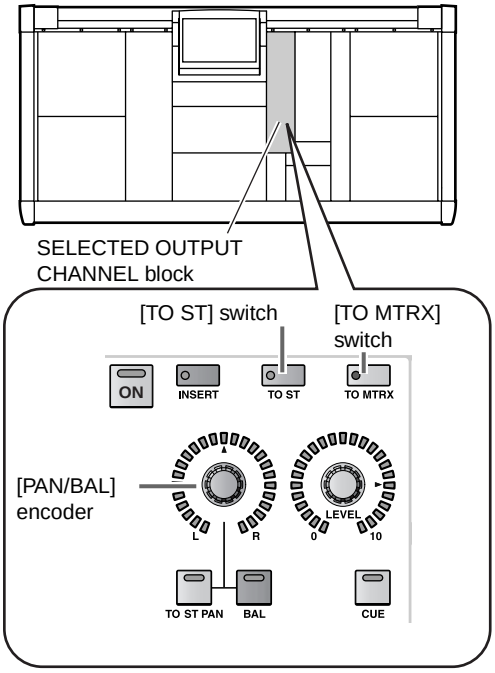
3. **In the OUTPUT section, raise the [LEVEL] encoder.**
   The signal of the corresponding output channel will be sent from the output unit patched to that channel.
4. **If in step 1 you selected a STEREO A/B channel or one channel of a pair of MIX/MATRIX channels, use the OUTPUT section [PAN/BAL] encoder to adjust the volume balance between the two channels.**
   If either channel of the STEREO A/B channel or of a paired MIX/MATRIX channel is selected, the OUTPUT section [BAL] switch LED will light. This indicates that you can use the [PAN/BAL] encoder to adjust the balance between the two channels.

Sending a signal from a MIX channel to a MATRIX bus/STEREO bus

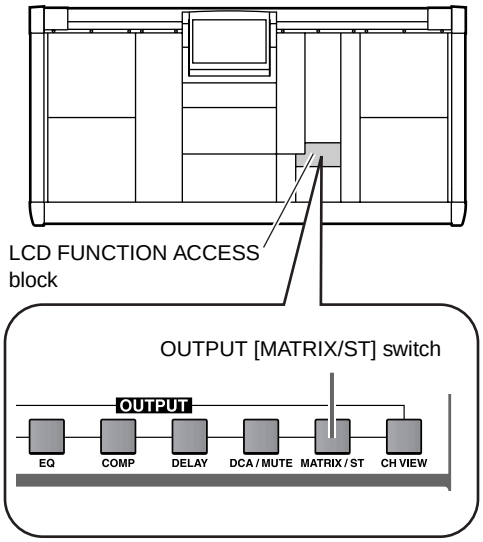
Here's how you can use the SELECTED OUTPUT CHANNEL block to send a MIX channel signal to the STEREO bus or a MATRIX bus.

[Procedure]

1. **Use the [SEL] switches of the MIX OUTPUT block to select the MIX channel that you wish to control.**
2. **To sent the MIX channel signal to the STEREO bus, go to the OUTPUT section of the SELECTED OUTPUT CHANNEL block and turn on the [TO ST] switch. If you wish to send the signal to a MATRIX bus, turn on the [TO MTRX] switch.**



3. **In the LCD FUNCTION ACCESS block, press the OUTPUT [MATRIX/ST] switch several times to access the following MATRIX/ST ROUTING screen.**



- **MATRIX/ST ROUTING screen (MATRIX/ST function)**

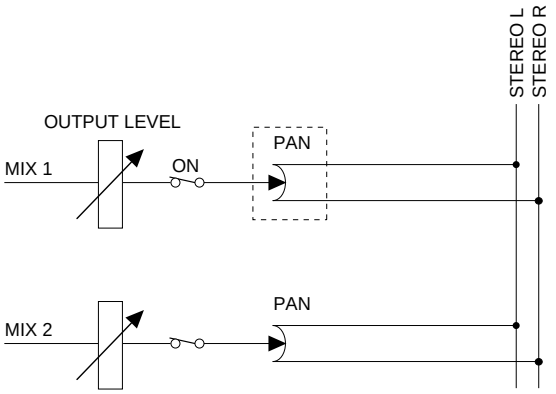
4. **If you are sending the MIX channel signal to the STEREO bus, use the PRE button located in the MIX TO STEREO section of the screen to specify the point from which the signal will be sent from the MIX channel to the STEREO bus.**
   If the PRE button is on, the signal from before the [LEVEL] encoder (pre-fader) will be sent to the STEREO bus. If the PRE button is off, the signal from after the [LEVEL] encoder (post-fader) will be sent to the STEREO bus.
5. **If you are sending the MIX channel signal to the MATRIX bus, use the buttons of the on-screen MIX TO MATRIX section to select one of the following points from which the signal will be sent from the MIX channel to the MATRIX bus.**
   - **PRE FADER** ..... Immediately before the MIX [LEVEL] encoder (pre-fader)
   - **POST FADER** .... Immediately after the MIX [LEVEL] encoder (post-fader)
   - **POST ON** ..... Immediately after the MIX [ON] switch
6. **In the SELECTED INPUT CHANNEL block OUTPUT section, turn on the [ON] switch.**

⚠ If pre-fader has been selected as the signal send point, the signal will now be sent to the corresponding bus.

7. **In the OUTPUT section, raise the OUTPUT [LEVEL] encoder.**

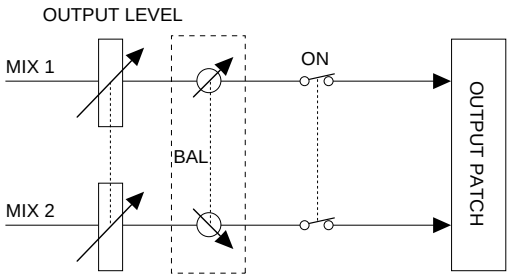
8. **If you are sending the MIX channel signal to the STEREO bus, use the [PAN/BAL] encoder located in the OUTPUT section to adjust the pan.**
   If a MIX channel is selected in the SELECTED OUTPUT CHANNEL block and the OUTPUT [TO ST] switch is on, the OUTPUT [TO ST PAN] switch LED will light. This indicates that you can use the OUTPUT [PAN/BAL] encoder to adjust the pan of the signal that is sent from the MIX channel to the STEREO bus. In the following diagram, the portion enclosed by a dotted line corresponds to the OUTPUT [PAN/BAL] encoder.

   - **Adjusting the pan of the signal sent from the MIX channel to the STEREO bus**



9. **If the source MIX channel is paired, use the OUTPUT [PAN/BAL] encoder to adjust the balance of the two channels.**
   If a paired MIX channel is selected in the SELECTED OUTPUT CHANNEL block, the OUTPUT [BAL] switch LED will light. This indicates that you can use the OUTPUT [PAN/BAL] encoder to adjust the balance between the two MIX channels. In the following diagram, the portion enclosed by a dotted line corresponds to the [PAN/BAL] encoder.

   - **Adjusting the volume balance between paired MIX channels**



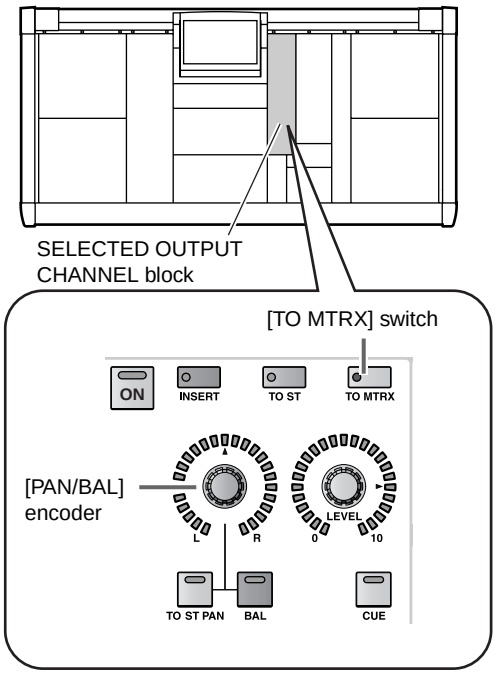
⚠ When paired MIX channels are sent to the STEREO bus, you can use both of the functions described in steps 8 and 9. In this case, you can press the OUTPUT [TO ST PAN] or OUTPUT [BAL] switch to select the item that will be controlled by the OUTPUT [PAN/BAL] encoder.

Sending a signal from the STEREO A channel to the MATRIX bus

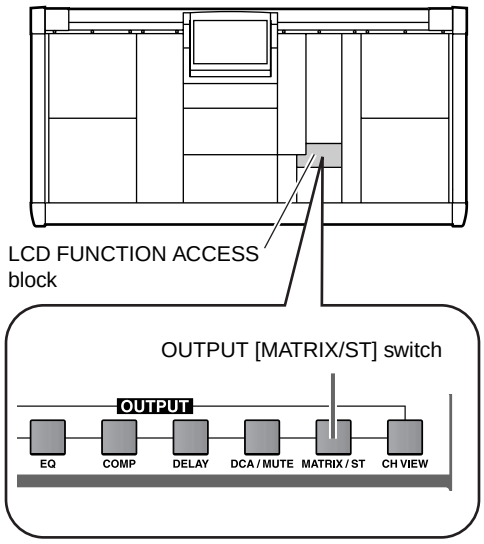
Here's how to use the SELECTED OUTPUT CHANNEL block to send the signal of the STEREO A channel to a MATRIX bus.

[Procedure]

1. **Use the STEREO A [SEL] switch of the STEREO OUTPUT block to select the STEREO A channel.**
2. **In the OUTPUT section of the SELECTED OUTPUT CHANNEL block, turn on the [TO MTRX] switch.**



3. **In the LCD FUNCTION ACCESS block, press the OUTPUT [MATRIX/ST] switch several times to access the following MATRIX/ST ROUTING screen.**



- **MATRIX/ST ROUTING screen (MATRIX/ST function)**

4. **Scroll the screen to the right so that the ST A [L] (STEREO A channel L) or ST A [R] (STEREO A channel R) appears in the horizontal source row.**
5. **Use the on-screen buttons in the MIX TO MATRIX section to select one of the following as the point from which the STEREO A channel signal will be sent to the MATRIX bus.**
   - **PRE FADER** ..... Immediately before the STEREO A fader (pre-fader)
   - **POST FADER** .... Immediately after the STEREO A fader (post-fader)
   - **POST ON** ..... Immediately after the STEREO A [ON] switch
6. **In the OUTPUT section of the SELECTED OUTPUT CHANNEL block, turn on the [ON] switch.**

⚠ If pre-fader is selected as the send point for the signal, the signal will now be sent to the corresponding bus.

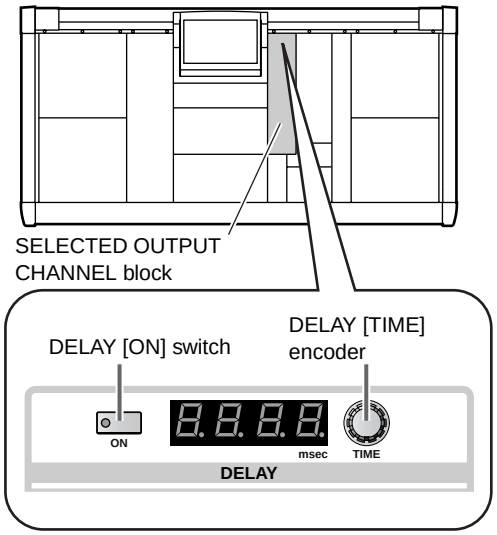
7. **In the OUTPUT section, raise the OUTPUT [LEVEL] encoder.**
8. **In the OUTPUT section, use the [PAN/BAL] encoder to adjust the output level balance between L and R.**
   If the STEREO A channel is selected in the SELECTED OUTPUT CHANNEL block, the OUTPUT [BAL] switch LED will light. This indicates that you can use the OUTPUT [PAN/BAL] encoder to adjust the L/R balance.

Delay settings

You can use the DELAY section of the SELECTED OUTPUT CHANNEL block to delay the output signal of a desired output channel by a fixed time. For example, this provides a convenient way to compensate between speaker systems that are located at a distance from each other.

[Procedure]

1. **Use the [SEL] switches of the MIX OUTPUT block, MATRIX OUTPUT block, or STEREO OUTPUT block to select the output channel that you wish to control.**
2. **In the DELAY section of the SELECTED OUTPUT CHANNEL block, turn on the DELAY [ON] switch.**



   The switch LED will light, and the delay function will be enabled for that channel.

3. **Use the DELAY [TIME] encoder to specify the delay time.**
   The delay time can be set in the range of 0–1000 msec.

Hint

Even for the STEREO A/B channels or for a paired MIX/MATRIX channel, the delay settings must be made independently. Select each channel in turn, and make settings individually.

Compressor settings

You can use the COMPRESSOR section of the SELECTED OUTPUT CHANNEL block to manually control almost all of the compressor parameters.

Hint

The compressors of the PM1D system allow you to select one of three types: COMP (compressor), EXPANDER, and COMPANDER. However, it is not possible to select the type by operations on the top panel. For this reason, you must first load compressor data of the desired type from the library, and then use the SELECTED OUTPUT CHANNEL block to edit the parameters as desired.

⚠ Separate libraries are provided for the input channel compressors and output channel compressors. Compressor data cannot be loaded into the opposite type of compressor.

The controls and functions of the COMPRESSOR section are shown below.

COMPRESSOR FILTER [ON] switch and LED
The [ON] switch located at the left is an on/off switch for the HPF or LPF located before the internal compressor. The [FREQUENCY] encoder at the right sets the cutoff frequency of this filter. The current value is shown in the [VALUE] indicator.

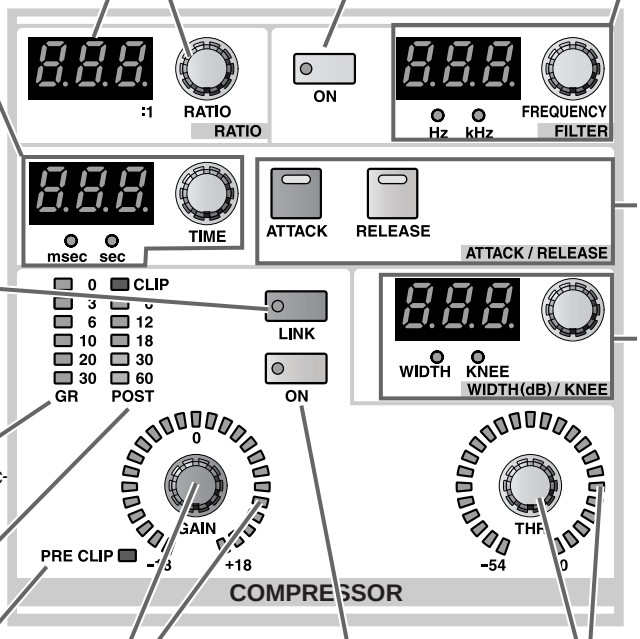
Hint The HPF and LPF cannot be used simultaneously. The selection of either HPF or LPF is made in the display (OUT COMP function COMP PRM screen).

COMPRESSOR [RATIO] encoder and [VALUE] indicator
Use the [RATIO] encoder located at the right to adjust the ratio of the compressor. The current value is shown in the [VALUE] indicator at left.

COMPRESSOR FILTER [FREQUENCY] encoder and [VALUE] indicator

COMPRESSOR ATTACK/ RELEASE [TIME] encoder and [VALUE] indicator
This sets the attack time/release time of the compressor. Use the switch located at the right to select either ATTACK or RELEASE, and use the [TIME] encoder to adjust the value. The current value is shown in the [VALUE] indicator.

COMPRESSOR [LINK] switch and LED
This specifies whether the compressors of adjacent odd-numbered → even-numbered MIX channels or MATRIX channels will be linked by the key-in signal (link=on), or whether the compressors will operate with independent key-in signals (link=off). (The LED will light when link is on.) For details refer to "CS1D Reference Manual (Hardware)" (→p.61).



COMPRESSOR [ATTACK]/ [RELEASE] switch and LED

COMPRESSOR WIDTH (dB)/ KNEE [TIME] encoder and [VALUE] encoder

When the compressor type is COMP or EXPANDER
use the [TIME] encoder to set the KNEE parameter of the COMP or EXPANDER. (The [KNEE] LED will light.)

When the compressor type is COMPANDER
use the [TIME] encoder to set the WIDTH parameter of the COMPANDER.

COMPRESSOR [GR] meter LEDs
These LEDs indicate the amount of gain reduction produced by the internal compressor.

COMPRESSOR [POST] meter LEDs
These LEDs indicate the level of the signal after being processed by the compressor.

COMPRESSOR [PRE CLIP] LED
This LED will light when the signal clips before passing through the compressor.

COMPRESSOR [GAIN] encoder and LEDs
This sets the GAIN parameter of the internal compressor. The approximate current value is shown by the perimeter LEDs.

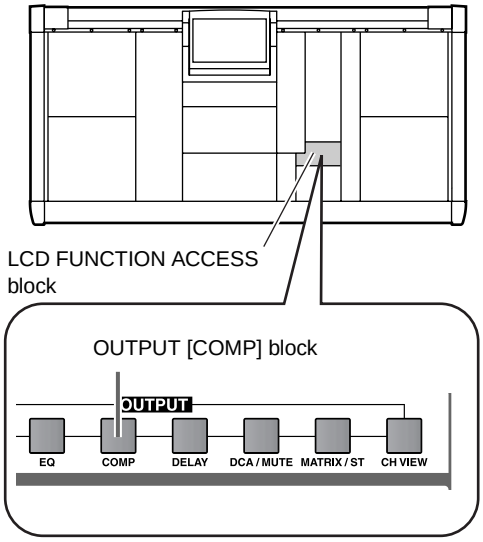
COMPRESSOR [ON] switch and LED
This turns the internal compressor on/off.

COMPRESSOR [THR] encoder and LED
Set the THRESHOLD LEVEL parameter of the internal compressor. The approximate current value is shown by the perimeter LEDs.

[Procedure]

1. **Press a [SEL] switch in the MIX OUTPUT block, MATRIX OUTPUT block, or STEREO OUTPUT block to select the output channel that you wish to control.**

2. **In the LCD FUNCTION ACCESS block, press the OUTPUT [COMP] switch several times to access the following COMP PRM screen.**



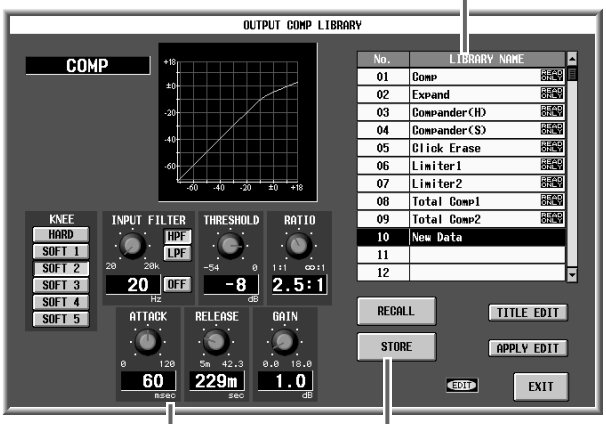
In the COMP PRM screen you can make compressor settings for the currently selected output channel.

- **COMP PRM screen**

3. **Click the OUTPUT COMP LIBRARY button in the upper right of the screen.**
   The following OUTPUT COMP LIBRARY window will appear. In this window you can store (save) output channel compressor settings in the library, or recall (load) existing data from the library.

- **OUTPUT COMP LIBRARY popup window**

Library list
This is a list of the output compressor data that has been stored in memory. The currently highlighted line is selected for operations.



Edit section
This area shows the settings of the output compressor data that is currently selected in the library list.

These buttons are used for Store and Recall operations.

4. **From the library list, select data that uses the desired type.**
   When you click a line in the library list it will be highlighted, and the compressor type and parameter settings used by that data will be displayed in the edit section.

Hint

Numbers 01–09 are displayed as "READ ONLY," and contain read-only preset data. Initially, you may wish to recall whichever of these presets is closest to the settings you intend, and then modify the parameters as necessary.

5. **Click the RECALL button located at the lower left of the library list.**
   The data you selected in step 4 will be recalled to the output channel that you selected in step 1.

   The OUTPUT COMP LIBRARY popup window will close, and you will return to the previous COMP PRM screen.

Hint

If a STEREO A/B channel or one of a pair of MIX/MATRIX channels is selected, the same data will be loaded into both channels.

The COMP PRM screen also lets you select the key-in signal (the reference signal that controls the compressor), and to switch between LPF and HPF to filter the input signal of the compressor. For details refer to "CS1D Reference Manual (Software)" (→p.93).

6. **In the COMPRESSOR section of the SELECTED OUTPUT CHANNEL block, turn on the COMPRESSOR [ON] switch.**
   The compressor of the corresponding channel will be enabled.
7. **Use the knobs and encoders of the COMPRESSOR section to adjust parameters such as ATTACK, RELEASE, THRESHOLD LEVEL, and GAIN.**

Hint

For details on the parameters of each type, refer to "CS1D Reference Manual (Appendices)" (→p.11).

You can make settings so that the corresponding screen appears automatically when you operate the COMPRESSOR section. This setting is made in the UTILITY function PREFERENCE screen ("CS1D Reference Manual (Software)" →p.37).

6 band EQ/HPF settings

Here's how to use the EQUALIZER section of the SELECTED OUTPUT CHANNEL block to control the 6 band EQ.

EQ [BYPASS] switch and LED
This switch bypasses the EQ for each band.

EQ [⊂] switch and LED (HIGH/SUB LOW bands only)
This switch changes the HIGH/SUB LOW band EQ type from peaking to shelving. If this switch is on, the HIGH/SUB LOW band [Q] encoders will have no effect.

EQ [LPF] switch and LED (HIGH band only)
This switch changes the HIGH band EQ type to LPF. If this switch is on, the HIGH band [Q]/[GAIN] encoders will have no effect.

EQ [Q] encoder and LEDs
This encoder sets the Q (steepness) of each band. The approximate current value is shown by the peripheral LEDs.

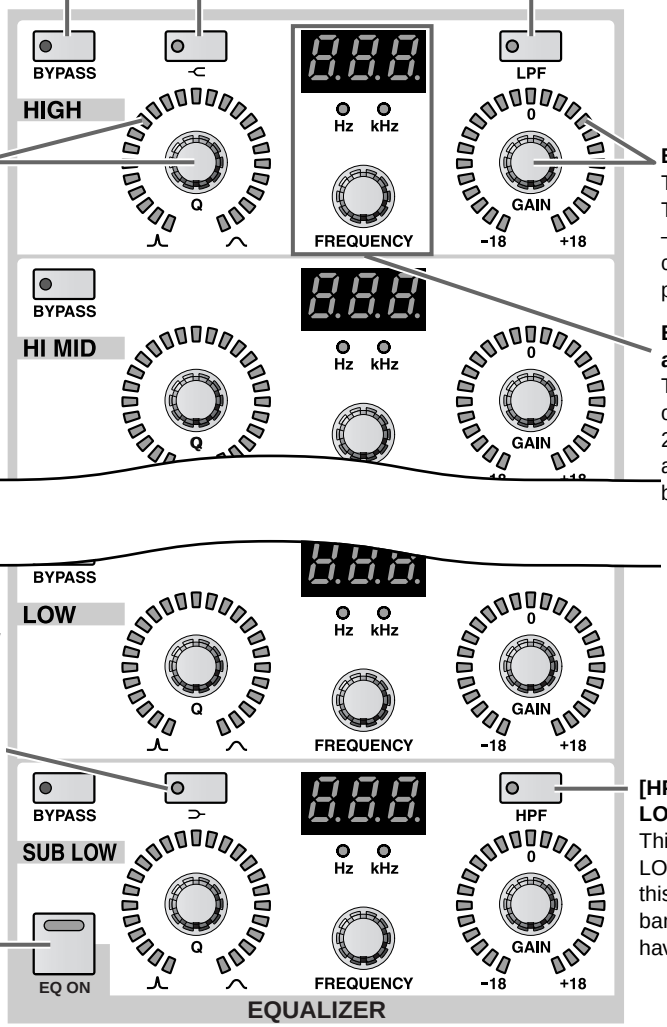
EQ [GAIN] encoder and LEDs
This sets the gain of each band. The adjustable range is –18 dB – +18 dB, and the approximate current value is shown by the peripheral LEDs.

EQ [FREQUENCY] encoder and [VALUE] indicator
This sets the center frequency of each band. The range is 20 Hz – 20 kHz for each band, and the current value is shown by the [VALUE] indicator.

EQ [⊃] switch and LED (SUB LOW band only)
This switch changes the SUB LOW band EQ to a low shelving type. The switch LED will light if low shelving is selected.
In this case, the SUB LOW band [Q] encoder will have no effect and the peripheral LEDs will go dark.

[HPF] switch and LED (SUB LOW band only)
This switch changes the SUB LOW band EQ type to HPF. If this switch is on, the SUB LOW band [Q]/[GAIN] encoders will have no effect.

[EQ ON] switch
This switch turns the entire equalizer on/off.



[Procedure]

1. **Press a [SEL] switch in the MIX OUTPUT block, MATRIX OUTPUT block, or STEREO OUTPUT block to select the output channel that you wish to control.**
2. **In the EQUALIZER section of the SELECTED OUTPUT CHANNEL block, turn on the [EQ ON] switch.**
   The 6 band EQ of the corresponding channel will be enabled.
3. **For each band, use the [Q] encoder, [FREQUENCY] encoder, and [GAIN] encoder to set the steepness, center frequency, and gain respectively.**
4. **If you wish to use the HIGH band or SUB LOW band as a shelving type EQ, turn on the [⊂] switch of the corresponding band.**
5. **If you wish to use the HIGH band as an LPF, turn on the [LPF] switch of the HIGH band.**
6. **If you wish to use the SUB LOW band as an HPF, turn on the [HPF] switch of the SUB LOW band.**

You can make settings so that the corresponding screen appears automatically when you operate the EQUALIZER section. This setting is made in the UTILITY function PREFERENCE screen.

In the same way as for the compressor or noise gate, EQ settings can be stored to or recalled from a dedicated EQ library. However, the output channel EQ library is independent of the input channel EQ library, and settings cannot be loaded/saved between these libraries.

Chapter 6. Insert and direct out

This chapter explains how external devices such as effect processors can be inserted into a specific channel, and how the signal of an input channel can be directly output from a desired output jack.

Insert

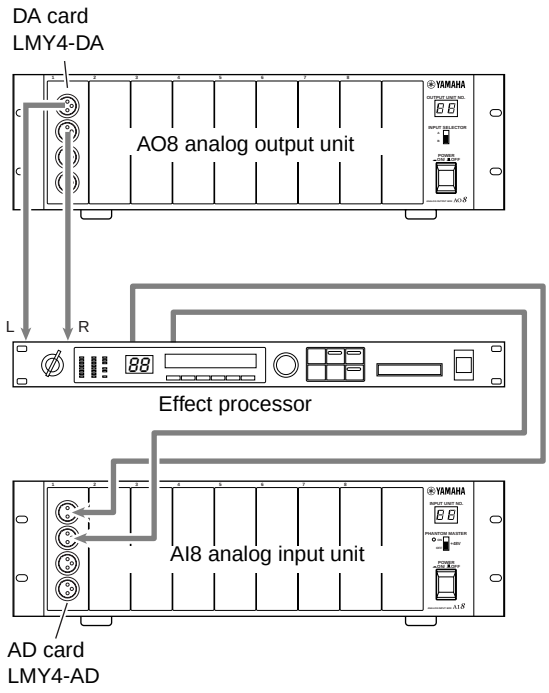
An external device such as an effect processor can be inserted in an input channel/output channel of the PM1D system.

Connecting the external device to be inserted

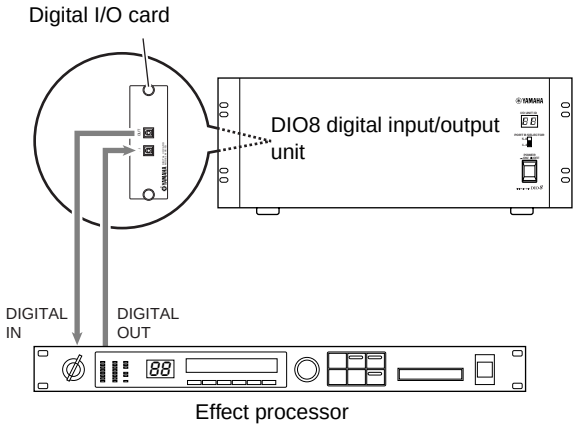
To insert an external device into a specific channel, you will use the output jack and input jack of an output unit as the insert out/insert in jacks respectively.

The following diagram shows typical connections for insertion.

- **Example connections for insertion** ①



- **Example connections for insertion** ②



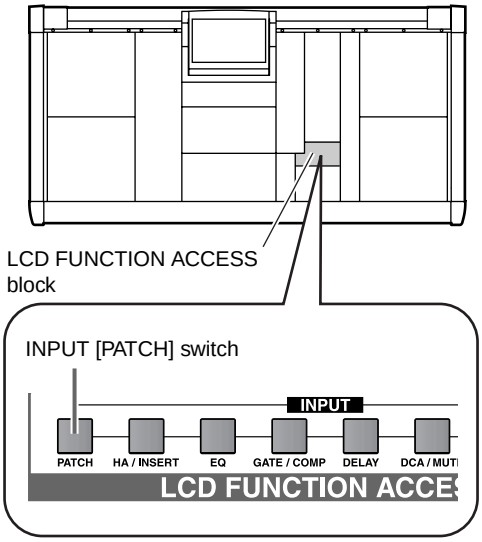
⚠ If an external digital device is inserted via a digital I/O card as shown in "Example connections for insertion ②," the word clocks of the PM1D system and the digital device must be synchronized. Normally, we recommend that you set the digital device as the slave, so that it will synchronize to the word clock of the PM1D. (For details on setting it to slave mode, refer to the manual for your device.)

Inserting into an input channel

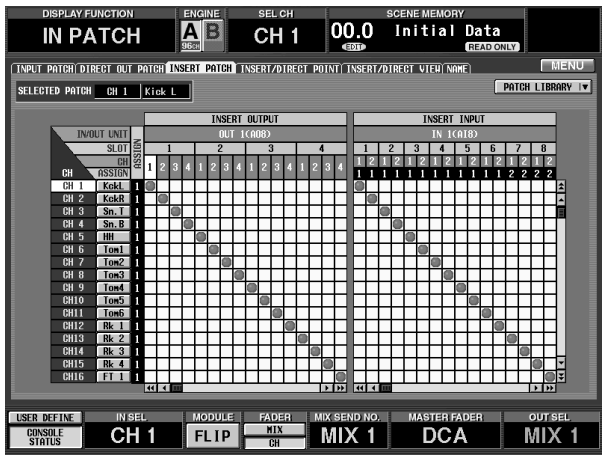
Here's how an external device connected to an input/output unit can be inserted into an input channel.

[Procedure]

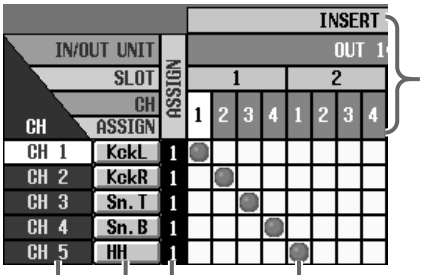
1. **In the LCD FUNCTION ACCESS block, press the INPUT [PATCH] switch several times to access the following INSERT PATCH screen (IN PATCH function).**



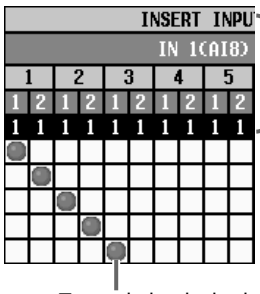
- **INSERT PATCH screen (IN PATCH function)**



In the INSERT PATCH screen (IN PATCH function), patch an output jack to the insert out point in the left half of the screen, and patch an input jack to the insert in point in the right half of the screen.



From above, this indicates the type and number of the output unit, the card slot number , and the channel number of the output jack.



From above, this indicates the type and number of the input unit, the card slot number, the channel number of the input jack, and the number of input channels that are patched to that jack.

Number of the input channel

Name of the input channel

Number of output jacks that are patched to the insert out of that channel

To patch the desired output jack to the insert out of an input channel, click this grid to display a "● " symbol.

To patch the desired output jack to the insert in of an input channel, click this grid to display a "● " symbol.

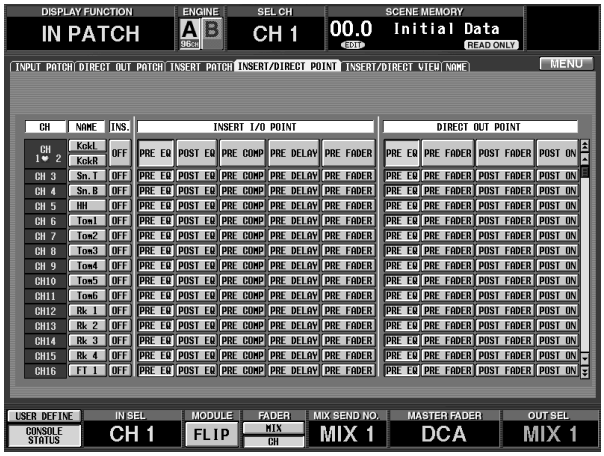
2. **In the left half of the screen, click the grid at which the output jack connected to the external device intersects with the desired input channel.**

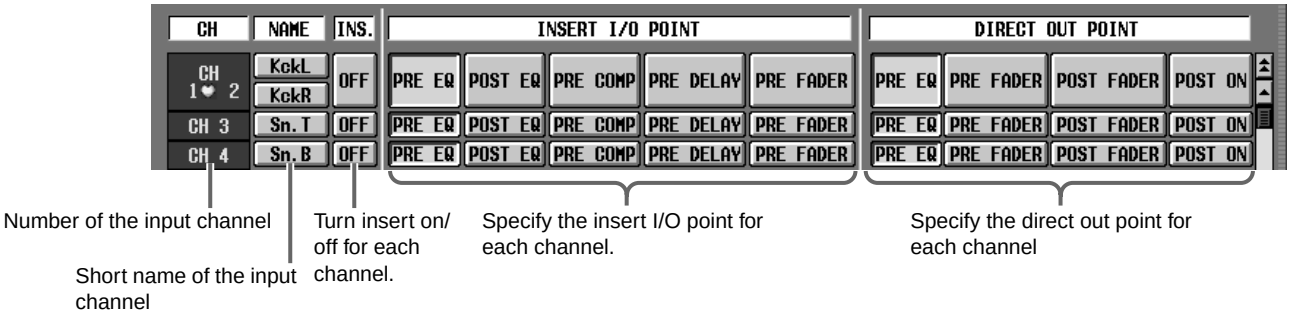
3. **In the right half of the screen, click the grid at which the input jack connected to the external device intersects with the desired input channel.**
With these settings, the input/output jacks connected to the external device will be patched to the corresponding input channel. (However, you should be aware that the insertion will not actually be enabled until the INS. button is turned on in the following INSERT/DIRECT OUT screen.)

4. **In the LCD FUNCTION ACCESS block, press the INPUT [PATCH] switch several times to access the following INSERT/DIRECT OUT screen (IN PATCH function).**
   In the INSERT/DIRECT OUT screen (IN PATCH function) you can switch insertion on/off for each input channel. Here you can also select the insert I/O point (the position at which the external device is inserted), and the direct out point (the position from which direct output is taken).

   Hint
   You can also turn insert on/off in the SELECTED INPUT CHANNEL block.

- **INSERT/DIRECT OUT screen (IN PATCH function)**

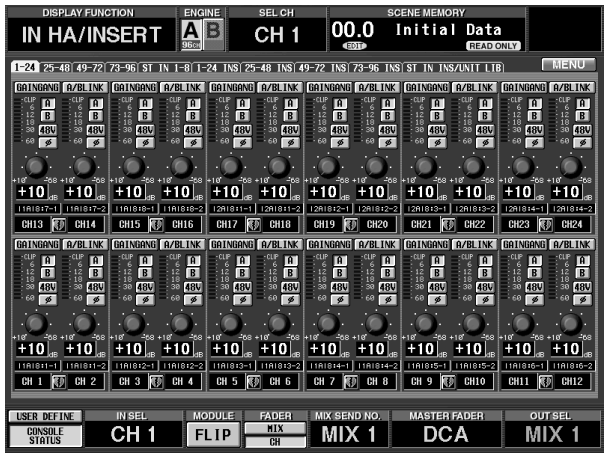




   Hint
   You can also access the INSERT/DIRECT OUT screen (IN PATCH) by clicking the INSERT/DIRECT POINT tab in step 3.

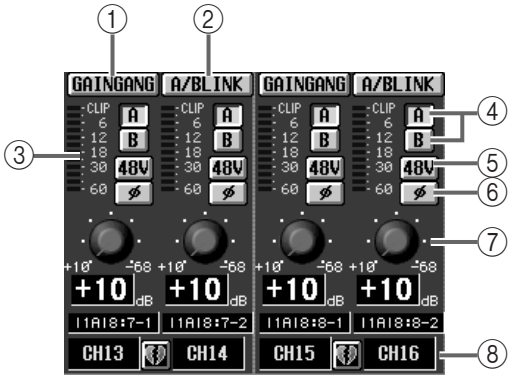
5. **Click the INS. button for the desired channel to turn it on.**
   Insert will be enabled for the corresponding channel.
6. **Click one of the following buttons to select the desired INSERT I/O POINT.**
   - **PRE EQ** .....Immediately before the EQ
   - **POST EQ** .....Immediately after the EQ
   - **PRE COMP**.....Immediately before the compressor
   - **PRE DELAY** .....Immediately before the delay
   - **PRE FADER**.....Immediately before the fader
7. **In the LCD FUNCTION ACCESS block, press the INPUT [HA/INSERT] switch.**
   The IN HA/INSERT function screen will appear. This contains mainly input card preamp settings (A/B selection, gain adjustment, etc.).

- **IN HA/INSERT function screen**

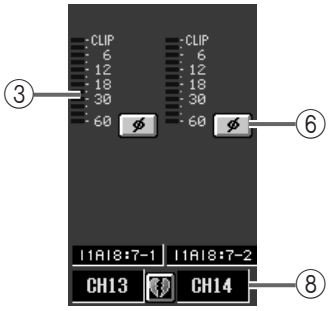


8. From the 1-24 INS, 25-48 INS, 49-72 INS, 73-96 INS, and ST IN INS tabs, click the tab that contains the channel into which you wish to insert the external device. {On the 48 channel model, the 49-72 INS and 73-96 INS tabs are not valid.}
The following items will be displayed, according to the type of input card that was patched to the insert point in step 3.

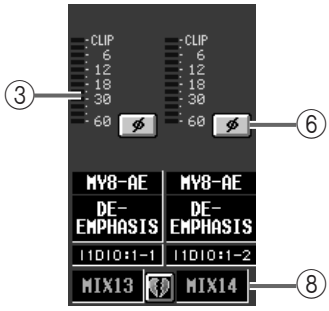
For a mic line input card (LMY2-ML) installed in the AI8



For an AD card (LMY4-AD) installed in the AI8



For a digital I/O card (MY card) installed in the DIO8



① **GAIN GANG**
If this button is on, the head amp gain settings of adjacent input channels in the screen will be linked while preserving the current difference between them.

② **A/B LINK**
If this button is on, the input jack A/B selection of adjacent input channels in the screen will be linked.

③ **Level meter**
This peak level meter shows the input level.

④ **A/B**
This button switches between input jacks A/B of an AD card with head amp.

⑤ **+48V**
For each channel, this button is an on/off switch for the phantom power of an AD card with head amp.

⚠ The +48V switch located on the front panel of the AI8 input unit is the master phantom switch for the entire unit. If this switch is off, phantom power cannot be used with that unit (regardless of the setting of the +48V button in the display).

⑥ **ø (phase)**
This button switches the input signal between normal/reversed phase.

⑦ **GAIN**
This knob adjusts the input sensitivity of the preamp. The adjustable range is +10 dB – –68 dB, and the current value is shown in the numerical box located below.

⑧ This shows the input channel number and the pairing status. You can also enable/defeat pairing by clicking the heart symbol.

9. As necessary, adjust input card parameters such as the A/B button, +48V button, GAIN, and phase.

⚠ By clicking a tab whose name does not include "INS" in step 8, you can make preamp settings for an input unit that is patched to an input channel.

Hint

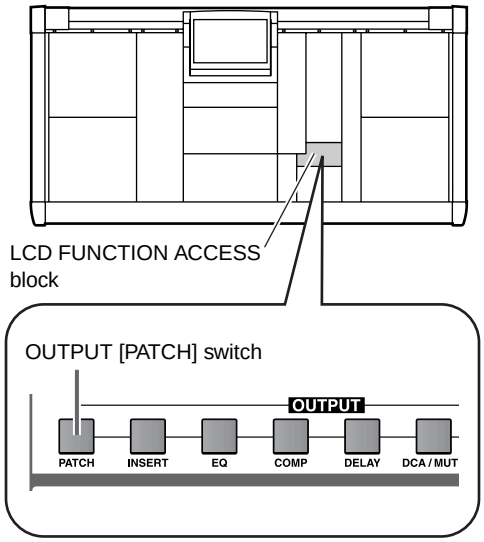
The A/B selection, +48V phantom power, ø (phase), and GAIN settings can also be made in the SELECTED INPUT CHANNEL block.

Inserting into an output channel

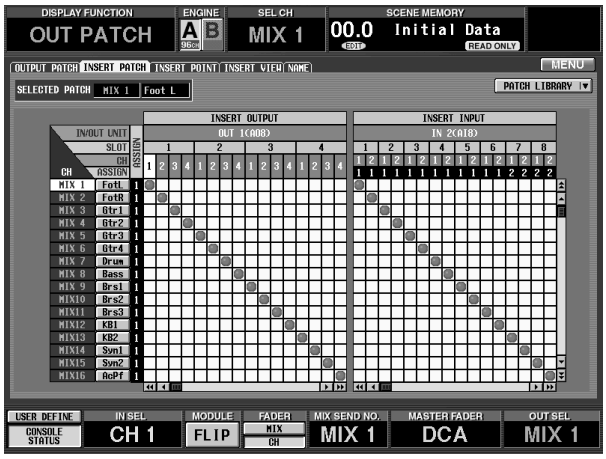
Here's how an external device can be inserted into an output channel (MIX channel, MATRIX channel, STEREO A/B channel). Most of the steps are the same as for an input channel.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the OUTPUT [PATCH] switch several times to access the following INSERT PATCH screen (OUT PATCH function).**

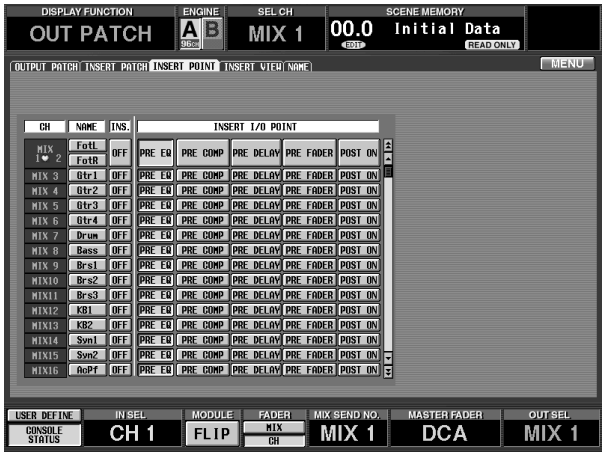


- **INSERT PATCH screen (OUT PATCH function)**



In this screen as in the INSERT PATCH screen of the IN PATCH function, you can patch an output jack to the insert out point in the left half of the screen, and patch an input jack to the insert in point in the right half of the screen.

2. **In the left half of the screen, click the grid at which the output jack connected to the external device intersects with the desired output channel.**
3. **In the right half of the screen, click the grid at which the input jack connected to the external device intersects with the desired output channel.**
4. **In the LCD FUNCTION ACCESS block, press the OUTPUT [PATCH] switch several times to access the following INSERT screen (OUT PATCH function).**
   In the INSERT POINT screen (OUT PATCH function) you can switch insertion on/off for each output channel. Here you can also select the insert I/O point (the position at which the external device is inserted).
   - **INSERT POINT screen (OUT PATCH function)**



Hint

You can also access the INSERT screen (OUT PATCH function) by clicking the INSERT tab in step 3.

5. **Click the INS. button for the desired channel to turn it on.**
   Insert will be enabled for the corresponding channel.

Hint

You can also turn insert on/off in the SELECTED OUTPUT CHANNEL block.

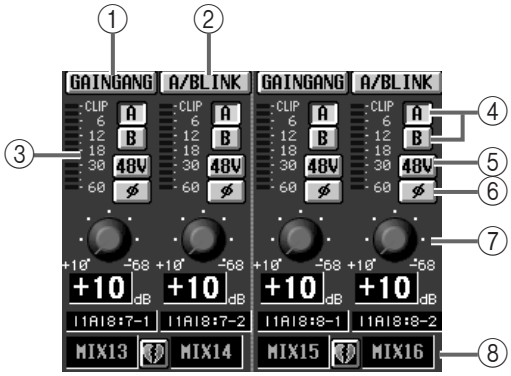
6. **Click one of the following buttons to select the desired INSERT I/O POINT.**
   - **POST EQ**..... Immediately after the EQ
   - **PRE COMP**..... Immediately before the compressor
   - **PRE DELAY**..... Immediately before the delay
   - **PRE FADER**..... Immediately before the fader
   - **POST ON**..... Immediately after the [ON] switch

7. **In the LCD FUNCTION ACCESS block, press the OUTPUT [INSERT] switch.**
   The OUT INSERT function screen will appear. This contains mainly preamp settings for the input card that is patched to the insert point.

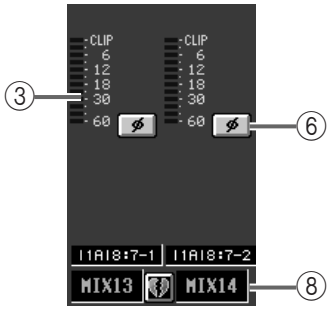
   • **OUT INSERT function screen**

8. **From the MIX 1-24 INS, MIX 25-48 INS, MATRIX 1-24 INS, and ST MAS INS tabs, click the tab that contains the channel into which you wish to insert the external device.**
   The following items will be displayed, according to the type of input card that was patched to the insert point in step 3.

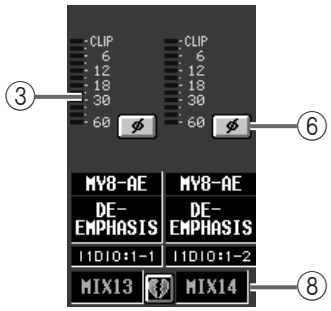
For a mic line input card (LMY2-ML) installed in the AI8



For an AD card (LMY4-AD) installed in the AI8



For a digital I/O card (MY card) installed in the DIO8



① **GAIN GANG**
If this button is on, the head amp gain settings of adjacent input channels in the screen will be linked while preserving the current difference between them.

② **A/B LINK**
If this button is on, the input jack A/B selection of adjacent input channels in the screen will be linked.

③ **Level meter**
This peak level meter shows the input level.

④ **A/B**
This button switches between input jacks A/B of an AD card with head amp.

⑤ **+48V**
For each channel, this button is an on/off switch for the phantom power of an AD card with head amp.

⚠ The +48V switch located on the front panel of the AI8 input unit is the master phantom switch for the entire unit. If this switch is off, phantom power cannot be used with that unit (regardless of the setting of the +48V button in the display).

⑥ **ø (phase)**
This button switches the input signal between normal/reversed phase.

⑦ **GAIN**
This knob adjusts the input sensitivity of the preamp. The adjustable range is +10 dB – –68 dB, and the current value is shown in the numerical box located below.

⑧ This shows the input channel number and the pairing status. You can also enable/defeat pairing by clicking the heart symbol.

9. **As necessary, adjust input card parameters such as the A/B button, +48V button, GAIN, and phase.**

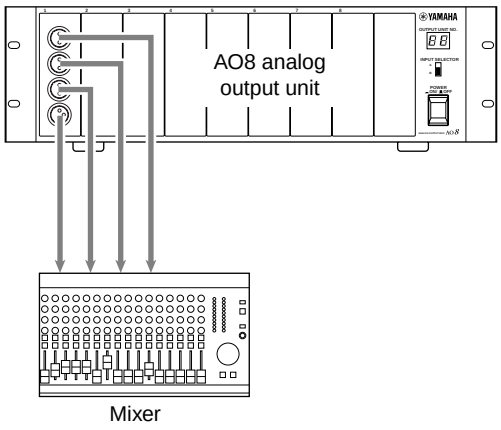
Direct out

An input source patched to an input channel can be output directly from a desired output jack without being affected by the STEREO bus or MIX buses.

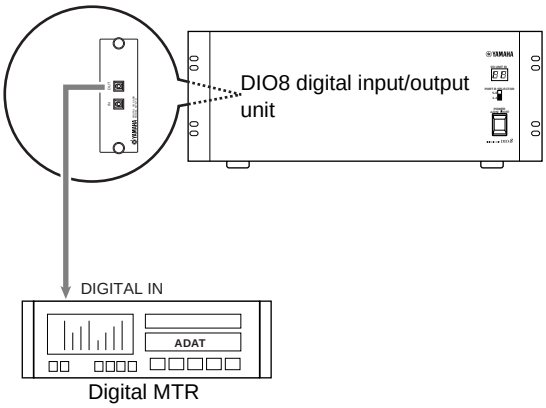
Direct out connections

If you wish to directly output a specific signal, you can use an output jack of an output unit as a direct output.

- **Direct out connection example ①**



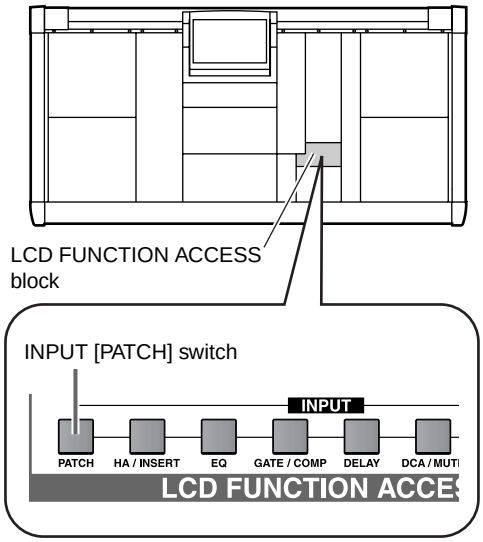
- **Direct out connection example ②**



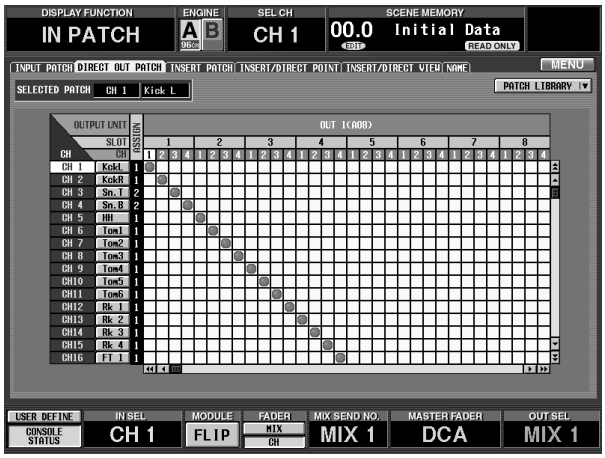
Directly outputting an input channel signal

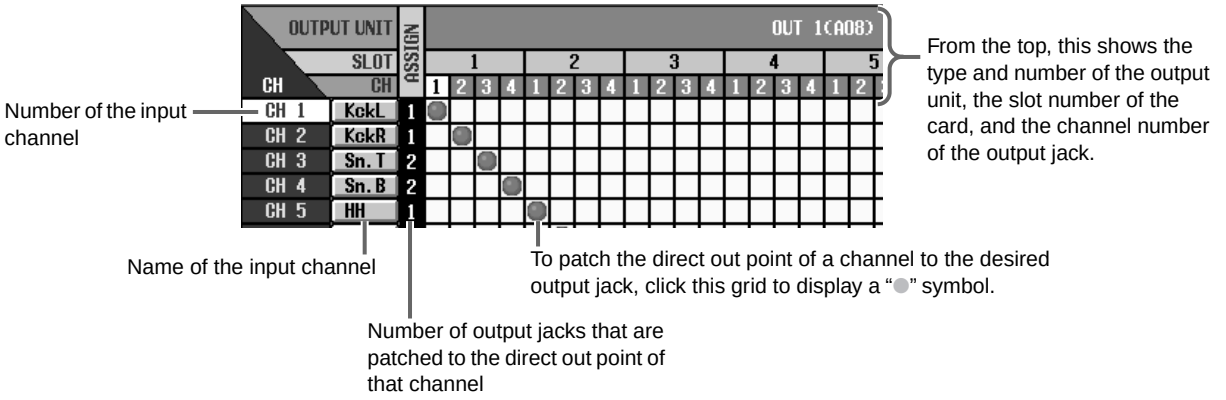
[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the INPUT [PATCH] switch several times to access the following DIRECT OUT PATCH screen (IN PATCH function).**
   In the DIRECT OUT PATCH screen, you can patch the desired input channel to an output jack that will be the direct output destination.



- **DIRECT OUT PATCH screen (IN PATCH function)**

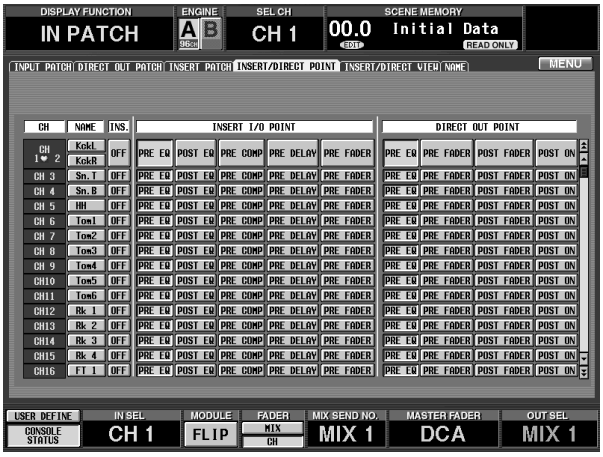


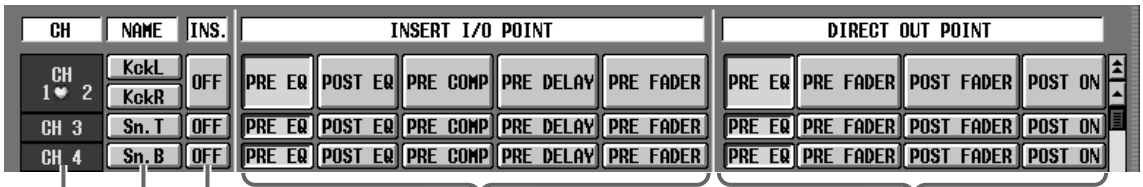


2. **Click the grid at which the input channel intersects with the output jack that you wish to use as the direct output.**

3. **In the LCD FUNCTION ACCESS block, press the INPUT [PATCH] switch several times to access the following INSERT/DIRECT OUT screen (IN PATCH function).**
   In the INSERT/DIRECT OUT screen (IN PATCH function) you can switch insertion on/off for each input channel. Here you can also select the insert I/O point (the position at which the external device is inserted), and the direct out point (the position from which direct output is taken).

- **INSERT/DIRECT OUT screen (IN PATCH function)**





4. **Use the on-screen buttons to select one of the following as the direct out point (the location in the signal patch from which the direct out signal will be taken).**
   - **PRE EQ** .....Immediately before the EQ
   - **PRE FADER**.....Immediately before the fader
   - **POST FADER**.....Immediately after the fader
   - **POST ON**.....Immediately after the [ON] switch

Hint

The direct point can also be selected in the IN PATCH function INSERT/DIRECT POINT screen, or in the INSERT/DIRECT VIEW screen.

Chapter 7. DCA groups/Mute groups

On the PM1D system, channels can be assigned to a DCA group/mute group to adjust the levels or switch muting on/off for a group of channels. This chapter explains operations for DCA groups and mute groups.

DCA groups

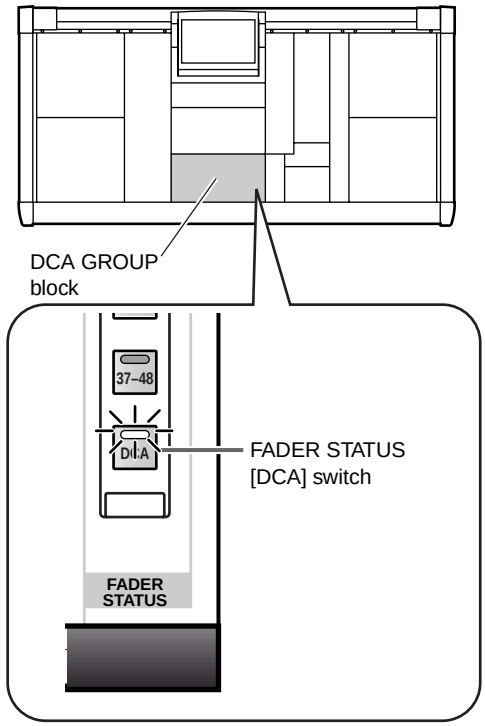
The PM1D system has 12 DCA groups to which input channels (input channels, ST IN channels) or output channels (MIX channels) can be assigned. By using the DCA faders in the DCA GROUP block of the console, you can control the levels of each DCA group.

Assigning a channel to a DCA group

Input channels (input channels, ST IN channels) can be assigned to DCA groups 1–12. Output channels (MIX channels) can be assigned to DCA groups 9–12. (However, it is not possible for input channels and output channels to exist in the same DCA group.) Here we will explain how to assign channels to a DCA group.

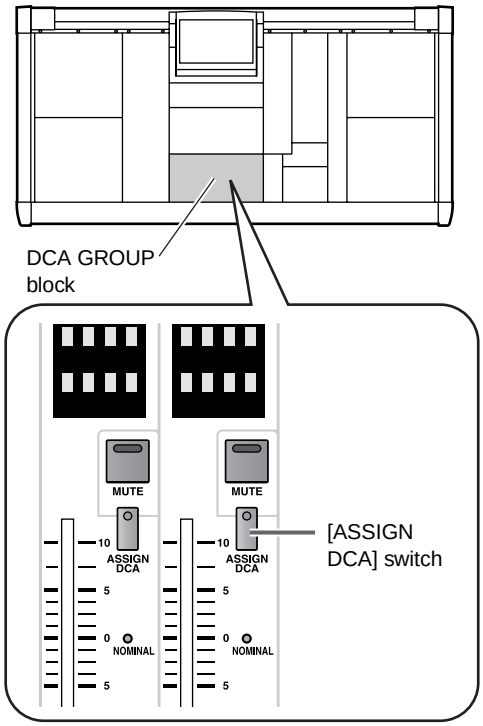
[Procedure]

1. **In the DCA GROUP block of the console, turn on the FADER STATUS [DCA] switch (the LED will light).**

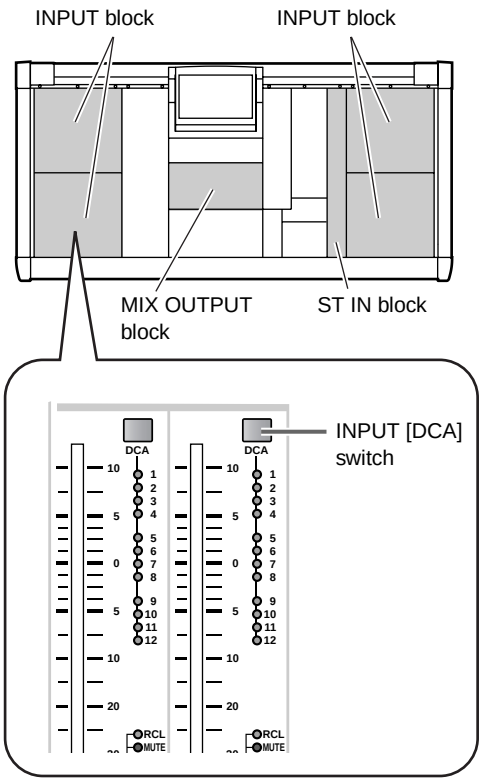


The FADER STATUS [DCA] switch lets you use the DCA faders to control DCA groups. (The DCA faders can also be used as input channel or MIX channel faders.)

2. **In the DCA GROUP block, press one of the [ASSIGN DCA] switches 1–12 to select a DCA group (1–12).**



3. **In the INPUT block, ST IN block, or MIX OUTPUT block, press the [DCA] switch for the channels that you wish to assign to the DCA group you selected above.**
For that channel, the [DCA] LED of the selected DCA group will light. You can assign either input channels (input channels, ST IN channels) or output channels (MIX channels).



- Output channels cannot be assigned to DCA groups 1–8.
- Input channels and output channels cannot coexist in a DCA group 9–12. If an input channel has already been assigned, attempting to assign an output channel will cause an error message to appear, and the assignment will not be completed. (The converse also applies.)
- When a scene is recalled, the DCA group data of the Recall Safe channels may sometimes be adjusted so that the Recall Safe settings are not mixed within DCA groups 9–12.
  Also when recalling a channel library, the recalled channel data may be adjusted so that the settings are consistent between DCA groups 9–12.

4. **Repeat steps 1 and 2 to assign channels to other DCA groups as desired.**
   You can assign multiple channels to a single DCA group, or assign a single channel to multiple DCA groups.

Hint

The assignment of input channels/output channels to DCA groups can also be performed within the display (IN DCA/MUTE function DCA ASSIGN screen, OUT DCA/MUTE function DCA ASSIGN screen).

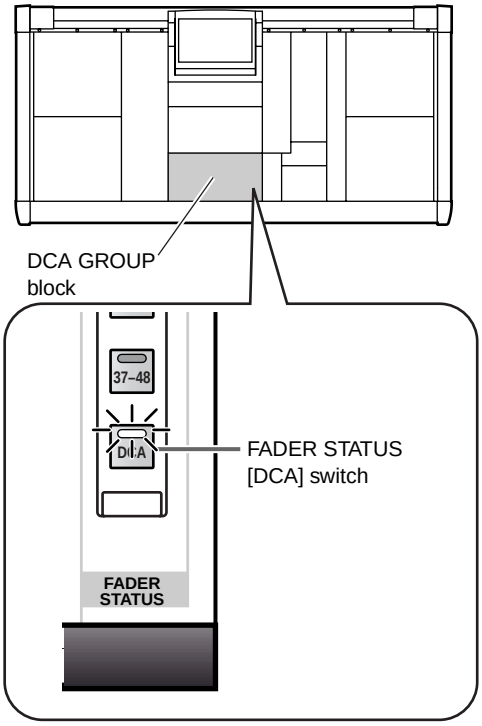
You can also use the SELECTED INPUT CHANNEL block (or the SELECTED OUTPUT CHANNEL block) to assign the desired channel to a DCA group. In this case, press the [SEL] switch for the channel that you wish to assign, and then use the SELECTED INPUT CHANNEL block DCA [1]–[12] switches (or the SELECTED OUTPUT CHANNEL block DCA [9]–[12] switches) to select the DCA fader. This method is convenient when you wish to assign a specific channel to multiple DCA faders.

Controlling a DCA group

By using the DCA faders in the DCA GROUP block of the console, you can control the levels of each DCA group.

[Procedure]

1. **Assign input channels/output channels to a DCA group.**
2. **In the DCA GROUP block of the console, turn on the FADER STATUS [DCA] switch (the LED will light).**



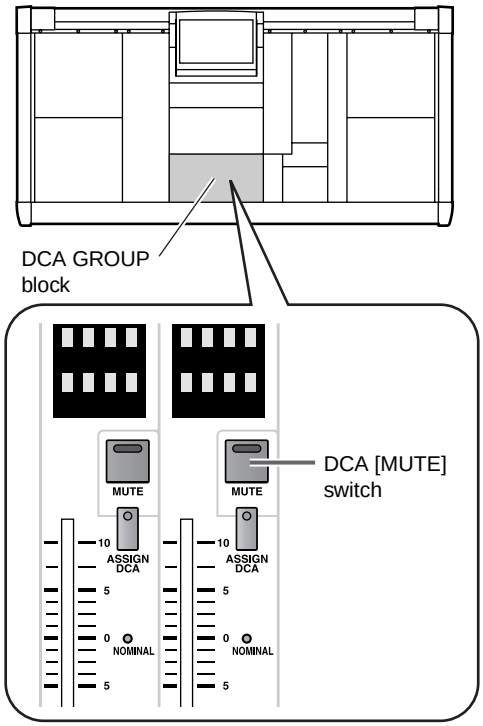
The FADER STATUS [DCA] switch lets you use the DCA faders to control DCA groups. (The DCA faders can also be used as input channel or MIX channel faders.)

3. **Operate DCA faders 1–12.**
The levels of the input channels or output channels assigned to each DCA fader will be controlled.

Hint

DCA group levels can also be adjusted in the display (IN DCA/MUTE function DCA GROUP ASSIGN screen, OUT GROUP DCA/MUTE function DCA ASSIGN screen).

4. **To mute a specific DCA group, press the DCA [MUTE] switch (located in the DCA GROUP block) for that DCA group.**



The DCA [MUTE] switch LED will light, and the input channels/output channels included in that DCA group will be set to a state identical to when the DCA fader has been lowered to the minimum position (– ∞ dB).

5. **If you press the switch once again, the DCA [MUTE] LED will go dark, and muting will be defeated.**

Hint

DCA group operations can also be performed in the display (IN DCA/MUTE function DCA GROUP ASSIGN screen, OUT DCA/MUTE function DCA GROUP ASSIGN screen).

Mute groups

The PM1D system provides 12 mute groups, to which the desired input channels (input channels, ST IN channels) or output channels (MIX channels, MATRIX channels) can be assigned. By using the [1]–[12] switches located in the SCENE MEMORY block of the console, you can turning muting on/off for each mute group.

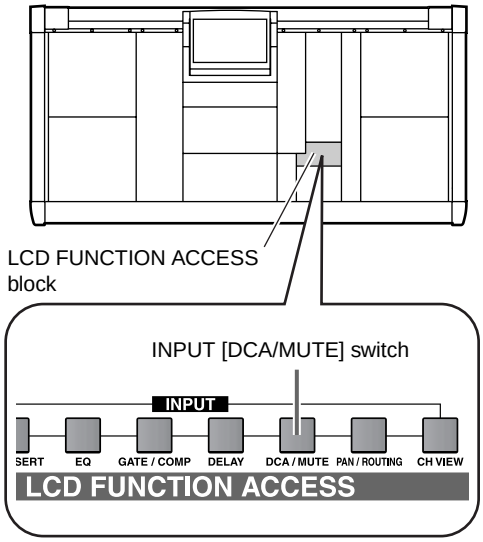
⚠ Do not confuse "mute groups" with the "DCA group muting" that is controlled by the DCA [MUTE] switches of the DCA GROUP block. These functions are independent in their operation and in their settings.

Assigning input channels to a mute group

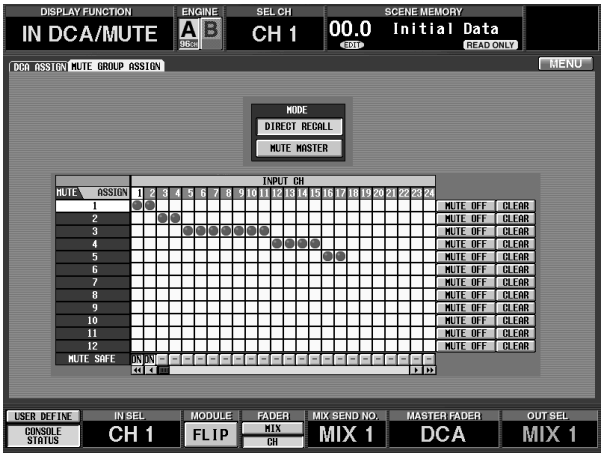
Here's how to assign an input channel (input channel, ST IN channel) to a mute group.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the INPUT [DCA/MUTE] switch several times to access the following MUTE GROUP ASSIGN screen (IN DCA/MUTE function).**



- **MUTE GROUP ASSIGN screen (IN DCA/MUTE function)**



In this screen, mute groups 1–12 are shown from top to bottom, and input channels (or ST IN channels) are shown from left to right. Use the left/right scroll bar to view channels that are currently not visible.

2. **To assign an input channel to a mute group, click the grid where the two intersect.**
A "●" symbol will appear in the grid, and the input channel will be assigned to the mute group. (If you click once again, the assignment will be cancelled, and the "●" symbol will disappear.)

3. **In the same way, assign input channels to other mute groups.**

⚠

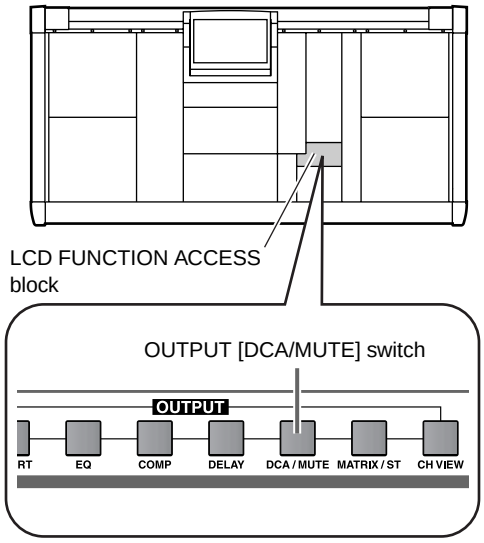
- It is not possible to assign input channels and output channels to the same mute group of mute groups 9–12. If an output channel is already assigned, attempting to assign an input channel will cause an error message to appear, and the assignment will not be completed. (The converse also applies.)
- When a scene is recalled, the mute group data of the Recall Safe channels may sometimes be adjusted so that the Recall Safe settings are not mixed within mute groups 9–12.
Also when recalling a channel library, the recalled channel data may be adjusted so that the settings are consistent between mute groups 9–12.

Assigning output channels to a mute group

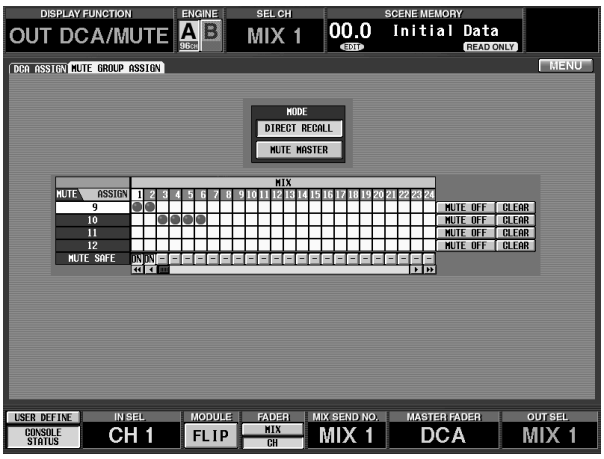
Here's how to assign an output channel (MIX channel, MATRIX channel) to a mute group.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the OUTPUT [DCA/MUTE] switch several times to access the following MUTE GROUP ASSIGN screen (OUT DCA/MUTE function).**



- **MUTE GROUP ASSIGN screen (OUT DCA/MUTE function)**



  In this screen, mute groups 9–12 are shown from top to bottom, and output channels (MIX channels, MATRIX channels) are shown from left to right. Use the left/right scroll bar to view channels that are currently not visible.

2. **To assign an output channel to a mute group, click the grid where the two intersect.**
   A "●" symbol will appear in the grid, and the output channel will be assigned to the mute group. (If you click once again, the assignment will be cancelled, and the "●" symbol will disappear.)

3. **In the same way, assign output channels to other mute groups.**

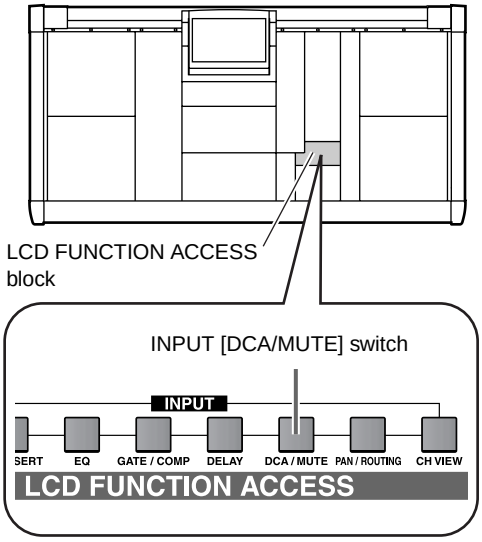
⚠ It is not possible to assign input channels and output channels to the same mute group of mute groups 9–12. If an input channel is already assigned, attempting to assign an output channel will cause an error message to appear, and the assignment will not be completed. (The converse also applies.)

Controlling a mute group

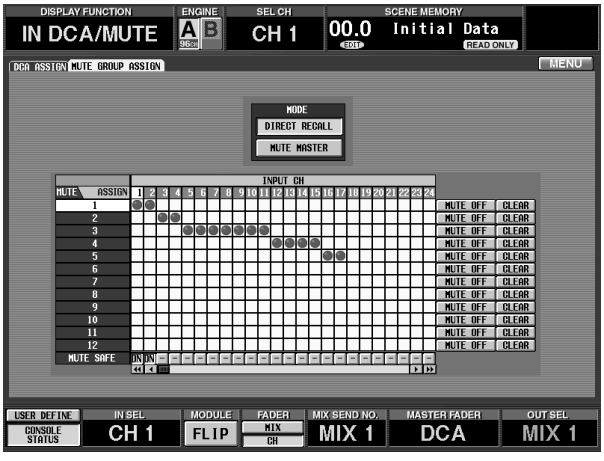
By using the SCENE MEMORY [1]–[12] switches in the SCENE MEMORY block of the console, you can switch muting on/off for mute groups 1–12.

[Procedure]

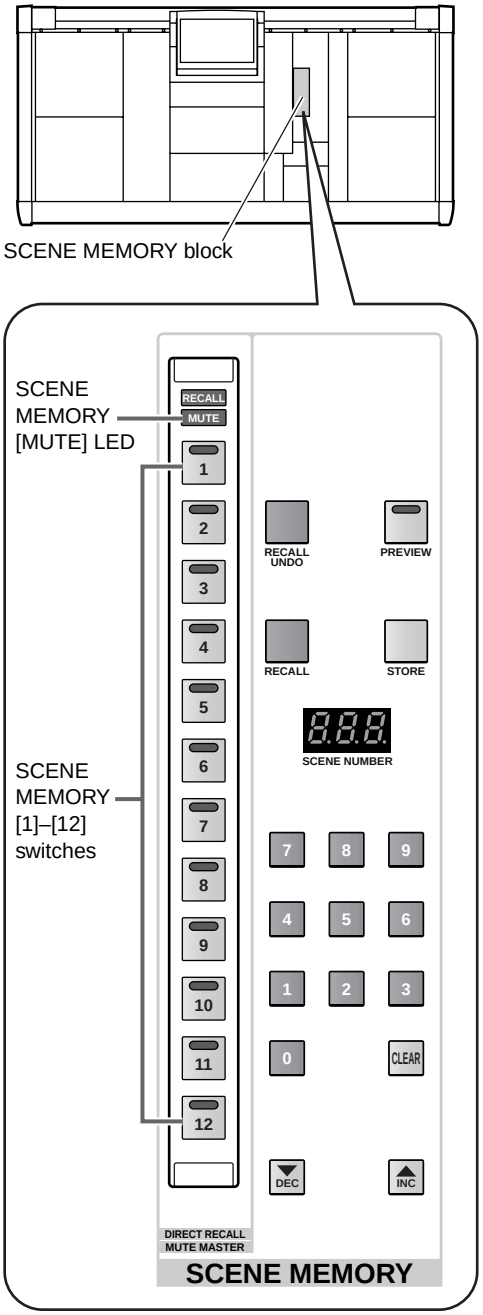
1. **Assign input channels/output channels to mute groups 1–12.**
2. **In the LCD FUNCTION ACCESS block, press the INPUT [DCA/MUTE] switch several times to access the MUTE GROUP ASSIGN screen (IN DCA/MUTE function).**



- **MUTE GROUP ASSIGN screen (IN DCA/MUTE function)**



3. **In the MODE section, click the MUTE MASTER button to turn it on.**
   The SCENE MEMORY [MUTE] LED in the SCENE MEMORY block of the console will light. In this state, the SCENE MEMORY [1]–[12] switches of the console will function as MUTE MASTER buttons to switch muting on/off for mute groups 1–12.



Hint

In the initial state of the PM1D system, the SCENE MEMORY [1]–[12] will function as DIRECT RECALL switches that recall specific scenes.

The function of the SCENE MEMORY [1]–[12] switches can also be selected in the OUT DCA/MUTE function MUTE GROUP ASSIGN screen, or in the SCENE MEMORY function DIRECT RECALL screen.

4. **Press a SCENE MEMORY [1]–[12] switch.**
   The LED of the corresponding switch will light, and the mute group assigned to that switch will be muted. (All channels assigned to that group will be in the same state as if their [ON] switches had been turned off.)

   Hint
   You can turn on multiple buttons to simultaneously mute two or more mute groups.

5. **To turn off muting, press a SCENE MEMORY [1]–[12] switch whose LED is currently lit.**

   Hint
   Mute group operations can also be performed in the display (IN DCA/MUTE function MUTE GROUP ASSIGN screen, OUT DCA/MUTE function MUTE GROUP ASSIGN screen).

Chapter 8. Scene memory

Mix parameters and various settings of the PM1D system can be stored in memory as a scene, and later recalled (loaded). This chapter explains mainly how to perform scene operations using the top panel of the CS1D.

Hint

It is also possible to store/recall scenes by operations within the display. (By using this method, you can assign names to individual scenes.) For details refer to "CS1D Reference Manual (Software)" (→p.18).

Data such as patch data, unit data, name data, EQ data, compressor data, and effect data can be saved for later recall in libraries that are independent of scenes. For more about libraries, refer to "CS1D Reference Manual (Software)" (→p.166).

About scenes

The scenes of the PM1D system contain settings for all the controllers of the CS1D (except for display contrast and analog volume settings), as well as the settings for the following functions in the display.

- **All INPUT functions**
- **All OUTPUT functions**
- **EFFECT functions**
- **GEQ functions**

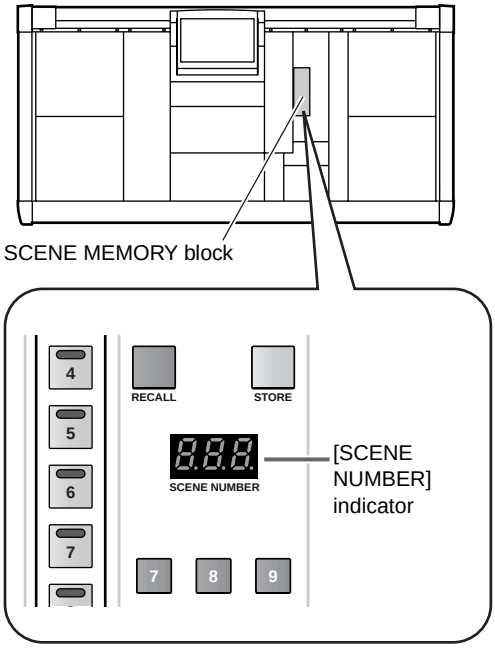
However for the UNIT, PATCH, and NAME data, only the number of the linked library is memorized (not the contents of the settings). If a library link is on when a scene is recalled, the library of the corresponding number will be recalled simultaneously.

When a scene is stored into memory, a scene number will be assigned. The scene number consists of an integer portion from 00–99, and a decimal portion from .0–.9, providing a total of 1,000 scenes numbered from 00.0 to 99.9.

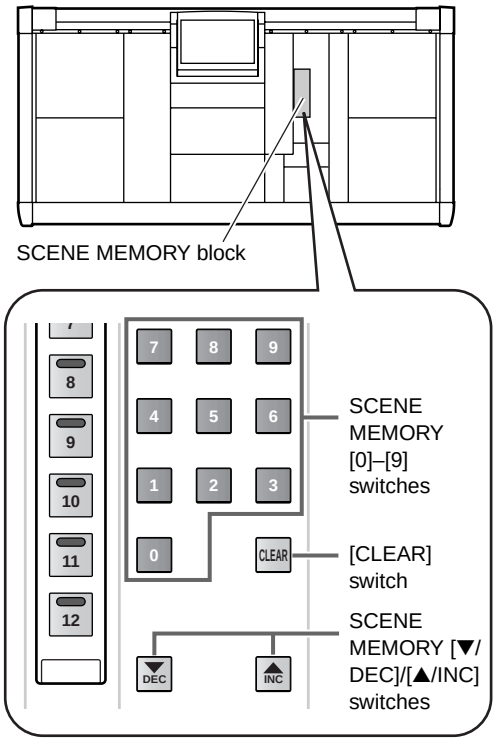
Hint

Numbers 00.0–00.9 contain various factory preset settings. These preset scenes are read-only, and cannot be overwritten. You may write scenes into any of the other numbers.

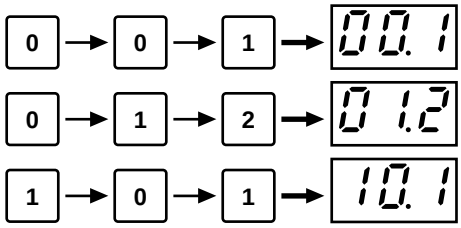
The currently selected scene is shown by the [SCENE NUMBER] indicator located in the SCENE MEMORY block of the console.



The scene number can be selected in the following two ways.



- **Using the SCENE MEMORY [0]–[9] switches to directly input the scene number**
  In this method, you use a three-digit number to specify the scene number. Consecutively input the two-digit integer portion and the one-digit decimal portion. (If the integer portion has only one digit, add a 0 at the beginning.)
  - **Examples of entering the scene number**



- **Using the SCENE MEMORY [▼/DEC]/[▲/INC] switches to increment or decrement the scene number**
  When the PM1D system is in the initial state, pressing the SCENE MEMORY [▼/DEC]/[▲/INC] switches cause the scene number displayed in the [SCENE NUMBER] indicator to increment or decrement in 0.1 units.

Hint

If desired, you can skip scenes in which data has not been saved. This setting is made in the display (SCENE function MEMORY screen).

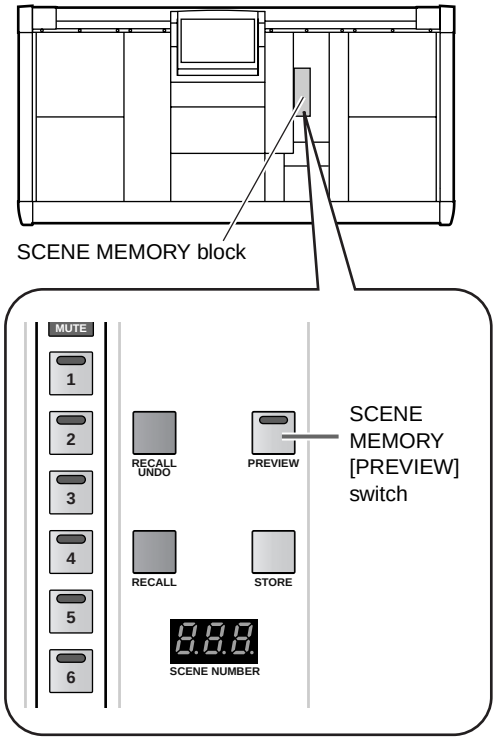
- **[CLEAR] switch**
  To return to the number that had been selected , press the [CLEAR] switch while the [SCENE NUMBER] indicator is blinking.

Scene memory operations

Storing a scene

Here's how to store the current mix settings as a scene.
We recommend that you store the current state as a scene memory before you turn off the power supply (PW1D). If the current unit connection state differs from the unit connection state the next time the power is turned on, patch settings etc. may be modified.

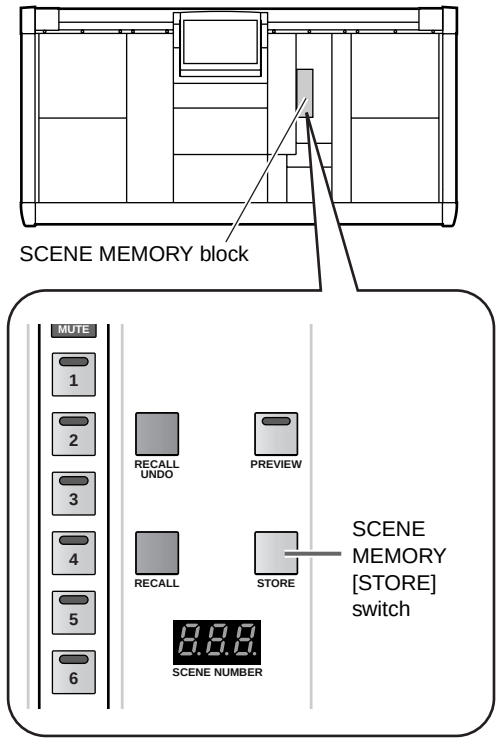
⚠ Before you perform the following procedure, make sure that the SCENE MEMORY [PREVIEW] switch in the SCENE MEMORY block is turned off. (If this switch is on, turn it off.)



[Procedure]

1. **Use the panel controllers of the CS1D to set the mix parameters.**
2. **Use the SCENE MEMORY [0]–[9] switches or the SCENE MEMORY [▼/DEC]/[▲/INC] switches to select the scene number into which you wish to store.**
   When you select a new scene number, the number shown in the [SCENE NUMBER] indicator will blink. The blinking indicates that the displayed scene number is different than the mix parameters that are currently being controlled from the CS1D.
   - **Blinking [SCENE NUMBER] indicator**

   However, be aware that the scene number displayed in the SCENE MEMORY [NUMBER] indicator of the meter bridge block will not change. This indicator always shows only the last stored/recalled scene number.
3. **Press the SCENE MEMORY [STORE] switch**
   The SCENE STORE popup window will appear, allowing you to assign a title to the scene and store it. Assign a title and comment as necessary. (For details on entering text →p.20)
4. **Use the [CURSOR] switches to move the cursor to the STORE button in the screen, and press the [ENTER] switch.**
   A message asking you to confirm the store operation will appear in the display. When you select OK, the current mix parameter settings will be stored in the scene number you selected in step 2, and the [SCENE NUMBER] indicator will stop blinking.



Hint

You can make settings so that the confirmation message does not appear in the display when you press the SCENE MEMORY [STORE] switch. This setting is made in the display (UTILITY function PREFERENCE screen)("CS1D Reference Manual (Software)" →p.37).

⚠
- If there are any changes in a UNIT, PATCH, or NAME library that is linked to that scene, the popup window for the corresponding library will appear after the SCENE STORE popup window. Store the library as necessary.
- If the EVENT RECALLING button is set to "ENABLE" in the TC EVENT screen of MIDI/GPI/TC functions, pressing the [STORE] switch will produce a message of "TIME CODE ACTIVE! CANNOT STORE!," and the Store operation cannot be executed.

You must first switch the EVENT RECALLING button to "DISABLE."

- While a message asking you to confirm the Store operation is being displayed, using the SCENE MEMORY [0]–[9] switches or the [▼/DEC]/[▲/INC] switches to change the scene number will cause the Store operation to be aborted.
- If you press the [STORE] switch while saving or loading to/from a memory card, a message of "CANNOT STORE!" will appear, and the store operation will not be performed.

Recalling a scene

Here's how to recall a scene from memory.

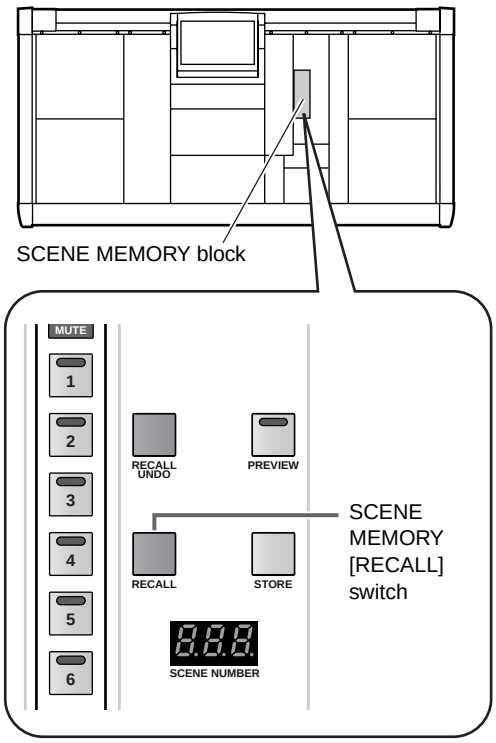
⚠ Before you perform the following procedure, make sure that the SCENE MEMORY [PREVIEW] switch in the SCENE MEMORY block is turned off.

[Procedure]

1. **Use the SCENE MEMORY [0]–[9] switches or the SCENE MEMORY [▼/DEC]/[▲/INC] switches to select the scene number that you wish to recall.**
   When you select a new scene number, the number shown in the [SCENE NUMBER] indicator will blink.

   However, be aware that the scene number displayed in the SCENE MEMORY [NUMBER] indicator of the meter bridge block will not change. This indicator always shows only the last stored/recalled scene number.

2. **Press the SCENE MEMORY [RECALL] switch.**
   A message asking you to confirm the recall operation will appear in the display. When you select OK, the scene of the number you selected in step 1 will be recalled.



Hint

You can make settings so that the confirmation message does not appear in the display when you press the SCENE MEMORY [RECALL] switch. This setting is made in the display (UTILITY function PREFERENCE screen).

If you recall a scene by mistake, you can press the SCENE MEMORY [RECALL UNDO] switch located in the SCENE MEMORY block to return to the state immediately prior to the recall operation. (If you undo a Recall operation, an EDIT symbol will appear in the top line of the display.)

When the undo operation is not available, such as immediately after the power is turned on, or in PREVIEW mode, pressing the [RECALL UNDO] switch will produce a message of "CANNOT UNDO!"

While a message asking you to confirm the Recall operation is being displayed, using the SCENE MEMORY [0]–[9] switches or the [▼/DEC]/[▲/INC] switches to change the scene number will cause the Recall operation to be aborted.

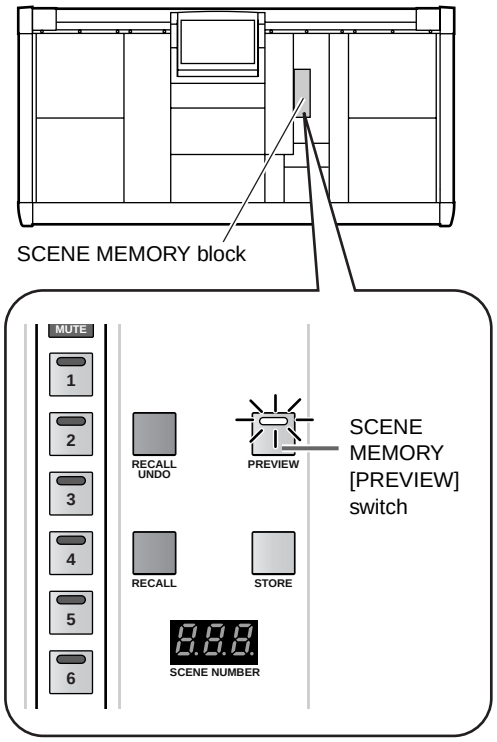
Using PREVIEW mode

The SCENE MEMORY block provides two modes: "NORMAL" mode in which the scene is actually loaded into the system, and "PREVIEW" mode in which only the parameter values are loaded without affecting the internal signal processing of the system. By using PREVIEW mode you can confirm the setting values of a scene in memory, or edit the settings and store them once again.

[Procedure]

1. **In the SCENE MEMORY block of the console, turn on the SCENE MEMORY [PREVIEW] switch.**
   The switch LED will light, and the SCENE MEMORY block will be in PREVIEW mode.

   The audio signal processing will remain as it was before you entered Preview mode. In Preview mode, operating the knobs and encoders etc. will not affect the audio signal processing.



2. **Use the SCENE MEMORY [0]–[9] switches or the SCENE MEMORY [▼/DEC]/[▲/INC] switches to select the scene number that you wish to load.**
   When you select a new scene, the number shown in the [SCENE NUMBER] indicator will blink.

3. **Press the SCENE MEMORY [RECALL] switch.**
   Only the setting values of the scene selected in step 2 will be loaded, and shown in the LEDs and display of the CS1D panel. However, the internal signal processing of the system will remain as it was prior to the recall operation, and will not change.

   Even if a fade time is specified for the recalled scene, it will be ignored in PREVIEW mode.

Hint

You can also access specific channels in the SELECTED INPUT CHANNEL block or SELECTED OUTPUT CHANNEL block, or access specific screens in the display and view the settings in detail.

4. **As desired, use the controllers of the console to edit the settings.**
   When you operate the panel controllers in PREVIEW mode, the patch whose settings alone were loaded in step 3 will be modified. The internal signal processing of the system will not be affected.

5. **If you wish to save the changes you made in step 4, select the storing destination patch number as necessary, and press the SCENE MEMORY [STORE] switch.**
   The settings you edited in step 4 will be stored into memory.

6. **To return the SCENE MEMORY block to NORMAL mode, press the SCENE MEMORY [PREVIEW] switch to make the switch LED go dark.**

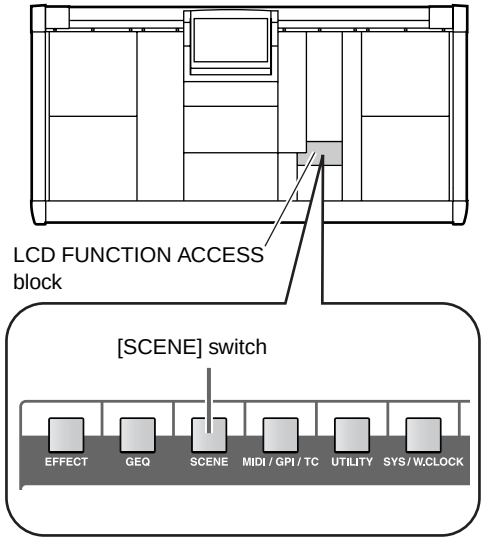
⚠ The preview function applies to the parameters included in [SCENE MEMORY], [UNIT LIBRARY], [PATCH LIBRARY], and [NAME LIBRARY]. The preview function does not apply to any other parameters.

Directly recalling a scene

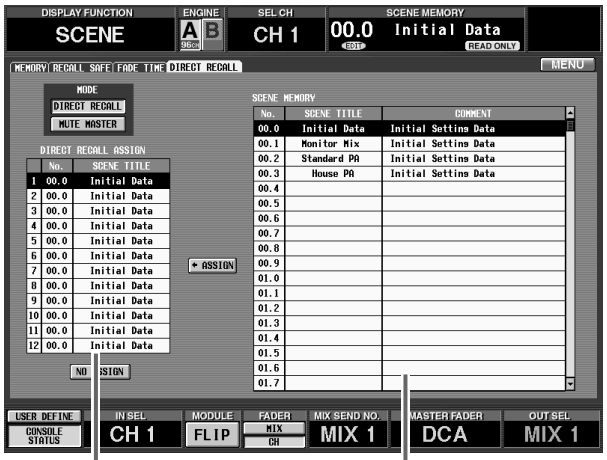
Frequently-used scenes can be assigned to the SCENE MEMORY [1]–[12] switches of the SCENE MEMORY block, and directly recalled at one touch.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [SCENE] switch several times to access the following screen.**



- **DIRECT RECALL screen (SCENE function)**



In the SCENE function DIRECT RECALL screen, you can assign scenes to the SCENE MEMORY [1]–[12] switches.

2. **In the DIRECT RECALL ASSIGN list at the left side of the screen, click the line for the switch number to which you wish to assign a scene.**
   The highlighted area will move to the selected line.
3. **In the SCENE MEMORY list, click the line that shows the desired scene to select it.**
   The cursor will move to that line. Use the scroll bar located at the right of the list to view scenes that are not currently visible.
4. **Click the ASSIGN button.**
   The scene you selected in step 3 will be assigned to the switch whose number you selected in step 2.
5. **Repeat steps 2–4 to assign the desired scenes to the SCENE MEMORY [1]–[12] switches.**
6. **In the MODE section at the upper left of the screen, make sure that the DIRECT RECALL button is on. (If it is off, click the DIRECT RECALL button.)**
   If the DIRECT RECALL button is on, the SCENE MEMORY [RECALL] LED in the SCENE MEMORY block of the console will light, and the SCENE MEMORY [1]–[12] switches will function as direct recall switches to directly recall the twelve assigned scenes.

   Hint
   The function of the SCENE MEMORY [1]–[12] switches can also be specified in the IN DCA/MUTE function MUTE GROUP ASSIGN screen, and the OUT DCA/MUTE function MUTE GROUP ASSIGN screen.
7. **Press one of the SCENE MEMORY [1]–[12] switches in the SCENE MEMORY block of the console.**
   The corresponding switch LED will light, and the scene assigned to that switch will be recalled.

Chapter 9. Recall safe/Mute safe

This chapter explains the "Recall Safe" function that excludes specific channels or parameters from recall operations, and the "Mute Safe" screen that excludes specific channels from mute operations.

Recall safe

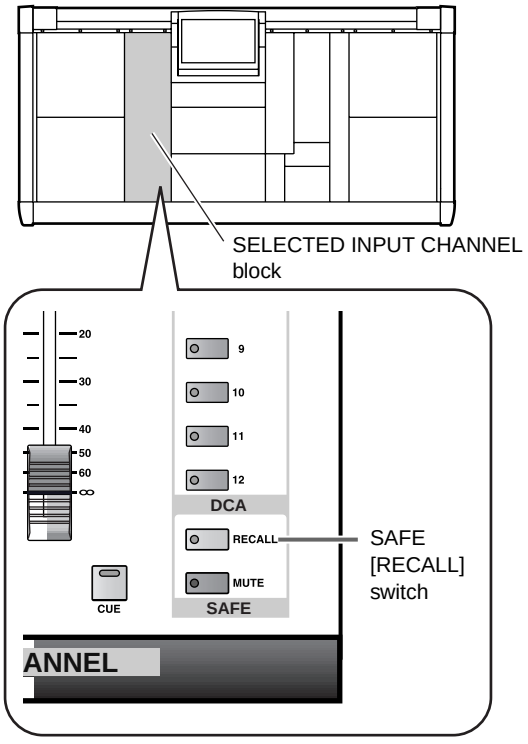
"Recall Safe" is a function that allows you to specify certain channels or parameters to remain unaffected when a scene is recalled. For example if you specify Recall Safe for a channel that you always want to control manually, the parameters of that channel will not change even when a new scene is recalled.
There are two ways to set a channel to Recall Safe; you can use the top panel of the console, or you can use a function within the display.

Using the console to set/defeat Recall Safe

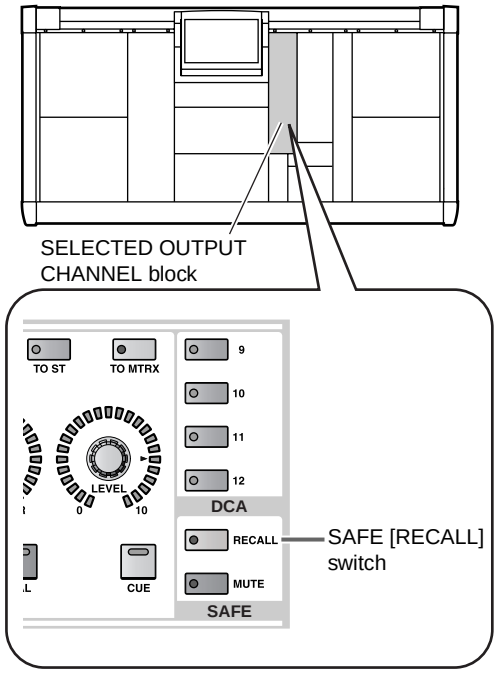
Here's how to use the top panel of the console to set/defeat Recall Safe. This method is convenient when you wish to temporarily operate only a specific channel manually.

[Procedure]

1. **Use the [SEL] switches to select the channel for which you wish to select Recall Safe.**
   You can select input channels (input channels, ST IN channels) or output channels (MIX channels, MATRIX channels, STEREO A/B channels).
2. **If you selected an input channel in step 1, press the SAFE [RECALL] switch located in the SAFE section of the SELECTED INPUT CHANNEL block.**



3. **If you selected an output channel in step 1, press the SAFE [RECALL] switch located in the SAFE section of the SELECTED OUTPUT CHANNEL block.**



   In either case, the SAFE [RECALL] switch LED will light, and the corresponding channel will be set to Recall Safe. As desired, make settings for other channels in the same way.
4. **To defeat Recall Safe, use the [SEL] switches to access the corresponding channel, and press the SAFE [RECALL] switch once again.**
   The SAFE [RECALL] switch LED will go dark, and Recall Safe will be defeated for that channel.

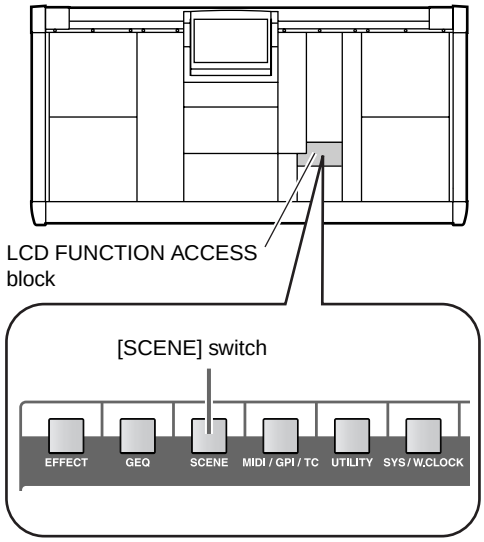
⚠ If Recall Safe is specified for either (not both) the odd-numbered or even-numbered channel of two channels, and you recall a scene in which these two channels are paired, pairing will be forcibly defeated, and the channel that was set to Recall Safe will maintain the state prior to the recall.

Using the screen to set/defeat Recall Safe

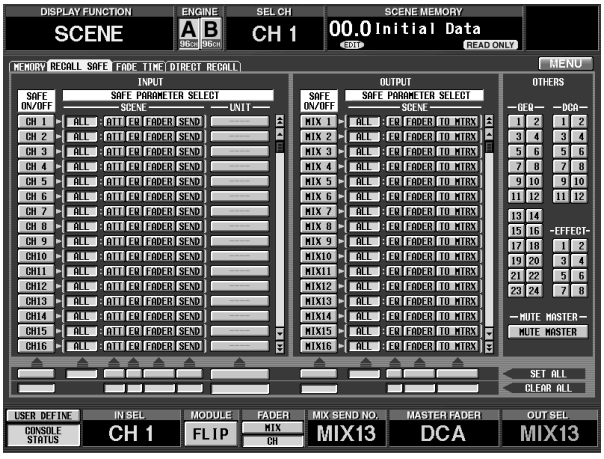
Recall Safe can also be set/cancelled from within the display. With this method, you can not only set/cancel Recall Safe, but also select the parameters to which Recall Safe will apply. Furthermore, you can select not only input channels or output channels, but also DCA groups, internal effects, graphic EQ, and mute masters as objects for the recall.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [SCENE] switch several times to access the following RECALL SAFE screen (SCENE function).**



- **RECALL SAFE screen (SCENE function)**



2. **Of the buttons arranged in the screen, turn on the SAFE ON/OFF buttons for the channels/parameters that you wish to set to Recall Safe.**
   In the RECALL SAFE screen, click the SAFE ON/OFF buttons to select the channels/parameters that you wish to set to Recall Safe. The following elements correspond to each button.
   - **CH 1–96 {1-48}** .....Input channels 1–96 {1–48}
   - **ST IN 1–8 {1–4}**.....ST IN channels 1–8 {1–4}
   - **MIX 1–48**.....MIX channels 1–48
   - **MTRX 1–24** .....MATRIX channels 1–24
   - **ST A/B** ..... STEREO A/B channels
   - **DCA 1–12** ..... DCA groups 1–12
   - **GEQ 1–24**..... Graphic EQ modules 1–24
   - **EFFECT 1–8**..... Internal effects 1–8
   - **MUTE MASTER**..... Turn all mute groups on/off

   For the INPUT, ST IN, MIX, MTRX, and STEREO A/B channels, you can specify Recall Safe not only for the entire channel, but for individual parameters. The following parameters can be selected.
   - **ALL**.....All parameters of that channel
   - **ATT**.....The ATT parameter of that channel
   - **EQ**.....The EQ parameters of that channel (except ATT)
   - **FADER** .....The fader of that channel (includes BALANCE for STEREO A/B)
   - **SEND/TO MTRX** .... The SEND/TO MATRIX parameters of that channel (ON, LEVEL, PAN, PRE/POST, PAN, PRE POINT)
   - **UNIT** ..... The parameters of the unit patched to that channel (HA GAIN GANG and HA A/B LINK are included in ALL)

Hint

By clicking one of the SET ALL buttons located at the bottom of the screen, you can set all channels, all specified parameters, or all units to Recall Safe status.

⚠
- If the SET ALL button is on, all units (including those not displayed in this screen) will be set to Recall Safe. Be aware that units that are not currently patched and units that are patched to Insert will also be set to Recall Safe.
- Simply turning on the above buttons does not enable the Recall Safe function. To enable Recall Safe, you must turn on the SAFE ON/OFF button for the corresponding channel.
- As an exception to this, Unit Recall Safe is independent of Channel Recall Safe. For this reason, simply turning on the UNIT button will exclude the corresponding unit from recall operations even if the SAFE ON/OFF button is off.

  Channels/parameters whose buttons are turned on will be set to Recall Safe. With this setting, these channels/parameters will not be affected even if a scene is recalled.

In the case of parameters of which there is only one setting for two adjacent odd-numbered → even-numbered channels (such as the parameters listed below), Recall Safe will be valid only if both channels are set to Recall Safe.

- HA GAIN GANG / HA A/B LINK / GATE LINK / COMP LINK / DELAY GANG / PAN MODE / GEQ LINK

Hint

In the case of two paired channels, a ST IN channel, or the STEREO A/B channels, all settings that are set to Recall Safe will be linked for both channels.

3. **To defeat Recall Safe, turn off the button of the corresponding channel/parameter in the RECALL SAFE screen.**

Hint

By clicking one of the CLEAR ALL buttons located at the bottom of the screen, you can exclude all channels, all specified parameters, or all units from Recall Safe status.

⚠ If a scene is recalled when Recall Safe is enabled, an EDIT symbol will appear in the top line of the display. This indicates that the contents stored in the scene are different than the current scene.

Mute safe

"Mute Safe" is a function that allows you to specify certain channels of mute group to remain unaffected when a mute master is set to on.

There are two ways to set a channel to Mute Safe; you can use the top panel of the console, or you can use a function within the display.

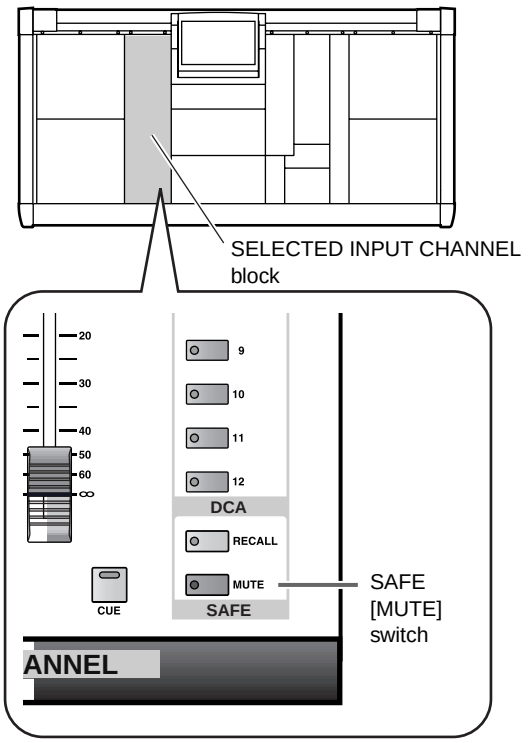
Using the console to set/defeat Mute Safe

Here's how to use the top panel of the console to set/defeat Mute Safe. This method is convenient when you wish to temporarily exclude only a specific channel from the mute group(s).

[Procedure]

1. **Use the [SEL] switches to select the channel for which you wish to select Mute Safe.**
   You can select input channels (input channels, ST IN channels) or output channels (MIX channels, MATRIX channels, STEREO A/B channels).

2. **If you selected an input channel in step 1, press the SAFE [MUTE] switch located in the SAFE section of the SELECTED INPUT CHANNEL block.**



3. **If you selected an output channel (MIX channel, MATRIX channel, STEREO A/B channel) in step 1, press the SAFE [MUTE] switch located in the SAFE section of the SELECTED OUTPUT CHANNEL block.**
   In either case, the SAFE [MUTE] switch LED will light, and the corresponding channel will be set to Mute Safe. As desired, make settings for other channels in the same way.

4. **To defeat Mute Safe, use the [SEL] switches to access the corresponding channel, and press the SAFE [MUTE] switch once again.**
   The SAFE [MUTE] switch LED will go dark, and Mute Safe will be defeated for that channel.

Hint

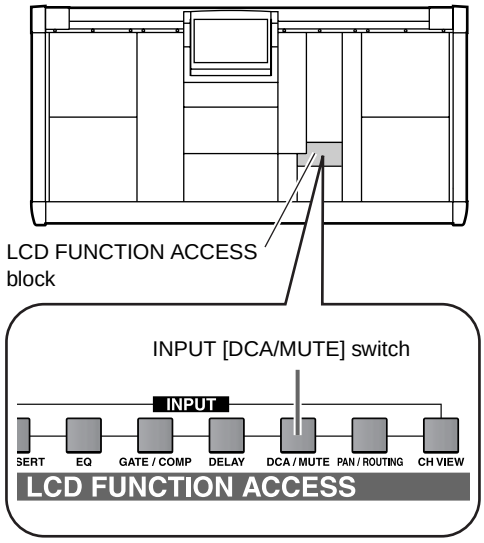
Normally, the Mute Safe operation can be performed independently of the scene memory. However if you recall a scene that causes a channel to switch from monaural to paired, both channels will be turned on if either of the two channels had been set to Mute Safe On until then.

Using the screen to set/defeat Mute Safe

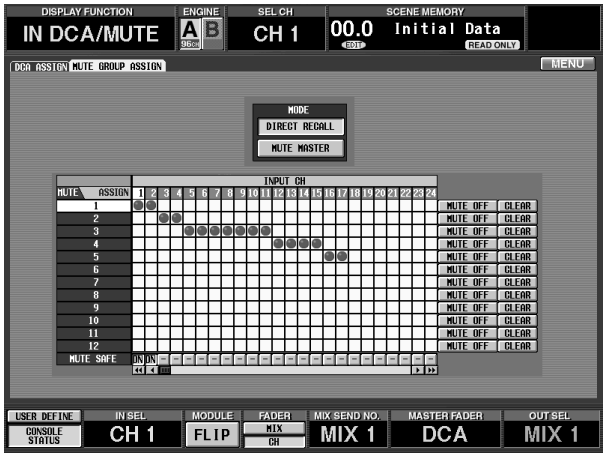
You can also set/defeat Mute Safe from within the display. This method is convenient when you wish to quickly make settings for multiple channels.

[Procedure]

1. **To set Mute Safe for input channels, press the INPUT [DCA/MUTE] switch (located in the LCD FUNCTION ACCESS block) several times to access the following MUTE GROUP ASSIGN screen (IN DCA/MUTE function).**

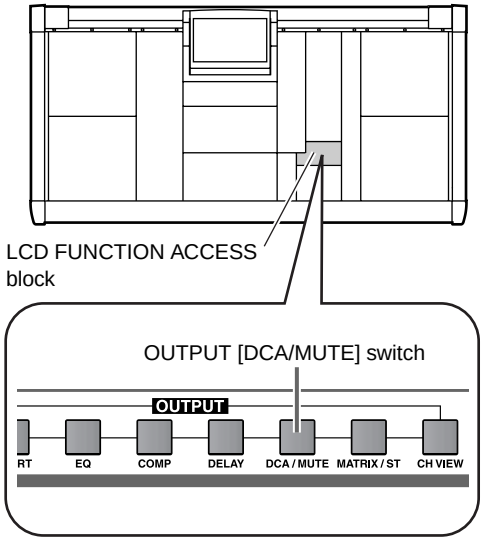


- **MUTE GROUP ASSIGN screen (IN DCA/MUTE function)**

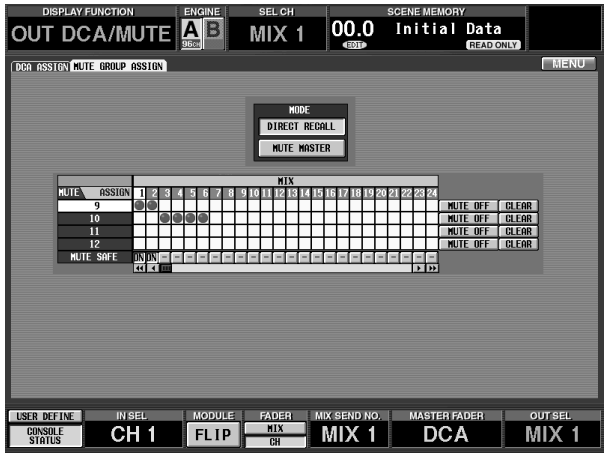


2. **In the MUTE SAFE buttons arranged in the bottom line of the grid, click the button for the desired channel.**
   The button display will change from "–" to "ON," and that channel will be set to Mute Safe. With this setting, the corresponding channel will not be affected even if mute groups are muted/unmuted.

3. **To set Mute Safe for output channels, press the OUTPUT [DCA/MUTE] switch (located in the LCD FUNCTION ACCESS block) to access the following MUTE GROUP ASSIGN screen (OUT DCA/MUTE function).**



- **MUTE GROUP ASSIGN screen (OUT DCA/MUTE function)**



4. **In the MUTE SAFE buttons arranged in the bottom line of the grid, click the button for the desired channel.**
   The button display will change from "–" to "ON," and that channel will be set to Mute Safe.

5. **To defeat Mute Safe, access the same screen and click the MUTE SAFE button once again.**
   The button display will change back from "ON" to "–" and Mute Safe will be defeated.

Chapter 10. Monitor

This chapter explains monitoring functions of the PM1D system such as the MONITOR A/B outputs and the cue/solo functions.

Basic operation of the MONITOR A/MONITOR B section

About MONITOR A/MONITOR B

The PM1D system provides two monitor outputs, MONITOR A and MONITOR B. For each, the monitoring source can be selected and the output level set independently. To control MONITOR A/MONITOR B from the CS1D console, you will use the following sections of the MASTER block.

- **MONITOR A section**
  This section controls the monitor signal that is output from MONITOR OUT jacks A located on the rear panel of the CS1D or from the MONITOR A headphone jacks located on the top panel and front panel of the CS1D. You can select the monitor source, set the output level, switch between stereo/mono, and set the delay function.

- **MONITOR B section**
  This section controls the monitor signal that is output from MONITOR OUT jacks B located on the rear panel of the CS1D or from the MONITOR B headphone jacks located on the top panel and front panel of the CS1D. You can select the monitor source and set the output level.

Hint

MONITOR A/MONITOR B operations can also be performed within the display (MON/CUE function MONITOR A screen, MONITOR B screen). By using these screens, you can make more detailed settings than can be made in the MONITOR A/MONITOR B sections.

⚠ Please note that the available functions differ between MONITOR A and MONITOR B. The following table shows the monitor sources that can be selected for each monitor output, and the functions that are available.

- **Differences between the MONITOR A and MONITOR B functions**

	MONITOR A	MONITOR B
Output jacks	MONITOR OUT jacks A	MONITOR OUT jacks B
	Headphone jack A	Headphone jack B
Selectable monitor sources	2TR IN 1	2TR IN 1
	2TR IN 2	2TR IN 2
	ST A	ST A
	ST B	ST B
	DEFINE	MONITOR A
		DEFINE
Delay function	○	×
Gate function	○	×
DIRECT IN	○	○
COMM IN	○	×
DIMMER	○	×
Cue/solo signal output	○	× (*)

* The cue/solo signal can be output indirectly by selecting MONITOR A as the monitor source.

Controls and functions of the MONITOR A/MONITOR B sections

The controls and functions of the MONITOR A/MONITOR B sections are explained below.

■ MONITOR A section

MONITOR A SOURCE [2TR IN 1]/[2TR IN 2]/[ST A]/[ST B]/[DEFINE] switches and LEDs
Select the monitor source for the MONITOR A output. The switch LED for the currently selected source will light. (Only one source at a time can be selected.)

MONITOR A DELAY [TIME] encoder and [VALUE] indicator

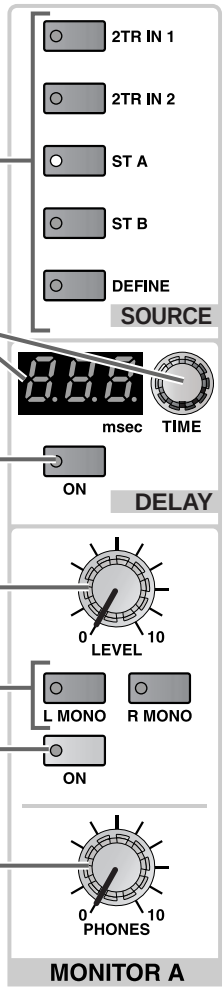
MONITOR A DELAY [ON] switch and LED
Control the delay built into the MONITOR A output.

MONITOR A [LEVEL] volume
This analog volume controls the output level of MONITOR A.

MONITOR A [L MONO]/[R MONO] switches and LEDs
Switch the MONITOR A output between stereo and monaural.

MONITOR A [ON] switch and LED
Turn the MONITOR A output on/off.

MONITOR A PHONES [LEVEL] volume
This analog volume controls the output level of the PHONES MONITOR A jack.



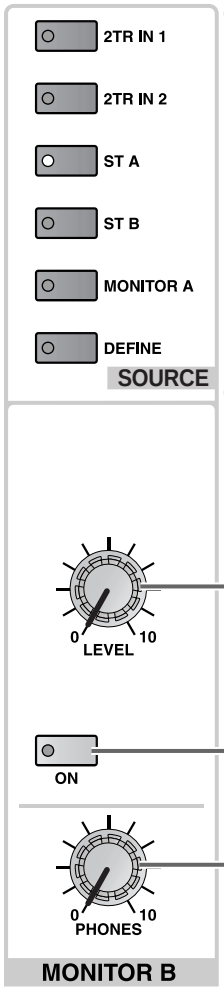
■ MONITOR B section

MONITOR B SOURCE [2TR IN 1]/[2TR IN 2]/[ST A]/[ST B]/[MONITOR A]/[DEFINE] switches and LEDs
Select the monitor source for the MONITOR B output. The switch LED for the currently selected source will light. (Only one source at a time can be selected.)

MONITOR B [LEVEL] volume
This analog volume controls the output level of MONITOR B.

MONITOR B [ON] switch and LED
Turn the MONITOR B output on/off.

MONITOR B PHONES [LEVEL] volume
This analog volume controls the output level of the PHONES MONITOR B jack.



Using the MONITOR A section to monitor a signal

Here's how to use the MONITOR A section to monitor the desired source.

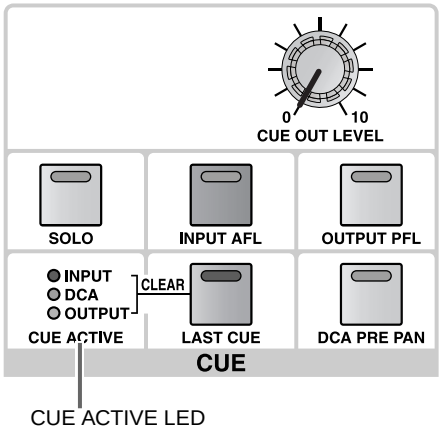
[Procedure]

1. **Make sure that your monitor system is connected to MONITOR OUT jacks A located on the rear panel of the CS1D. Alternatively, connect a set of headphones to the MONITOR A headphone jack located on the top panel or front panel of the CS1D.**

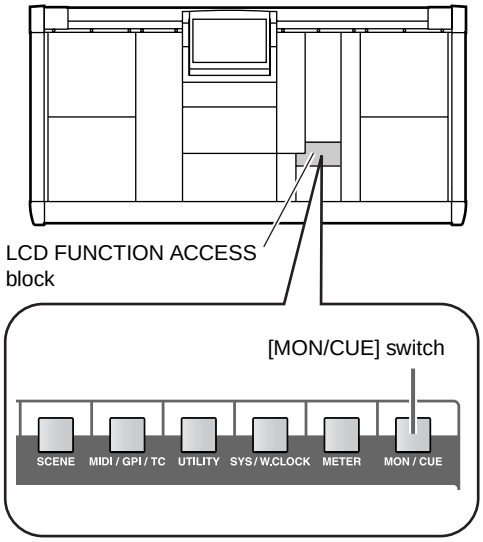
⚠ Do not use the top panel PHONES MONITOR jack simultaneously with the front panel MONITOR headphone jack. Doing so may cause the CS1D to malfunction due to excessive current.

When the PM1D system is in the initial state, the settings of the MONITOR A section will be overridden if the [CUE] switch of even one input channel, output channel, or DCA group is on, and the cue signal will be output from MONITOR OUT jacks A. The CUE ACTIVE LED (located in the MASTER block CUE section) will light if there are any currently active [CUE] switches.

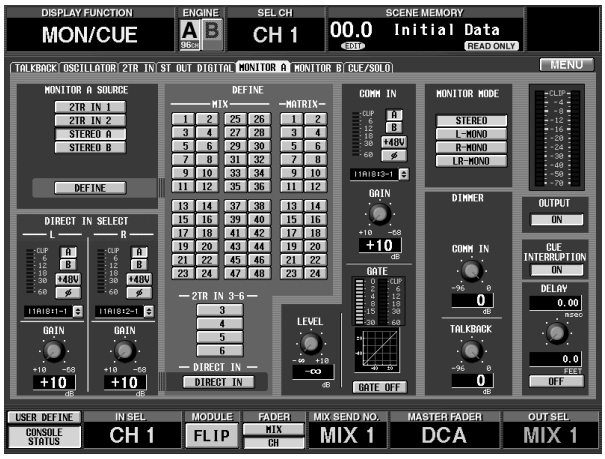
- **Detail of the CUE section**



2. **In the LCD FUNCTION ACCESS block, press the [MON/CUE] switch several times to access the following MONITOR A screen.**



- **MONITOR A screen (MON/CUE function)**



In the MONITOR A screen you can make various settings related to the MONITOR A output. Here we will specify the source that will be monitored when the SOURCE [DEFINE] switch of the MONITOR A section is pressed.

3. **Use the buttons arranged in the DEFINE section of the screen to select the source that will be monitored when the SOURCE [DEFINE] switch is pressed.**
You can select from the following monitor sources.
   - **MIX 1–48** ..... Output signals of MIX buses 1–48
   - **MATRIX 1–24**.... Output signals of MATRIX buses 1–24
   - **2TR IN 3–6** ..... Input signals from 2-TRACK IN DIGITAL jacks 3–6 of the CS1D console

Hint

In the MONITOR A screen you can also use functions such as DIRECT IN to directly monitor the signal from a specific input jack, or COMM IN to monitor the signal from a specific input jack via the MONITOR A output when that signal exceeds a certain level. For details refer to "CS1D Reference Manual (Software)".

4. **In the MASTER block MONITOR A section, press one of the SOURCE [2TR IN 1]/[2TR IN 2]/[ST A]/[ST B]/[DEFINE] switches to select the source that you wish to monitor.**
The following sources correspond to each switch.
   - **[2TR IN 1] switch**.... The input signal from the 2-TRACK IN DIGITAL 1 jack or 2-TRACK IN ANALOG 1 jacks located on the CS1D rear panel
   - **[2TR IN 2] switch**.... The input signal from the 2-TRACK IN DIGITAL 2 jack or 2-TRACK IN ANALOG 2 jacks located on the CS1D rear panel
   - **[ST A] switch** ..... The output signal of the STEREO A channel
   - **[ST B] switch** ..... The output signal of the STEREO B channel
   - **[DEFINE] switch** ..... The signal previously specified in the display (MON/CUE function MONITOR A screen)
5. **Turn on the MONITOR A [ON] switch.**
6. **Use the MONITOR A [LEVEL] volume to adjust the output level from the MONITOR OUT A jacks. Alternatively, use the MONITOR A [PHONES] volume to adjust the output level of the PHONES MONITOR A jack.**

Hint

The MONITOR A [LEVEL] volume and MONITOR A [PHONES] volume are independent.

7. **As necessary, use the DELAY [ON] switch and the DELAY [TIME] encoder to set the dedicated delay for MONITOR A.**
   The [ON] switch at left switches the delay on/off, and the [TIME] encoder at right sets the delay time. The delay time range is 0 msec – 750 msec.
8. **If you wish to monitor the MONITOR A output in monaural, turn on the [L MONO] switch or [R MONO] switch.**
   According to the on/off status of the MONITOR A [L MONO]/[R MONO] switches, the MONITOR A output will change as shown on the following table.

MONITOR A [L MONO]/[R MONO] switches

[L MONO] switch	[R MONO] switch	MONITOR A output signal
Dark	Dark	Stereo signal
Lit	Dark	Monaural signal of left channel only
Dark	Lit	Monaural signal of right channel only
Lit	Lit	Monaural signal of mixed left and right channels

Using the MONITOR B section to monitor a signal

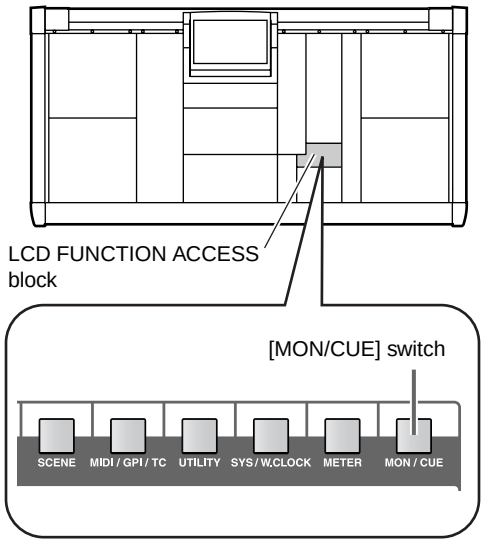
Here's how to use the MONITOR B section to monitor the desired source.

[Procedure]

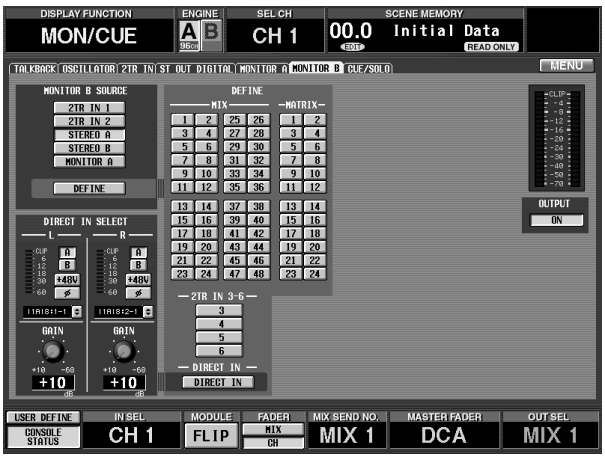
1. **Make sure that your monitor system is connected to MONITOR OUT jacks B on the rear panel of the CS1D. Alternatively, connect a set of headphones to the MONITOR B headphone jack on the top panel or front panel of the CS1D.**

   ⚠ Do not use the top panel PHONES MONITOR jack simultaneously with the front panel MONITOR headphone jack. Doing so may cause the CS1D to malfunction due to excessive current.

2. **In the LCD FUNCTION ACCESS block, press the [MON/CUE] switch several times to access the following MONITOR B screen.**



- **MONITOR B screen (MON/CUE function)**



In the MONITOR B screen you can make various settings related to the MONITOR B output. Here we will specify the source that will be monitored when the SOURCE [DEFINE] switch of the MONITOR B section is pressed.

3. **Use the buttons arranged in the DEFINE section of the screen to select the source that will be monitored when the SOURCE [DEFINE] switch is pressed.**
   You can select from the following monitor sources.
   - **MIX 1–48** ..... Output signals of MIX buses 1–48
   - **MATRIX 1–24**.... Output signals of MATRIX buses 1–24
   - **2TR IN 3–6**..... Input signals from 2-TRACK IN DIGITAL jacks 3–6 of the CS1D console

Hint

In the MONITOR B screen you can also use DIRECT IN to directly monitor the signal from a specific input jack. For details refer to "CS1D Reference Manual (Software)".

4. **In the MASTER block MONITOR B section, press one of the SOURCE [2TR IN 1]/[2TR IN 2]/[ST A]/[ST B]/[MONITOR B]/[DEFINE] switches to select the source that you wish to monitor.**
   The following sources correspond to each switch.
   - **[2TR IN 1] switch** ....The input signal from the 2-TRACK IN DIGITAL 1 jack or 2-TRACK IN ANALOG 1 jacks located on the CS1D rear panel
   - **[2TR IN 2] switch** ....The input signal from the 2-TRACK IN DIGITAL 2 jack or 2-TRACK IN ANALOG 2 jacks located on the CS1D rear panel
   - **[ST A] switch**.....The output signal of the STEREO A channel
   - **[ST B] switch**.....The output signal of the STEREO B channel
   - **[MONITOR A] switch**
     The same signal as the monitor source currently selected in the MONITOR A section
   - **[DEFINE] switch** .....The signal previously specified in the display (MON/CUE function MONITOR B screen)
5. **Turn on the MONITOR B [ON] switch.**
6. **Use the MONITOR B [LEVEL] volume to adjust the output level from the MONITOR OUT B jacks. Alternatively, use the MONITOR B [PHONES] volume to adjust the output level of the PHONES MONITOR B jack.**

Using the Cue/Solo function

The PM1D system provides a flexible Cue/Solo function. Here's how to use it.

Cue mode and Solo mode

The input channels, output channels, and DCA groups of the CS1D each provide a [CUE] switch that is used by the Cue/Solo function. The result of pressing the [CUE] switch will depend on whether CUE mode or SOLO mode is selected. The two modes differ as follows.

- **CUE mode**
  The cue signal from the channel/DCA group whose [CUE] switch is pressed will be output via the dedicated CUE bus from MONITOR OUT jacks A, PHONES MONITOR A jack, and CUE OUT jacks (the Cue function). Select this mode if you wish to monitor the signal of a specific channel without affecting other output buses.

- **SOLO mode**
  The solo signal of only the channel/DCA group whose [CUE] switch is pressed will be output from the MIX, MATRIX, and STEREO buses, and the remaining channels/DCA groups will be muted. (This is the conventional "Solo function.") The same signal can also be monitored from MONITOR OUT jacks A, PHONES MONITOR A jack, and CUE OUT jacks.

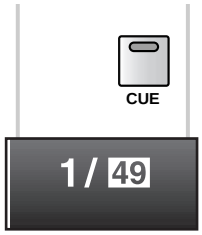
To switch between CUE mode and SOLO mode, press and hold the [SOLO] switch (located in the MASTER block CUE section) for two seconds or longer.

When SOLO mode is selected, you may exclude specific channels from the Solo operation (→p.119).

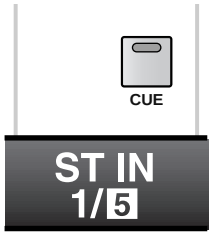
Cue/Solo groups

The cue/solo signals of the PM1D system can be categorized into the following three groups.

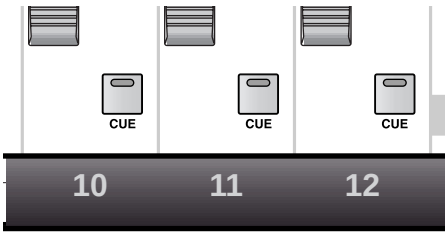
- **INPUT CUE group**
  These are the cue/solo signals of the input channels. They are enabled when the [CUE] switch of an input channel or ST IN channel is pressed.
  - **Input channel [CUE] switch**



  - **ST IN channel [CUE] switch**



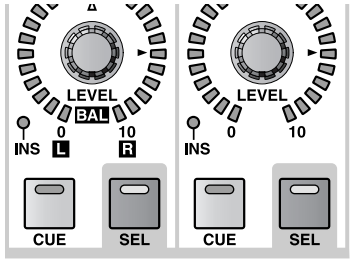
- **DCA CUE group**
  These are the cue/solo signals of the DCA groups. They are enabled when a [CUE] switch in the DCA GROUP block is pressed.
  - **DCA GROUP block [CUE] switch**



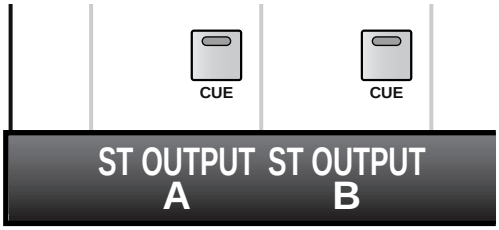
Hint

For details on DCA groups, refer to "Chapter 7. DCA groups/Mute groups."

- **OUTPUT CUE group**
  These are the cue/solo signals of output channels. They are enabled when the [CUE] switch of a MIX channel, MATRIX channel, or STEREO A/B channel is pressed.
  - **MIX/MATRIX channel [CUE] switch**



  - **STEREO A/B channel [CUE] switch**

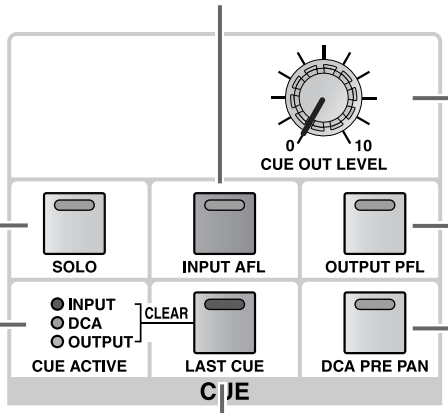


⚠ It is not possible for the [CUE] switches of these three groups to be on simultaneously. The group for the last-pressed [CUE] switch will be given priority, and the cue/solo signals of that group will be enabled.

For details on cue operation, refer to "CS1D Reference Manual (Hardware)" (→p.81).

Controls and functions of the CUE section

Operations for the Cue/Solo function are performed in the CUE section of the MASTER block or in the display (MON/CUE function CUE/SOLO screen). The controls and functions of the CUE section are explained below.



[INPUT AFL] switch and LED
This switch selects the output location of the signal that is sent to the CUE bus when a [CUE] switch of an input channel (input channel, ST IN channel) is pressed.

[SOLO] switch and LED
This selects either CUE mode (LED dark) or SOLO mode (LED blinks) as the monitoring method for the [CUE] switches. Press and hold this switch more than 2 seconds to set the SOLO mode

CUE ACTIVE [INPUT]/[DCA]/[OUTPUT] LEDs
These LEDs indicate the monitoring status. If even one [CUE] switch is currently on, the LED for its group will light.

[CUE OUT LEVEL] volume
This knob sets the output level of the signal output from the CUE OUT jacks.

[OUTPUT PFL] switch and LED
This selects the location in the signal route at which the signal will be monitored when you press the [CUE] switch of an output channel (MIX channel, MATRIX channel, STEREO A/B channel).

[DCA PRE PAN] switch and LED
This switch selects the location in the signal route at which the signal will be monitored when a [CUE] switch in the DCA GROUP block is used to monitor a DCA group to which input channels are assigned.

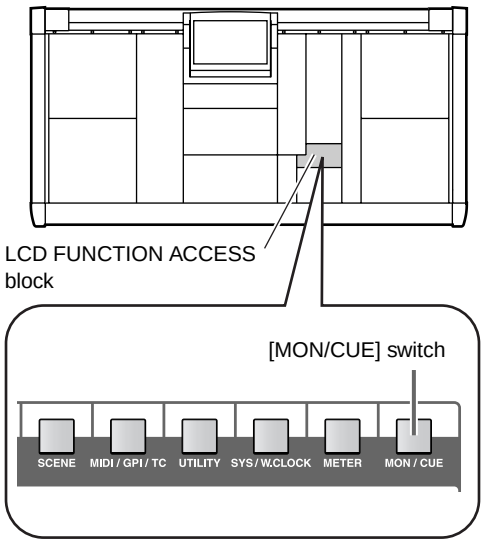
[LAST CUE] switch and LED
This switch selects either LAST CUE mode (LED lit) or MIX CUE mode (LED dark) as the operation when the [CUE] switch is pressed for two or more channels.

Using the Cue function

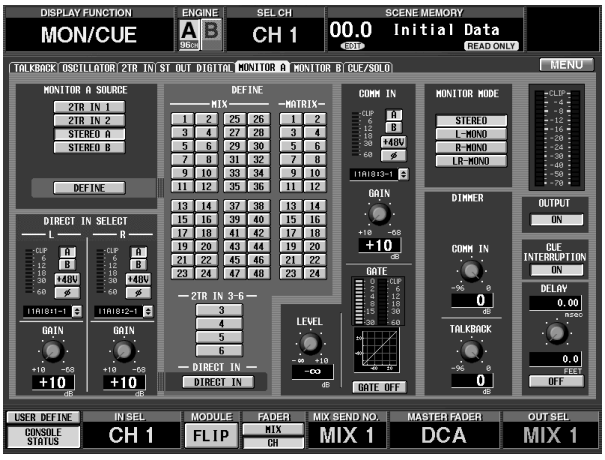
Here's how to use the [CUE] switch of the desired channel/DCA group to monitor the cue signal.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [MON/CUE] switch several times to access the following MONITOR A screen.**



- **MONITOR A screen (MON/CUE function)**



2. **Make sure that the CUE INTERRUPTION button located at the right edge of the screen is turned on.**

⚠ The CUE INTERRUPTION button is an on/off switch for the interrupt from the cue signal of the [CUE] switch. Be aware that if this button is off, pressing a [CUE] switch will not affect MONITOR OUT jacks A.

3. **Use the [INPUT AFL] switch located in the CUE section of the MASTER block to specify the position from which the signal will be sent to the CUE bus when the [CUE] switch of an input channel is pressed.**
   When the [INPUT AFL] switch is off, the post-fader signal will be sent to the CUE bus. When this switch is on, the pre-fader signal will be sent.
4. **Use the [OUTPUT PFL] switch of the CUE section to specify the position from which the signal will be sent to the CUE bus when the [CUE] switch of an output channel is pressed.**
   When the [OUTPUT PFL] switch is off, the pre-fader signal will be sent to the CUE bus. When this switch is on, the post-fader signal will be sent.
5. **Use the [DCA PRE PAN] switch of the CUE section to specify the position from which the signal will be sent to the CUE bus when the [CUE] switch of a DCA group is pressed.**
   When the [DCA PRE PAN] switch is off, the post-pan signal will be sent to the CUE bus. When the switch is on, the pre-pan signal will be sent.

   Hint
   The setting of this switch only affects DCA groups to which input channels are assigned. For DCA groups to which output channels are assigned, the signal will always be sent to the CUE bus from a location immediately after the [ON] switch.

6. **Use the [LAST CUE] switch of the CUE section to select either LAST CUE mode ([LAST CUE] switch on) or MIX CUE mode ([LAST CUE] switch off) as the mode of operation when two or more [CUE] switches within the same group are pressed.**
   The operation of the two modes differs as follows.
   - **LAST CUE mode ([LAST CUE] switch is on)**
     Only the channel/DCA group whose [CUE] switch was pressed last will be monitored.

     Hint
     In LAST CUE mode, pressing the [CUE] switch of a channel will also cause the [SEL] switch to operate in tandem, selecting that channel.

   - **MIX CUE mode ([LAST CUE] switch is off)**
     All channels/DCA groups within the same cue group whose [CUE] switches are on will be monitored.

     Hint
     It is not possible to simultaneously turn on [CUE] switches that belong to different groups. The group to which the last-pressed [CUE] switch belongs will take priority, and the signals of that group can be monitored.

     In this case of channels that are paired, both channels will be turned on.

7. **Make sure that the [SOLO] switch of the CUE section is off (Cue mode).**
8. **Turn on the [CUE] switch of the desired channel/DCA group.**
   The cue signal of the corresponding channel will be output from MONITOR OUT jacks A, the PHONES MONITOR A jack, and the CUE OUT jacks.
9. **To defeat cue, press the currently-on [CUE] switch(es) once again.**

   Hint
   When you press the [LAST CUE] switch to change from LAST CUE mode to MIX CUE mode (or vice versa), the previously-valid cue (solo) will be cancelled.

Using the Solo function

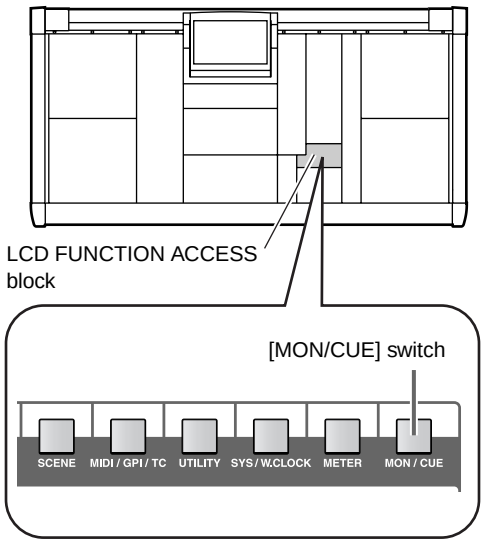
Here's how to use the Solo function of the PM1D.

[Procedure]

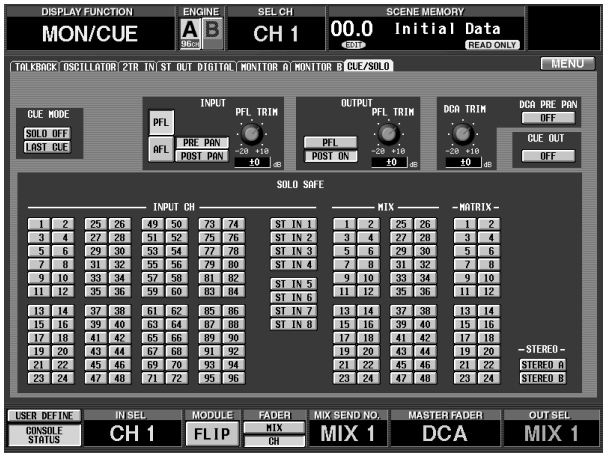
1. **Use the [LAST CUE] switch of the CUE section to select either LAST CUE mode ([LAST CUE] switch on) or MIX CUE mode ([LAST CUE] switch off) as the mode of operation when two or more [CUE] switches within the same group are pressed.**

2. **Turn on the [SOLO] switch of the CUE section for two seconds or longer.**
   Solo mode will be selected. In Solo mode, only the signal of the channel/DCA group whose [CUE] switch was pressed will be output to the MIX, MATRIX, and STEREO buses. The same signal can also be monitored from MONITOR OUT jacks A, the PHONES MONITOR A jack, and the CUE OUT jacks.

3. **If you wish to exclude only a specific channel from the Solo operation, press the [MON/CUE] switch (located in the LCD FUNCTION ACCESS block) several times to access the following CUE/SOLO screen.**



- **CUE/SOLO screen (MON/CUE function)**



4. **In the SOLO SAFE section of the CUE/SOLO screen, select the channel(s) that you wish to exclude from the Solo operation. (You may select more than one.)**
   Channels that are selected in the SOLO SAFE section will not be muted in Solo mode. For example, this is a convenient way to avoid soloing channels that must not be soloed accidentally, such as the main STEREO channel or MIX channels that are sending signals to an external recorder.

   Each button corresponds to the following channels.

   - **INPUT 1–96 {1–48}**. Input channels 1–96 {1–48}
   - **ST IN 1–8 {1–4}** ..... ST IN channels 1–8 {1–4}
   - **MIX 1–48** ..... MIX channels 1–48
   - **MATRIX 1–24**..... MATRIX channels 1–24
   - **STEREO A/B**..... STEREO A/B channels

5. **Turn on the [CUE] switch of the desired channel/DCA group.**
   Only the signal of the corresponding channel/DCA group will be sent to the various buses, and other channels/DCA groups will be muted. The same signal will also be output from MONITOR OUT jacks A, the PHONES MONITOR A jack, and the CUE OUT jacks.

6. **To defeat Solo, press the currently-on [CUE] switches once again.**

Hint

When you press the [LAST CUE] switch to change from LAST CUE mode to MIX CUE mode (or vice versa), the previously-valid cue (solo) will be cancelled.

Normally, cue/solo operations can be performed independently of the scene memory. However if you recall a scene that causes a channel to switch from monaural to paired, both channels will be turned on if either of the two channels had been set to Cue/Solo On until then.

Chapter 11. Talkback/Oscillator

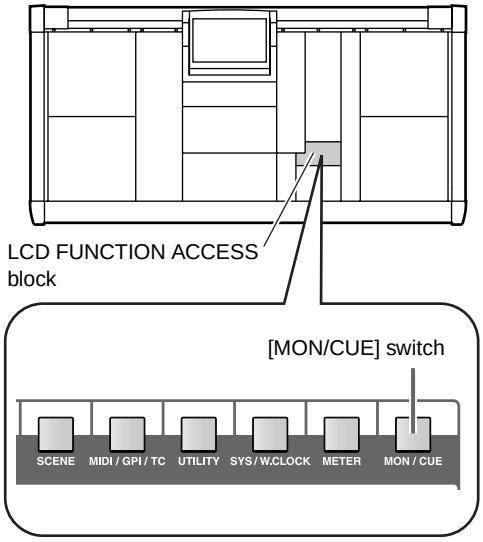
This chapter explains how to use the talkback and oscillator functions.

Talkback

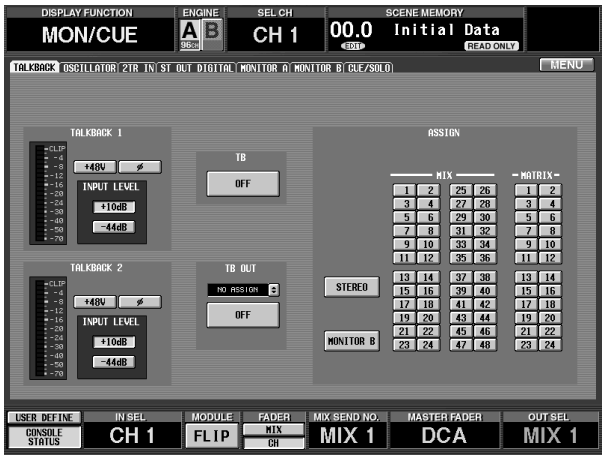
The CS1D console has input jacks for two talkback mics: a TALKBACK 1 jack (top panel) and a TALKBACK 2 jack (rear panel). The talkback signals that are input from these two jacks are mixed inside the CS1D and can be sent to the desired bus or output jack.

[Procedure]

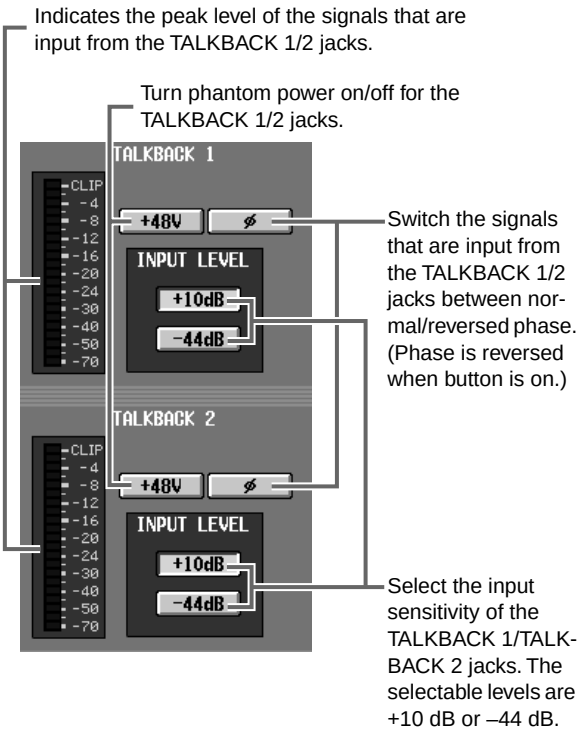
1. **In the LCD FUNCTION ACCESS block, press the [MON/CUE] switch several times to access the following TALKBACK screen (MON/CUE function).**
   In the TALKBACK screen you can make settings for the TALKBACK 1/2 jacks, and select the destination of the talkback signal.



- **TALKBACK screen (MON/CUE function)**



2. **In the TALKBACK 1/TALKBACK 2 section of the TALKBACK screen, turn phantom power on/off, select normal/reversed phase, and set the input sensitivity for the TALKBACK 1/2 jacks.**
   The following items can be set in the TALKBACK 1/TALKBACK 2 section of the TALKBACK screen.



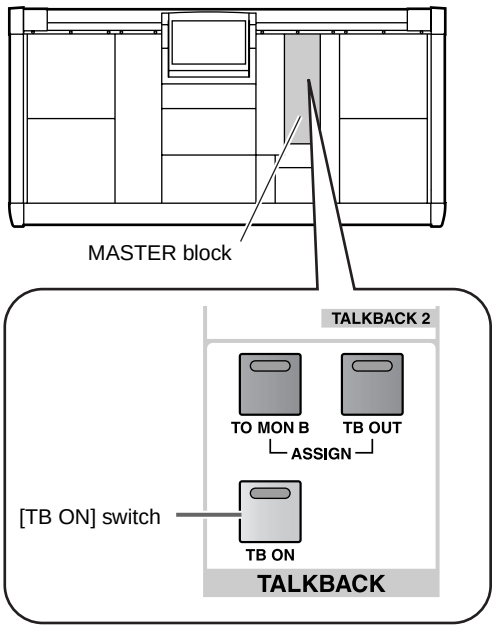
3. **Use the buttons in the ASSIGN section of the TALKBACK screen to select the bus or output jack to which the talkback signal will be sent. (You may select more than one.)**
   Each button corresponds to the following buses and output jacks.
   - **STEREO** ..... STEREO bus
   - **MONITOR B** ..... MONITOR OUT jacks B
   - **MIX 1–48** ..... MIX buses 1–48
   - **MATRIX 1–24**.... MATRIX buses 1–24

Hint

It is not possible to send the talkback signal directly to MONITOR OUT jacks A. However by patching the talkback signal to an input channel in the IN PATCH screen (INPUT PATCH function), you can monitor it from MONITOR OUT jacks A as a conventional input signal.

If necessary, you can also output the talkback signal directly from a desired output jack. For details refer to "CS1D Reference Manual (Software)".

4. In the TALKBACK section of the MASTER block, press the [TB ON] switch.



The [TB ON] switch can be used in the following two ways.

- **Press and hold the switch for two seconds or longer**
  This is the conventional way to use talkback. The LED will be lit and talkback will be on as long as you continue to hold the switch. It will turn off when you release the switch.
- **Press and immediately release the switch**
  The LED will remain lit even after you release the switch, and talkback will stay on. When you press and immediately release the switch, talkback will be turned off.

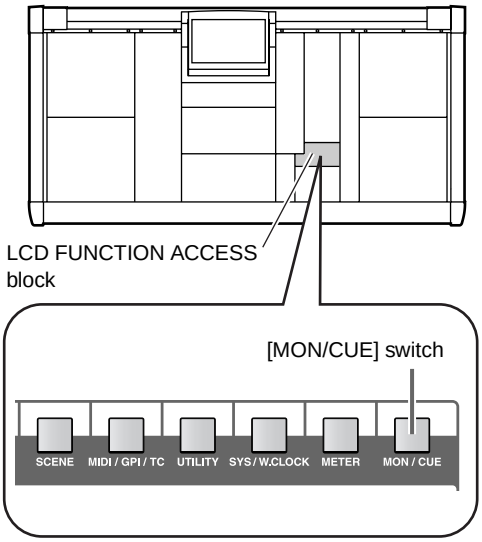
  While talkback is on, the signal from the talkback mic will be sent to the bus/output jack that you selected in step 3. At this time, the two talkback mics connected to the TALKBACK 1 jack (top panel) and the TALKBACK 2 jack (rear panel) can be used in exactly the same way. As necessary, use the TALKBACK [LEVEL] volumes to adjust the input level of each jack.

Oscillator

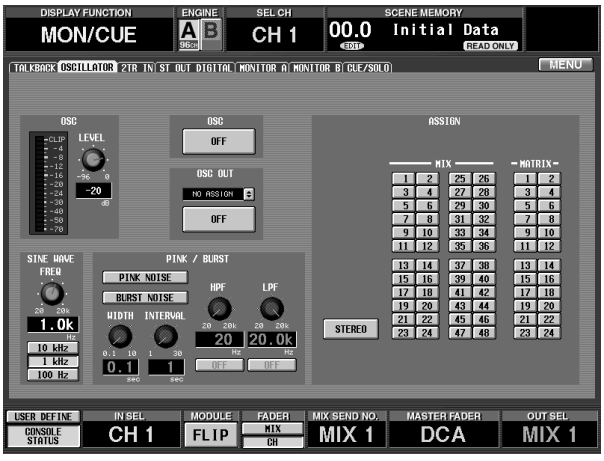
The PM1D provides an internal oscillator for test purposes, and can send a sine wave or pink noise to the desired bus. This can be used to check the operation of devices connected to an output unit, or to check the acoustical characteristics of a concert location.

[Procedure]

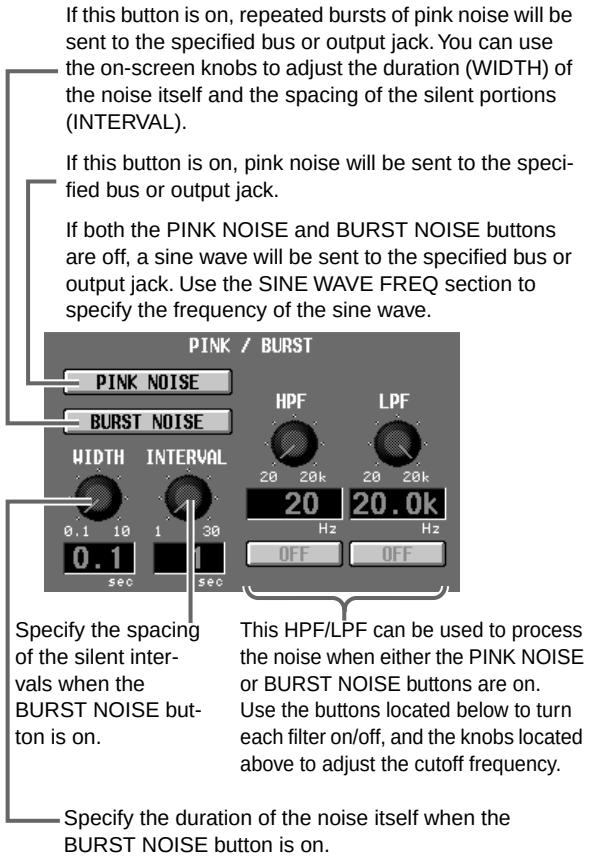
1. **In the LCD FUNCTION ACCESS block, press the [MON/CUE] switch several times to access the following OSCILLATOR screen (MON/CUE function).**
   In the OSCILLATOR screen you can select the output waveform of the oscillator, and select the output destination of the signal.



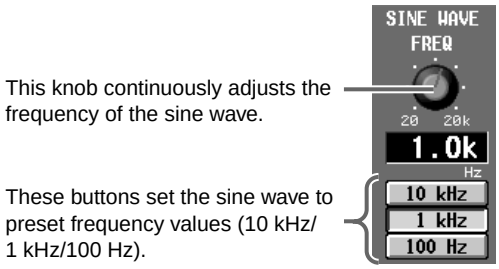
- **OSCILLATOR screen (MON/CUE function)**



2. **In the PINK/BURST section of the OSCILLATOR screen, use the PINK NOISE button and BURST NOISE button to select the type of signal that the oscillator will output.**



3. **If you selected sine wave in step 2, use the SINE WAVE FREQ section to specify the frequency of the sine wave.**

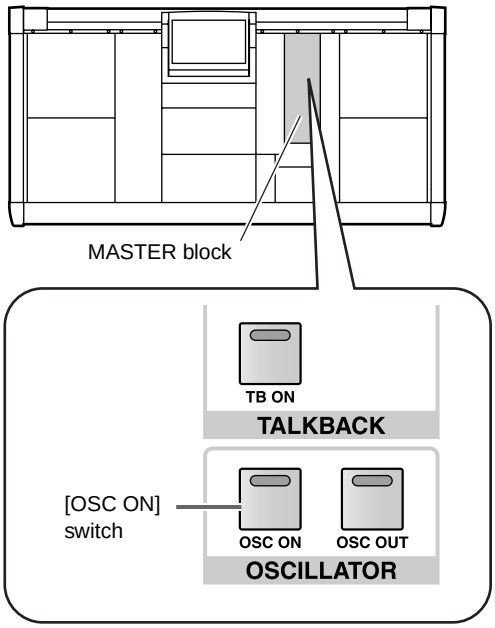


4. **Use the LEVEL knob in the OSC section of the OSCILLATOR screen to set the output level of the oscillator.**

5. **Use the buttons in the ASSIGN section of the OSCILLATOR screen to select the bus to which the oscillator signal will be sent.**
   Each button corresponds to the following buses.
   - **STEREO**.....STEREO bus
   - **MIX 1–48**.....MIX buses 1–48
   - **MATRIX 1–24** ....MATRIX buses 1–24

   Hint
   If necessary, you can also output the oscillator signal directly from the desired output jack. For details refer to "CS1D Reference Manual (Software)".

6. **Press the [OSC ON] switch in the OSCILLATOR section of the MASTER block.**



   The oscillator signal will be sent to the bus or output jack you selected in step 5. To turn off the oscillator, press the same switch once again.

Chapter 12. Internal effects

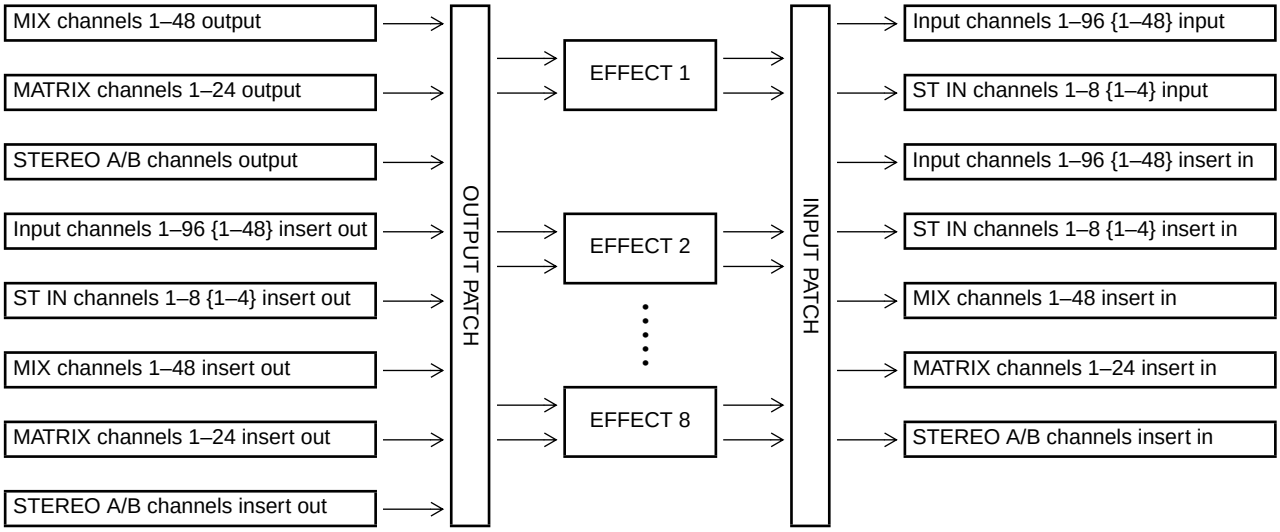
This chapter explains how to use the internal effects.

About the internal effects of the PM1D system

The PM1D system contains eight effect units. For each effect unit, you can select one of 29 effect types.

The inputs and outputs of these internal effects are not fixed to any particular bus or channel. They can be freely patched to any output channel or input channel, or used as insert-in/insert-out in any channel.

- **Signal flow for the internal effects**



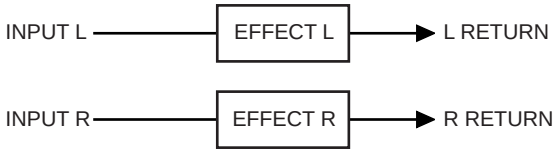
If the signal path is assigned to only one side of the effect, it will be processed as monaural input/stereo output.

- **When the signal path is assigned to only one input channel**

If the signal path is assigned to both input channels, the processing will depend on the type of effect that is currently selected. "STEREO type" effects process the L/R input signals independently. "MIX type" effects mix the L/R inputs before inputting them to the effect, and then output in stereo.

- **When the signal path is assigned to both input channels**

STEREO type effects



MIX type effects

Patching an internal effect

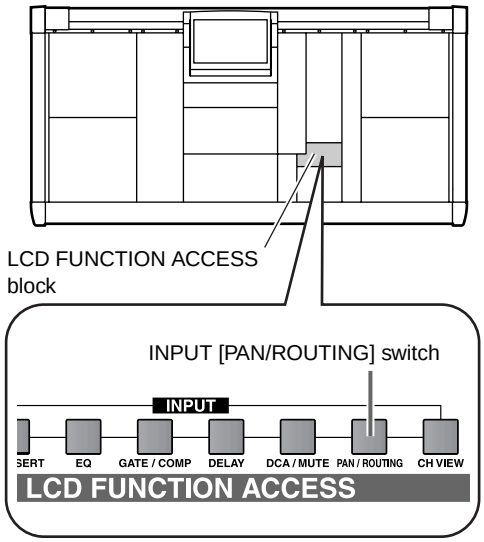
To use an internal effect, you must first patch the input and output of the effect to an appropriate signal path. Here we will explain two typical methods of patching.

Using an internal effect via the MIX bus

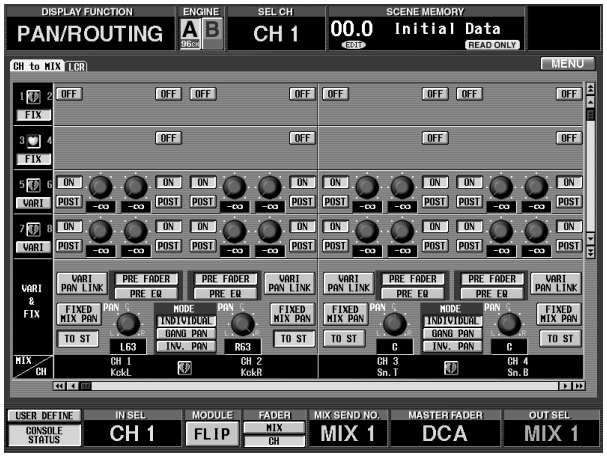
Here's how you can patch MIX channel outputs to the effect input, and the effect outputs to input channels. As an example, we will explain how to use a VARI type MIX bus as the effect send, and an input channel as the effect return.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the INPUT [PAN/ROUTING] switch several times to access the following CH to MIX screen.**



- **CH to MIX screen (PAN/ROUTING function)**

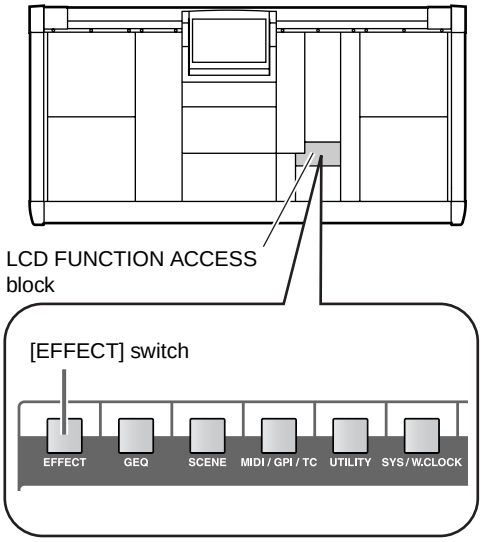


2. **Use the VARI/FIX buttons located at the left of the screen to select "VARI" as the type for the MIX bus that will be used as the effect send.**

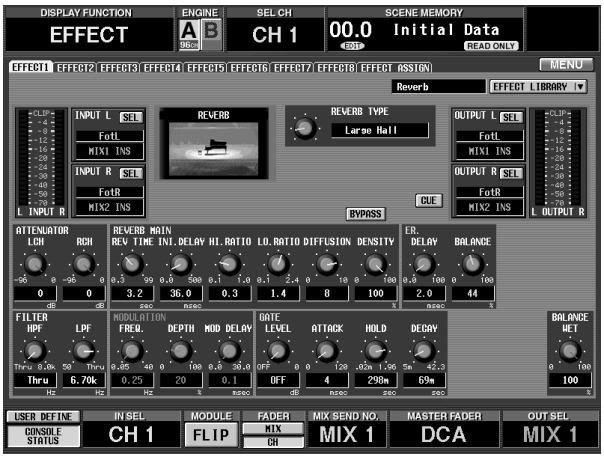
Hint

The VARI/FIX selection is made in groups of two adjacent odd-numbered → even-numbered MIX buses. If you wish to use the effect input in stereo, it is convenient to set these two MIX buses as a pair.

3. **In the LCD FUNCTION ACCESS block, press the [EFFECT] switch several times to access the EFFECT 1 – EFFECT 8 screen for the desired effect.**



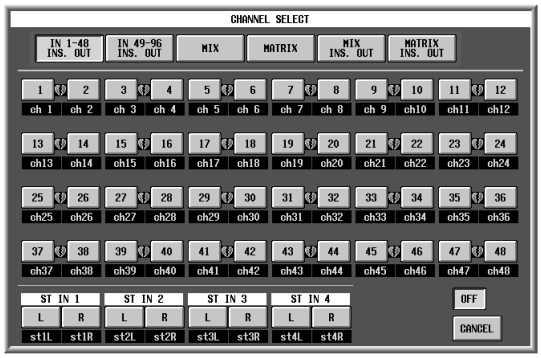
- **EFFECT 1 screen (EFFECT function)**



The EFFECT function has eight screens for the eight effects EFFECT 1 – EFFECT 8, allowing settings to be made independently.

4. **Click the SEL button located in the INPUT L section at the upper left of the screen.**
When you click the SEL button of the INPUT L/ INPUT R section, a CH SELECT popup window will appear, allowing you to select the signal path that will be patched to the input of the effect.

- **CH SELECT popup window**



In this window, you will first use the buttons in the top row to select the type of signal route, and then use the remaining buttons to select an individual channel. You can select from the following signal routes.

- **CH 1 INS – CH 96 INS {CH 1 INS – CH 48 INS}**
Input channel 1–96 {1–48} insert out
- **ST 1 INS–ST 8 INS {ST 1 INS–ST 4 INS} (L/R)**
ST IN channel 1–8 {1–4} insert out
- **MIX 1 – MIX 48**
MIX channel 1–48 output
- **STA (L/R)**
STEREO A channel (L/R) output
- **STB (L/R)**
STEREO B channel (L/R) output
- **MATRIX 1 – MATRIX 24**
MATRIX channel 1–24 output
- **MIX 1 INS – MIX 48 INS**
MIX channel 1–48 insert out
- **MATRIX 1 INS – MATRIX 24 INS**
MATRIX channel 1–24 insert out
- **STA (L/R) INS**
STEREO A channel (L/R) insert out
- **STB (L/R) INS**
STEREO B channel (L/R) insert out
- **OFF**
If you click this button, the selection will be cancelled.

⚠ For channels that are already used by another effect, the NAME will be displayed in white characters on a red background.
Please be aware that selecting one of these channels may affect other functionality.

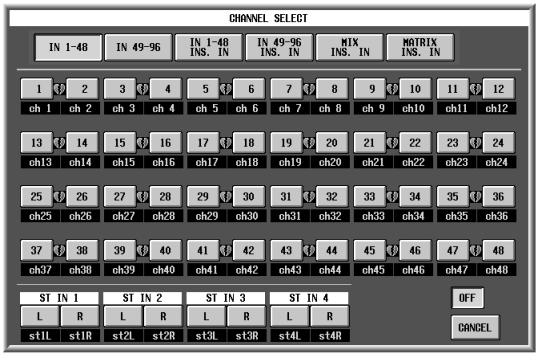
5. **From the buttons in the top row of the screen, click the MIX button, and then click the number of the MIX bus that you set to VARI type in step 2.**
When you click the number, you will return to the previous screen. As necessary, assign a MIX channel to the R input of the effect as well.

Hint

If one of two paired MIX channels is patched to the L input of the effect, the other MIX channel will automatically be patched to the R input of the effect.

6. **Click the SEL button located in the OUTPUT L section at the upper right of the screen.**
When you click the SEL button of the OUTPUT L/ OUTPUT R section, a CH SELECT popup window will appear, allowing you to select the signal route that will be patched to the effect output.

- **CH SELECT popup window**



You can select from the following signal routes.

- **CH 1 – CH 96 {CH 1– CH48}**
Input channel 1–96 {1–48} input
- **CH 1 INS – CH 96 INS {CH 1 INS – CH 48 INS}**
Input channel 1–96 {1–48} insert in
- **ST 1 –ST8 {ST 1 – ST 4} (L/R)**
ST IN channel 1–8 {1–4} input
- **ST 1 INS–ST 8 INS {ST 1 INS–ST 4 INS} (L/R)**
ST IN channel 1–8 {1–4} insert in
- **MIX 1 INS – MIX 48 INS**
MIX channel 1–48 insert in
- **MATRIX 1 INS – MATRIX 24 INS**
MATRIX channel 1–24 insert in
- **STA (L/R) INS**
STEREO A channel (L/R) insert in
- **STB (L/R) INS**
STEREO B channel (L/R) insert in
- **OFF**
If you click this button, the selection will be cancelled.

⚠ For channels that are already used by another effect, the NAME will be displayed in white characters on a red background.
Please be aware that selecting one of these channels may affect other functionality.

7. **In the row of buttons at the top of the screen, click either the IN 1-48 button or the IN 49-96 button {on the 48 channel mode, this button has no effect}, and then click the button for the channel that you wish to patch to the L output of the effect.**
When you click the button, you will return to the previous screen. As necessary, assign a MIX channel to the R output of the effect as well.

Hint

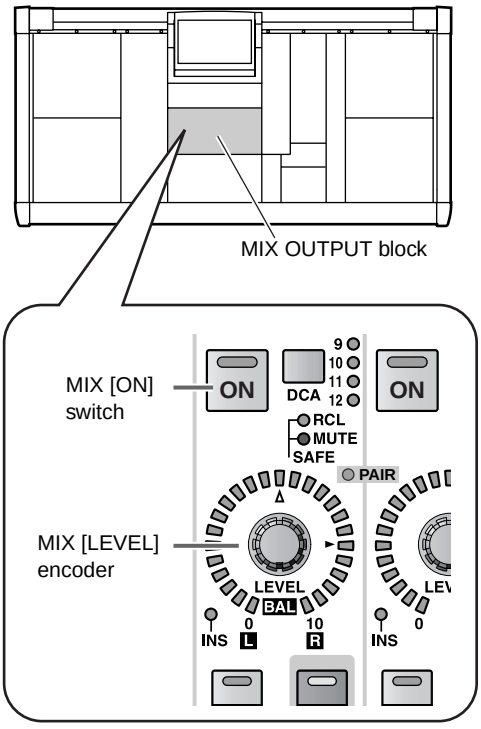
If one side of a ST IN channel (or of two paired input channels) is patched to the L output of the effect, the other side of the ST IN channel (or paired input channel) will automatically be patched to the R output of the effect.

8. **Adjust the send level of the signal that is sent from the input channel to which the input source is connected to the MIX bus patched to the effect.**

Hint

To raise the MIX send level, you can either use the INPUT block (or ST IN block), or the SELECTED INPUT CHANNEL block. By using the MIX SEND [PRE] switch located in the SELECTED INPUT CHANNEL block, you can select whether to send the pre-fader or post-fader signal for each input channel. For details refer to "Chapter 4. Basic operation for input channels."

9. **In the MIX OUTPUT block, turn on the MIX [ON] switch for the corresponding MIX channel. Use the MIX [LEVEL] encoder to adjust the master send level of the effect.**



Hint

If the MIX channels are paired, the left (odd-numbered) encoder will function as a MIX [BAL] encoder to adjust the volume balance between the two channels, and the right (even-numbered) encoder will function as a MIX [LEVEL] encoder to adjust the output level of the two channels in common.
For details refer to "Chapter 5. Basic operation for output channels."

10. **Turn on the [ON] switch for the input channel (or ST IN channel) to which the L/R output of the effect is patched, and use the fader to adjust the effect return level.**

Hint

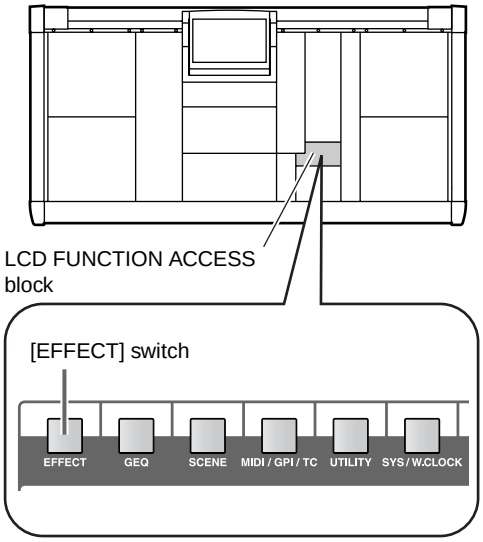
The effect input/output levels can be viewed in the EFFECT function screen.

Inserting an internal effect into a channel

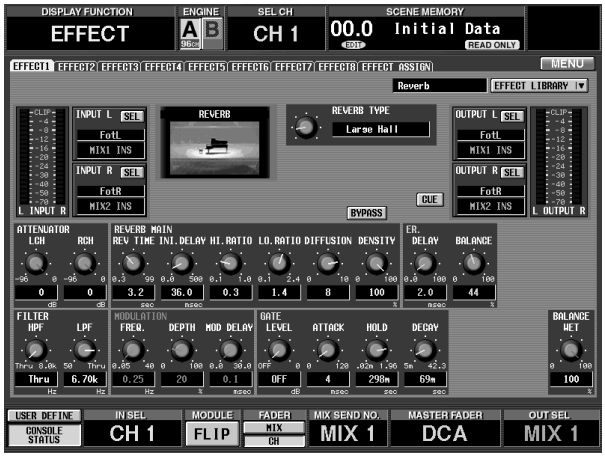
With this method, an internal effect can be patched between the insert out and insert in of a desired channel. As an example, we will explain how to insert an effect into an input channel.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [EFFECT] switch several times to access the desired effect screen from EFFECT 1– EFFECT 8.**

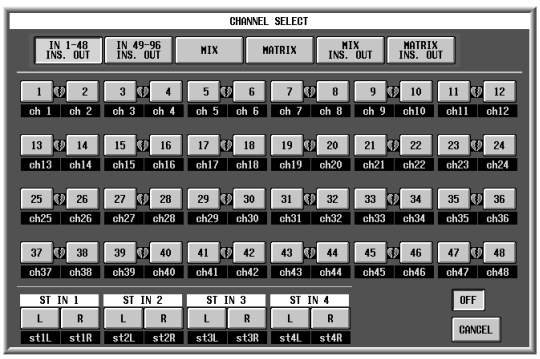


- **EFFECT 1 screen (EFFECT function)**



2. **Click the SEL button located in the INPUT L section at the upper left of the screen.**
The CH SELECT popup window will appear.

- **CH SELECT popup window**



3. **In the row of buttons at the top of the screen, click either the "IN 1-48 INS. OUT" button or the "IN 49-96 INS. OUT" button {on the 48 channel model, this button has no effect}.**
The buttons labeled "INS. OUT" are used to patch the effect input to the insert out of each channel. You may also select a MIX channel or MATRIX channel as the insert destination.

⚠ For channels that are already used by another channel, the NAME will be displayed in white characters on a red background.
Please be aware that selecting one of these channels may affect other functionality.

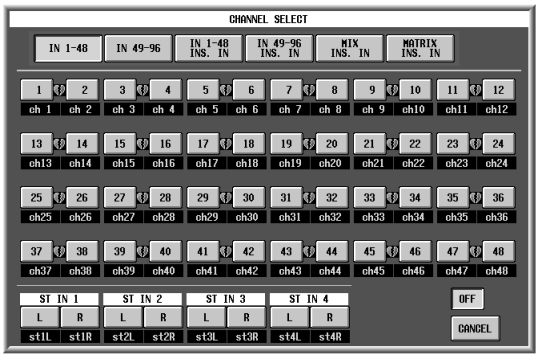
4. **Click the button for the channel that you wish to patch to the L input of the effect.**
You will return to the previous effect screen, and the insert out selected for the INPUT L section will be displayed. As necessary, assign an insert out to the R channel of the effect as well.

Hint

If one of two paired channels (or a stereo channel) is patched to the L input of the effect, the other channel will automatically be patched to the R input of the effect.

5. **Click the SEL button located in the OUTPUT L section at the upper right of the screen.**
The CH SELECT popup window will appear, allowing you to select a signal route as the effect send destination.

- **CH SELECT popup window**



6. **In the row of buttons at the top of the screen, click either the IN 1-48 INS. IN" button or the "IN 49-96 INS. IN" button {on the 48 channel mode, this button has no effect}.**
The buttons labeled "INS. IN" are used to patch the effect output to the insert in of each channel. Normally, you will select the insert in of the same channel that you selected in step 3.

⚠ For channels that are already used by another channel, the NAME will be displayed in white characters on a red background.
Please be aware that selecting one of these channels may affect other functionality.

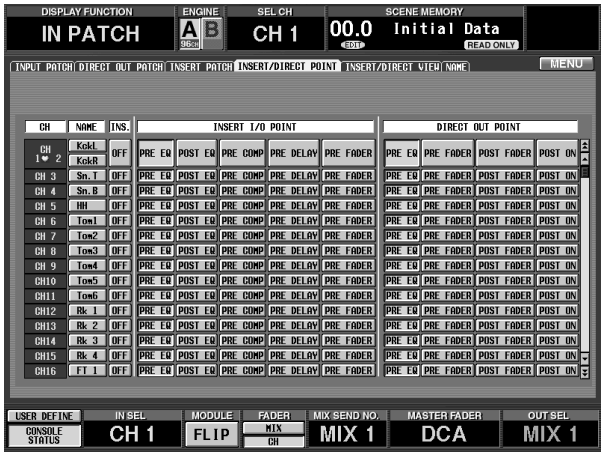
7. **Click the button of the channel that you wish to patch to the L output of the effect.**
You will return to the previous effect screen, and the selected channel will appear in the OUTPUT L section. In the same way, assign the insert in of the desired channel to the R channel output.

Hint

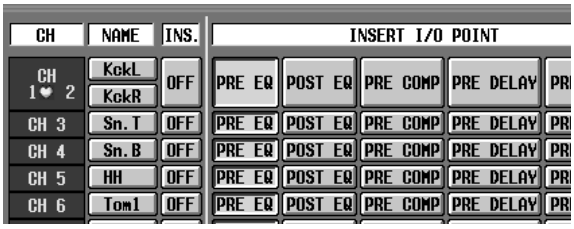
If one side of a pair of channels (or a stereo channel) is patched to the L output of the effect, the other channel will automatically be patched to the R output of the effect.

8. **In the LCD FUNCTION ACCESS block, press the INPUT [PATCH] several times to access the following INSERT/DIRECT POINT screen (IN PATCH function).**

- **INSERT/DIRECT POINT screen (IN PATCH function)**



- **INSERT/DIRECT POINT**



9. **For the channel into which the effect was inserted, click the INS. button to turn it on. As necessary, select the INSERT I/O POINT.**

⚠ If you inserted the effect into an output channel, press the OUTPUT [PATCH] switch several times to access the INSERT POINT screen (OUT PATCH function) and make settings in the same way.

10. **Turn on the [ON] switch of the input channel (or ST IN channel) into which the effect was inserted, and use the fader to adjust the input level.**
The input/output levels of the effect can be viewed in the EFFECT function screen.

Basic operation of the effect screen

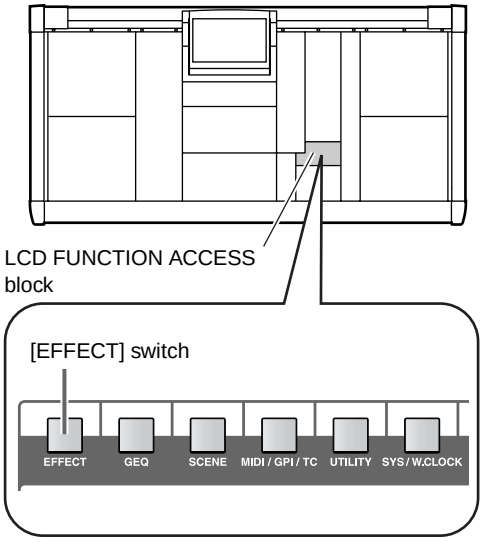
This section explains how you can use the EF function screen to edit effect parameters, and recall/store effect library data.

Editing effect parameters

In the EFFECT function screen, you can use the knobs or buttons to edit effect parameters.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [EFFECT] switch several times to access the desired screen from EFFECT 1–EFFECT 8.**



- **EFFECT 1 screen (EFFECT function)**

2. **Use the TYPE knob in the upper middle of the screen to select the effect type.**
   The TYPE knob switches the preset settings that are provided for the currently selected effect.

   Depending on the effect that is selected, this setting may not be available.

3. **Use the knobs and buttons in the lower part of the screen to set the effect parameters.**
   The lower part of the screen contains knobs and buttons that are used to edit the effect parameters. The parameter contents will differ depending on the currently selected effect. When you change the type in step 2, the setting values of the various parameters will change accordingly.

Hint

Effect parameter settings can be saved in the effect library, independently of scene memories. (For the Save procedure, refer to p.133.)

[Procedure]

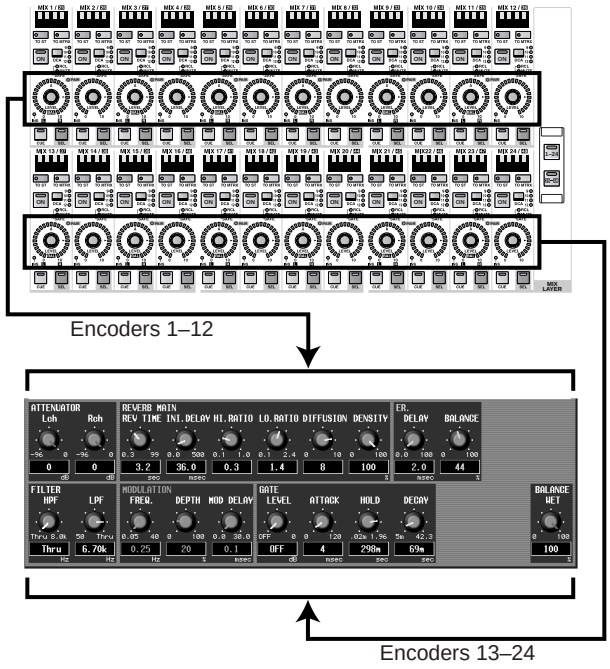
Using the encoders to operate effect parameters

When the EFFECT function EFFECT 1–EFFECT 8 screens are displayed, you can use the encoders of the MIX OUTPUT block to control the effect parameters.

1. **Access one of the EFFECT 1–EFFECT 8 screens.**
2. **Click the ASSIGN button located in the center of the screen to turn it on.**

The parameters of the currently selected effect will be assigned to the MIX [LEVEL/BAL] encoders as shown in the following diagram. At this time, the MIX [NAME] indicator of the MIX OUTPUT block will show the parameter name (up to four characters).

CS1D MIX OUTPUT block



Hint

- When the EFFECT 1–EFFECT 8 screens are displayed, you can obtain the same result by holding down the [SHIFT/GRAB] switch located in the data entry block and pressing the MIX LAYER [1-24] switch or [25-48] switch.
- The ASSIGN button on/off setting is common to all of the EFFECT 1–EFFECT 8 screens. If you switch between EFFECT 1–EFFECT 8 screens when the ASSIGN button is on, the parameters of the new screen will be assigned.

3. **To return to the previous state, click the ASSIGN button to turn it off.**
   The encoder functions will return to their previous state.

Hint

The encoder functions will also return to their previous state if you access a screen other than EFFECT 1–EFFECT 8, or if you press either the MIX LAYER [1-24] or [25-48] switch.

Recalling effect data from the library

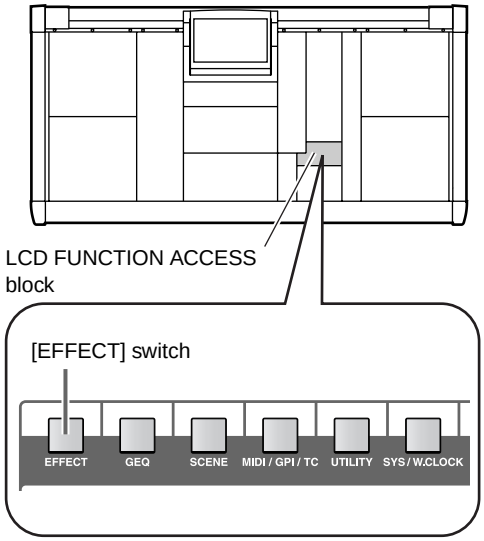
It is not possible to switch the effect type from within the EFFECT function screen. If you wish to change the effect type, you must recall effect data that uses the desired effect. Here's how you can recall (load) existing effect data from the effect library.

Hint

The libraries of the PM1D system are an area of internal memory that stores system settings for later reuse, and are independent of the scene memories. There are other libraries in addition to the effect library explained here, such as the patch library and EQ library.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [EFFECT] switch several times to access the desired screen from EFFECT 1 – EFFECT 8.**

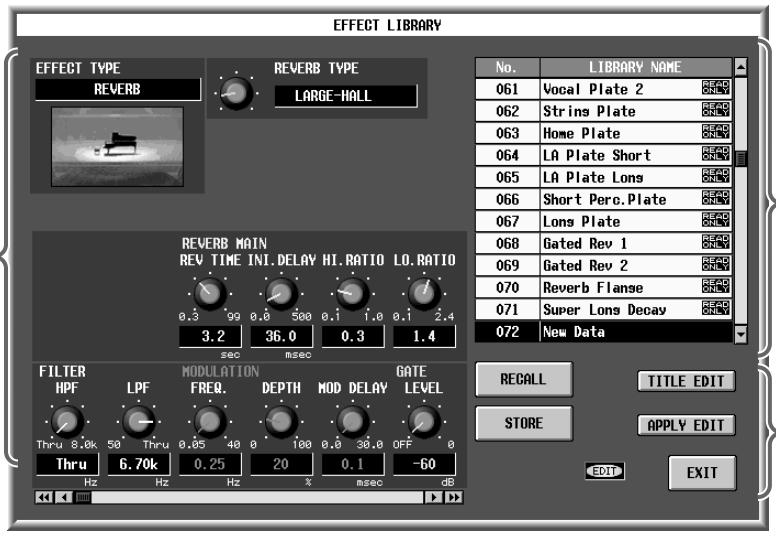


- **EFFECT 1 screen (EFFECT function)**

2. **Click the EFFECT LIBRARY button located in the upper right of the screen.**
   The EFFECT LIBRARY popup window will appear, in which you can recall/store effect data from/to the effect library.

   • **EFFECT LIBRARY button**

   • **EFFECT LIBRARY popup window**



This displays the effect type and parameter settings of the data selected in the library list. In this window you can also edit effect parameters and re-save them in the library.

This is the library list which lists the data stored in the library. The row currently selected for operations will be highlighted.

These buttons are used to store or recall library data.

3. **Click the library list at the right side of the screen (or use the CURSOR [▲]/[▼] switches of the data entry block) to select the desired effect data.**
   When you click the desired number in the library list, the highlighted area will move to that line. The contents of the data selected at this time will be displayed in the left side of the screen, allowing you to find the effect you want.

4. **Click the RECALL button.**
   The selected effect data will be loaded into the PM1D system.

   You will exit the library popup window and return to the previous screen.

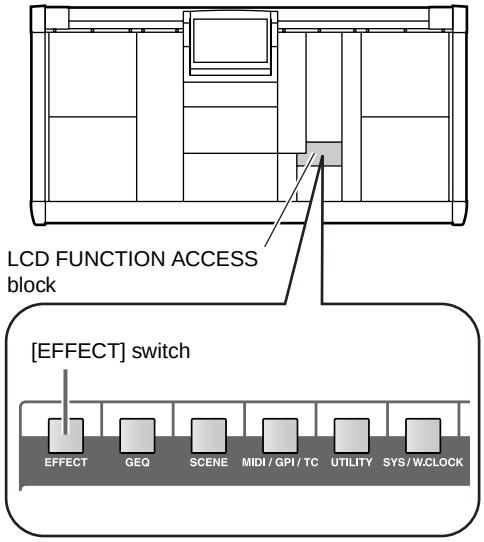
5. **Edit the effect parameters as necessary.**

Storing effect data to the library

You can store (save) effect parameter settings in the effect library for later re-use.

[Procedure]

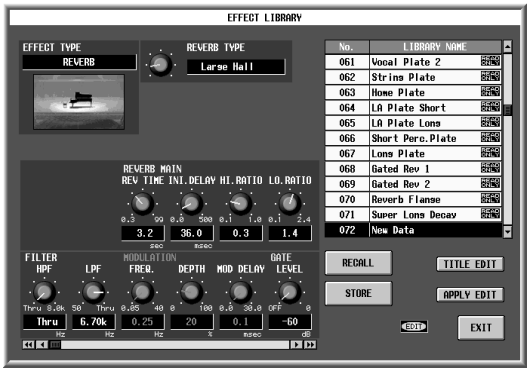
1. **In the LCD FUNCTION ACCESS block, press the [EFFECT] switch several times to select the desired screen from EFFECT 1 – EFFECT 8.**



2. **Click the EFFECT LIBRARY button located in the upper right of the screen.**
The EFFECT LIBRARY popup window will appear.

- **EFFECT LIBRARY button**

- **EFFECT LIBRARY popup window**



3. **From the library list, select the number into which you wish to store the data, and click that line.**

⚠ Data displayed as "READ ONLY" contains factory preset data. It is not possible to overwrite data onto these numbers.

4. **Click the STORE button.**
The LIBRARY STORE popup window will appear, in which you can assign a name to the data that you are storing.

- **LIBRARY STORE popup window**

5. **Use the character palette to assign a name to the data.**
For details on using the character palette, refer to p.20.

6. **Click the STORE button.**
A window will ask you to confirm the Store operation.

- **Store confirmation window**

7. **To execute the Store operation, click the OK button.**
You will exit the library popup window and return to the previous screen.

If you click the CANCEL button instead of the OK button, the Store operation will be cancelled and you will return to the library popup window.

Chapter 13. Graphic EQ

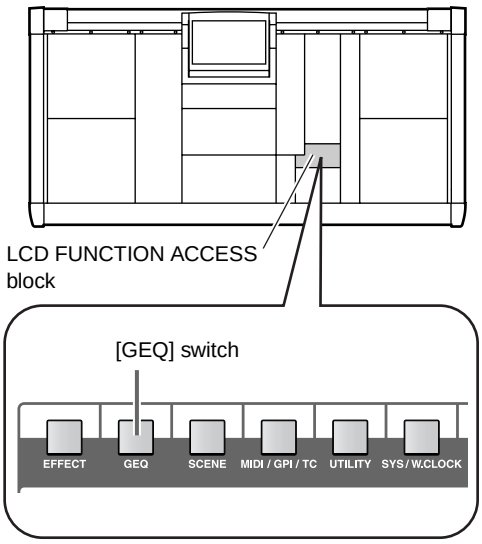
The PM1D system provides twenty-four 31-band graphic EQ modules. This chapter explains how to operate the graphic EQ.

Inserting a graphic EQ into a channel

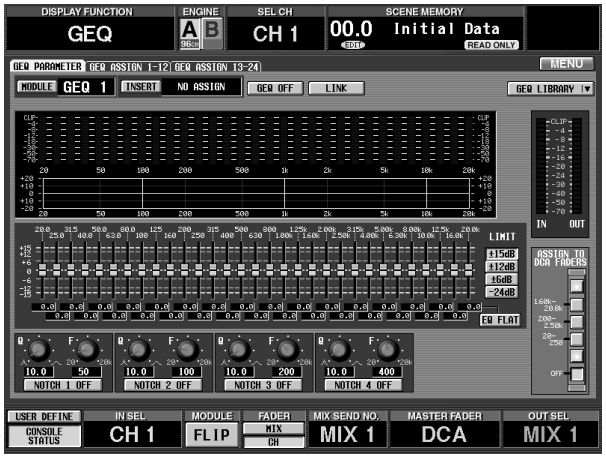
The 24 GEQ (graphic EQ) modules built into the PM1D system can be patched to the insert-out/insert-in of a desired channel. Here we will explain how to insert a graphic EQ into an input channel.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [GEQ] switch several times to access the following GEQ PARAMETER screen.**



- **GEQ PARAMETER screen (GEQ function)**

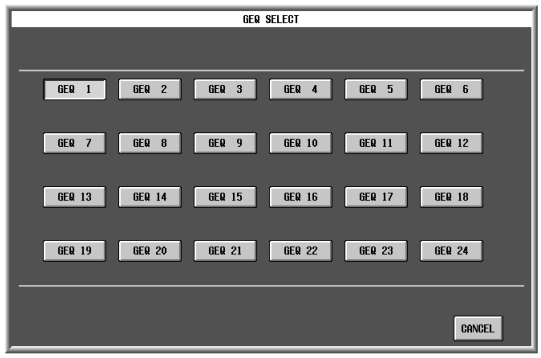


In the GEQ PARAMETER screen you can select a specific GEQ module, select the patch destination channel, and set the parameters.

2. **Click the MODULE button in the upper left of the screen.**

A GEQ SELECT popup window will appear, allowing you to select a GEQ module (1–24).

- **GEQ SELECT popup window**

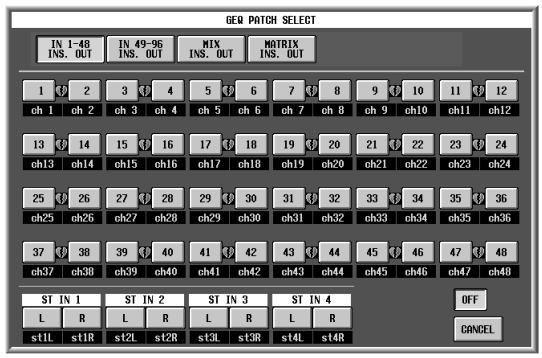


3. **Select the desired module from GEQ 1 – GEQ 24, and click the corresponding button.**
When you click a button, you will return to the GEQ PARAMETER screen. Notice that the selected module is displayed at the right of the MODULE button.

4. **Click the INSERT button located at the right of the MODULE button.**

The GEQ PATCH SELECT popup window will appear, allowing you to select the patch destination for the GEQ module.

- **GEQ PATCH SELECT popup window**



In this window, you will first use the top row of buttons to select the type of channel, and then use the remaining buttons to select the channel number.

The following signal routes can be selected as a patch destination.

- **IN 1-48 INSERT OUT**
  Patch to the insert-out/insert-in of an input channel 1–48 or ST IN channel 1–4.
- **IN 49–96 INSERT OUT {this button is not valid for the 48 channel model}**
  Patch to the insert-out/insert-in of an input channel 49–96 or ST IN channel 5–8.
- **MIX INSERT OUT**
  Patch to the insert-out/insert-in of a MIX channel 1–48.
- **MATRIX INSERT OUT**
  Patch to the insert-out/insert-in of a MATRIX channel 1–24.
- **STEREO A (L/R)**
  Patch to the insert-out/insert-in of the STEREO A channel (L or R).
- **STEREO B (L/R)**
  Patch to the insert-out/insert-in of the STEREO B channel (L or R).

Hint

If the short name of a channel is displayed on a red background, this indicates that some other item (an internal effect, input/output unit, or another GEQ) has already been inserted into that channel. Be aware that if you select such a channel as the patch destination for a GEQ module, the previously-inserted item will be defeated.

5. **In the top row of the screen, click either the 1-48 INSERT OUT button or the 49-96 INSERT OUT button {this button is not valid for the 48 channel model}, and then click one of the buttons in the lower part of the screen to select the channel number.**
   When you click a number, you will return to the previous GEQ PARAMETER screen. Notice that the module you selected is displayed at the right of the INSERT button.

Hint

If one side of a stereo channel (or of two paired channels) is patched to one of two adjacent odd-numbered → even-numbered GEQ modules, the remaining channel will automatically be assigned to the other GEQ module.

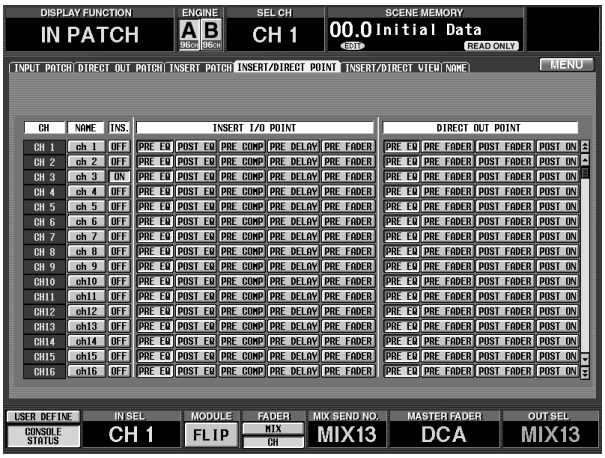
If you turn on the LINK button of the GEQ PARAMETER screen, adjacent odd-numbered → even-numbered GEQ modules will be linked.

6. **Turn on the GEQ ON/OFF button located in the upper middle of the screen.**

Hint

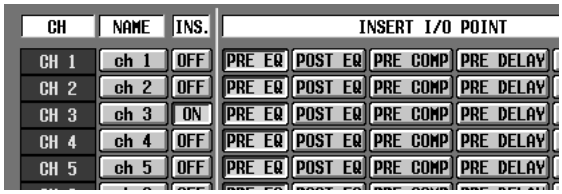
The GEQ can also be switched on/off in the GEQ ASSIGN 1-12/13/24 screens.

7. **In the LCD FUNCTION ACCESS block, press the INPUT [PATCH] switch several times to access the INSERT/DIRECT POINT screen (IN PATCH function).**
   - **INSERT/DIRECT POINT screen (IN PATCH function)**



   If an input channel is selected as the GEQ insert, the INS. button of the corresponding channel in the INSERT/DIRECT OUT screen will automatically be turned on.

   - **INSERT/DIRECT POINT**



8. **If necessary, change the INSERT I/O POINT.**

⚠

- The INS. button will switch on/off only when you select/cancel the insert destination in the GEQ PARAMETER screen. Selecting/canceling the GEQ insert destination in the IN PATCH/OUT PATCH screen will not operate this function.
- In the INSERT/DIRECT POINT screen you can always switch the INS. button on/off.
- If you insert a graphic EQ into an output channel, press the OUTPUT [PATCH] switch several times to access the INSERT POINT screen (OUT PATCH function), and make the setting in the same way.
- If you defeat GEQ insertion in the GEQ PARAMETER screen, the INS. button of the corresponding channel will automatically be turned off.

Controlling a graphic EQ

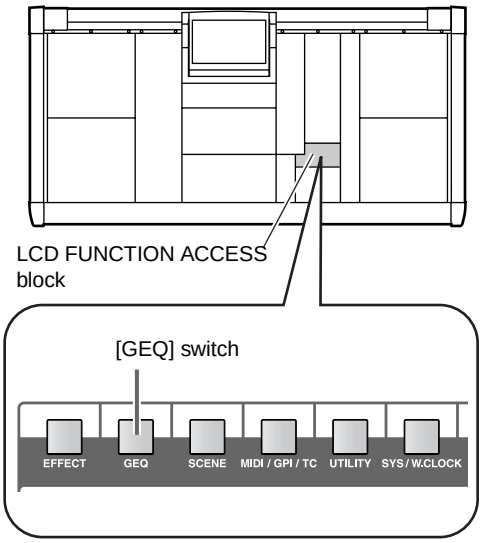
To control a graphic EQ, you can either use the virtual faders and virtual knobs shown in the display, or the DCA faders of the CS1D console.

Controlling a graphic EQ from the display

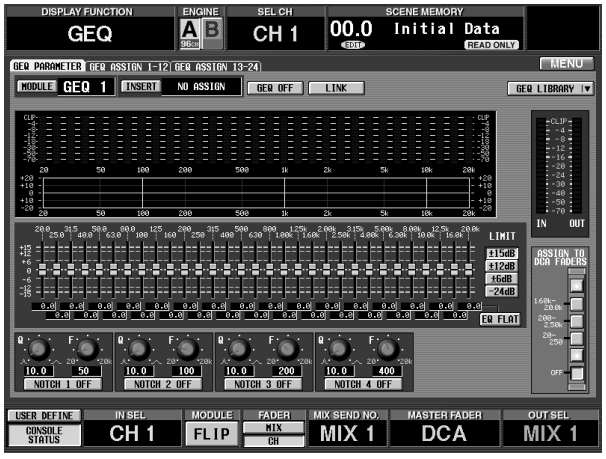
Here's how to control the desired GEQ module by using the virtual faders and virtual knobs shown in the GEQ function screen.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [GEQ] switch several times to access the GEQ PARAMETER screen.**



- **GEQ PARAMETER screen (GEQ function)**



2. **Click the MODULE button located in the upper left of the screen to select the GEQ module that you wish to control.**

Make sure that the GEQ ON/OFF button is turned on. Also make sure that the corresponding module has been inserted into an appropriate channel, and that insertion has been enabled for that channel.

Hint

An alternate way to select the desired GEQ module is to use the GEQ ASSIGN 1-12/13-24 screens of the GEQ function.

3. **Use the LIMIT section (located in the screen at the right of the faders) to specify the range of the faders.**
   In the LIMIT section you can select the maximum change and direction of change produced by the faders. You can select ±15 dB, ±12 dB, ±6 dB (these are bi-directional, allowing boost or cut), or –24 dB (cut only).

   - **LIMIT section**

4. **Operate the virtual faders in the screen.**
   The numerical boxes below the faders will indicate the amount of boost/cut.

Hint

By clicking the EQ FLAT button located below the LIMIT section, you can reset all faders to the 0 dB position.

5. **As necessary, operate the four notch filters located at the bottom of the screen.**
   Four notch filters can be used for each GEQ module. The NOTCH 1 – NOTCH 4 buttons turn each filter

on/off, the Q knobs adjust the steepness, and the F knobs adjust the center frequency.

- **Notch filters**

Hint

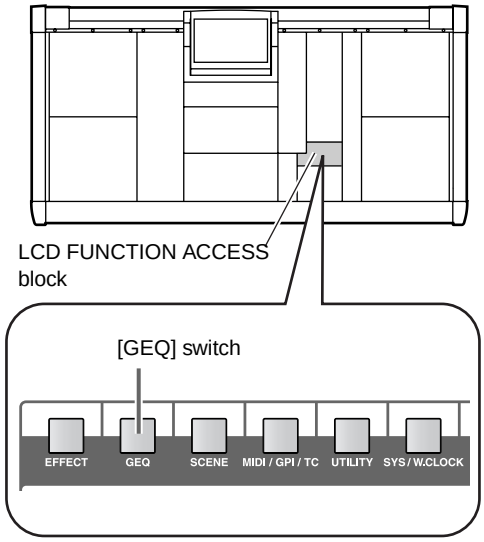
Notch filters 1–4 are independent of the graphic EQ, and are not affected by the GEQ ON/OFF button. If necessary, you can access the graphic EQ module and use only the notch filters.

Controlling a graphic EQ from the DCA faders

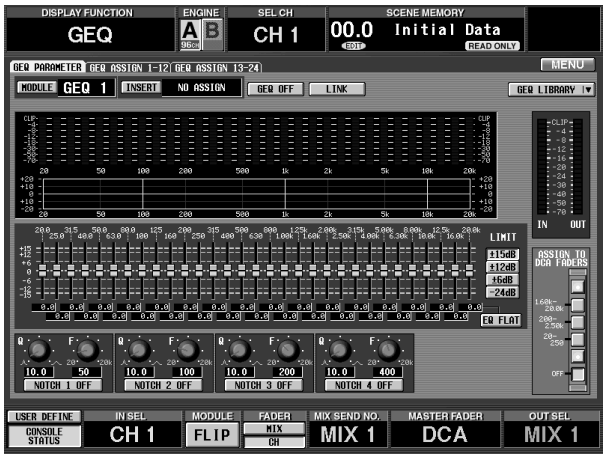
Here's how to control the desired GEQ module in realtime by using the twelve DCA faders in the DCA GROUP block of the console. When this method is used, the currently selected GEQ module is divided into three frequency bands which are operated individually.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [GEQ] switch several times to access the GEQ PARAMETER screen.**



- **GEQ PARAMETER screen (GEQ function)**



2. **Click the MODULE button located in the upper left of the screen, and select the GEQ module that you wish to control.**

Make sure that the GEQ ON/OFF button is turned on. Also make sure that the corresponding module is inserted into an appropriate channel, and that insertion is enabled for that channel.

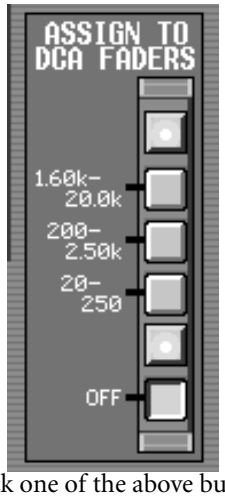
Hint

Holding down the [SHIFT/GRAB] switch and pressing the [SEL] switch of a channel will display the GEQ if a GEQ has been inserted into that channel.

3. **In the LIMIT section located at the right of the faders, specify the control width for the faders.**

4. **In the ASSIGN TO DCA FADERS section located in the lower right of the screen, click one of the following buttons to select the frequency bands that will be controlled by the DCA faders.**
   Each button corresponds to the following frequency bands.

   - **1.60k-20.0k button**
     The DCA faders will be assigned to the twelve bands from 1.6 kHz–20 kHz.
   - **200-2.50k button**
     The DCA faders will be assigned to the twelve bands from 200 Hz–2.5 kHz.
   - **20-250 button**
     The DCA faders will be assigned to the twelve bands from 20 Hz–250 Hz.



When you click one of the above buttons, you will be able to use the DCA faders to operate the graphic EQ.

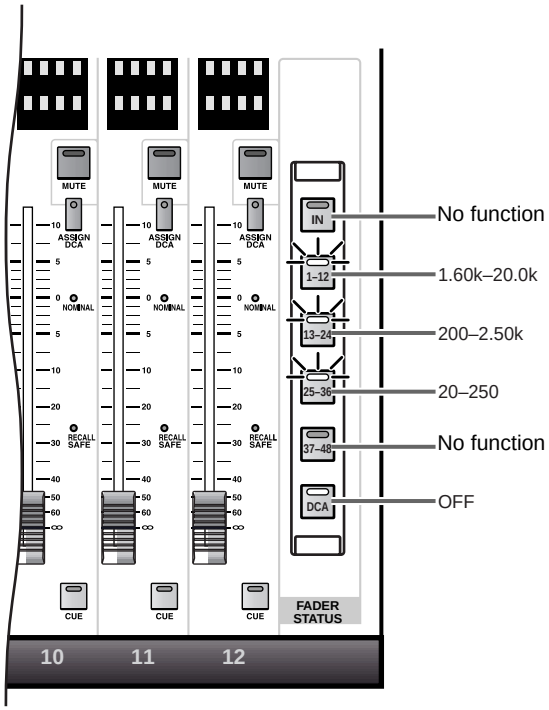
The center line of the selected range of faders will change to red in the display.

Hint

While the GEQ PARAMETER screen is displayed, you can also perform operations using the DCA faders by holding down the [SHIFT/GRAB] switch and pressing the [DCA STATUS] switch. The frequency range selected at this time will be the same as in the following diagram.

At this time, the [FADER STATUS] switches in the DCA GROUP block of the CS1D will function as graphic EQ band select switches, as shown in the following diagram.

- **FADER STATUS switches**



5. **Operate DCA faders 1-12.**
   The corresponding frequency bands will be cut or boosted.

6. **If you wish to use the DCA faders to control other bands, repeat steps 4–5.**

7. **When you are finished using the DCA faders to control the graphic EQ, press the [DCA] switch of the FADER STATUS section. Alternatively, click the OFF button in the ASSIGN TO DCA FADERS section of the GEQ PARAMETER screen.**
   The [FADER STATUS] switch will return to the normal condition, and the DCA faders will function as control faders for the DCA groups.

   If you again wish to assign the graphic EQ to the DCA faders, click one of the buttons in the ASSIGN TO DCA FADERS section of the GEQ PARAMETER screen.

Hint

The settings of the GEQ function are saved as part of a scene. In addition, the settings of a GEQ module can be saved in the GEQ library independently of the scene memory. For details refer to "CS1D Reference Manual (Software)".

⚠ When you exit the GEQ screen, the assignments to the DCA faders will be cancelled forcibly. At this time, the [FADER STATUS] switches of the DCA GROUP block will return to their previous state.

Chapter 14. MIDI/Time Code

This chapter explains how MIDI messages and time code (LTC) can be used to control events on the PM1D.

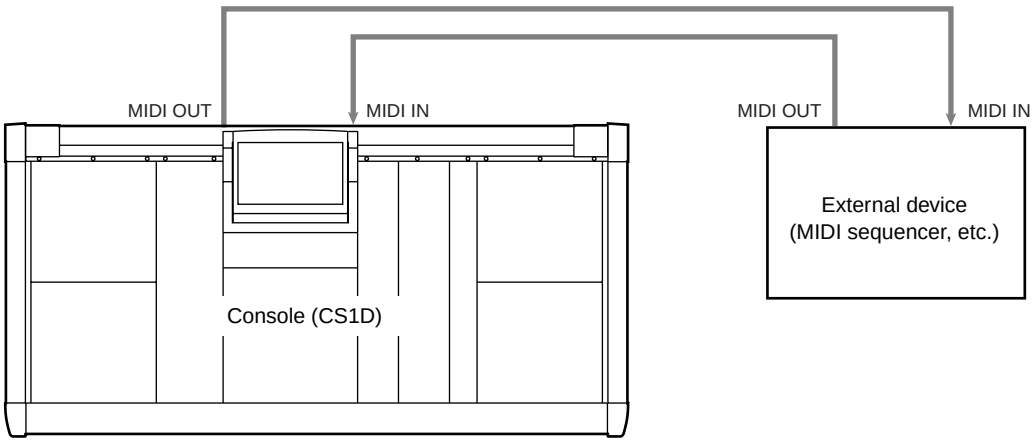
Using MIDI program changes to control events

On the PM1D system, you can assign specific events (scene recall/effect recall) to MIDI program numbers, so that the specified event will be executed when the corresponding MIDI program change number is received. It is also possible to cause program change messages to be transmitted to an external device when a specific event is executed on the console.

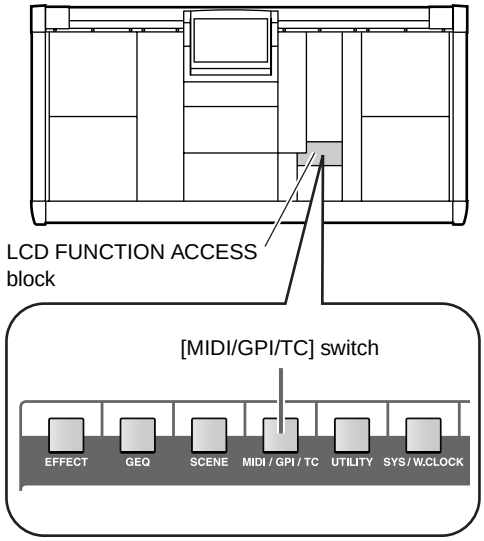
[Procedure]

1. **Connect the MIDI OUT connector of the external device to the MIDI IN connector of the console (or engine). Connect, the MIDI OUT connector of the console (or engine) to the MIDI IN connector of the external device.**

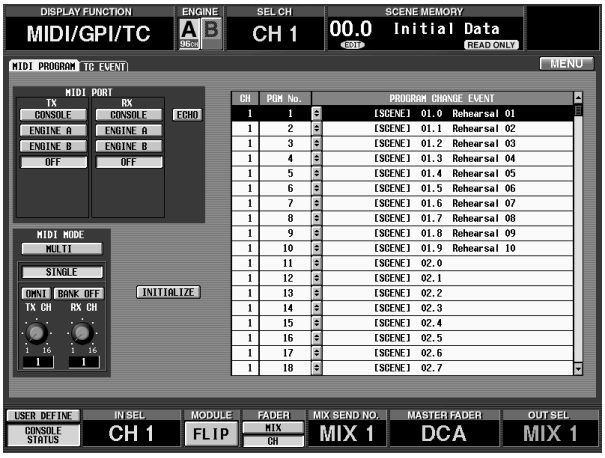
   - **MIDI connections between the PM1D system and an external device**



2. **In the LCD FUNCTION ACCESS block, press the [MIDI/GPI/TC] switch several times to access the following MIDI PROGRAM screen.**



   - **MIDI PROGRAM screen (MIDI/GPI/TC function)**



In the MIDI PROGRAM screen you can select the port at which MIDI messages will be transmitted and received, specify how they will be transmitted and received, and assign an event to each program number.

3. **In the MIDI PORT section of the screen, press the button for the port at which program changes will be transmitted and received.**
   In the MIDI PORT section you can select from the following ports to transmit (TX) and receive (RX) MIDI program change messages.
   - **CONSOLE** .....MIDI IN/OUT connectors on the rear panel of the console
   - **ENGINE A** .....MIDI IN/OUT connectors of engine A
   - **ENGINE B** .....MIDI IN/OUT connectors of engine B
   - **OFF** .....MIDI messages will not be transmitted or received

   Hint

   DSP x2

   The ENGINE B button is valid only when the PM1D system is being used in Mirror mode.

4. **In the MIDI MODE section, use the MULTI or SINGLE button to select the program change transmission/reception mode.**
   You can select one of the following two modes.

   • **Single mode (when the SINGLE button is on)**
   This mode uses a single MIDI channel to transmit and receive programs. In this mode, incoming program changes 1–128 received on the MIDI channel specified by the RX CH knob (RX CH) will execute the event assigned to each program number. When the corresponding events are executed on the CS1D, a program change 1–128 will be transmitted to the external device on the MIDI channel specified by the TX CH knob (TX CH).

   • **Multi mode (when the MULTI button is on)**
   This mode uses multiple MIDI channels to transmit and receive program changes. In this mode, incoming program changes 1–128 on MIDI channels 1–16 will execute the event assigned to each program MIDI channel/program number. When the corresponding events are executed on the CS1D, a program change 1–128 will be transmitted to the external device on a MIDI channel 1–16.

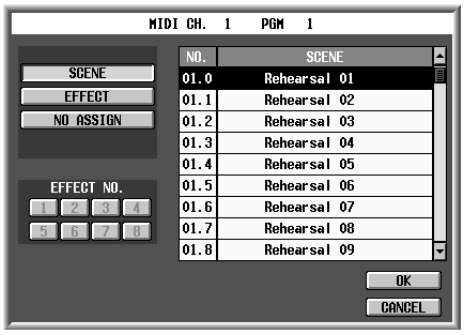
5. **If you selected single mode in step 4, use the TX CH/RX CH knobs to select the MIDI channels on which program changes will be transmitted or received. If desired, turn on the OMNI button or the BANK button.**
   When Single mode is selected, turning the OMNI button on will allow program change messages of all MIDI channels to be received.

   When Single mode is selected, turning the BANK button on will allow events to be specified by the combination of bank select messages (bank numbers 1–16) + program change messages.

   ⚠ Please do not confuse "Single mode/OMNI button on" with "Multi mode." When the OMNI button is on, program changes will be received on all MIDI channels, but the only events that can be executed are those that have been assigned to program changes 1–128 of the RX CH. Also, the TX CH is the only MIDI channel that can be transmitted.

6. **From the PROGRAM CHANGE EVENT list in the right of the screen, select the program number to which you wish to assign an event, and click the ⇕ button of that line.**
   The PROGRAM CHANGE EVENT list allows you to assign an event to each program number. When you click the ⇕ button of the desired line, a popup window will appear, where you can select an event to assign.

   • **Event selection popup window**



   Hint

   In Multi mode, MIDI channels 1–16 and program changes 1–128 can be used.

   In Single mode, only program changes 1–128 of the MIDI channel selected by the RX CH knob can be used.

   If the BANK button is turned on in Single mode, bank select 1–16 and program change 1–128 of the MIDI channel selected by the RX CH knob can be used. In this case, the number displayed in the CH column of the PROGRAM CHANGE EVENT list will be the bank number.

7. **Click one of the buttons in the upper left of the window to select the type of event.**
   The following events can be selected.
   - **SCENE**..... Scene memory recall operations
   - **EFFECT**..... Effect recall operations
   - **NO ASSIGN**..... No event assigned

8. **If you selected Scene memory recall in step 7, select the number of the desired scene from the list in the right side of the popup window, and click the OK button.**

9. **If you selected Effect recall in step 7, use the buttons in the lower left of the popup window to select the internal effect (1–8) for which data will be recalled, use the list at the right to select the effect library data that will be recalled, and then click the OK button.**
10. **In the same way, assign events to other program numbers as well.**
11. **Transmit a program change (or bank select + program change) from an external device on a valid MIDI channel.**
    The event assigned to that program number will be executed. When you execute one of the assigned events on the CS1D, a program change (or bank select + program change) will be transmitted to the external device.

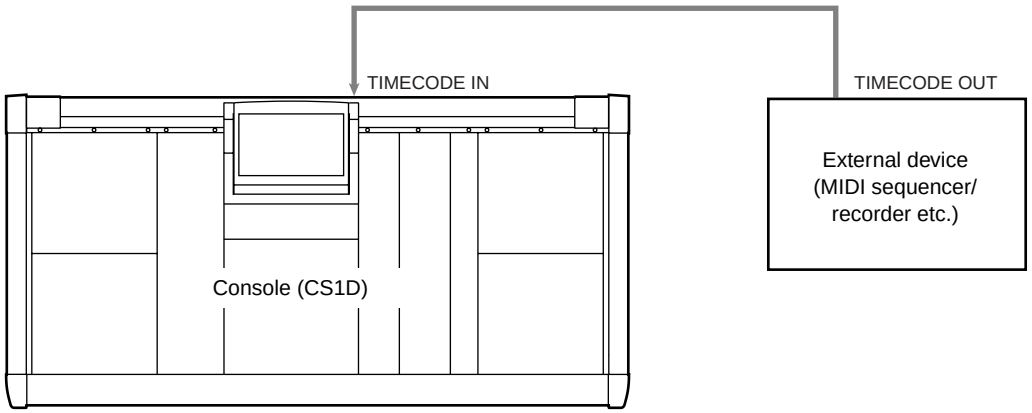
Using time code to control events

On the PM1D system, specified scenes can be recalled when the LTC time code received at the TIME CODE IN connector (or the time code internally generated by the PM1D system itself) reaches a specified time location. Here we will explain how to capture a time code time location, and how to assign the desired scene to that time location.

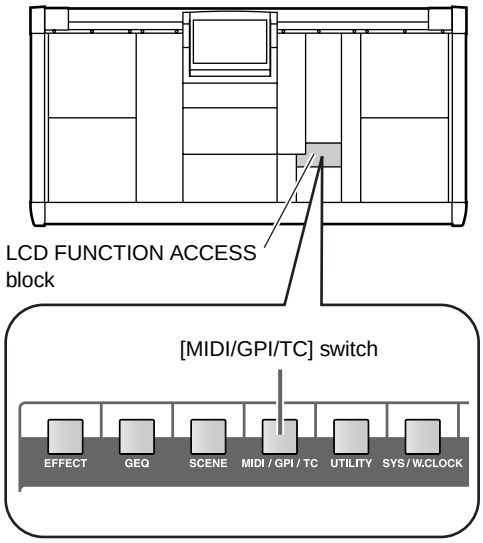
[Procedure]

1. **Connect the time code output connector of the external device to the TIME CODE IN connector of the console (or engine).**

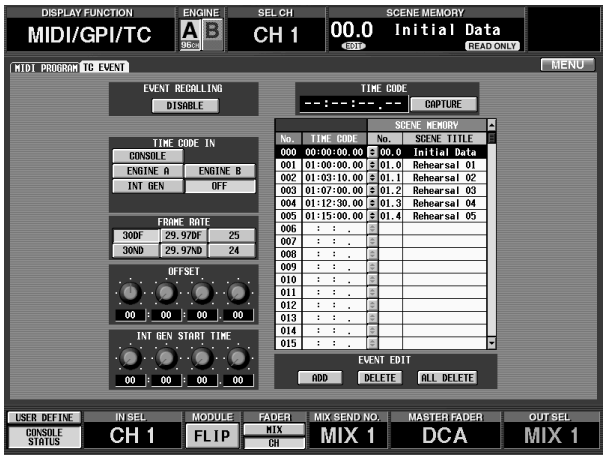
   - **Time code connections between the PM1D system and the external device**



2. **In the LCD FUNCTION ACCESS block, press the [MIDI/GPI/TC] switch several times to access the following TC EVENT screen.**

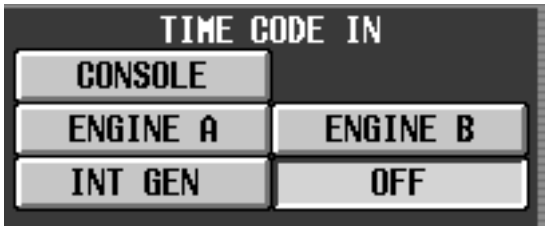


   - **TC EVENT screen (MIDI/GPI/TC function)**



   In the TC EVENT screen you can select the connector at which time code will be received, select the frame rate of the time code, and assign a desired scene number to a captured time location.

3. **Use the buttons of the TIMECODE IN section to select the time code source.**

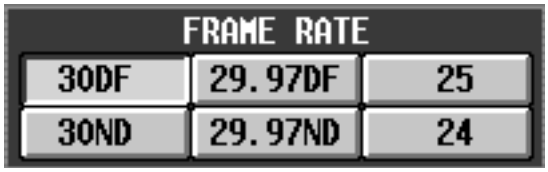


The following sources can be selected.

- **CONSOLE** .....Time code (LTC) will be received from the TIMECODE IN connector of the console.
- **ENGINE A** .....Time code (LTC) will be received from the TIMECODE IN connector of engine A.
- **ENGINE B** .....Time code (LTC) will be received from the TIMECODE IN connector of engine B.
- **INT GEN**.....The internal time code generated by the PM1D system itself will be followed. The instant you click this button, internal time code will start being generated at the time specified by the INT GEN START TIME knobs.
- **OFF** .....If this button is clicked, no time code will be received from outside.

⚠ If "OFF" is selected in the TIME CODE IN section, time code will not be displayed in this screen or in the TIME CODE section of the meter bridge block.

4. **Use the buttons of the FRAME RATE section to select the frame rate appropriate for the time code that will be received.**



The following frame rates can be selected.

- **24**.....24 frames/second
- **25**.....25 frames/second
- **29.97ND**.....29.97 frames/second (non-drop)
- **29.97DF** .....29.97 frames/second (drop frame)
- **30ND**.....30 frames/second (non-drop)
- **30DF** .....30 frames/second (drop frame)

5. **As necessary, use the knobs of the OFFSET section to specify the offset value.**
   The four knobs of the OFFSET section specify the offset value by which the event times will be shifted relative to the incoming time code.

   If the INT GEN button is selected as the time code source, you can use the INT GEN START TIME knob to specify the starting time of the internally-generated time code.

6. **Start time code output on the external device.**
   At this time, the currently received time code value will be displayed in the TIME CODE section of the meter bridge and in the TC EVENT screen.

7. **When you come to the moment at which you want a scene to be recalled, click the CAPTURE button in the TC EVENT screen.**
   Each time you click the CAPTURE button, the time location at that instant will be added to the list below.

   If an event is already recorded at the same time location, the original event will take priority.

8. **When you have captured all of the desired times, stop time code output on the external device.**

9. **In the list, click the line of time code that you captured first.**
   The TC EVENT popup window will appear, in which you can select a scene memory.

   - **TC EVENT popup window**

10. **Select a scene memory, and click the OK button.**

11. **Repeat steps 7–8 until you have assigned the desired scene to each of the time code locations you captured.**

Hint

By using the ADD button, DELETE button, or ALL DELETE button located below the list, you can register new time code locations and events to the list, or delete a time code location from the list.

12. **Click the EVENT RECALLING ENABLE button to turn it on.**
    This setting will allow events to be controlled by time code.

⚠ While this button is set to "ENABLE," it is not possible to store or sort SCENE memories or UNIT/PATCH/NAME libraries. Nor is it possible to load from memory card.

13. **Once again, start time code output on the external device.**
    Each time a time location registered in the list is reached, the corresponding scene will be recalled.

⚠

- The FRAME RATE button and OFFSET/INT GEN START TIME knobs can be operated only while "OFF" is selected in the TIMECODE IN section.
- CAPTURE, ADD, DELETE, and ALL DELETE buttons can be operated only while the EVENT RECALLING button is set to "DISABLE."

Chapter 15. Using a memory card to save/load data

This chapter explains how to use a memory card to save/load data. On the PM1D system, all system settings (or just specified items) can be saved on a commercially available memory card, and loaded later for reuse. For example this allows you to back up the settings to load it into the PM1D.

⚠

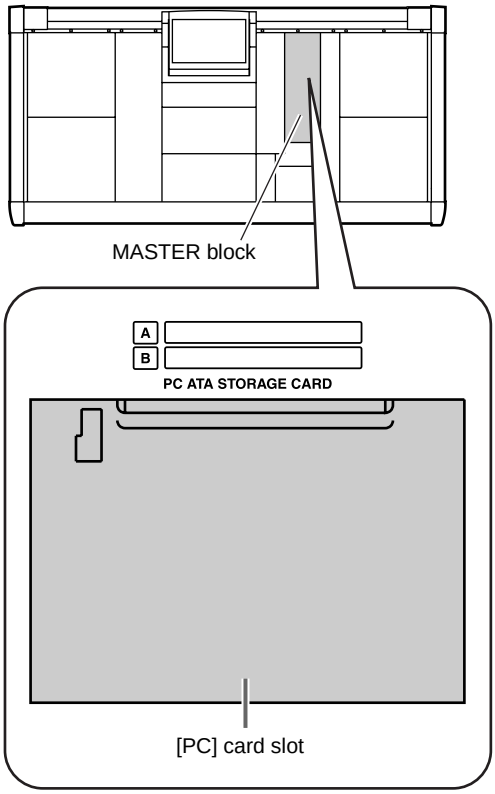
- You can use either PCMCIA Type II compatible ATA type PC flash storage cards, or compact flash media with a PC card adapter that is guaranteed to work with that card. (In either case, the power supply voltage can be 3.3V or 5V.) Operation cannot be guaranteed for other media.
- Normally, memory cards are sold in a formatted condition. For this reason, it is not necessary to format a card before using it on the PM1D system.
- If you need to format a card, please use an external device such as a personal computer to do so. The PM1D system does not have the capability to format a memory card.

Saving a file onto a memory card

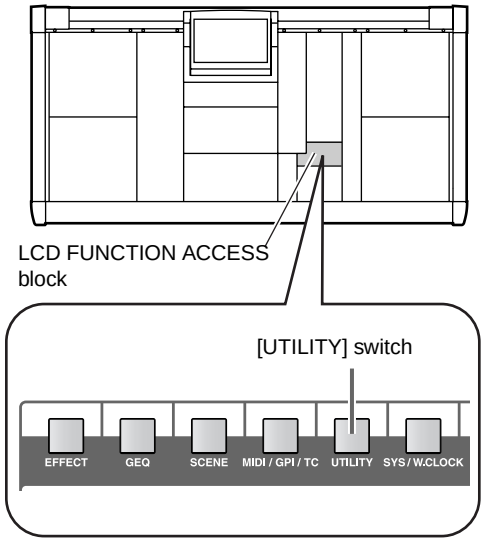
Here's how to save desired items of data onto a memory card.

[Procedure]

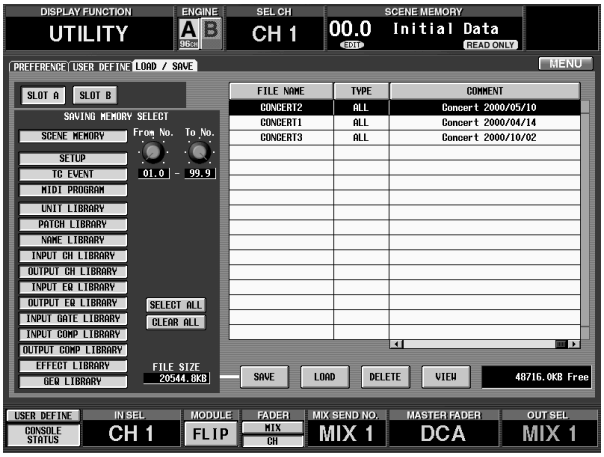
1. **Insert a ATA-compatible PC flash storage card into [PC] card slot A or B located on the top panel of the CS1D.**
   Cards may be inserted or removed while the power of the CS1D is turned on.



2. **In the LCD FUNCTION ACCESS block, press the [UTILITY] switch several times to access the following LOAD/SAVE screen.**



- **LOAD/SAVE screen (UTILITY function)**



In the LOAD/SAVE screen you can select the desired data item, and save or load it.

3. **In the screen, click SLOT A or SLOT B to select the memory card that you wish to use.**

4. **Use the buttons of the SAVING MEMORY SELECT section to select the item that you wish to save or load.**
   In the SAVING MEMORY SELECT section you can select the item that you wish to save. The following items can be selected.

   - **SCENE MEMORY**
     Contents of one or more scene memories
   - **SETUP**
     Internal parameters of the PM1D system not stored in scene memory
   - **TC EVENT**
     Settings of the TC EVENT screen (MIDI/GPI/TC function)
   - **MIDI PROGRAM**
     Settings of the MIDI PROGRAM screen (MIDI/GPI/TC function)
   - **UNIT LIBRARY**
   - **PATCH LIBRARY**
   - **NAME LIBRARY**
   - **INPUT CH LIBRARY**
   - **OUTPUT CH LIBRARY**
   - **INPUT EQ LIBRARY**
   - **OUTPUT EQ LIBRARY**
   - **INPUT GATE LIBRARY**
   - **INPUT COMP LIBRARY**
   - **OUTPUT COMP LIBRARY**
   - **EFFECT LIBRARY**
   - **GEQ LIBRARY**
     Contents of the corresponding library

5. **If you selected Scene Memory in step 4, use the on-screen From No. knob and To No. knob to specify the desired number(s). (Alternatively, you can select "ALL.")**
   For example if you select Scene Memory in the SAVING MEMORY SELECT section and set the From No. knob = 01.0 and the To No. knob = 02.9, the data for PM1D system scene memories 01.0–02.9 will be saved on the memory card. If at a later time you load this file from the memory card, the data will be loaded into the same scene memory numbers of the PM1D system.

6. **Click the SAVE button.**
   A popup window will appear, in which you can input the file name and a comment.

7. **As necessary, assign a file name and comment, and click the SAVE button.**
   The data you selected in steps 4–5 will be saved on the memory card.

⚠ Never insert or remove a memory card while the card is being accessed.

The following characters cannot be used in a file name. If you attempt to input them, they will be ignored. (However, the SPACE character is unavailable only at the beginning of the file name.)

(SPACE)				\	/	:	*	?	"
<	>	|	+	=	[	]	;	,	.

⚠ It is not possible to paste the file name in the FILE SAVE popup window.

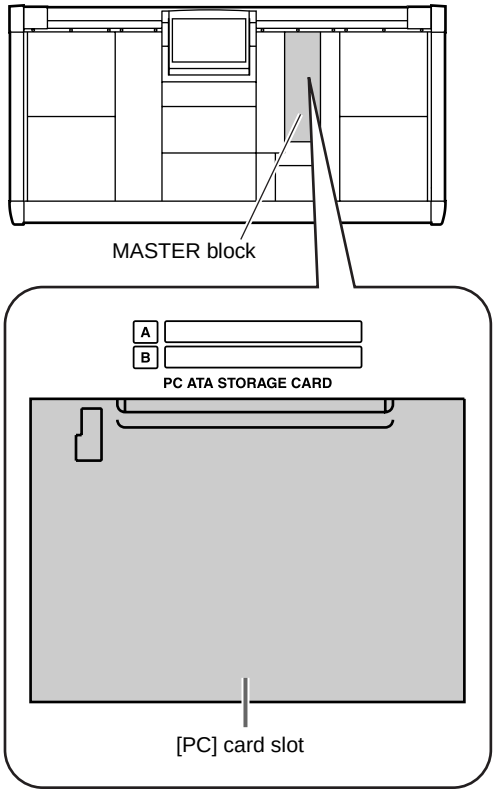
⚠ It is not possible to recall or save a scene while saving. If you press the panel [STORE] switch or [RECALL] switch, a message of "CANNOT STORE!" or "CANNOT RECALL!" will appear.

Loading a file from a memory card

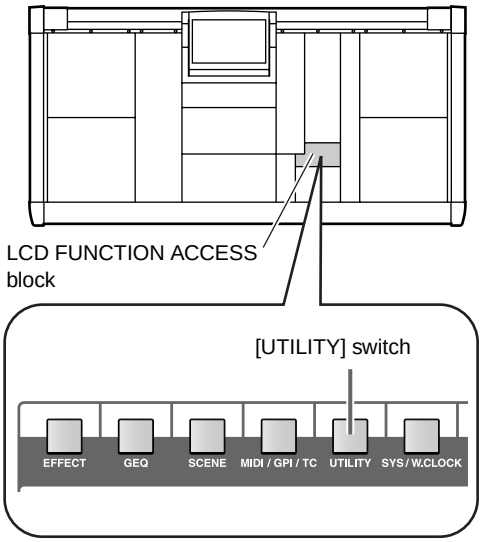
Here's how to load the desired data from a memory card into the PM1D system.

[Procedure]

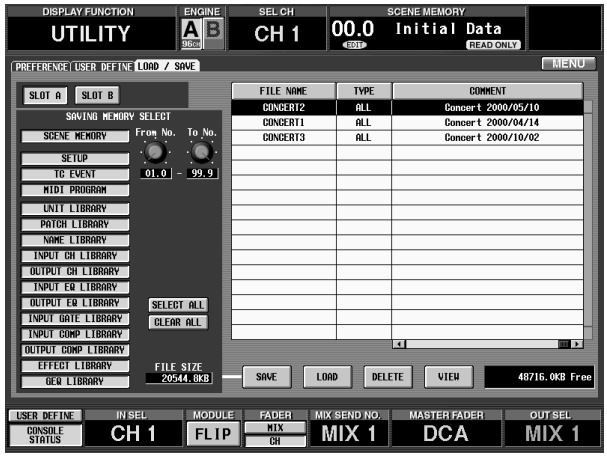
1. **Insert the PC flash storage card containing the data into [PC] card slot A or B located on the top panel of the CS1D.**



2. **In the LCD FUNCTION ACCESS block, press the [UTILITY] switch several times to access the following LOAD/SAVE screen.**



- **LOAD/SAVE screen (UTILITY function)**



3. **In the list at the right, click a row to select the file that you wish to load.**
   The cursor moves to the row.

Hint

The list shows the following information for each file.

- **FILE NAME**
  A file name of up to 8 characters.
- **TYPE**
  One of the following types of file.
  - **ALL** .....All contents including scene memories/libraries, SETUP, TC EVENT, and MIDI PROGRAM
  - **COMPOSITE** ....Part of the scene memories (a file saved by using the From No. knob and To No. knob to specify the range)
  - **Other** .....A file containing only a specific item
- **DATE/SIZE**
  The date and time at which the file was last saved.
- **COMMENT**
  The comment that was added when the file was saved.

4. **Click the LOAD button.**
   The file you selected in step 3 will be loaded from the memory card into the PM1D system. A blank scene memory will be loaded as blank.

⚠ If the type of file being loaded is ALL/COMPOSITE, all or part of the PM1D scene memories and/or libraries may be overwritten unexpectedly. Be careful not to accidentally erase important scenes or libraries.

Never insert or remove a memory card while the card is being accessed.

If the EVENT RECALLING button is set to "ENABLE" in the MIDI/GPI/TC function TC EVENT screen, the LOAD button will be grayed, and loading will not be possible.
You must first switch the EVENT RECALLING button to "DISABLE."

⚠ It is not possible to recall or save a scene while loading. If you press the panel [STORE] switch or [RECALL] switch, a message of "CANNOT STORE!" or "CANNOT RECALL!" will appear.

Chapter 16. Various settings

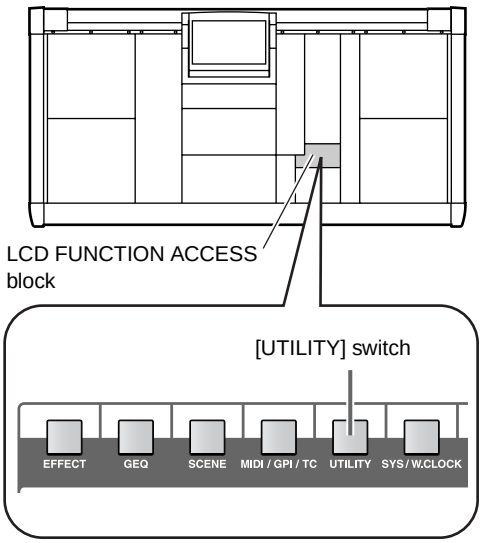
This chapter explains various settings that allow you to customize the PM1D system.

Initial settings for the console

Here's how to make initial settings that affect the basic operation of the CS1D console, such as track pad/mouse operation and operation within the display.

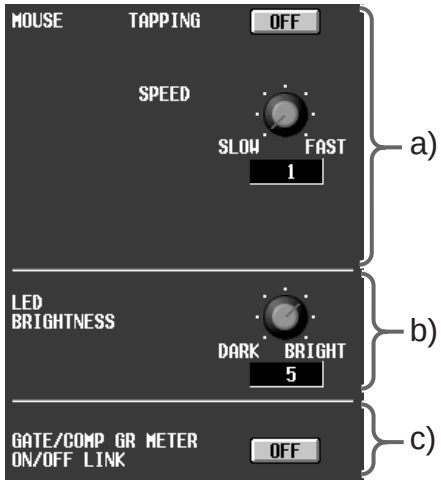
[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [UTILITY] switch several times to access the following PREFERENCE screen.**



- **PREFERENCE screen (UTILITY function)**

2. **Use the on-screen knobs and buttons to specify the initial settings for each item.**
   The following items can be set.



a) MOUSE

Make settings for the track pad built into the CS1D or the mouse connected to the MOUSE connector.

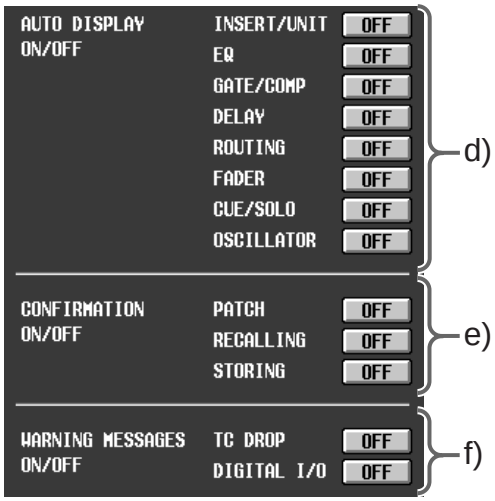
- **TAPPING**
  Specify whether or not to enable tapping on the built-in track pad.
- **SPEED**
  Set the speed of pointer movement controlled by the built-in track pad of the CS1 or a mouse connected to the MOUSE connector.

b) LED BRIGHTNESS

Adjust the brightness of the LEDs on the CS1D.

c) GATE/COMP GR METER ON/OFF LINK

If this button is on, the on-screen GR meter will be displayed or hidden according to whether the internal compressor is turned on or off.



d) AUTO DISPLAY ON/OFF

Specify whether or not the corresponding screen will appear in the display when a specific controller in the SELECTED INPUT CHANNEL/SELECTED OUTPUT CHANNEL section of the CS1D is operated. The following table shows the controllers corresponding to each button and the screen that will be selected.

Button	Controller	Selected screen
INSERT/UNIT button	[INSERT] switch	INSERT/DIRECT VIEW or INSERT VIEW
	UNIT-related controllers	HA/INSERT
EQ button	ATT, EQ-related controllers	EQ PARAMETER
GATE/COMP button	Gate/compressor-related controllers	GATE PRM / COMP PRM
DELAY button	Delay-related controllers	IN DELAY / OUT DELAY
ROUTING button	Routing-related controllers	PAN/ROUTING / MATRIX/ST or OUT CH VIEW
FADER button	Input/output channel faders and [ON] switch	IN CH VIEW / OUT CH VIEW
CUE/SOLO button	Input/output channel [CUE] switches	IN CH VIEW / OUT CH VIEW
OSCILLATOR button	[OSC ON] switch, [OSC OUT] switch	OSCILLATOR

e) CONFIRMATION ON/OFF

Specify whether or not a confirmation message will appear when you perform a specific operation on the CS1D.

Each button corresponds to the following operations.

Button	Operation
PATCH button	Patching changes in the OUT PATCH screen/IN PATCH screen
RECALLING button	Scene or library recall operations
STORING button	Scene or library store operations

⚠ Even if the RECALLING button is turned on, using the following methods will cause the scene to be recalled without a confirmation message.

- Recall via MIDI program change
- Recall from the TC EVENT screen
- Direct recall
- Recall using a USER DEFINE switch

f) WARNING MESSAGES ON/OFF

Specify whether or not a warning message will appear when an error occurs within the PM1D system.

Each button corresponds to the following errors.

Button	Error
TC DROP	A dropout occurred in the time code.
DIGITAL I/O	A digital audio signal not synchronized with the PM1D system was input.

Hint

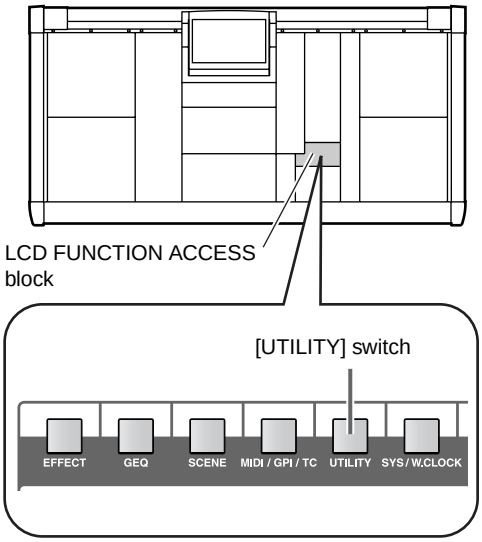
The settings of the PREFERENCE screen are maintained even when the power of the PM1D system is turned off. If the SETUP button of the UTILITY function LOAD/SAVE screen is turned on when saving data to a memory card inserted in the PC ATA STORAGE CARD slot of the CS1D, the settings of the PREFERENCE screen will be saved on the card as well.

Setting the internal calendar and clock

Here's how to set the date of the internal calendar and the time of the internal clock.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [UTILITY] switch several times to access the following PREFERENCE screen.**



- **PREFERENCE screen (UTILITY function)**

2. **Use the six knobs of the INTERNAL CALENDAR/CLOCK section to set the date and time.**

- **INTERNAL CALENDAR/CLOCK section**

3. **To finalize the new date and time, click the SET button.**
   The new date and time will take effect the instant you click the SET button. If you click the CANCEL button instead of the SET button, the previous date and time will reappear.

Hint

The date and time you specify in this screen are used as a time stamp when a scene is stored into internal memory, and when data is saved on a memory card inserted into the PC ATA STORAGE CARD slot of the CS1D.

Specifying the metering points

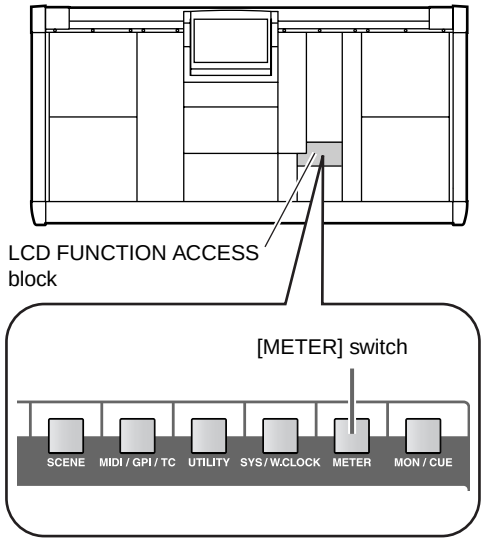
The metering point (the location at which the level is detected) for the level meters on the CS1D console can be specified independently for input channels and output channels.

Input channel metering point

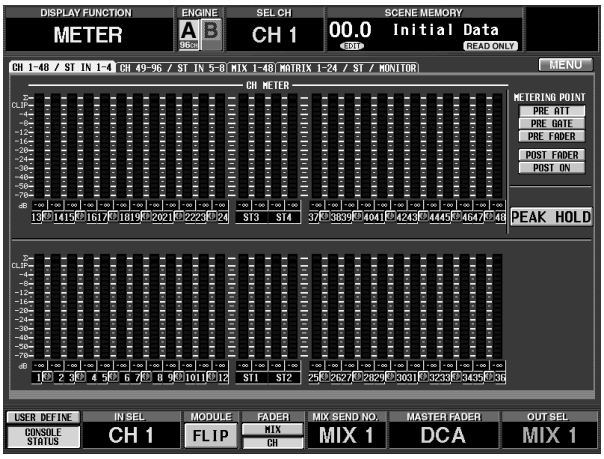
Here's how to set the metering point for the input levels displayed by the level meters of the INPUT block/ST IN block.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [METER] switch several times to access the CH 1-48/STIN 1-4 screen or the CH 49-96/STIN 5-8 screen. {The CH 49-96/STIN5-8 screen is not valid for the 48 CH model.}**



- **CH 1-48/STIN 1-4 screen (METER function)**



The CH 1-48/STIN 1-4 screen and CH 49-96/STIN 5-8 screen show virtual level meters that indicate the input levels of the input channels. In this screen you can also select the metering point for the input channels.

2. **Use the buttons located at the right of the screen to select the metering point at which the input level will be detected.**
   The following metering points can be selected.
   - **PRE ATT**..... Before the attenuator
   - **PRE GATE**..... Immediately before the internal gate
   - **PRE FADER**..... Immediately before the fader
   - **POST FADER**.... Immediately after the fader
   - **POST ON**..... Immediately after the [ON] switch
3. **If you want the peak level display of the input channels to be held, turn on the PEAK HOLD button.**

Hint

Steps 2 and 3 will affect the following level meters.

- **Level meters of the INPUT block/ST IN block**
- **Level meters of the SELECTED INPUT CHANNEL block**
- **Level meters of the CH 1-48/STIN 1-4 screen and CH 49-96/STIN 5-8 screen**

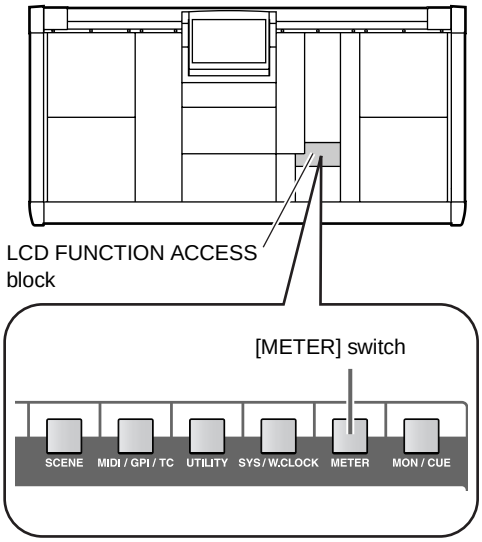
However, the METER [PEAK HOLD] switch in the MASTER block of the CS1D will affect only the CLIP LED of the SELECTED INPUT CHANNEL block.

Output channel metering point

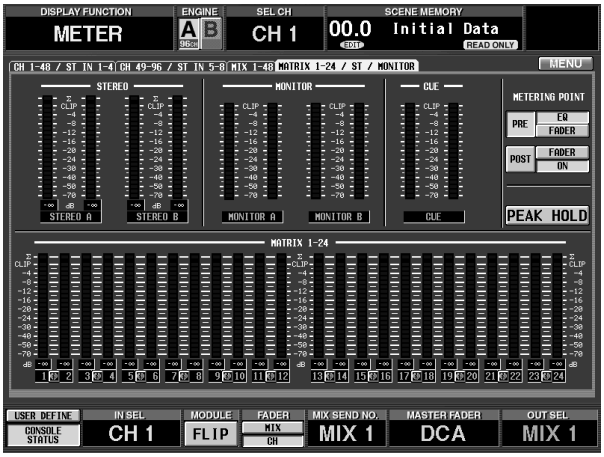
Here's how to set the metering point for the various output levels displayed in the meter bridge block.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [METER] switch several times to access the MIX 1-48 screen or the MATRIX 1-24/ST/MONITOR IN5-8 screen.**



   - **MATRIX 1-24/ST/MONITOR screen (METER function)**



   The MIX 1-48 screen and MATRIX 1-24/ST/MONITOR IN 5-8 screen show virtual level meters that indicate the output levels of the output channels, monitor outputs, and cue outputs. In this screen you can also select the metering point for the output channels.

2. **Use the buttons located at the right of the screen to select the metering point at which the output level will be detected.**
   The following metering points can be selected.
   - **PRE EQ** .....Immediately before the EQ
   - **PRE FADER**.....Immediately before the fader
   - **POST FADER**.....Immediately after the fader
   - **POST ON**.....After the [ON] switch

Hint

You can also use the METER [PRE] switch in the METER section (MASTER block) of the CS1D to select the metering point for the output channels.

If the METER [PRE] switch is on, either PRE EQ or PRE FADER as selected in the display will be the metering point.

If the METER [PRE] switch is off, either POST FADER or POST ON as selected in the display will be the metering point.

3. **If you want the peak level display of the output channels to be held, turn on the PEAK HOLD button.**

Hint

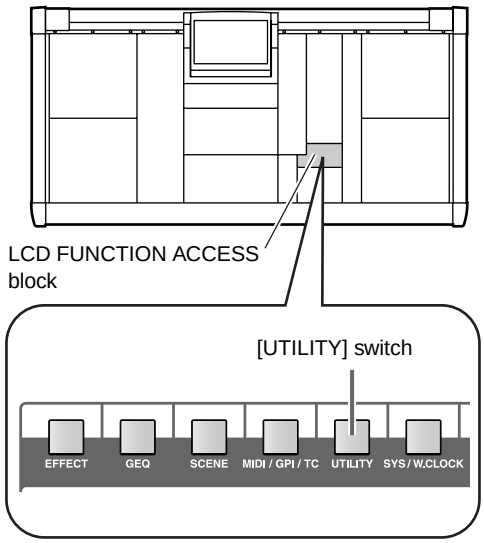
You can also use the METER [PEAK HOLD] switch in the METER section (MASTER block) of the CS1D to turn peak hold on/off for the output channels.

User defined function settings

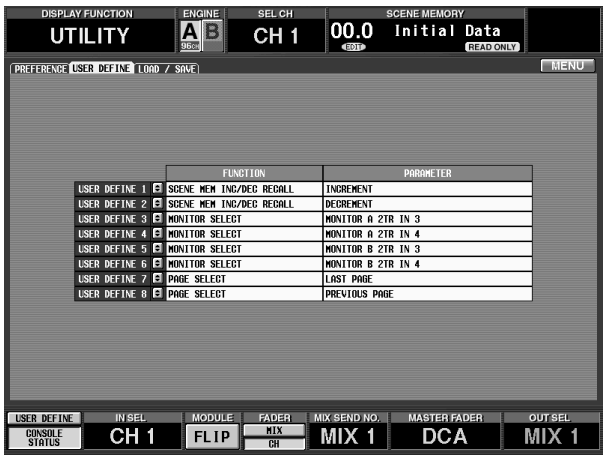
You can assign the desired function to the USER DEFINE [1]–[8] switches in the USER DEFINE block of the CS1D console, and use them to control the system.

[Procedure]

1. **In the LCD FUNCTION ACCESS block, press the [UTILITY] switch several times to access the following USER DEFINE screen.**



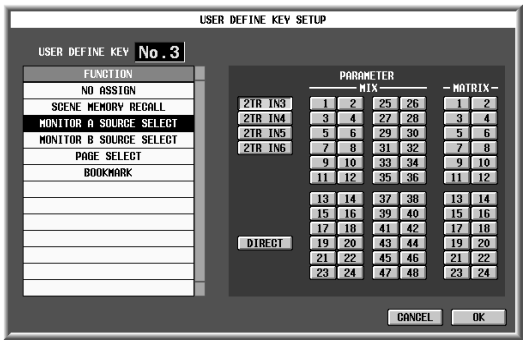
- **USER DEFINE screen (UTILITY function)**



In the USER DEFINE screen you can assign the desired function to each of the USER DEFINE [1]–[8] switches.

2. **From the USER DEFINE [1]–[8] switches, select the switch to which you wish to assign a function, and click the ⇕ button for that number.**
The following USER DEFINE KEY SETUP popup window will appear.

- **USER DEFINE KEY SETUP popup window**



In the USER DEFINE KEY SETUP popup window, use the FUNCTION list in the left of the window to select the function that will be assigned to the switch, and use the PARAMETER section to select the parameter specific to that function.

The following functions and parameters can be selected.

- **SCENE RECALL (parameters: –1/+1)**
Recall the scene numbered one before (or after) the currently selected scene.
- **MONITOR A SOURCE SELECT (parameters: 2TR IN 3–6, DIRECT, MIX 1–48, MTRX 1–24)**
- **MONITOR B SOURCE SELECT (parameters: 2TR IN 3–6, DIRECT, MIX 1–48, MTRX 1–24)**
Select 2TR IN 3–6, DIRECT IN, MIX channels 1–48, or MATRIX channels 1–24 as the source monitored by MONITOR A or B respectively.

  The LED will light for a USER DEFINE switch to which this function is assigned if the currently selected monitor source and parameter match.

⚠ If you use the USER DEFINE [1]–[8] switches to change the monitor source, the MONITOR A SOURCE switch and MONITOR B SOURCE switch of the CS1D will be invalid until the monitor source is next selected from the front panel.

- **PAGE SELECT (parameters: PREVIOUS, NEXT, LAST)**
Access the specified screen in the display, according to the selected parameter.

  PREVIOUS: Access the previous screen of the currently selected function.

  NEXT: Access the next screen of the currently selected function.

  LAST: Access the last-selected screen once again.

- **BOOKMARK (parameters: none)**
  Access the last-registered screen. The LED will light for a USER DEFINE switch to which this function is assigned if a screen has been assigned. When the functions of the USER DEFINE [1]–[8] switches are shown in the lower part of the display, the name of the screen assigned as a BOOKMARK will be shown at the position of the corresponding switch.

Hint

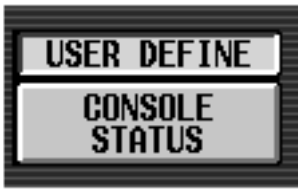
To register a screen, press and hold the USER DEFINE switch to which the BOOKMARK function was assigned for two seconds or longer. If you release the switch in less than two seconds, the last-registered screen will be recalled.

3. **Select the function that you wish to assign to the switch, and the parameter specific to that function.**
4. **Press the OK button.**
5. **Repeat steps 2–5 until you have assigned the desired function to each of the USER DEFINE [1]–[8] switches.**
6. **To execute an assigned function, press one of the USER DEFINE [1]–[8] switches in the USER DEFINE block.**

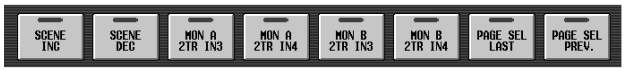
Hint

Functions assigned to the USER DEFINE [1]–[8] switches can also be executed within the display. To do so, click the USER DEFINE button in the lower left of the screen to make the USER DEFINE 1–8 buttons appear in the lower part of the screen, and then click the desired button.

- **USER DEFINE button**



- **Show the USER DEFINE 1–8 buttons in the lower part of the screen**



YAMAHA

CS1D

CONTROL SURFACE

Reference Manual

PM1D

DIGITAL AUDIO MIXING SYSTEM

CS1D

CONTROL SURFACE

Reference Manual (Hardware)

PM1D

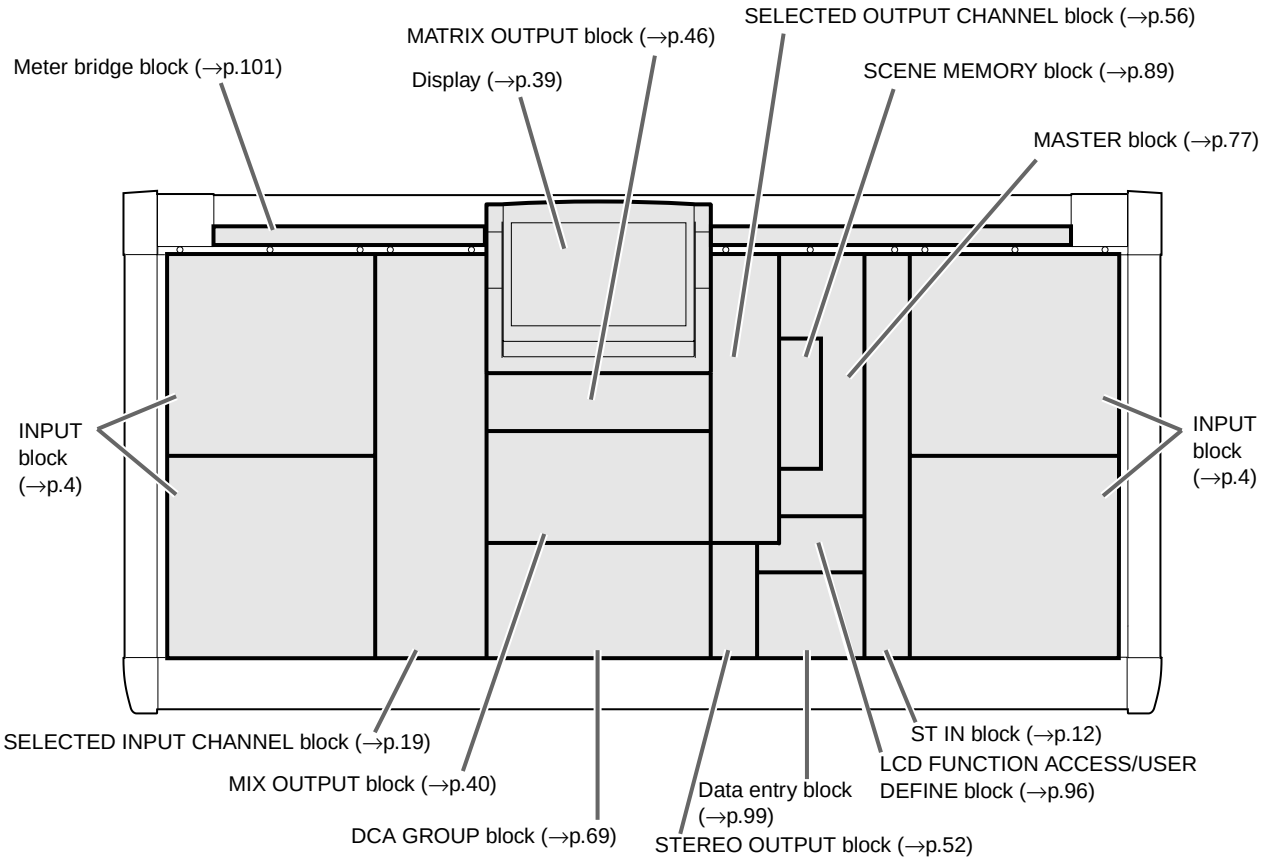
DIGITAL AUDIO MIXING SYSTEM

Contents

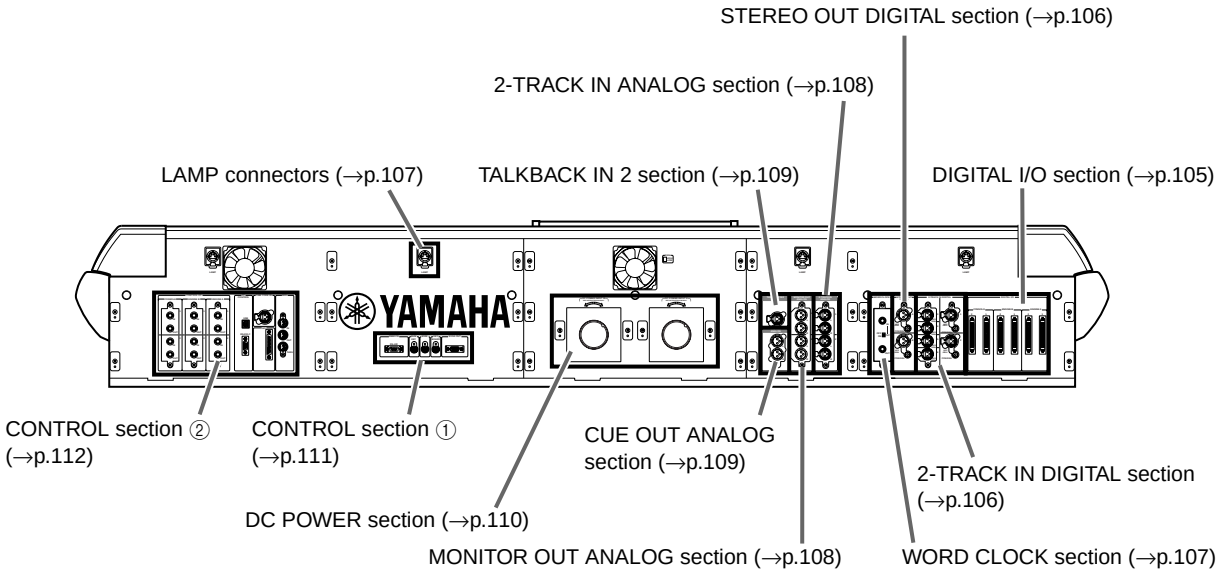
How the "CS1D Reference Manual (Hardware)" is organized

The "CS1D Reference Manual (Hardware)" explains the function and operation of each block of the CS1D control surface.

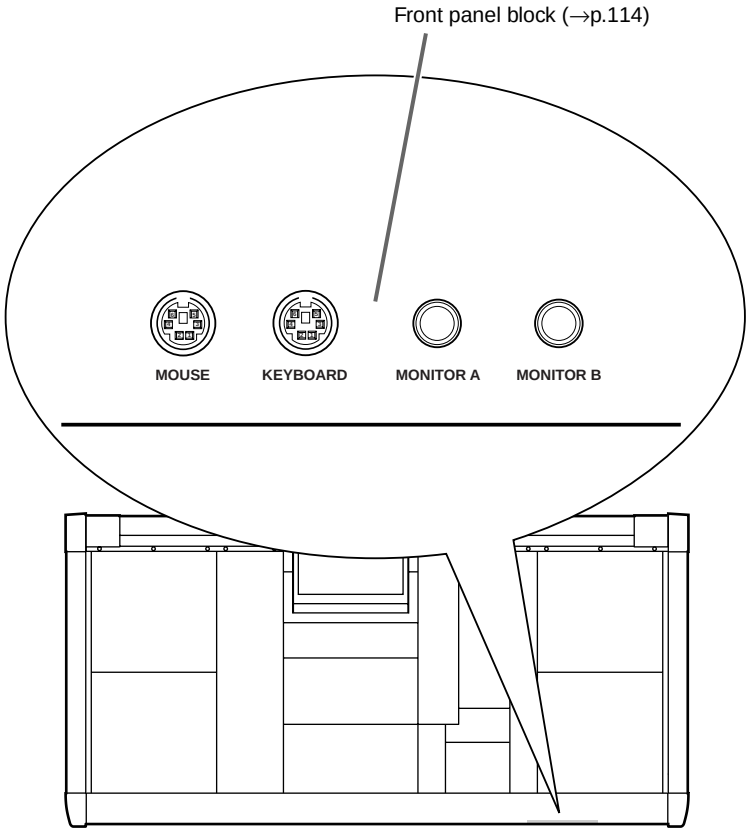
CS1D Top panel



CS1D Rear panel



CS1D front panel



- For details on the specifications and functions of the engine (DSP unit) and input/output units, refer to the owner's manual for each device.
- For details on installation and connection of the PM1D system, refer to "CS1D Operating Manual (Start-up)."
- For details on basic operation of the PM1D system, refer to "CS1D Operating Manual (Basic Operation)."
- For details on the functions and operations within the display of the CS1D, refer to "CS1D Reference Manual (Software)."

⚠ Screen shots shown in this manual are taken from a prototype. Please be aware that they may differ slightly from the actual screens on your unit.

Printing conventions in the "CS1D Reference Manual (Hardware)"

In general, the "CS1D Reference Manual (Hardware)" is written for the 96 channel model of the PM1D system (the model that uses the DSP1D-EX for its engine).

- If specifications differ between the 96 channel model and the 48 channel model (the model that uses the DSP1D for its engine), **the specifications of the 48 channel model will be enclosed in curly brackets** { }.

  Example: The [NUMBER] indicator will show a number in the range of 1–96 {1–48}.

- Controls (switches, encoders, volumes) on the top panel, rear panel, and front panel of the CS1D are enclosed in square brackets [ ] to distinguish them from the knobs and buttons displayed by the software in the screen. The block name or section name may also be given before the name enclosed in square brackets [ ].

  Example: INPUT [MIX] encoder, MIX SEND [NAME] indicator

- The following icon indicates useful tips or related pages for reference.

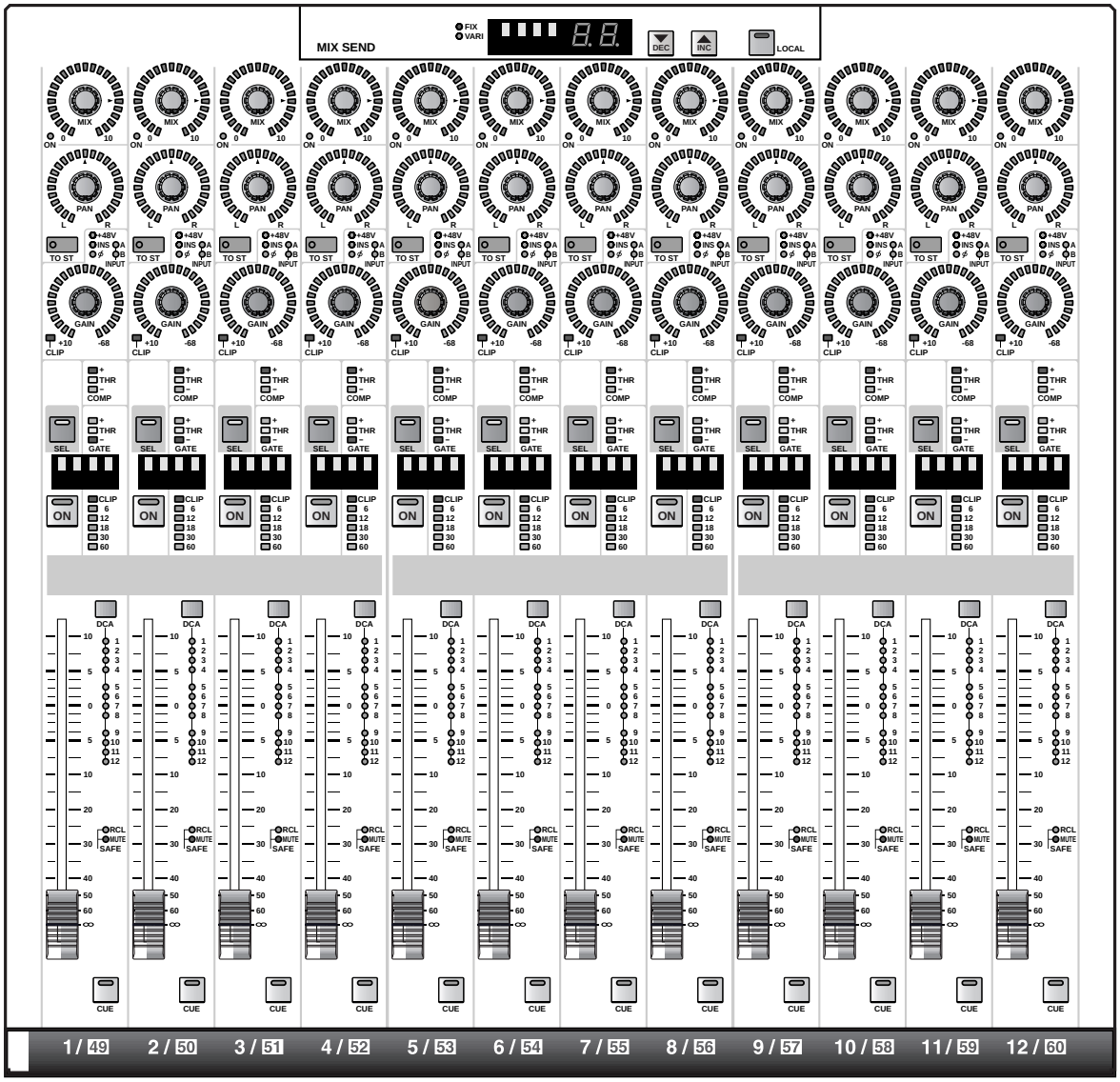
- The following icon indicates particularly important items or operations that must be used with caution.

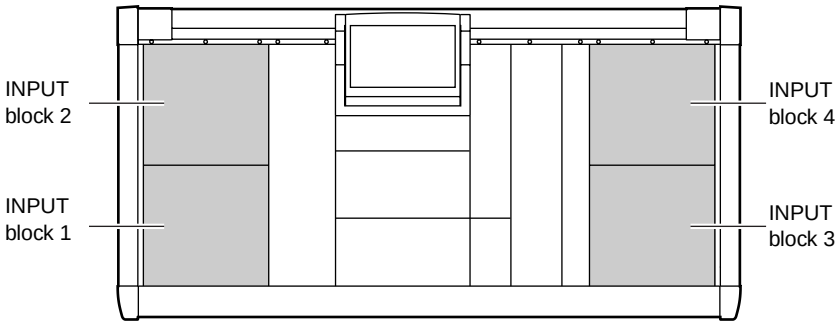
  

INPUT block

[Function]

This block specifies the pan and level of the signals patched to monaural input channels 1–96 {1–48}, and sends them to the STEREO bus or MIX buses 1–48 or assigns them to the DCA groups.

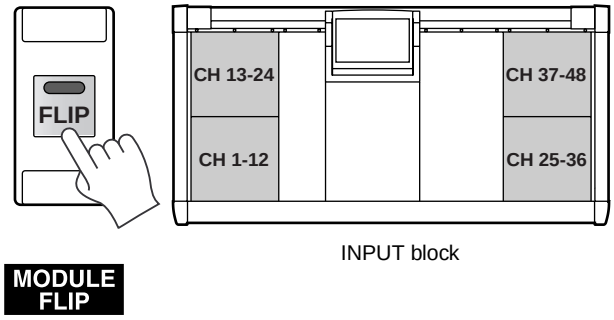


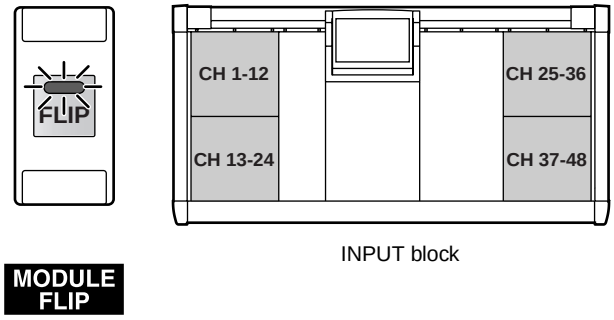


INPUT block channel assignments

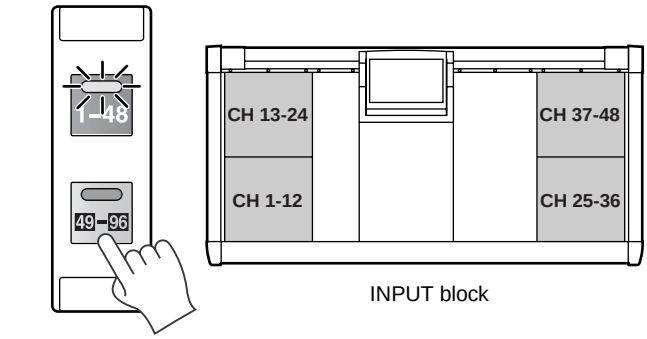
The top panel of the CS1D has four blocks located at top, bottom, left and right.
When the PM1D system is in the default state, channels 1–12, 13–24, 25–36, and 37–48 are assigned to these blocks in the order of lower left → upper left → lower right → upper right. These assignments can be changed as follows in the SELECTED INPUT CHANNEL block MODULE FLIP section, and in the MASTER block GLOBAL LAYER section. {The GLOBAL LAYER section has no effect on the 48 channel model.}

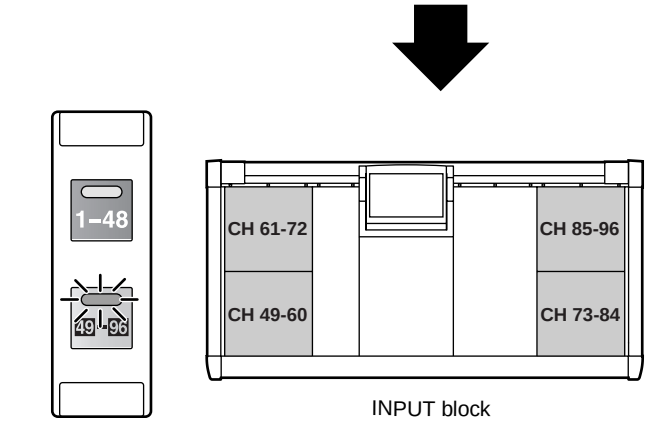
Using the MODULE [FLIP] switch to change the channel assignments

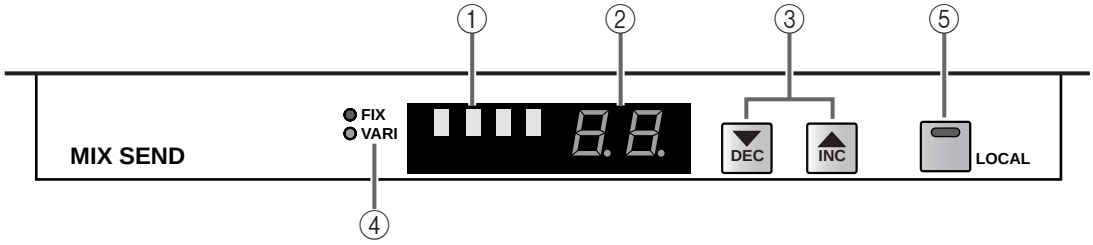




Using the GLOBAL LAYER switches to change the channel assignments (96 channel model only)







① **MIX SEND [NAME] indicator**

② **MIX SEND [NUMBER] indicator**
These indicate the short name and the number 1–48 of the MIX bus currently selected for that INPUT block.

- You can use any of the following ways to select the MIX bus to which your operation will apply.

  1) Use the **MIX SEND [▼/DEC]/[▲/INC]** switches

  2) Use the **MIX [SEL]** switch of the MIX/MATRIX OUTPUT block

  3) Use the **CHANNEL SELECT [▼/DEC]/[▲/INC]** switches of the SELECTED OUTPUT CHANNEL block

Hint

If you have turned on the FADER FLIP [MIX] switch of the SELECTED INPUT CHANNEL block, the MIX SEND [NAME] indicator will alternately show "FLIP" and the short name.

③ **MIX SEND [▼/DEC]/[▲/INC] switches**
These switches select the MIX bus 1–48 to which your operation will apply.

If you press the MIX SEND [▲/INC] switch, the next higher-numbered MIX bus will be selected. (If MIX bus 48 is selected, you will wrap around to MIX bus 1.)

If you press the MIX SEND [▼/DEC] switch, the next lower-numbered MIX bus will be selected. (If MIX bus 1 is selected, you will wrap around to MIX bus 48.)

⚠ When the CS1D is in its default state, changing the MIX bus that is the object of operations in one INPUT block will also cause the MIX bus selected for the other INPUT blocks to be switched in tandem. However, if the MIX SEND [LOCAL] switch (5) is turned on for an INPUT block, you will be able to select its MIX bus independently of the other INPUT blocks.

④ **MIX SEND [FIX]/[VARI] LED**
This LED indicates the type of MIX bus that is currently selected.

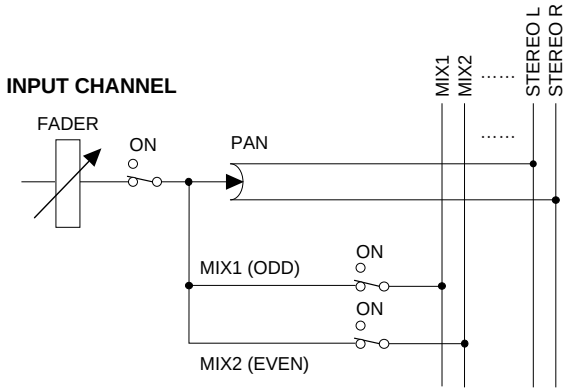
MIX buses 1–48 of the PM1D system are in pairs of odd and even numbers (MIX buses 1/2, 3/4, ...). You are free to select one of two types for each pair.

- **FIX (fixed)**
These MIX buses have a fixed send level. Select this type when you wish to use the MIX bus as a bus output for group output or for recording on MTR.

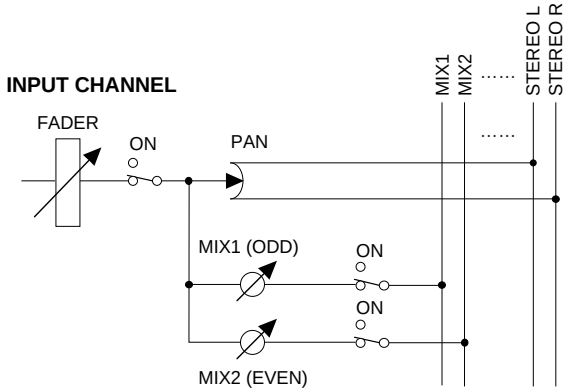
- **VARI (variable)**
These MIX buses have a variable send level. Select this type when you wish to use the MIX bus as a foldback/effect send.

The type selection is made in the display (PAN/ROUTING function, CH to MIX screen).

Signal flow when FIX is selected as the type for MIX buses 1/2



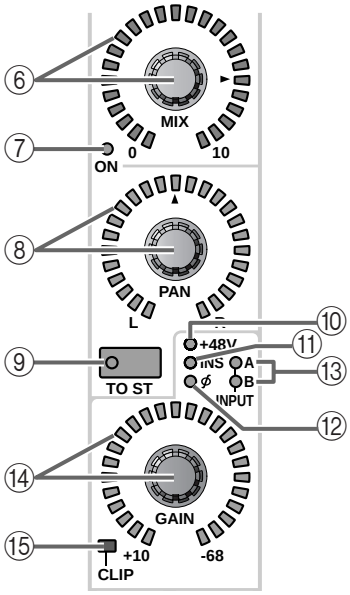
Signal flow when VARI is selected as the type for MIX buses 1/2



* Each of the above diagrams show only one example of standard signal routing. For details on signal routing, please refer to the block diagram on page 38.

⑤ **MIX SEND [LOCAL] switch and LED**
This specifies whether the signal of the MIX bus selected in this INPUT block will be linked with the other INPUT blocks ([LOCAL] switch = off), or will be switchable independently from the other INPUT blocks ([LOCAL] switch = on).

When the MIX SEND [LOCAL] switch is on (LED lit), pressing the MIX SEND [▼/DEC]/[▲/INC] switches (②) of that INPUT block will not affect the other INPUT blocks. (The converse also applies.)



⑥ **INPUT [MIX] encoder and LED**
When a VARI type MIX bus is selected, this encoder sets the send level of the signal that is sent to that MIX bus from each input channel.

The range is from – ∞ dB – +10 dB, and the approximate current value is shown by the LEDs around the perimeter of the encoder. When the LED at the ► mark is lit, the level is nominal (0 dB). However if a FIX type MIX bus is selected, the INPUT [MIX] encoder will have no effect, even if you operate the encoder, the LED display will continue to indicate the nominal position.

⑦ **INPUT MIX [ON] LED**
This indicates the on/off status of the signal sent from each input channel to the currently selected MIX bus. (When on, the LED will light.)

The on/off status can be switched in the SELECTED INPUT CHANNEL block of the console, or in the display (PAN/ROUTING function, CH to MIX screen).

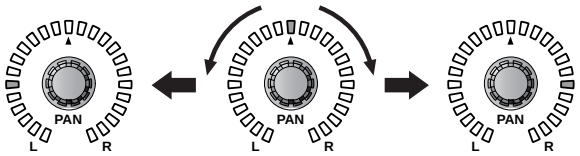
⚠ By making the FADER [FLIP] switch settings in the SELECTED INPUT CHANNEL block, you can exchange (flip) the functions of the INPUT [MIX] encoders (⑥) and the INPUT faders (㉒). (→p.36)

⑧ **INPUT [PAN] encoder and LED**
This encoder sets the panning of the signal sent from each input channel to the STEREO bus.

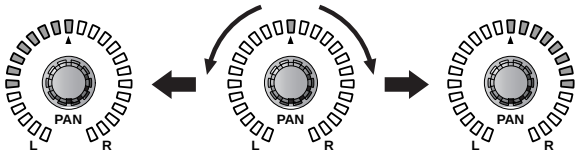
The approximate current value is shown by the LEDs around the perimeter of the encoder. When the LED at the ▲ mark is lit, the signal is panned to the center.

The perimeter LEDs will light differently, depending on whether LCR mode (a function that allows three-channel playback with a CENTER channel added to the L/R channels) is on or off. (LCD mode can be turned on/off in the PAN/ROUTING function LCR screen.)

- **When LCR=off**



- **When LCR=on**



Hint

If the SELECTED INPUT CHANNEL block STEREO [FIXED MIX PAN] switch is on, the setting of this INPUT [PAN] encoder will also apply to FIX type MIX buses.

In addition, if the VARI PAN LINK button is turned on in the PAN/ROUTING function CH to MIX screen, the PAN knob that is displayed in the screen when VARI type MIX buses are paired will be linked with this INPUT [PAN] encoder. For details refer to "CS1D Reference manual (Software)," CH to MIX (PAN/ROUTING function).

⑨ **INPUT [TO ST] switch and LED**
This is an on/off switch for the signal sent from each input channel to the STEREO bus. (The LED will light when this is on.)

This switch does not affect the signal that is sent from the input channel to the MIX bus.

⑩ **INPUT [+48 V] LED**
This LED will light if an AD card with head amp has been patched to this input channel, and phantom power is on.

The LED will be dark if a different card is patched, or if phantom power is off.

⑪ **INPUT [INS] LED**
This LED will light if insertion is turned on for that input channel.

Insertion on/off can be switched in the SELECTED INPUT CHANNEL block of the console, or in the display (IN PATCH function INSERT/DIRECT POINT screen).

⑫ **INPUT [ø] (Phase) LED**
If settings have been made to invert the phase of the input signal for this input channel, this LED will light.

The phase setting can be changed in the SELECTED INPUT CHANNEL block of the console, or in the display (IN HA/INSERT function).

⑬ **INPUT [A]/[B] LED**
For an input channel to which an AD card with switchable input jacks A/B has been patched, the corresponding LED will light to indicate the currently selected input jack (A/B).

For an input channel to which another type of card is patched, these LEDs will be dark. The A/B input jack selection can be performed in the SELECTED INPUT CHANNEL block of the console, or in the display (IN HA/INSERT function or IN CH VIEW function).

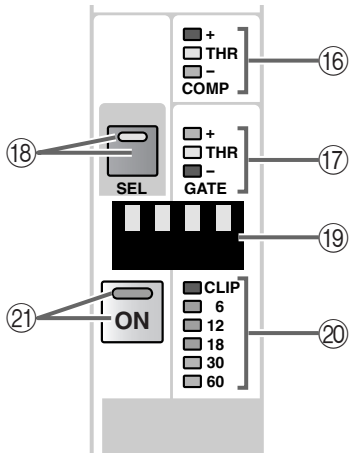
⑭ **INPUT [GAIN] encoder and LED**
If an AD card with head amp is patched to this input channel, this encoder will adjust the input sensitivity of the head amp.

The adjustable range is +10 dB — –68 dB. The approximate current value is shown by the LEDs around the perimeter of the encoder.

⚠ The PAD will be internally switched on or off when the gain of the LMY4-MLF card (including the AI8-ML8F unit) internal head amp is adjusted between –8 dB and –7 dB. Keep in mind that noise may be generated if there is a difference between the Hot and Cold output impedance of the external device connected to the card when using phantom power.

⑮ **INPUT [CLIP] LED**
This LED will light when the input signal of that input channel has clipped.

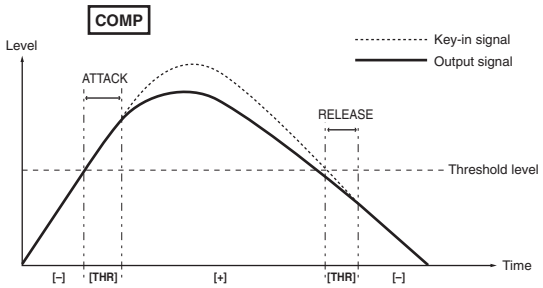
If this LED lights for an input channel to which an AD card with head amp has been patched, use the INPUT [GAIN] encoder (⑭) to lower the input sensitivity. If this LED lights for an input channel to which an AD card without a head amp or a digital I/O card has been patched, lower the output level of the sound source that is connected to the card.



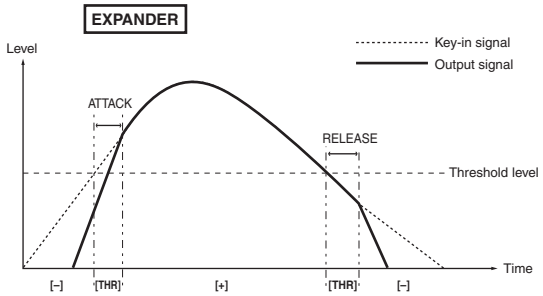
⑯ **COMP [+]/[THR]/[–] LEDs**
The LEDs indicate the operating status of the internal compressor. If the compressor is turned off, all LEDs will be dark.

If the compressor is turned on, one of the LEDs will light to indicate the currently selected type and status of the compressor.

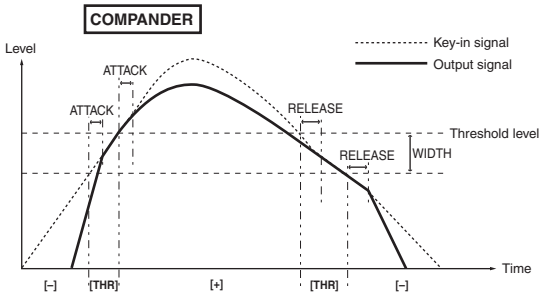
When the compressor type is COMP



When the compressor type is EXPANDER



When the compressor type is COMPANDER



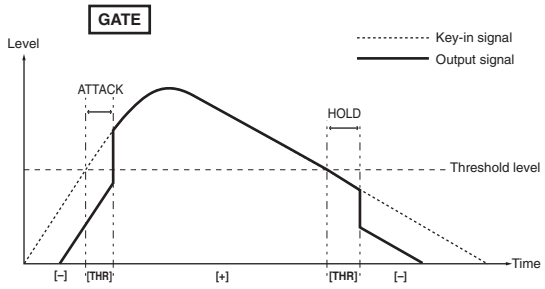
* Each of the diagrams shows the example of using the input channel itself as the key-in signal for the compressor.

Hint

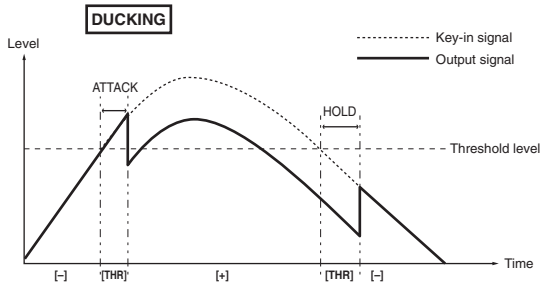
The compressor on/off status and its parameters can be set in the SELECTED INPUT CHANNEL block, or in the display (IN GATE/COMP function COMP PRM screen).

⑰ **GATE [+]/[THR]/[–] LEDs**
These LEDs indicate the operating status of the internal noise gate. If the noise gate is turned off, all LEDs will be dark. If the noise gate is turned on, one of the LEDs will light to indicate the currently selected type and operating status of the noise gate.

When the noise gate type is GATE



When the noise gate type is DUCKING



* Each of the above diagrams shows the example of using the input channel itself as the key-in signal for the noise gate.

Hint

The noise gate on/off status and its parameters can be set in the SELECTED INPUT CHANNEL block, or in the display (IN GATE/COMP function GATE PRM screen).

⑱ **INPUT [SEL] switch and LED**
This switch selects the input channel to which your operations will apply. The [SEL] LED for the currently selected input channel will light.

The channel selected by this switch can be adjusted in the SELECTED INPUT CHANNEL block, and these adjustments will also be reflected in the display.

Hint

If the selected input channel is part of a pair, the [SEL] LED will blink for the other input channel of the pair.
You can also use the [SEL] switch to set/defeat pairing.

[Procedure]

Using the [SEL] switch to set/defeat pairing

1. **For two input channels that can be set as a pair, hold down one of the [SEL] switches and press the other [SEL] switch.**
The direction in which the channel parameters are copied will depend on the order in which the [SEL] switches are pressed. When creating a pair, the parameters of the channel you pressed first will be copied to the channel that you pressed later, and then the parameters will be linked.

   For example if you wish to pair CH 1 and CH 2, hold down the CH 1 [SEL] switch and press the CH 2 [SEL] switch. The state of CH 1 will be copied to CH 2. For details on the parameters that are copied/linked for a pair, refer to "CS1D Reference Manual (Appendices)" (→p.45).

   If you wish to reset the parameters, do so from the screen.

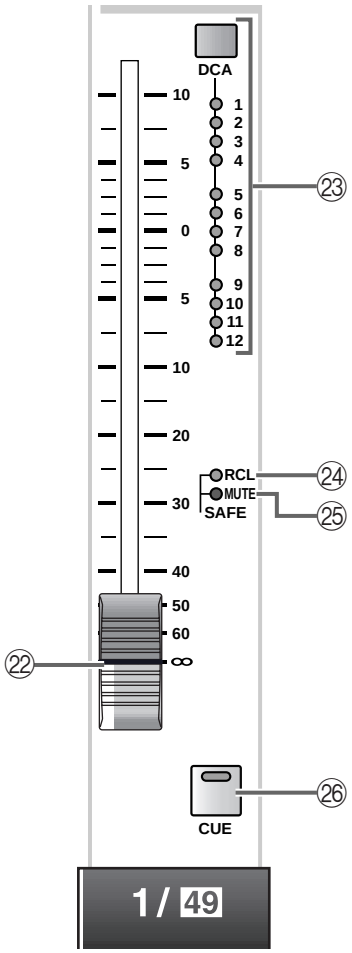
2. **To defeat pairing, hold down the [SEL] switch for one of the paired channels, and press the [SEL] switch for the other channel.**

⑲ **INPUT [NAME] indicator**
This shows the short name of the input channel. The short name can be input in the display (IN PATCH function NAME screen, etc.).

⑳ **Meter LEDs**
These six LEDs indicate the input level of the input channel. The position at which the level is detected can be selected from the following locations: PRE ATT. (before the attenuator), PRE GATE (immediately before the internal noise gate), PRE FADER (immediately before the fader), POST FADER (immediately after the fader), or POST ON (immediately after the [ON] switch). The level detection point can be selected in the display (METER function).

The peak level of this meter will not be held even if the PEAK HOLD button is turned on in the display (METER function input meter screen).

㉑ **[ON] switch and LED**
This switches the on/off status of the input channel. (This LED will be lit for input channels that are turned on.) If this switch is turned off, no signal will be sent from that input channel to the STEREO bus or MIX buses.



㉒ INPUT fader

This is a 100 mm fader that adjusts the input level of each input channel. The adjustable range is – ∞ dB – +10 dB.

Hint

In the SELECTED INPUT CHANNEL block FADER FLIP section, you can exchange (flip) the functions of the INPUT fader (㉒) and the INPUT [MIX] encoder (⑥) as shown in the following illustrations.

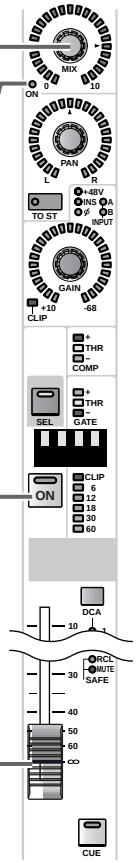
- **When the FADER FLIP [CH] switch is on**

If a VARI type MIX bus is selected, this encoder will adjust the send level to that MIX bus. If a FIX type MIX bus is selected, only the LED at the ► position will light, and the encoder will be disabled.

This indicates the on/off status of the signal that is sent from the input channel to the currently selected MIX bus.

This turns the input channel on/off.

This adjusts the input level of the input channel.



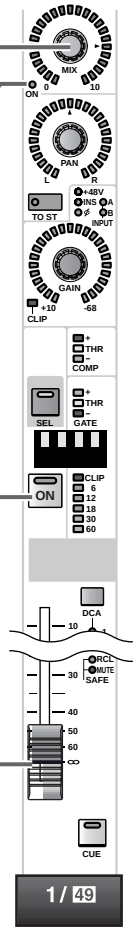
- **When the FADER FLIP [MIX] switch is on**

This adjusts the input level of the input channel.

This indicates the on/off status of the input channel.

This is an on/off switch for the signal that is sent from the input channel to the currently selected MIX bus.

If a VARI type MIX bus is selected, this fader will adjust the send level to that MIX bus. If a FIX type MIX bus is selected, the fader will be fixed at the 0 dB position and will have no effect.



㉓ **INPUT [ASSIGN DCA] switch and LEDs**
This switch assigns the input channel to DCA groups 1–12. When an input channel is assigned to a DCA group, the corresponding LED will light. The LED will blink while you are in the process of making assignments to a DCA group.

Hint
It is possible to assign a single channel to multiple DCA groups, as well as to assign multiple channels to a single DCA group.

[Procedure]

Assigning an input channel to a DCA group

1. **In the DCA GROUP block, press one of the [ASSIGN DCA] switches 1–12 to select a DCA group (1–12).**
   The LED of the selected [ASSIGN DCA] switch will light.

⚠ If following step 1 you do not perform any action for approximately ten seconds, the [ASSIGN DCA] switch LED will automatically go dark, and the assignment procedure will be terminated.

2. **In the INPUT block, press the INPUT [DCA] switch for the input channel that you wish to assign to the above-selected DCA group.**
   While the DCA GROUP block [ASSIGN DCA] switch LED is lit, all of the INPUT [DCA] LEDs assigned to that DCA group will blink.

⚠

- DCA faders 9–12 can be used for either input channels or output channels. However, it is not possible to assign both inputs and outputs to the same DCA fader. For this reason, if an output channel is already assigned to DCA 9–12, attempting to assign an input channel will cause a message to be displayed, and you will not be able to do so.
- When a scene is recalled, the DCA group data of recall safe channels may be adjusted so that recall safe settings are consistent within DCA groups 9–12. Also when a channel library is recalled, the data recalled to a channel may be adjusted so that settings are consistent within DCA groups 9–12.

㉔ **SAFE [RCL] LED**
This LED will light if the input channel has been set to Recall Safe (a state in which the input channel is unaffected by scene recall operations).

The parameters of a channel for which this LED is lit will not change when a scene memory is recalled.

Recall Safe settings can be made in the SELECTED INPUT CHANNEL block or display (SCENE function RECALL SAFE screen).

㉕ **SAFE [MUTE] LED**
This LED will light if the input channel has been set to Mute Safe (a state in which the input channel is unaffected by mute group operations).

A channel for which this LED is lit will not be affected even if a mute group to which it belongs is muted.

Mute Safe settings can be made in the SELECTED INPUT CHANNEL block or display (IN DCA/MUTE function MUTE GROUP ASSIGN screen).

㉖ **[CUE] switch and LED**
This switch is used for monitoring the input channel. When this switch is pressed, the PFL (pre-fader listen), PRE PAN, or POST PAN signal of the corresponding input channel will be sent to the CUE bus, and can be monitored from the CUE OUT jacks, MONITOR OUT A jacks, and PHONES jack.

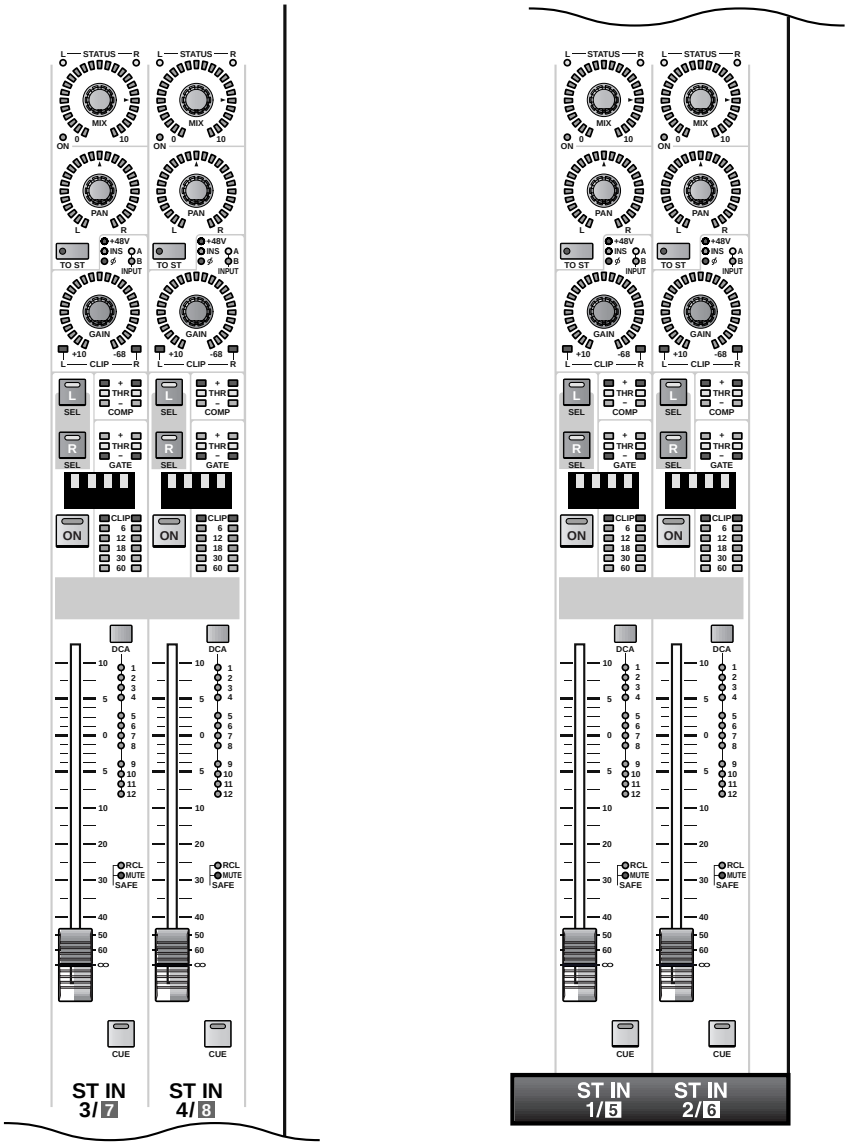
The location of the signal that is sent to the CUE bus and the monitoring method can be selected on the console in the CUE section of the MASTER block, or in the display (MON/CUE function CUE/SOLO screen).

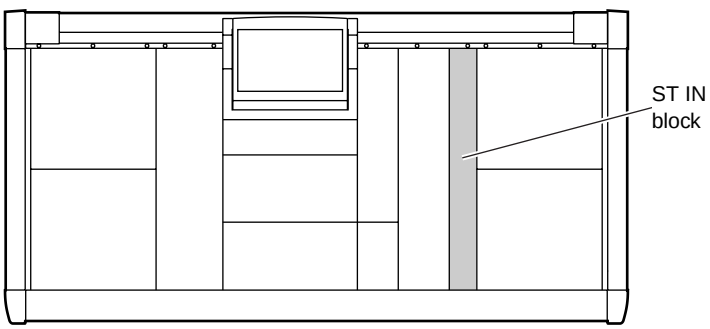
Hint
For the input channel signal flow, refer to the block diagram on page 38.

ST IN block

[Function]

This block adjusts the pan and level of the stereo signals patched to ST IN channels 1–8 {1–4}, and sends them to the STEREO bus or to MIX buses 1–48, or assigns them to DCA groups.

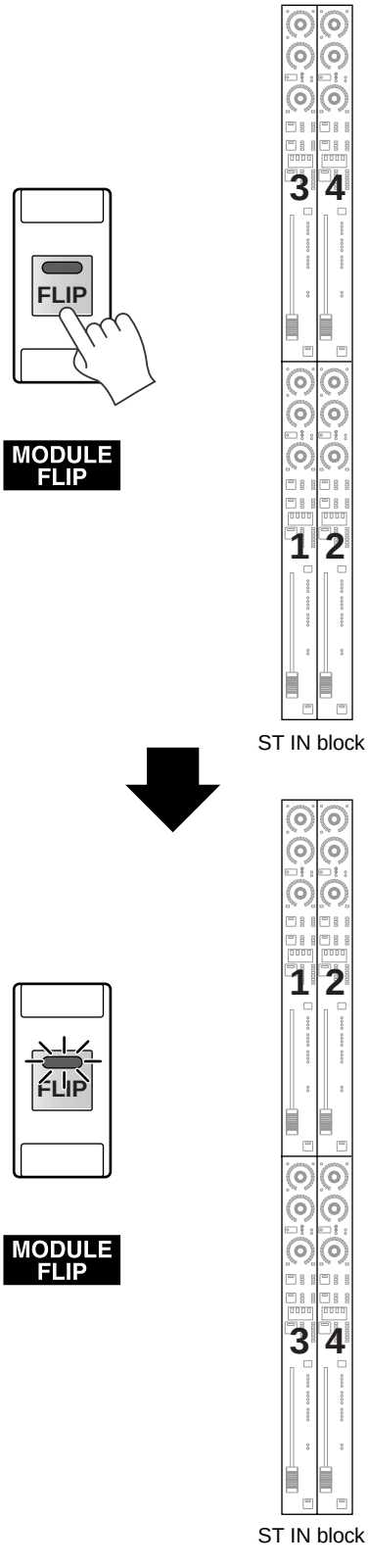




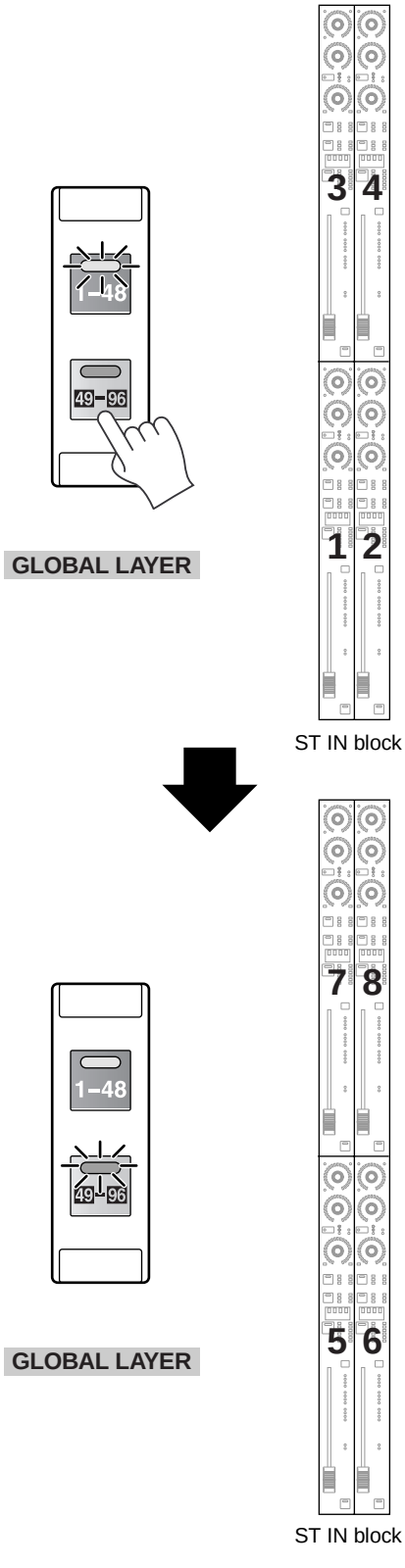
Channel assignments for the ST IN block

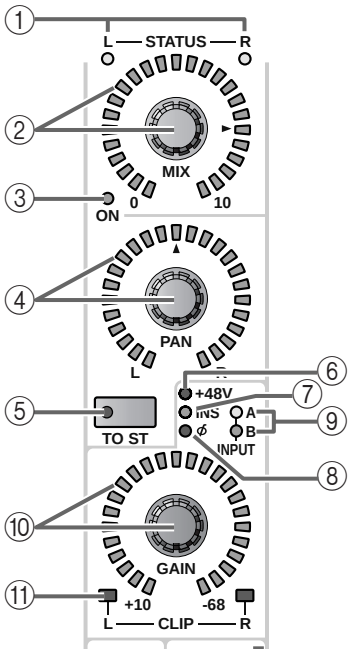
The ST IN block contains four modules, two above and two below. In the default state of the PM1D system the lower two modules are assigned to control ST IN channels 1/2, and the upper two modules are assigned to control ST IN channels 3/4. However, these assignments can be changed as follows in the SELECTED INPUT CHANNEL block MODULE FLIP section, and the MASTER block GLOBAL LAYER section. {The GLOBAL LAYER section is not available for 48 channel model.}

Using the MODULE [FLIP] switch to change channel assignments



Using the GLOBAL LAYER switches to change channel assignments (96 channel model only)





① **ST IN STATUS [L]/[R] LEDs**
These LEDs indicate whether this ST IN channel module currently shows the right or the left channel. When the [L] LED is lit, the module shows the status of the left channel. When the [R] LED is lit, the module shows the status of the right channel.

Hint

The two-channel signal that is patched to the ST IN channel will be processed as a pair, all parameters will be linked except for the head amp settings (A/B channel selection, phantom power on/off, gain adjustment), and pan and delay.

② **ST IN [MIX] encoder and LEDs**
When a VARI type MIX bus is selected, this encoder sets the send level of the signal that is sent from the ST IN channel to that MIX bus.

The range is – ∞ dB – +10 dB, and the approximate current value is shown by the perimeter LEDs. When the LED for the ► mark is lit, the level is nominal (0 dB).

However if a FIX type MIX bus is selected, the ST IN [MIX] encoder will have no effect, the LEDs will remain dark even if the encoder is operated

Hint

To select the MIX bus that will be the send destination of the ST IN channel, use the MIX OUTPUT block MIX [SEL] switch, or the SELECTED OUTPUT CHANNEL block CHANNEL SELECT [▼/DEC]/[▲/INC] switches.

③ **ST IN MIX [ON] LED**
This indicates the on/off status of the signal that is sent from the ST IN channel to the currently selected MIX bus. (The LED will light when on.)

The on/off setting can be switched from the console in the SELECTED INPUT CHANNEL block, or in the display (PAN/ROUTING function CH to MIX screen/MIX ASSIGN screen).

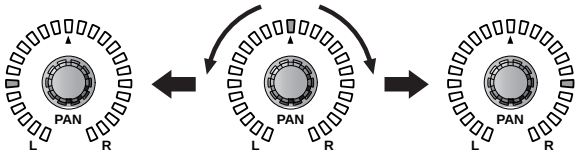
⚠ You can set the FADER [FLIP] switch in the SELECTED INPUT CHANNEL block to exchange (flip) the function of the ST IN [MIX] encoder (②) and the ST IN fader (⑱). (→p.36)

④ **ST IN [PAN] encoder and LEDs**
This encoder sets the panning of the signal that is sent from the ST IN channel to the STEREO bus.

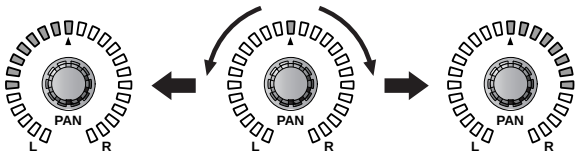
The approximate current setting is shown by the perimeter LEDs. When the LED at the ▲ mark is lit, the pan is at the center.

As shown below, the perimeter LEDs will light differently, depending on whether LCR mode (a function that allows three-channel playback with a CENTER channel added to the L/R channels) is on or off. (LCR mode can be turned on/off in the PAN/ROUTING function LCR screen.)

- **When LCR=off**



- **When LCR=on**



Hint

This parameter can be adjusted independently for left and right channels.

⑤ **ST IN [TO ST] switch and LED**
This is an on/off switch for the signal that is sent from the ST IN channel to the STEREO bus. (The LED will light when this is on.)

This switch does not affect the signal that is sent from the ST IN channel to the MIX buses.

⑥ **ST IN [+48V] LED**
This LED will light if an AD card with head amp is patched to the ST IN channel, and the phantom power is on.

This will be dark if a different type of card is patched, or if phantom power is off.

Hint

This parameter can be set independently for left and right channels.

⑦ **ST IN [INS] LED**
This LED will light if insertion is turned on for the ST IN channel.

Insertion can be switched from the console in the SELECTED INPUT CHANNEL block, or in the display (IN PATCH function INSERT/DIRECT POINT screen).

⑧ **ST IN [ø] (Phase) LED**
This LED will light if the phase has been reversed for the input signal of this ST IN channel.

The phase setting can be made from the console in the SELECTED INPUT CHANNEL block, or in the display (IN HA/INSERT function).

⑨ **ST IN [A]/[B] LEDs**
For a ST IN channel to which an AD card with switchable A/B inputs has been patched, one of these LEDs will light to indicate the currently selected input jack (A/B).

For a ST IN channel to which a different type of card has been patched, the LEDs will be dark.

You can switch between A/B input jacks in the SELECTED INPUT CHANNEL block of the console, or in the display (IN HA/INSERT function or IN CH VIEW function).

Hint
This parameter can be set independently for left and right channels.

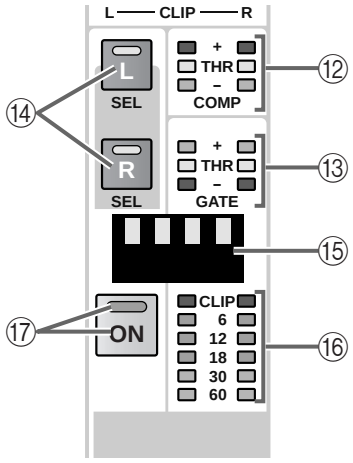
⑩ **ST IN [GAIN] encoder and LEDs**
If an AD card with head amp is patched to this ST IN channel, this encoder will adjust the input sensitivity of the head amp. The range of levels is +10 dB — –68 dB.

The approximate current value is shown by the perimeter LEDs.

Hint
This parameter can be set independently for left and right channels.

⑪ **ST IN CLIP [L]/[R] LED**
This LED will light when the input signal of the ST IN channel clips. If this LED lights when an AD card with head amp has been patched to this ST IN channel, use the ST IN [GAIN] encoder (⑩) to lower the input sensitivity.

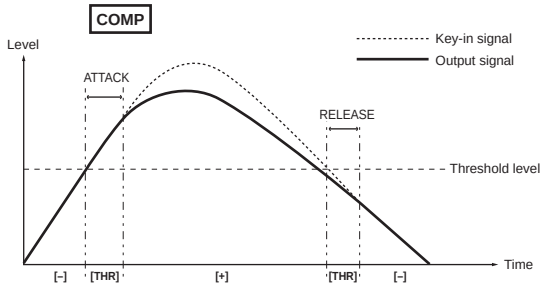
If this LED lights when an AD card without head amp or a digital I/O card has been patched to this ST IN channel, lower the output level of the sound source connected to the corresponding card.



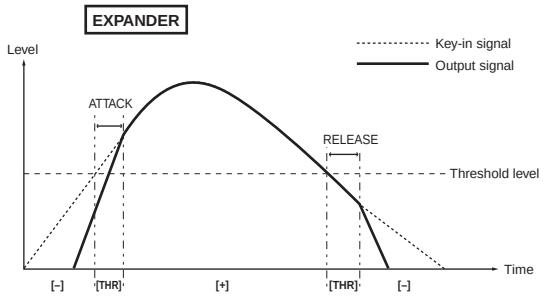
⑫ **ST IN COMP [+]/[THR]/[–] LEDs**
The LEDs indicate the operating status of the internal compressor. If the compressor is turned off, all LEDs will be dark.

If the compressor is turned on, one of the LEDs will light to indicate the currently selected type and status of the compressor.

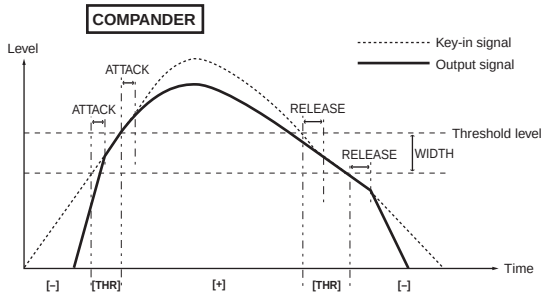
When the compressor type is COMP



When the compressor type is EXPANDER



When the compressor type is COMPANDER



* Each of the above diagrams shows the example of using the ST IN channel itself as the key-in signal for the compressor.

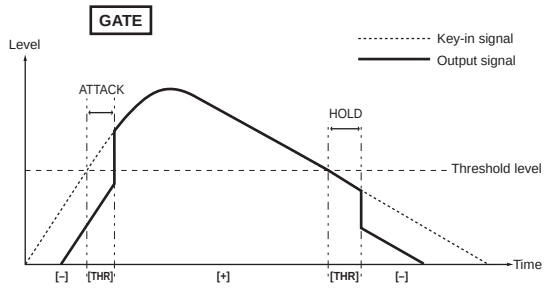
Hint

The compressor on/off status and its parameters can be set in the SELECTED INPUT CHANNEL block, or in the display (IN GATE/COMP function COMP PRM screen).

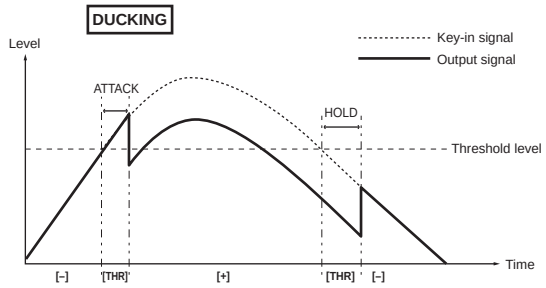
⑬ **ST IN GATE [+]/[THR]/[–] LEDs**
These LEDs indicate the operating status of the internal noise gate. If the noise gate is turned off, all LEDs will be dark.

If the noise gate is turned on, one of the LEDs will light to indicate the currently selected type and operating status of the noise gate.

When the noise gate type is GATE



When the noise gate type is DUCKING



* Each of the above diagrams shows the example of using the ST IN channel itself as the key-in signal for the noise gate.

Hint

The noise gate on/off status and its parameters can be set in the SELECTED INPUT CHANNEL block, or in the display (IN GATE/COMP function GATE PRM screen).

⑭ **ST IN SEL [L]/[R] switches and LEDs**
These switches select the ST IN channel to which your operations will apply.

You can select either the L or the R channel. The LED of the currently selected channel will light, and the LED of the other channel will blink.

The channel selected by these switches can be adjusted by the SELECTED INPUT CHANNEL block, and will be reflected by the contents of the display screen.

⑮ **ST IN [NAME] indicator**
This displays the short name of the ST IN channel. The short name can be input in the display (IN PATCH function NAME screen, etc.).

⑯ **L/R meter LEDs**
These six LEDs indicate the input level of the ST IN channel.

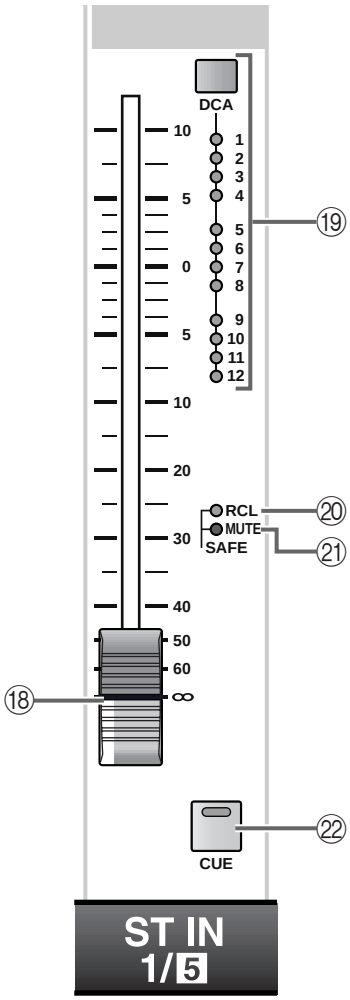
The position at which the level is detected can be selected from the following locations: PRE ATT. (before the attenuator), PRE GATE (immediately before the internal noise gate), PRE FADER (immediately before the fader), POST FADER (immediately after the fader), or POST ON (immediately after the [ON] switch).

The level detection point can be selected in the display (METER function).

The peak level of this meter will not be held even if the [PEAK HOLD] switch is turned on in the METER section (MASTER block).

⑰ **ST IN [ON] switch and LED**
This switches the on/off status of the ST IN channel. (This LED will be lit for ST IN channels that are turned on.)

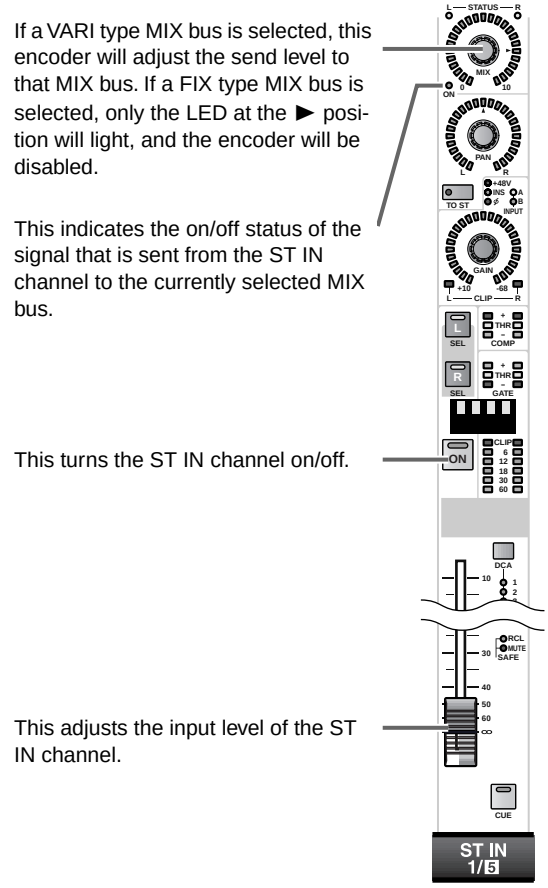
If this switch is turned off, no signal will be sent from that ST IN channel to the STEREO bus or MIX buses.



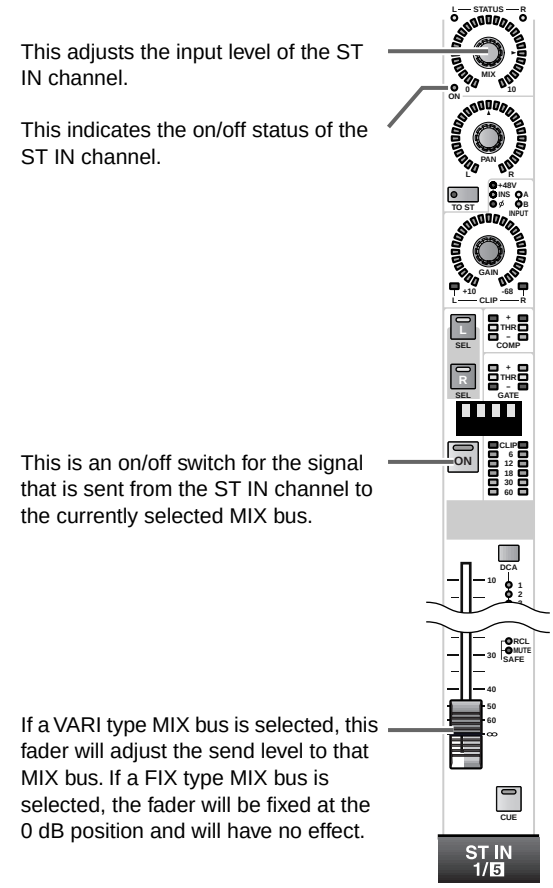
⑱ **ST IN fader**
This is a 100 mm fader that adjusts the input level of each ST IN channel. The adjustable range is – ∞ dB – +10 dB.

Hint
In the SELECTED INPUT CHANNEL block FADER FLIP section, you can exchange (flip) the functions of the ST IN fader (⑱) and the ST IN [MIX] encoder (②) as shown in the following illustrations.

- **When the FADER FLIP [CH] switch is on**



- **When the FADER FLIP [MIX] switch is on**



⑲ **ST IN [DCA] switch and LEDs**
This switch assigns the ST IN channel to DCA groups 1–12.

When a ST IN channel is assigned to a DCA group, the corresponding LED will light. The LED will blink while you are in the process of making assignments to a DCA group.

Hint
It is possible to assign a single ST IN channel to multiple DCA groups, as well as to assign multiple ST IN channels to a single DCA group.

[Procedure]

Assigning a ST IN channel to a DCA group

1. **In the DCA GROUP block, press one of the [ASSIGN DCA] switches 1–12 to select a DCA group (1–12).**
   The LED of the selected [ASSIGN DCA] switch will light.

⚠ If following step 1 you do not perform any action for approximately ten seconds, the [ASSIGN DCA] switch LED will automatically go dark, and the assignment procedure will be terminated.

2. **In the ST IN block, press the ST IN [DCA] switch for the ST IN channel that you wish to assign to the above-selected DCA group.**
   While the DCA GROUP block [ASSIGN DCA] switch LED is lit, all of the INPUT [DCA] LEDs assigned to that DCA group will blink.

⚠

- DCA groups 9–12 can be used for either input channels or output channels. However, it is not possible to assign both inputs and outputs to the same DCA group. For this reason, if an output channel is already assigned to DCA group 9–12, attempting to assign an input channel will cause an error message to be displayed, and you will not be able to do so.
- When a scene is recalled, the DCA group data of recall safe channels may be adjusted so that recall safe settings are consistent within DCA groups 9–12. Also when a channel library is recalled, the data recalled to a channel may be adjusted so that settings are consistent within DCA groups 9–12.

⑳ **SAFE [RCL] LED**
This LED will light if the ST IN channel has been set to Recall Safe (a state in which the channel is unaffected by scene recall operations).

The parameters of a channel for which this LED is lit will not change when a scene memory is recalled.

Recall Safe settings can be made in the SELECTED INPUT CHANNEL block or display (SCENE function RECALL SAFE screen).

㉑ **SAFE [MUTE] LED**
This LED will light if the ST IN channel has been set to Mute Safe (a state in which the channel is unaffected by mute group operations).

A channel for which this LED is lit will not be affected even if a mute group to which it belongs is muted.

Mute Safe settings can be made in the SELECTED INPUT CHANNEL block or display (IN DCA/MUTE function MUTE GROUP ASSIGN screen).

㉒ **[CUE] switch and LED**
This switch is used for monitoring the ST IN channel.

When this switch is pressed, the POST PAN, PFL (pre-fader listen), or AFL (after-fader listen) signal of the corresponding ST IN channel will be sent to the CUE bus, and can be monitored from the CUE OUT jacks, MONITOR OUT jacks A, and PHONES jack.

The location of the signal that is sent to the CUE bus and the monitoring method can be selected on the console in the CUE section of the MASTER block, or in the display (MON/CUE function CUE/SOLO screen).

Hint
For the signal flow of the ST IN channel, refer to the block diagram on page 38.

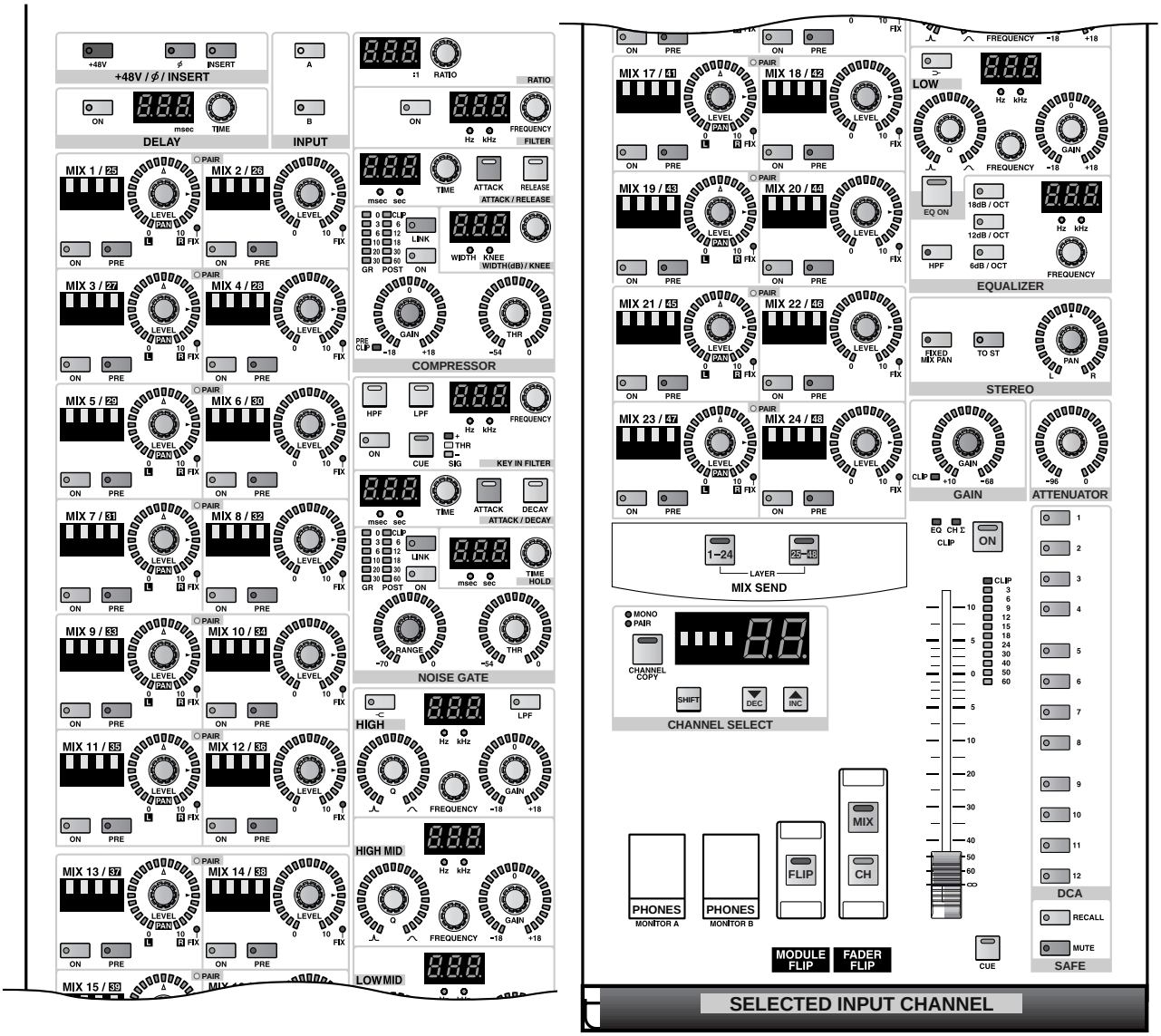
SELECTED INPUT CHANNEL block

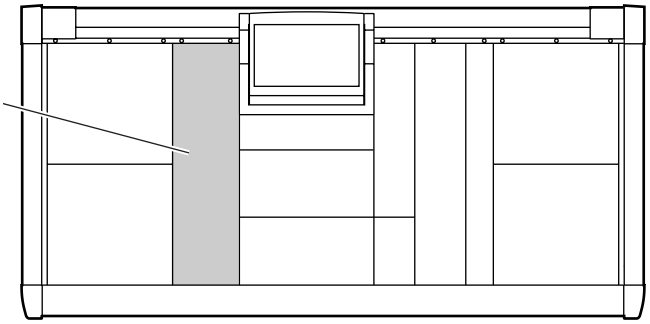
[Function]

In this block you can view and set the parameters of the currently selected input channel or ST IN channel.

Hint

If desired, the related screen can be made to appear automatically when this block is operated.
This setting is made in the UTILITY function PREFERENCE screen.





[Procedure]

Selecting a channel

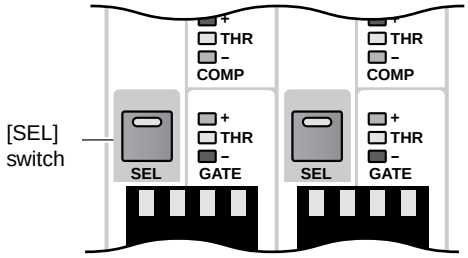
The channel to be controlled by the SELECTED INPUT CHANNEL block can be selected in the following ways.

1. **Use a [SEL] switch**
   You can use the INPUT block INPUT [SEL] switches or the ST IN block ST IN SEL [L]/[R] switches to directly select the desired channel.

   In the case of a ST IN channel, select either the left or the right channel.

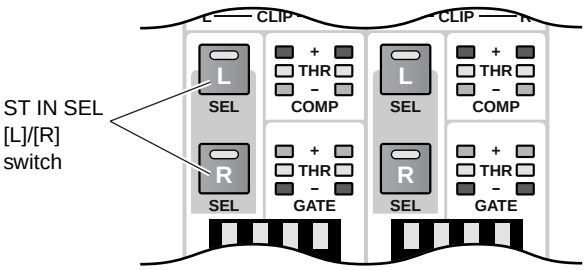
   The [SEL] switch LED of the currently selected channel will light.

   - **Use an INPUT [SEL] switch of the INPUT block**



INPUT block

   - **Use a ST IN SEL [L]/[R] switch of the ST IN block**

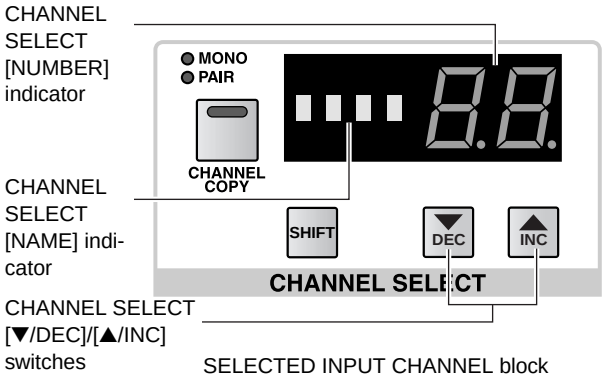


ST IN block

2. **Use the SELECTED INPUT CHANNEL block**
   You can use the CHANNEL SELECT [▼/DEC]/[▲/INC] switches of the SELECTED INPUT CHANNEL block to select channels sequentially.

   The number and short name of the channel will be displayed by the CHANNEL SELECT [NAME] indicator and the CHANNEL SELECT [NUMBER] indicator located above the CHANNEL SELECT [▼/DEC]/[▲/INC] switches.

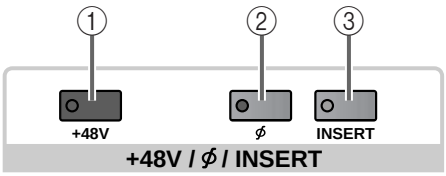
   - **Use the CHANNEL SELECT [▼/DEC]/[▲/INC] switches of the SELECTED INPUT CHANNEL block**



SELECTED INPUT CHANNEL block

+48/ø/INSERT (+48/phase/insert) section

In this section you can switch phantom power on/off, reverse the phase, and switch insertion on/off.



① **[+48 V] switch and LED**
If an AD card with head amp is patched to the channel, this switch turns the phantom power on/off. (The switch LED will light when if phantom power is on.)

For a channel to which another card is patched, this switch has no function.

⚠ The +48V switch on the front panel of the AI8 input unit is the master phantom switch for the entire unit.
Be aware that if the master phantom switch is off, that unit cannot use phantom power.

② **[ø] (Phase) switch and LED**
This switches the input signal between normal and reverse phase. The LED will light if the phase has been inverted.

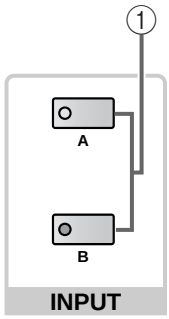
③ **[INSERT] switch and LED**
This switch turns channel insertion on/off.

When insertion is on, the switch LED will light, and the insert out/in points specified in the display (IN PATCH function INSERT PATCH screen) will be enabled.

⚠ Be aware that if you turn on the [INSERT] switch when the insert out/in points are not patched to appropriate jacks, a signal may not be input to that channel.

INPUT section

In this section you can switch between input jacks A/B of the AD card with head amp (LMY2-ML).



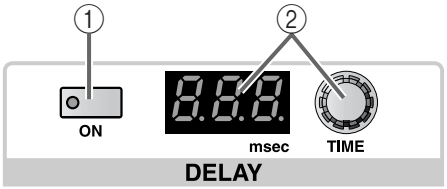
① **INPUT [A]/[B] switches and LEDs**
If an AD card with switchable input jacks A/B is assigned to the channel, these switches select input jack A or B.

The LED for the currently selected input jack (A/B) will light.

If another type of card is patched to the channel, the LEDs will be dark.

DELAY section

In this section you can make settings for the internal delay function.



① **DELAY [ON] switch and LED**
This switch turns the delay on/off for the selected channel.

When on, the switch LED will light, and the input signal will be delayed by the time shown in the DELAY TIME [VALUE] indicator (②).

② **DELAY TIME encoder and [VALUE] indicator**
The DELAY TIME encoder is used to adjust the delay time of the selected channel.

At this time, the current delay time will be shown in milliseconds in the DELAY TIME [VALUE] indicator.

The delay time range is 0 msec – 250 msec.

Hint

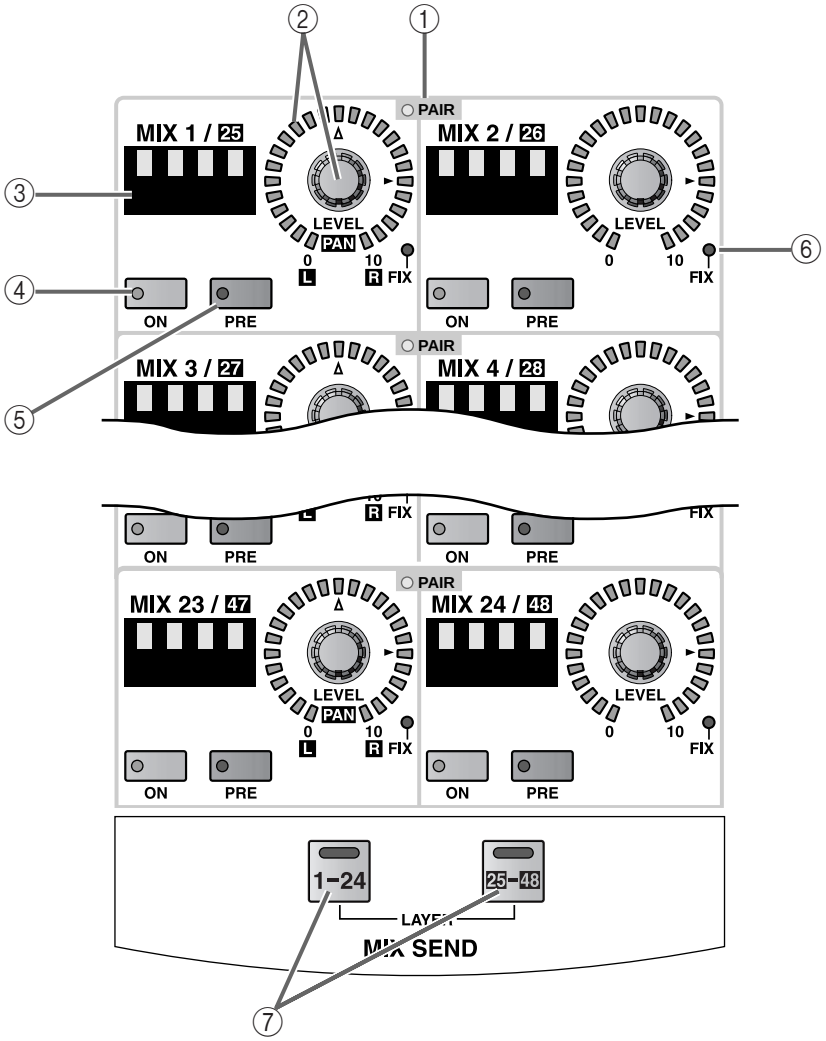
It is convenient to use the input channel or ST IN channel delay function to compensate for timing differences between widely separated mics.

Even if the internal clock on which the PM1D system operates is switched from 48 kHz to 44.1 kHz (or the opposite), the delay time will not change. However while a PM1D system is synchronized to a word clock supplied from an external device, the displayed time and the actual delay time may differ if the word clock frequency is changed using vari-pitch.

⚠ The delay time can be adjusted independently for each channel even for the two channels of a pair, or for ST IN channels.
If you adjust the delay time here, decimal places that are not subsequently displayed will be rounded off.

MIX SEND section

In this section, the signals sent from the currently selected channel to MIX buses 1–48 can be switched on/off, and their send levels adjusted.



① **MIX SEND [PAIR] LED**
This LED will light to indicate two adjacent odd and even-numbered MIX buses 1–48 (MIX buses 1/2, 3/4, ...) that are paired.

Mix bus pairing can be set or defeated on the console by the MIX OUTPUT block MIX [SEL] switch, or in the display (PAN ROUTING function etc.).

Hint

Before you perform this procedure, use the MIX SEND LAYER [1-24]/[25-48] switches (⑦) to select either MIX buses 1-24 or MIX buses 25-48 as the send destination MIX buses.

② **MIX SEND [LEVEL/PAN] encoder and LEDs**
This encoder sets the send level of the signal that is sent from the currently selected channel to a MIX bus that is set to VARI.

The range of adjustment is – ∞ dB – +10 dB, and the approximate current value is shown by the perimeter LEDs.

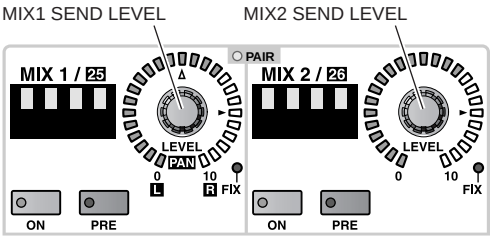
When the LED at the ► symbol is lit, the level is nominal (0 dB).

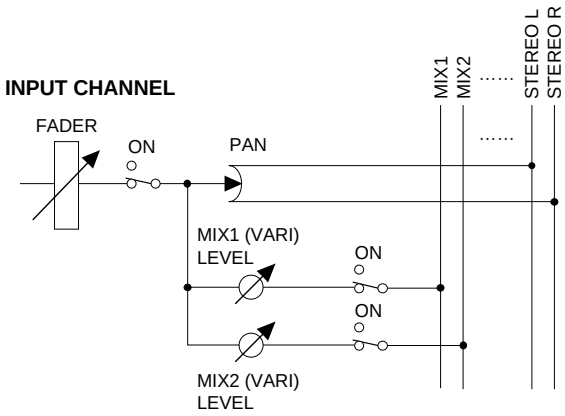
However in the case of FIX type MIX buses, only the LED at the ► position of the input channel will light, and the MIX SEND [LEVEL] encoder will be disabled.

If the send destination MIX bus is paired, the encoder for the left-hand MIX bus will function as the MIX SEND [PAN] encoder, and the encoder for the right-hand MIX bus will function as the MIX SEND [LEVEL] encoder. The approximate current value for each will be shown by the perimeter LEDs around each encoder.

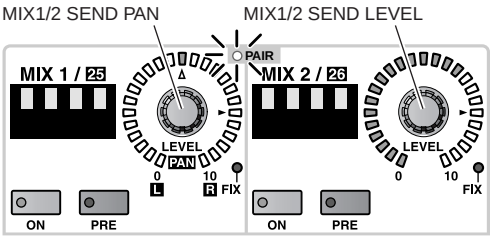
Of the LEDs around the [PAN] encoder, the LED at the △ mark indicates that the signal is panned to the center.

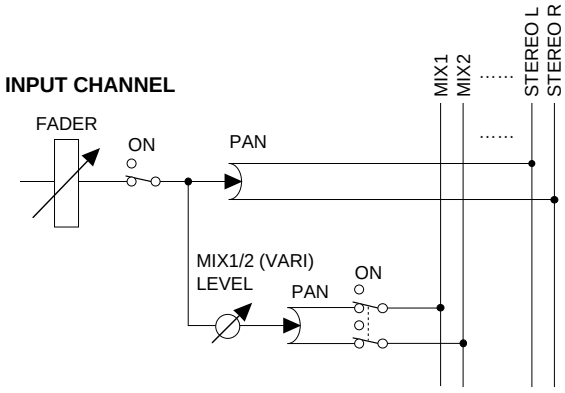
- **When the send destination MIX bus is not paired**





- **When the send destination MIX bus is paired**





③ **MIX SEND [NAME] indicator**
This shows the short name of the MIX bus.

The short name can be input in the display (OUT PATCH function NAME screen, etc.).

④ **MIX SEND [ON] switch and LED**
This is an on/off switch for the signal that is sent from the selected channel to the corresponding MIX bus. (The switch LED will light when on.)

If the send destination MIX bus is paired, the setting of this parameter will be linked for adjacent odd-numbered to even-numbered MIX buses.

⑤ **MIX SEND [PRE] switch and LED**
This switch specifies the location of the signal that is sent from the selected channel to a VARI type MIX bus.

If the send destination MIX bus is paired, the setting of this parameter will be linked for adjacent odd-numbered to even-numbered MIX buses.

- **If the [PRE] switch LED is dark**

The post-fader signal will be sent to the corresponding MIX bus.

- **If the [PRE] switch LED is lit**

The pre-EQ or pre-fader signal will be sent to the corresponding MIX bus.

The pre-EQ/pre-fader selection can be made in the display (PAN/ROUTING function CH to MIX screen).

⑥ **MIX SEND [FIX] LED**
This LED indicates the type of MIX bus (FIX or VARI).

This LED will light when the corresponding MIX bus is set to FIX.

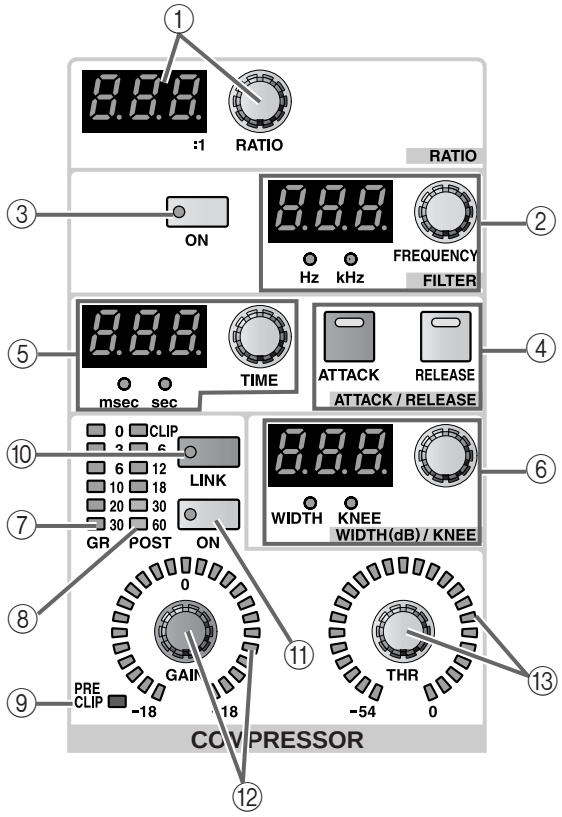
The FIX/VARI selection can be made in the display (PAN/ROUTING function CH to MIX screen).

⑦ **MIX SEND LAYER [1–24]/[25–48] switches and LEDs**
These switches select either MIX buses 1–24 or MIX buses 25–48 as the MIX buses to be controlled and displayed in the MIX SEND section.

The LED of the currently selected switch will light.

COMPRESSOR section

In this section you can make settings for the internal compressor.
All parameters can be controlled from the top panel, except for compressor library store/recall operations, compressor type selection, and key-in signal selection.



① **COMPRESSOR [RATIO] encoder and [VALUE] indicator**
This sets the ratio of the internal compressor.

The range of settings is 1:1 – ∞(16 steps) if COMP or EXPANDER is selected as the compressor type, or 1:1–20:1 (15 steps) if COMPANDER is selected.

② **COMPRESSOR FILTER [FREQUENCY] encoder, [VALUE] indicator, and [Hz]/[kHz] LEDs**
This sets the cutoff frequency of the HPF or LPF that is placed in the first stage of the internal compressor.

The adjustable range is 20 Hz – 20 kHz (121 steps).

The current value is shown by the [VALUE] indicator. (Either the [Hz] or [kHz] LED will light to indicate the units of the displayed value.)

The selection of HPF or LPF is made in the display (IN GATE/COMP function COMP PRM screen).

Hint

HPF and LPF cannot be used simultaneously. When COMP is selected as the type for the internal compressor, selecting HPF will allow it to be used as a "de-esser."

③ **COMPRESSOR FILTER [ON] switch and LED**
This is an on/off switch for the HPF or LPF that is placed in the first stage of the internal compressor.

④ **COMPRESSOR [ATTACK]/[RELEASE] switches and LEDs**
These switches select the function of the ATTACK/RELEASE [TIME] encoder (⑤) located at the left of the switches.

- **When the COMPRESSOR [ATTACK] LED is lit**
The ATTACK/RELEASE [TIME] encoder will set the ATTACK (attack time).
- **When the COMPRESSOR [RELEASE] LED is lit**
The ATTACK/RELEASE [TIME] encoder will set the RELEASE (release time).

⑤ **COMPRESSOR ATTACK/RELEASE [TIME] encoder, [VALUE] indicator, and [msec]/[sec] LEDs**
According to the setting of the COMPRESSOR [ATTACK]/[RELEASE] switch (④), this encoder adjusts the ATTACK (attack time) or RELEASE (release time) of the internal compressor.

The range of settings is 0 ms–120 msec for the attack time, and 5 msec–42.3 sec for the release time (when operating at 48 kHz).

The current value is shown in the [VALUE] indicator. (Either the [msec] or [sec] LED will light to indicate the units of the value.)

⑥ **COMPRESSOR WIDTH (dB)/KNEE [TIME] encoder, [VALUE] indicator, and [WIDTH]/[KNEE] LEDs**
The function of this encoder depends on the currently selected compressor type.

- **When the compressor type is COMP or EXPANDER**
Use the encoder to set the KNEE parameter of the COMP or EXPANDER. (The [KNEE] LED will light.)

You can select SF1–SF5 (SOFT 1–SOFT 5), or Hrd (HARD).

- **When the compressor type is COMPANDER**
Use the encoder to set the WIDTH parameter of the COMPANDER.

The range is 1 dB–90 dB.

⑦ **COMPRESSOR [GR] meter LEDs**
This meter displays the amount of gain reduction caused by the compressor.

Hint

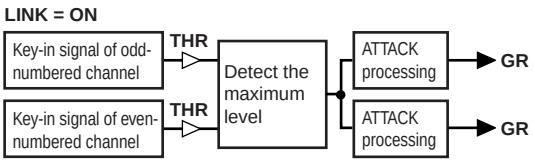
In the UTILITY function PREFERENCE screen you can specify whether the GR meter display will be linked with the compressor on/off setting. If linking is on, the GR meter will be displayed only when the compressor is on; the meter will not be displayed when the compressor is off. If linking is turned off, the GR meter will always be displayed.

⑧ **COMPRESSOR [POST] meter LEDs**
This meter indicates the signal level after the compressor.

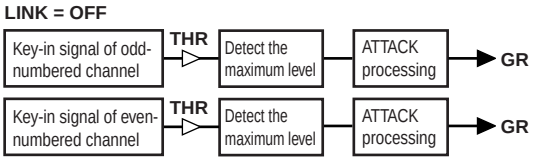
⑨ **COMPRESSOR [PRE CLIP] LED**
This LED will light if the signal clips before passing through the compressor.

⑩ **COMPRESSOR [LINK] switch and LED**
This specifies whether compressor operation of adjacent odd-numbered → even-numbered input channels will be linked by a key-in signal (link=on) or whether the compressors will operate using independent key-in signals (link=off). (The LED will light when link is on.)

- **Key-in signal flow when link=on**



- **Key-in signal flow when link=off**



⚠ Linking will occur only if channels of the same COMPRESSOR type are linked. If channels with differing types are linked, the operation will be the same as if link is off.
Be careful not to confuse "compressor linking" with "input channel pairing."
Turning compressor link on will simply cause the two compressors to be triggered by the same key-in signal; the parameters of the compressors themselves can be set independently for each channel.

If two input channels are paired, compressor link will automatically be turned on, and the compressor parameters will also operate in tandem.

However, you are free to subsequently turn linking off.

For a ST IN channel, the compressor parameters for the left and right channels will always operate in tandem. However, you are free to turn link on/off.

⑪ **COMPRESSOR [ON] switch and LED**
This switch turns the internal compressor on/off.

When the compressor is on, the LED will light.

⑫ **COMPRESSOR [GAIN] encoder and LEDs**
This encoder controls the GAIN parameter of the internal compressor.

The approximate current value is shown by the perimeter LEDs.

The value range is 0 dB– +18 dB (0.5 dB steps) when the type is COMP/EXPANDER, and –18 dB–0 dB (0.5 dB steps) when the type is COMPANDER.

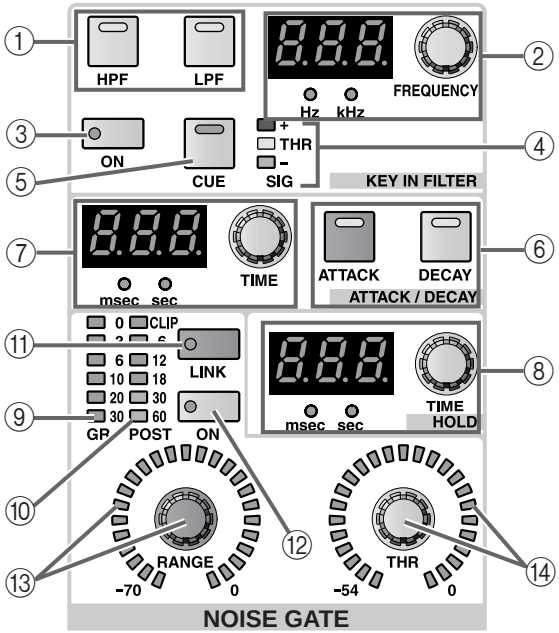
⑬ **COMPRESSOR [THR] encoder and LEDs**
This encoder controls the THRESHOLD LEVEL parameter of the internal compressor.

The approximate current value is shown by the perimeter LEDs.

The value range is –54 dB–0 dB (1 dB steps).

NOISE GATE section

In this section you can make settings for the internal noise gate.
All parameters can be controlled from the top panel, except for noise gate library store/recall operations, noise gate type selection, and key-in signal selection.



① **NOISE GATE KEY IN FILTER [HPF]/[LPF] switch**
Of the two filters (HPF and LPF) provided for the key-in signal of the noise gate, this switch selects the filter that you wish to adjust.

The LED of the currently selected switch will light.

Hint

You can simultaneously use both the HPF and LPF.

The HPF and LPF are applied only to the key-in signal sent to the noise gate.
They do not affect the signals that are sent to the STEREO bus or the MIX buses.

② **NOISE GATE KEY IN FILTER [FREQUENCY] encoder, [VALUE] indicator, and [Hz]/[kHz] LEDs**
This encoder sets the cutoff frequency of the filter (LPF or HPF) selected by the KEY IN FILTER [HPF]/[LPF] switch (①).

The range of frequency adjustment is 20 Hz–20 kHz (121 steps).

The current value is shown in the [VALUE] indicator. (Either the [Hz] or [kHz] indicator will light to indicate the units of the displayed value.)

③ **NOISE GATE KEY IN FILTER [ON] switch and LED**
This is an on/off switch for the filter selected (LPF or HPF) selected by the KEY IN FILTER [HPF]/[LPF] switch (①).

When this is on, the switch LED will light.

④ **NOISE GATE SIG [+]/[THR]/[–] LEDs**
These LEDs indicate the level of the noise gate key-in signal (after passing through the filters).

At the threshold level, [THR] will light. When the key-in signal exceeds the threshold level [+] will light, and when it is below the threshold level [–] will light.

⑤ **NOISE GATE KEY IN [CUE] switch and LED**
This switch allows you to monitor the noise gate key-in signal.

When this switch is pressed, the noise gate key-in signal (after passing through the filters) of the currently selected channel will be sent to the CUE bus, and can be monitored via the CUE OUT jacks, MONITOR OUT jacks A, and PHONES jack.

The LED will light while this is being monitored.

While this switch is on, all three of the CUE ACTIVE LEDs in the CUE section of the MASTER block will light.

⑥ **NOISE GATE [ATTACK]/[DECAY] switches and LEDs**
These switches select the function of the NOISE GATE ATTACK/DECAY [TIME] encoder (⑦) located at the left of the switches.

When the NOISE GATE [ATTACK] LED is lit, the encoder will set the ATTACK (attack time). When the NOISE GATE [DECAY] LED is lit, the encoder will set the DECAY (decay time).

⑦ **NOISE GATE ATTACK/DECAY [TIME] encoder, [VALUE] indicator, and [msec]/[sec] LEDs**
Depending on the setting of the NOISE GATE [ATTACK]/[DECAY] switch (⑥), this encoder adjusts either the ATTACK (attack time) or the DECAY (decay time) of the internal noise gate.

The range for the attack time is 0 msec–120 msec, and for the decay time is 5 msec–42.3 sec (when operating at 48 kHz).

The current value is shown by the [VALUE] indicator. (Either the [msec] or [sec] LED will light to indicate the units of the displayed value.)

⑧ **NOISE GATE HOLD [TIME] encoder, [VALUE] indicator, and [msec]/[sec] LEDs**
These set and display the hold time of the internal noise gate.

The range is 0.02 msec–1.96 sec (when operating at 48 kHz).

The current value is shown by the [VALUE] indicator. (Either the [msec] or [sec] LED will light to indicate the units of the displayed value.)

⑨ **NOISE GATE [GR] meter LEDs**
This meter shows how far the noise gate has closed.

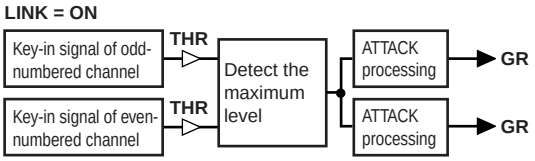
Hint

In the UTILITY function PREFERENCE screen you can specify whether the GR meter display will be linked with the noise gate on/off setting. If linking is on, the GR meter will be displayed only when the noise gate is on; the meter will not be displayed when the noise gate is off. If linking is turned off, the GR meter will always be displayed.

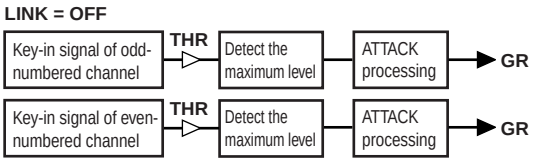
⑩ **NOISE GATE [POST] meter LEDs**
This meter indicates the signal level after passing through the noise gate.

⑪ **NOISE GATE [LINK] switch and LED**
This specifies whether noise gate operation of adjacent odd-numbered → even-numbered input channels will be linked by a key-in signal (link=on) or whether the noise gate will operate using independent key-in signals (link=off). (The LED will light when link is on.)

- **Key-in signal flow when link=on**



- **Key-in signal flow when link=off**



⚠ Linking will occur only if channels of the same NOISE GATE type are linked. If channels with differing types are linked, the operation will be the same as if link is off.
Be careful not to confuse "noise gate linking" with "input channel pairing."
Turning noise gate link on will simply cause the two noise gates to be triggered by the same key-in signal; the parameters of the noise gates themselves can be set independently for each channel.

If two input channels are paired, noise gate link will automatically be turned on, and the noise gate parameters will also operate in tandem. However, you are free to subsequently turn linking off.

For a ST IN channel, the noise gate parameters for the left and right channels will always operate in tandem. However, you are free to turn link on/off.

⑫ **NOISE GATE [ON] switch and LED**
This switch turns the internal noise gate on/off.

When the noise gate is on, the switch LED will light.

⑬ **NOISE GATE [RANGE] encoder and LEDs**
This encoder sets the RANGE parameter of the internal noise gate.

The approximate current value is shown by the perimeter LEDs.

The range is –70 dB–0 dB (1 dB units).

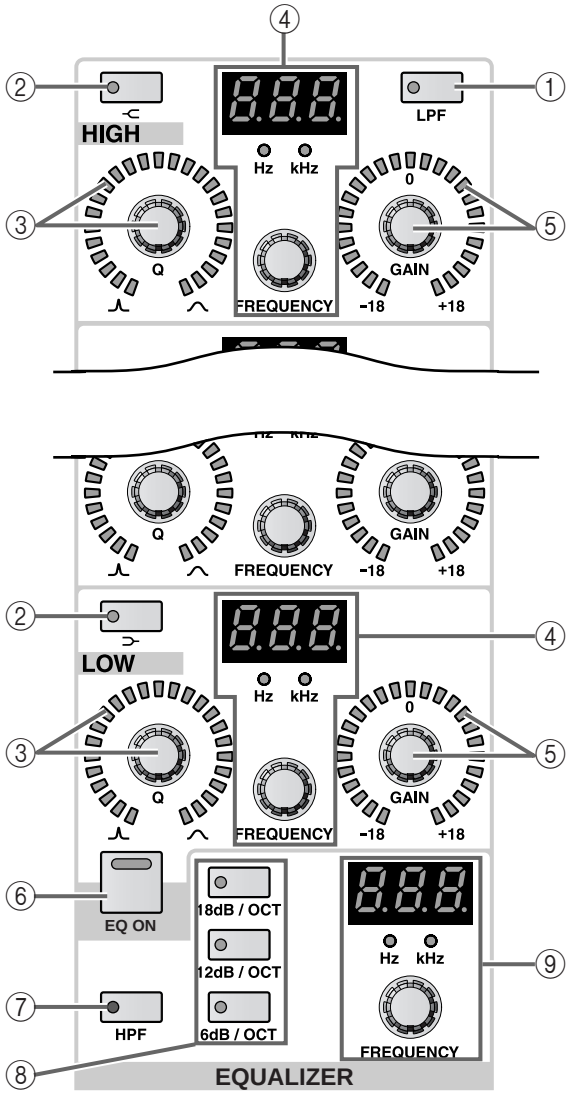
⑭ **NOISE GATE [THR] encoder and LEDs**
This encoder sets the THRESHOLD parameter of the internal noise gate.

The approximate current value is shown by the perimeter LEDs.

The range is –54 dB–0 dB (1 dB units).

EQUALIZER section

In this section you can make settings for the internal four-band EQ (HIGH, HIGH MID, LOW MID, LOW).
Of the four bands, HIGH and LOW EQ can be switched between shelving and peaking, and the HIGH band can also be used as an LPF.
You can also use a HPF that is independent of the four-band EQ.



① **EQ [LPF] switch and LED (HIGH band only)**
This switch changes the HIGH band EQ to a LPF.

The switch LED will light when LPF is selected.

In this case, the HIGH band [Q]/[GAIN] encoders will have no effect.

② **EQ [⊂] [⊃] switch and LED (HIGH/LOW bands only)**
This switches the HIGH/LOW band EQ type between peaking and shelving.

The switch LED will light when shelving is selected.

In this case, the HIGH band [Q] encoder will have no effect, and its perimeter LEDs will go dark.

③ **EQ [Q] encoder and LEDs**
This encoder sets the Q (steepness) of each band. Rotating it toward the left will make the Q sharper, and rotating it toward the right will make the Q more gentle.

The range of adjustment is 10.0–0.10 (41 steps) for each band.

The approximate current value is shown by the perimeter LEDs.

④ **EQ [FREQUENCY] encoder, [VALUE] indicator, and [Hz]/[kHz] LEDs**
This encoder sets the center frequency of each band.

The range of adjustment is 20 Hz–20 kHz (121 steps) for each band.

The current value is shown by the [VALUE] indicator, and either the [Hz] or [kHz] LED will light to indicate the units of the displayed value.

⑤ **EQ [GAIN] encoder and LEDs**
This encoder sets the gain of each band.

The range of adjustment is –18 dB– +18 dB (0.5 dB steps), and the approximate current value is shown by the perimeter LEDs.

⑥ **[EQ ON] switch**
This switch turns the entire equalizer on/off.

When on, the switch LED will light.

⑦ **[HPF] switch and LED**
This switch turns the HPF on/off.

When the HPF is on, the switch LED will light.

This can be turned on/off independently of the four-band EQ.

⑧ **HPF [6 dB/OCT]/[12 dB/OCT]/[18 dB/OCT] switches and LEDs**
This switch selects the slope of the HPF: 6 dB/OCT, 12 dB/OCT, or 18 dB/OCT.

The LED of the currently selected slope will light.

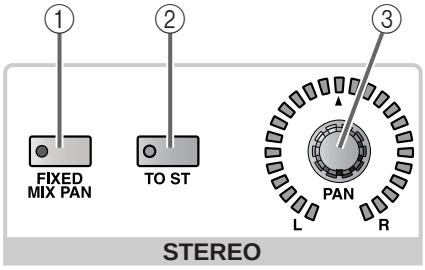
⑨ **HPF [FREQUENCY] encoder, [VALUE], and [Hz]/[kHz] LEDs**
This encoder sets the HPF cutoff frequency.

The range of adjustment is 20 Hz–600 Hz (60 steps) for each band.

The current value is shown by the [VALUE] indicator, and the [Hz] LED will light to indicate the units of the displayed value.

STEREO section

In this section, the signal that is sent from the currently selected channel to the STEREO bus can be switched on/off and panned.

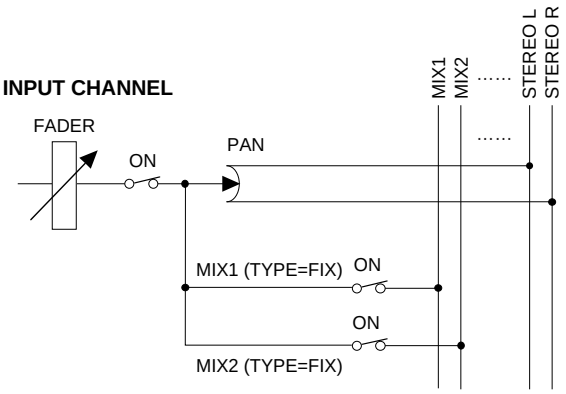


① **STEREO [FIXED MIX PAN] switch and LED**
When the signal from the currently selected channel is sent to a FIX type MIX bus, this switch specifies whether the signal from before or after the [PAN] encoder (③) will be sent.

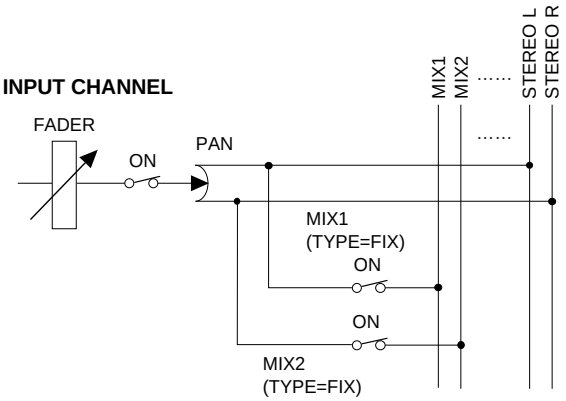
When this switch is on (LED lit), the signal after the [PAN] encoder will be sent.

The setting of this switch applies to all FIX type MIX buses.

- **Signal flow when the [FIXED MIX PAN] switch is off**



- **Signal flow when the [FIXED MIX PAN] switch is on**



② **STEREO [TO ST] switch and LED**
This is an on/off switch for the signal that is sent from the currently selected channel to the STEREO bus. (When on, the LED will light.)

This switch does not affect the signals that are sent from the channel to the MIX buses.

③ **STEREO [PAN] encoder and LEDs**
This encoder sets the panning of the signal that is sent from the currently selected channel to the STEREO bus.

The approximate current setting is shown by the perimeter LEDs.

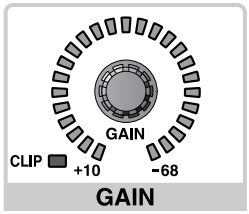
When the LED at the ▲ mark is lit, the signal is panned to the center.

Hint

For two paired channels, or for a ST IN channel, the pan is set independently for each channel.

If the STEREO [FIXED MIX PAN] switch (①) is turned on, the setting of the STEREO [PAN] encoder will be valid for FIX type MIX buses as well.

GAIN section



① **[GAIN] encoder and LEDs**
If an AD card with head amp is patched to this channel, this encoder sets the input sensitivity of the head amp.

The range of levels is +10dB — –68 dB.

The approximate current setting is shown by the perimeter LEDs.

⚠ The PAD will be internally switched on or off when the gain of the LMY4-MLF card (including the AI8-ML8F unit) internal head amp is adjusted between –8 dB and –7 dB. Keep in mind that noise may be generated if there is a difference between the Hot and Cold output impedance of the external device connected to the card when using phantom power.

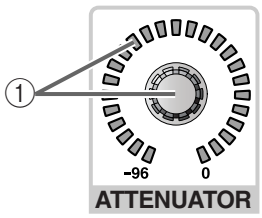
② **GAIN [CLIP] LED**
This LED will light if the input signal of the input channel clips.

If this LED lights for an input channel to which an AD card with head amp has been patched, use the [GAIN] encoder (①) to lower the input sensitivity.

If this LED lights for an input channel to which an AD card without head amp or a digital I/O card has been patched, lower the output level of the sound source that is connected to the card.

ATTENUATOR section

This section attenuates the level of the input signal.

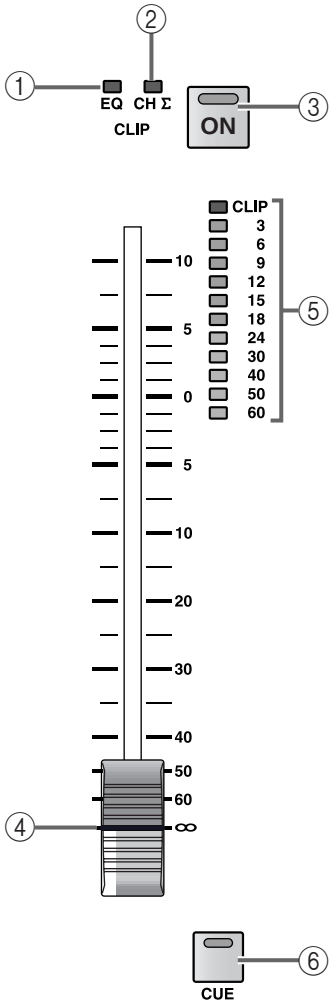


① **[ATTENUATOR] encoder and LEDs**
This encoder attenuates the signal level of the selected channel, and immediately before the HPF.

The range is –96 dB – 0 dB (1 dB steps), and the approximate current value is shown by the perimeter LEDs.

FADER section

In this section you can switch the currently selected channel on/off, and set its input level.



① **CLIP [EQ] LED**
This LED will light when the post-EQ signal clips.

If this LED lights, lower the [ATTENUATOR] encoder.

② **CLIP [CH Σ] LED**
This LED will light if clipping occurs at any of the following locations: the currently selected channel metering point, PRE ATT, POST EQ, POST GATE, POST COMP, or INSERT IN.

The lit state of this LED will be held if input PEAK HOLD is turned on in the METER function screen.

③ **[ON] switch and LED**
This turns the currently selected channel on/off. (The LED will light for an input channel that is turned on.)

If this switch is turned off, no signals will be sent from that channel to the STEREO bus or MIX buses.

④ **Fader**
This is a 100 mm fader that adjusts the input level of the currently selected channel.

The range is – ∞ – +10 dB.

⑤ **Meter LEDs**
This is a twelve-point LED meter that indicates the input level of the channel.

The position at which the level is detected can be selected from the following locations:

- **PRE ATT** ..... Before the attenuator
- **PRE GATE** .....Immediately before the internal gate
- **PRE FADER**..... Immediately before the fader
- **POST FADER** .... Immediately after the fader
- **POST ON**..... Immediately after the [ON] switch

The level detection point can be selected in the display (METER function).

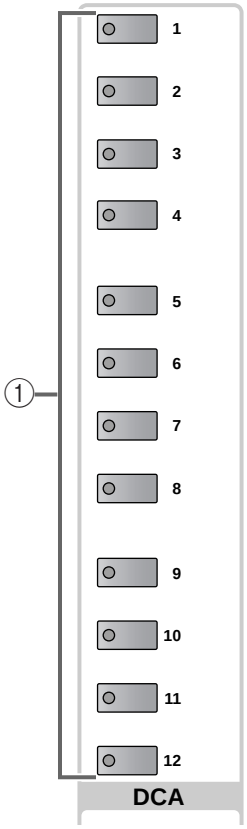
⑥ **[CUE] switch and LED**
This switch monitors the currently selected channel.

When this switch is pressed, the POST PAN, PFL (pre-fader listen), or AFL (after-fader listen) signal of the corresponding channel will be sent to the CUE bus, and can be monitored from the CUE OUT jacks, MONITOR OUT jacks A, and PHONES jack.

The position of the signal sent to the CUE bus and the monitoring method can be selected from the console in the MASTER block CUE section, or in the display (MON/CUE function CUE/SOLO screen).

DCA section

This section assigns the currently selected channel to a DCA group. It is convenient to use this section when you wish to assign a single channel to multiple DCA groups.



① **DCA [1]–[12] switches and LEDs**
These switches assign the currently selected channel to DCA groups 1–12.

When the channel is assigned to a DCA group, the LED of the corresponding switch will light.

[Procedure]

Using the SELECTED INPUT CHANNEL block to assign a channel to a DCA group

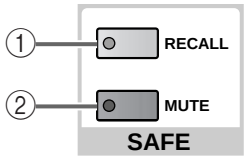
1. **Select the input channel or ST IN channel that you wish to assign to a DCA group (1–12).**
2. **In the SELECTED INPUT CHANNEL block, use the DCA [1]–[12] switches to select the DCA group(s) to which you wish to assign the channel. (You may select more than one DCA group.)**
   The LED(s) for the corresponding DCA group(s) will light.

⚠

- DCA groups 9–12 can be used for either input channels or output channels. However, it is not possible to assign both inputs and outputs to the same DCA group.
  For this reason, if an output channel is already assigned to DCA group 9–12, attempting to assign an input channel will cause a message to be displayed, and you will not be able to do so.
- When a scene is recalled, the DCA group data of recall safe channels may be adjusted so that recall safe settings are consistent within DCA groups 9–12. Also when a channel library is recalled, the data recalled to a channel may be adjusted so that settings are consistent within DCA groups 9–12.

SAFE section

In this section you can set or defeat Recall Safe or Mute Safe settings for the currently selected channel.



① **SAFE [RECALL] switch and LED**
This switch sets/defeats Recall Safe for the currently selected channel; a condition in which the channel will be unaffected by scene recall operations.

The switch LED will light for channels that are set to Recall Safe.

The parameters of a channel for which this LED is lit will not change even if a scene memory is recalled.

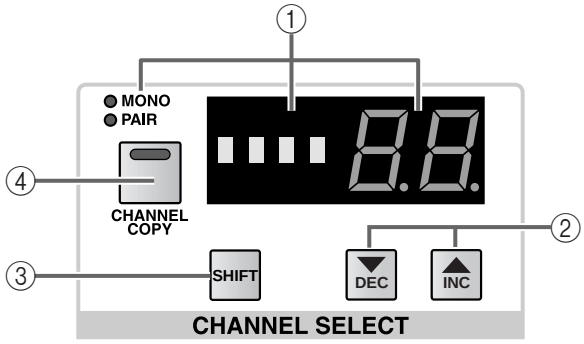
② **SAFE [MUTE] switch and LED**
This switch sets/defeats Mute Safe for the currently selected channel; a condition in which the channel will be unaffected by mute group operations.

The switch LED will light for channels that are set to Mute Safe.

A channel for which this LED is lit will not be affected even if a mute group to which the channel belongs is muted.

CHANNEL SELECT section

This section selects the channel that will be controlled by the SELECTED INPUT CHANNEL block.



① **CHANNEL SELECT [NAME]/[NUMBER] indicator and [MONO]/[PAIR] LEDs**
These indicators show the short name and number of the currently selected channel.

When an input channel is selected, the [MONO] LED will light if that channel is monaural, or the [PAIR] LED will light if pairing is enabled. The [NUMBER] indicator will indicate a number 1–96 {1–48}.

If a ST IN channel is selected, the [PAIR] LED will light, and the [NUMBER] indicator will display the number and the LR designation as 1L, 1R ... 8L, 8R {4L, 4R}.

② **CHANNEL SELECT [▼/DEC]/[▲/INC] switches**
These switches change the channel number of the currently selected channel, in the order of 1–96 {1–48} → 1L, 1r ... 8L, 8r {4L, 4r}.

Hint

If you continue holding down one of the CHANNEL SELECT [▼/DEC]/[▲/INC] switches, the number will change continuously.

If you hold down both CHANNEL SELECT [▼/DEC]/[▲/INC] switches for one second, input channel 1 will be selected.

③ **[SHIFT] switch**
If an input channel is selected, you can hold down this switch and press either the CHANNEL SELECT [▼/DEC] or [▲/INC] switches to increment or decrement the current value in steps of 12.

When a ST IN channel is selected, you can hold down this switch and use the CHANNEL SELECT [▼/DEC]/[▲/INC] switches to increment or decrement the number in steps of 8, as in 1L → 5L. {On 48 channel models, this switch will have no effect when a ST IN channel is selected.}

This function is convenient when you wish to quickly select an input channel that is at the same position of another INPUT block.

④ **[CHANNEL COPY] switch and LED**
This switch is used to copy parameters from the desired input channel to another input channel.

When you press this switch, the currently selected input channel will be the copy source, and the input channel whose [SEL] you press immediately thereafter will be the copy destination.

[Procedure]

Copying the input channel/ST IN channel parameters to another channel

1. **Select the input channel or ST IN channel that will be the copy source.**
2. **Press the [CHANNEL COPY] switch.**
   The [CHANNEL COPY] switch LED will light.

   However if you do not specify the copy destination within ten seconds, the copy operation will be cancelled.
3. **Press a [SEL] switch to select the copy destination input channel or ST IN channel.**
   A popup window will appear, asking you to confirm the copy operation.
4. **To execute the copy operation, click the OK button. To cancel the copy operation, click the CANCEL button.**

Hint

For details on the types of parameter that are copied when you copy between input channels, refer to the appendices (→p.44).

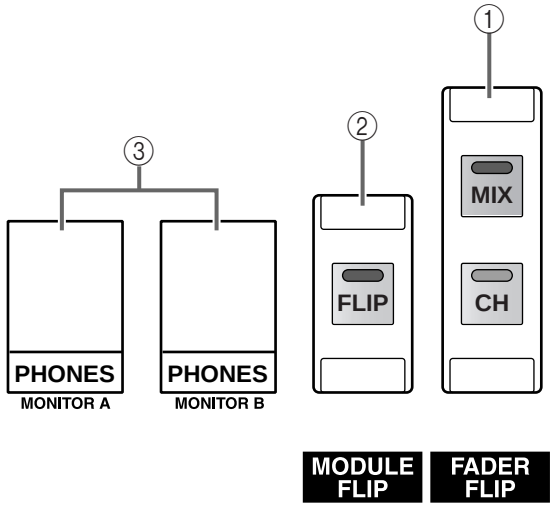
If you wish to perform another copy, repeat steps 1–4.

⚠ Copying is possible only between monaural input channels or stereo input channels (a ST IN channel or two paired channels). If you attempt to copy some other combination of channels, a message of "DATA TYPE CONFLICT! CANCELED" will appear, and copying will not occur.

⚠ It is not possible to use the [▼/DEC]/[▲/INC] switches to select the copy destination channel. The channel copy operation will be cancelled.

GLOBAL CONTROL section

In this section you can exchange (flip) the faders and modules.



① **FADER FLIP [CH]/[MIX] switches and LEDs**

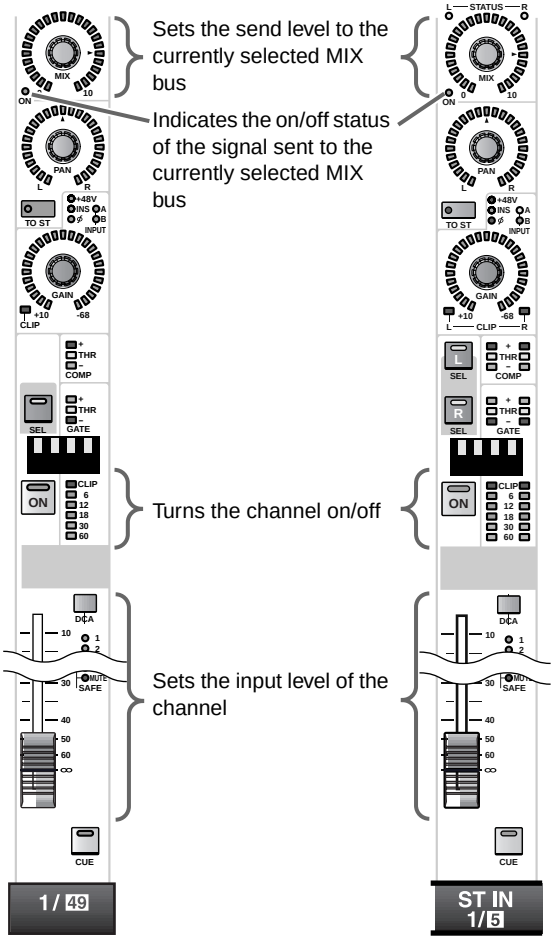
These switches exchange the functions of the faders and the [MIX] encoders in the INPUT blocks and the ST IN block.

The functions of the faders and [MIX] encoders will change as follows, depending on the switch that is turned on.

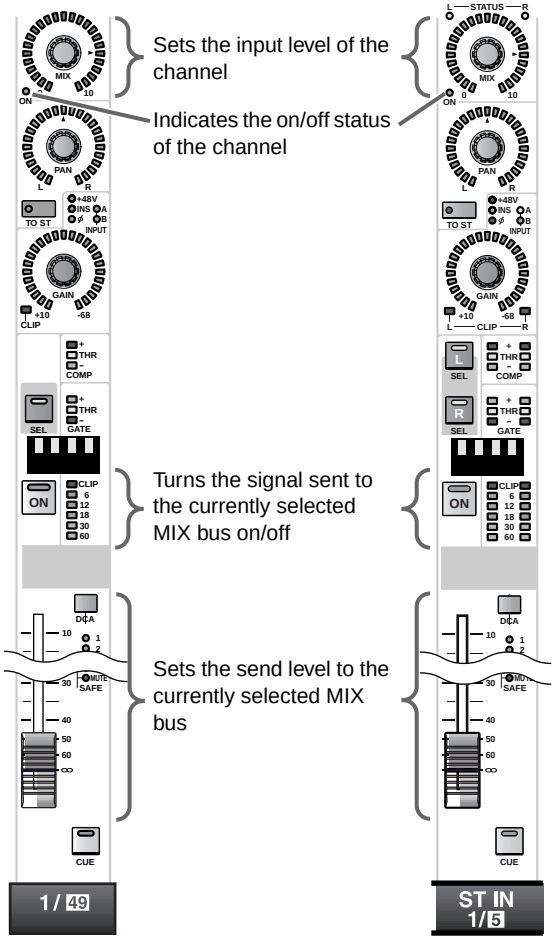
The status of this switch will always be shown at the bottom of the display.

For details refer to "CS1D Reference manual (Software)."

- **When FADER FLIP [CH] switch is on (default)**



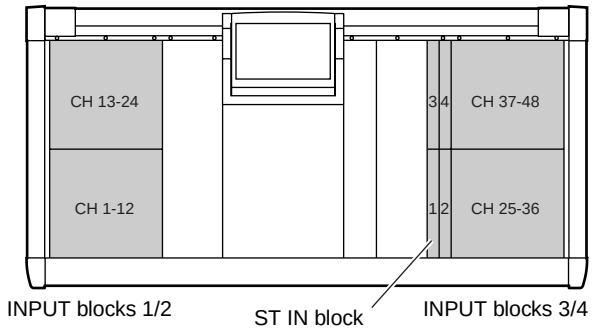
- **When FADER FLIP [MIX] switch is on**



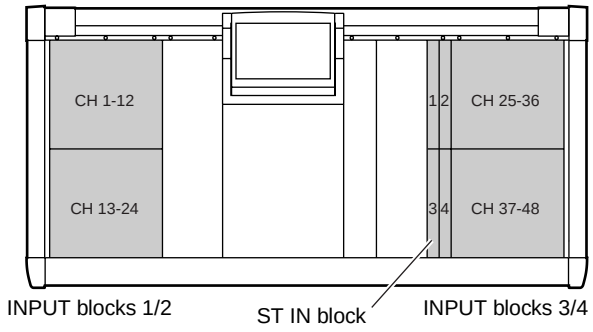
② **MODULE [FLIP] switch**
This switch exchanges (flips) the operating channels between vertically adjacent INPUT blocks or vertically adjacent ST IN channels.

Depending on the on/off status of this switch, the channels operated in the INPUT blocks and the ST IN block will change as follows.

- **When the MODULE [FLIP] switch is off (default)**



- **When the MODULE [FLIP] switch is on**



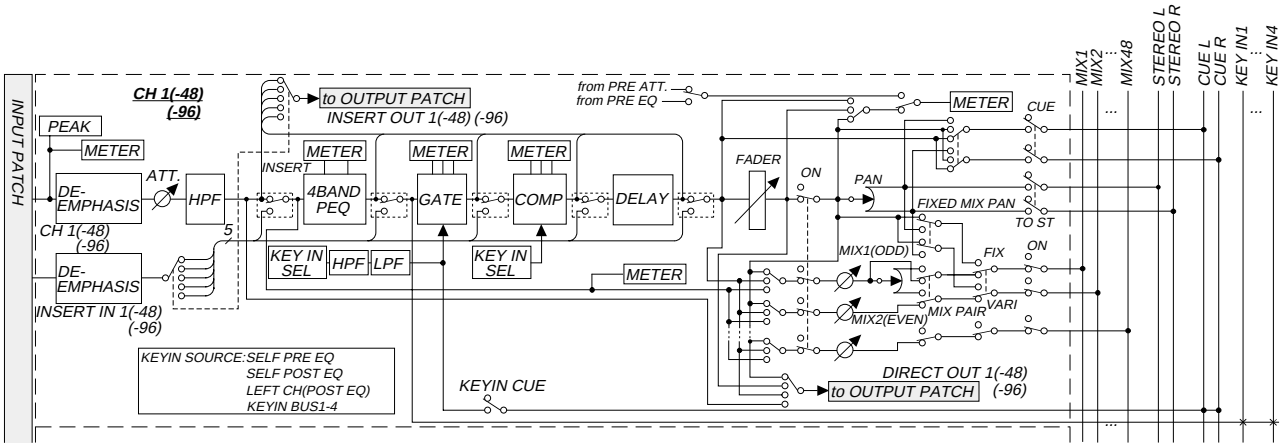
The status of this switch will always be shown at the bottom of the display.

For details refer to "CS1D Reference manual (Software)."

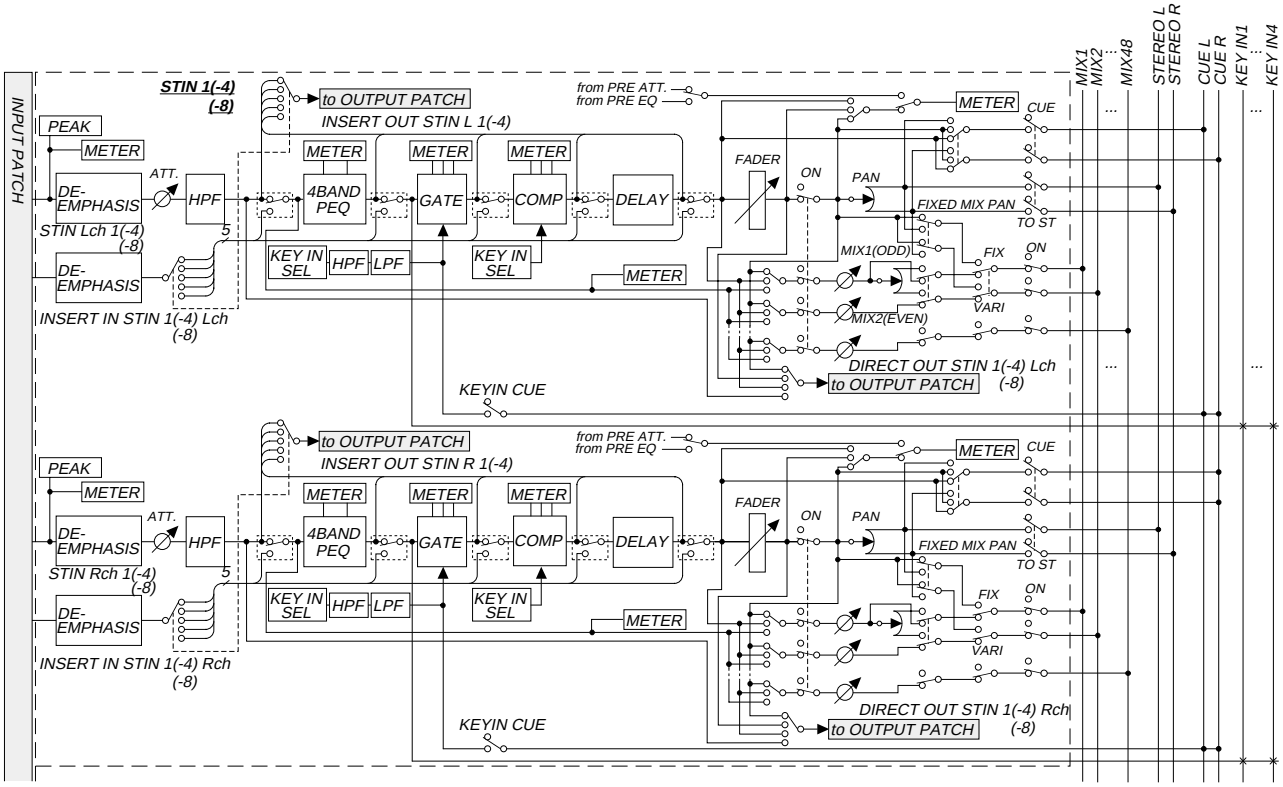
③ **PHONES MONITOR A/MONITOR B jacks**
These are headphone jacks for monitoring MONITOR A and MONITOR B.

⚠ Do not use both the headphone jack on the top panel and the headphone jack on the front panel at the same time. Doing so can cause the CS1D to malfunction due to excessive current.

Signal flow for input channels 1–96 {1–48}



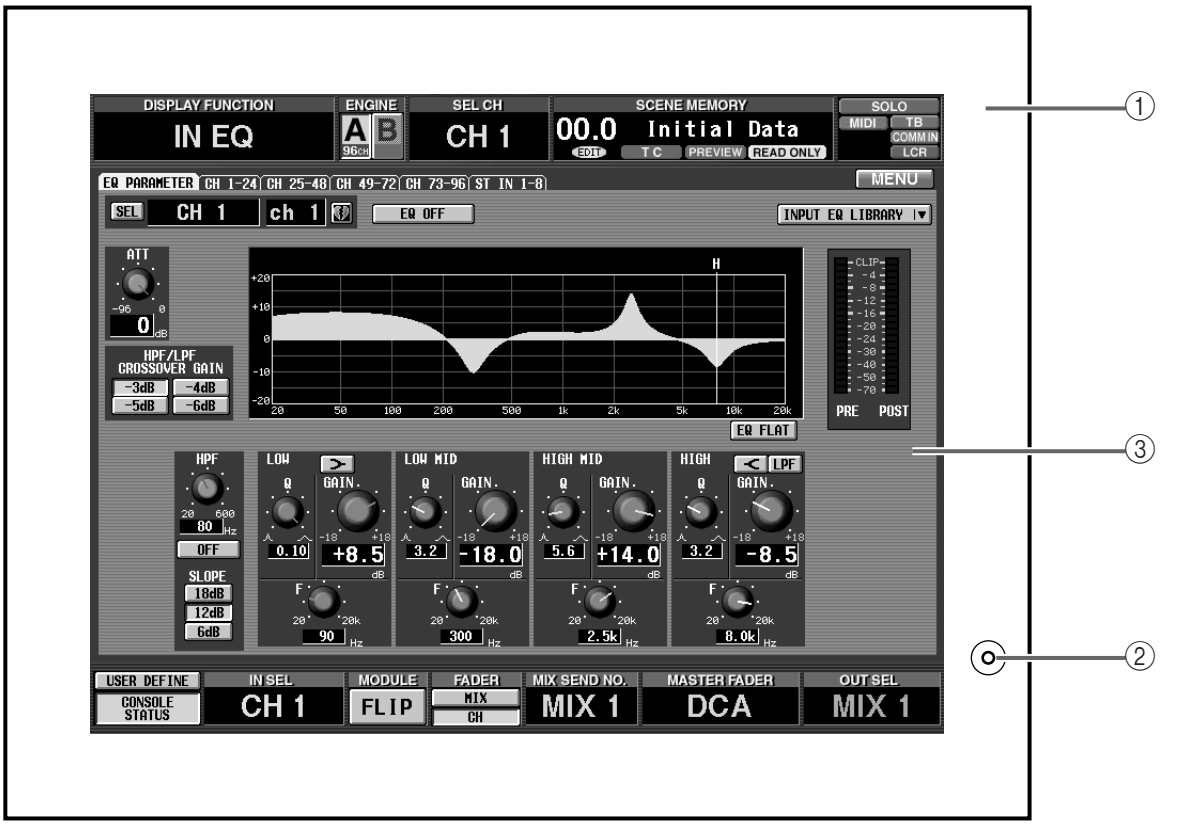
Signal flow for ST IN channels 1–8 {1–4}

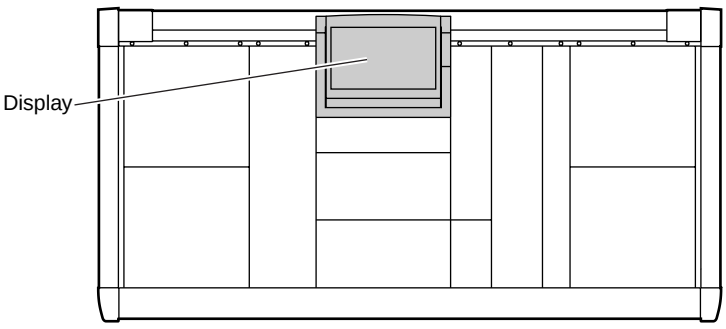


Display

[Function]

This screen displays the information needed to operate the PM1D system, and lets you make settings for the overall system and set MIX parameters for the input and output channels.





① **Frame**
By moving the upper part of this frame backward or forward, you can change the angle of the screen.

⚠ Before moving the CS1D, you must be sure to lower the display toward the back until it is fastened in position.

② **Brightness**
This adjusts the brightness of the screen. After setting the angle of the screen, adjust this for best visibility from your operating location.

③ **Screen**
Various parameters are displayed here, depending on the selected function. For the contents of each screen, refer to "CS1D Reference manual (Software)."

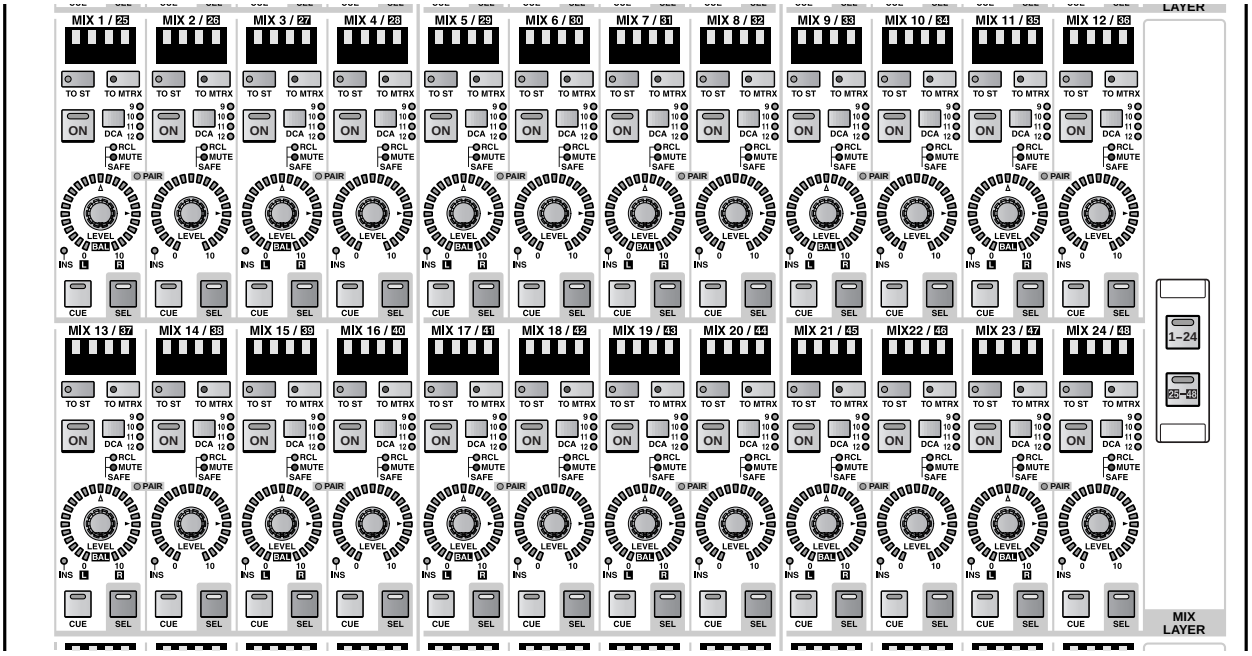
⚠ The LCD screen built into the CS1D has the following characteristics. Please be aware that even if the following symptoms occur, this is not a malfunction or a defect.

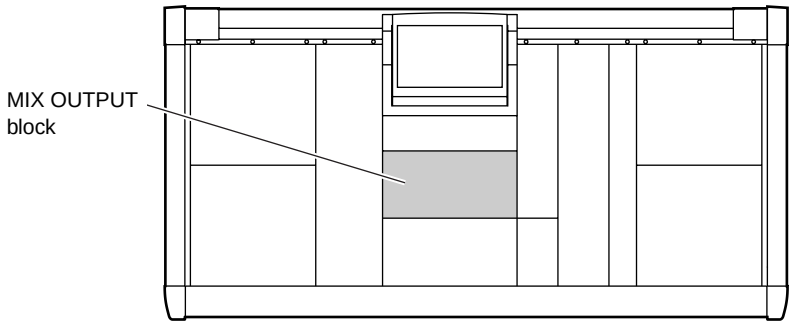
- Since the LCD display is manufactured with extremely delicate technology, individual pixels may not display correctly. (A pixel may be constantly lit or constantly dark.)
- The LCD screen may be affected by changes in the ambient temperature.
- Depending on the environment of use, you may notice unevenness in brightness or small spots.
- Since the LCD screen uses a cold cathode tube for a backlight, the state of the display will gradually change over time.

MIX OUTPUT block

[Function]

This block sets the level and on/off status of the signals sent from the input channels and ST IN channels to MIX buses 1–48, and outputs them to the output units patched to each MIX channel and to the STEREO bus and MATRIX buses.
This block also assigns MIX channels 1–48 to DCA faders.

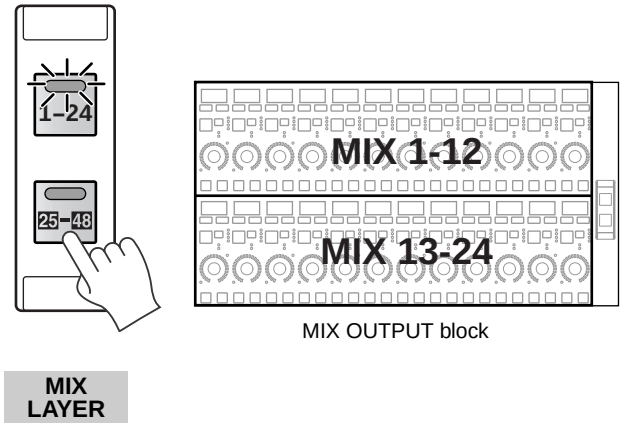


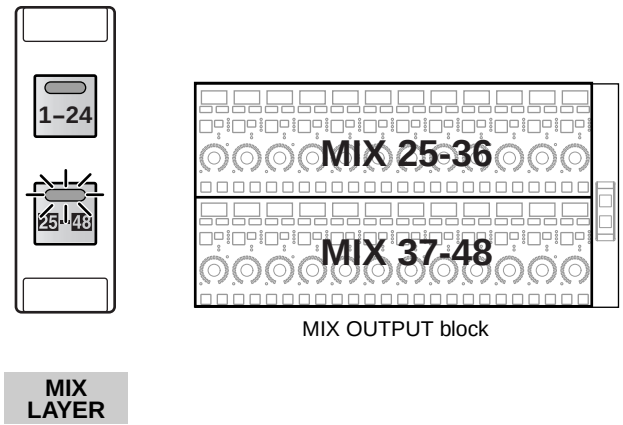


Channel assignments in the MIX OUTPUT block

The MIX channel section of the MIX OUPUT block contains a total of 24 MIX channel modules; 12 channels above and 12 channels below.
In the default state of the PM1D system, these modules are assigned to control MIX channels 1–24.
However in the MIX OUTPUT block MIX LAYER section, you can change this assignment as follows.

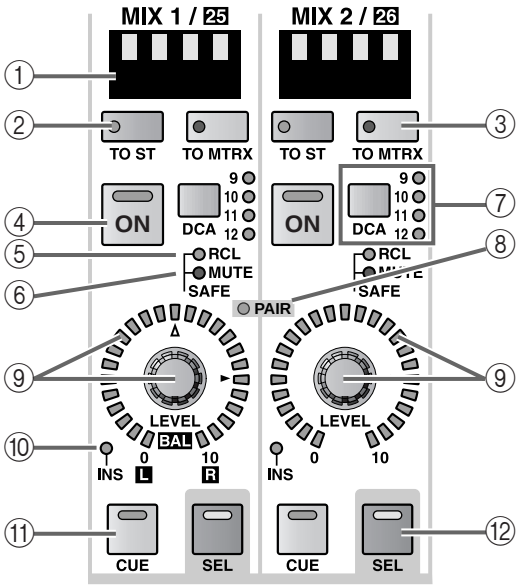
Using the MIX LAYER switches to change the MIX channel assignments





MIX channel section

In this section you can switch the on/off status and set the output level of each MIX channel 1–48.



① **MIX [NAME] indicator**
This displays the short name of the MIX channel.

The short name can be input in the display (OUT PATCH function NAME screen, etc.).

② **MIX [TO ST] switch and LED**
This is an on/off switch for the signal that is sent form the MIX channel to the STEREO bus. (The LED will light when this is on.)

③ **MIX [TO MTRX] switch and LED**
This is an on/off switch for the signal that is sent from the MIX channel to the MATRIX bus. (The LED will light when this is on.)

When this switch is off, no signal will be sent from that MIX channel to any MATRIX bus.

④ **MIX [ON] switch and LED**
This is the on/off switch for the MIX channel. (The LED will light when this is on.)

When this switch is off, a signal will not be sent to the channel of the output unit that is patched to the corresponding MIX channel.

Hint

Even if this switch is off, a signal can be sent from the MIX channel to a MATRIX bus or the STEREO bus. To do this, make settings in the display (MATRIX/ST function MATRIX/ST ROUTING screen) so that the signal is sent to the MATRIX buses or the STEREO bus from a point earlier than the MIX [ON] switch.

⑤ **MIX [RCL SAFE] LED**
This LED will light for MIX channels that are set to Recall Safe (a state in which the channel will be unaffected by scene recall operations).

The parameters of a MIX channel for which this LED is lit will not change even if a scene memory is recalled.

Recall Safe settings can be made in the SELECTED OUTPUT CHANNEL bolck or display (SCENE function RECALL SAFE screen).

⑥ **MIX [MUTE SAFE] LED**
This LED will light for MIX channels that are set to Mute Safe (a state in which the channel will be unaffected by mute group operations).

A MIX channel for which this LED is lit will be unaffected even if a mute group to which it belongs is muted.

Mute Safe settings can be made in the SELECTED OUTPUT CHANNEL block or display (OUT DCA/MUTE function MUTE GROUP ASSIGN screen).

⑦ **MIX [DCA] switch and LEDs**
This switch assigns the MIX channel to DCA groups 9–12.

When the MIX channel is assigned to a DCA group, the corresponding LED will light.

Hint

You can assign a single MIX channel to multiple DCA groups, and assign multiple MIX channels to a single DCA group.

[Procedure]

Assigning a MIX channel to a DCA group

1. **In the DCA GROUP block, press one of the [ASSIGN DCA] switches 9–12 to select a DCA group (9–12).**
2. **In the MIX OUTPUT block, press the MIX [DCA] switch of the MIX channel that you wish to assign to the above-selected DCA group.**
   The LED for that DCA group will light.

⚠

- DCA groups 9–12 can be used for either input channels or output channels. However, it is not possible to assign both inputs and outputs to the same DCA group. For this reason, if an input channel is already assigned to DCA group 9–12, attempting to assign an output channel will cause a message to be displayed, and you will not be able to do so.
- When a scene is recalled, the DCA group data of recall safe channels may be adjusted so that recall safe settings are consistent within DCA groups 9–12. Also when a channel library is recalled, the data recalled to a channel may be adjusted so that settings are consistent within DCA groups 9–12.

⑧ **MIX [PAIR] LED**
This LED will light if pairing has been selected for two adjacent odd and even-numbered channels (MIX channels 1/2, 3/4, ...) of MIX channels 1–48.

Pairing of MIX channels can be set/defeated using the MIX [SEL] switches (⑫), and in the display (PAN ROUTING function, etc.).

⑨ **MIX [LEVEL/BAL] encoder and LEDs**
This encoder sets the output level of the MIX channel 1–48 (the level of the signal that is sent to the output unit patched to that MIX channel)

The range is from – ∞ – +10 dB, and the approximate current value is shown by the perimeter LEDs.

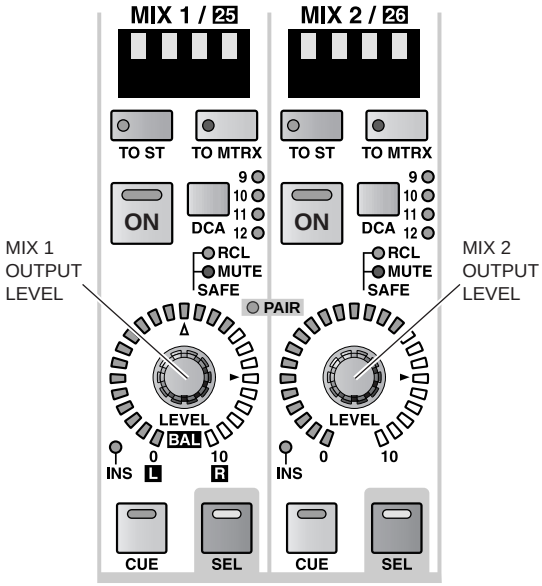
The LED at the ► mark will light to indicate nominal level (0 dB).

If two adjacent odd and even-numbered MIX channels are paired, the right (even-numbered) encoder will function as the MIX [LEVEL] encoder to set the common output level of the two channels, and the left (odd-numbered) encoder will function as the MIX [BAL] encoder to set the volume balance between the two channels.

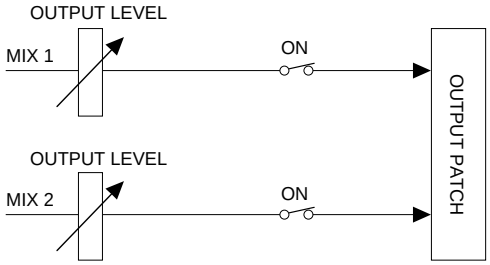
In this case as well, the approximate current value is shown by the perimeter LEDs.

Of the LEDs around the [BAL] encoder, the LED at the △ mark will light to indicate that the left/right balance is equal.

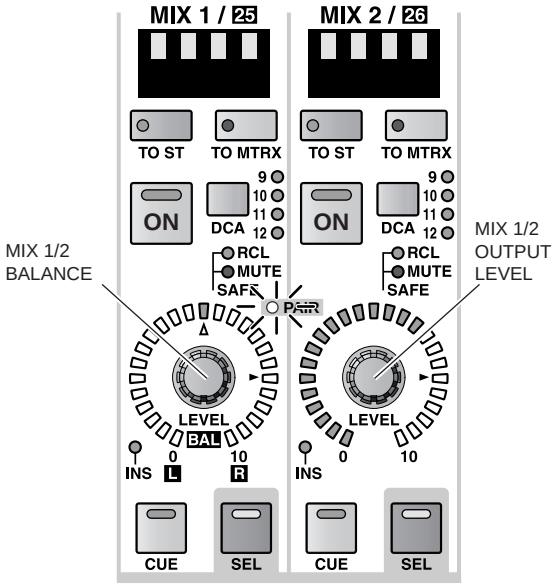
- **When MIX channels are not paired**

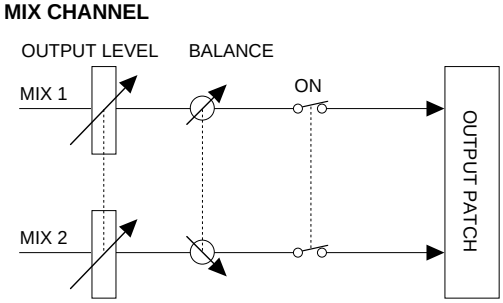


MIX CHANNEL



- **When MIX channels are paired**





⑩ **MIX [INS] LED**
This LED indicates the insertion status of the MIX channel.

When insertion is on, the switch LED will light, and the insert out/in point specified in the display (OUTPUT PATCH function INSERT PATCH screen) will be enabled.

⑪ **MIX [CUE] switch and LED**
This switch monitors the currently selected MIX channel.

When this switch is pressed, the PFL (pre-fader listen) or POST ON (after the [ON] switch) signal of the corresponding MIX channel will be sent to the CUE bus, and can be monitored from the CUE OUT jacks, MONITOR OUT jacks A, or PHONES jack.

The location of the signal that is sent to the CUE bus and the monitoring method can be switched from the console in the MASTER block CUE section, or in the display (MON/CUE function CUE/SOLO screen).

⑫ **MIX [SEL] switch and LED**
This switch selects the MIX channel that your operations will affect.

The MIX [SEL] LED of the currently selected MIX channel will light.

The MIX channel selected by this switch can be controlled in the SELECTED OUTPUT CHANNEL block.

It will also be reflected by the settings in the display.

Hint

If the selected MIX channel is paired, the MIX [SEL] LED of the other MIX channel of the pair will blink.

You can also use the MIX [SEL] switches to set/defeat pairing.

The MIX channel shown by the INPUT block MIX SEND [NAME] indicator and the MIX SEND [NUMBER] indicator will also follow the operation of the MIX [SEL] switch. (However, INPUT blocks whose [LOCAL] LED is lit are excepted.)

[Procedure]

Using the MIX [SEL] switches to set/defeat pairing of MIX channels

1. **For adjacent odd and even-numbered MIX channels, hold down one [SEL] switch and press the other [SEL] switch.**
The MIX [PAIR] LED will light, and the two MIX channels will be paired.

   The direction in which the channel parameters are copied will depend on the order in which the [SEL] switches are pressed. When creating a pair, the parameters of the channel you pressed first will be copied to the channel that you pressed later, and then the parameters will be linked.

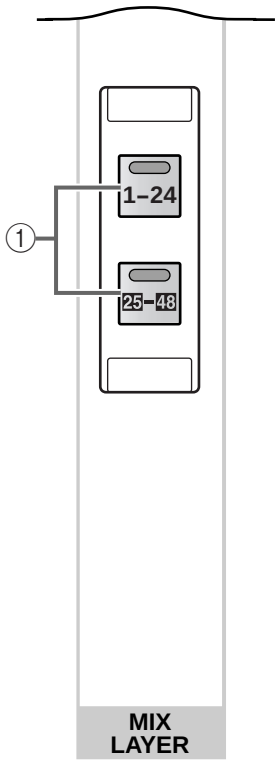
   For example if you wish to pair MIX 1 and MIX 2, hold down the MIX 1 [SEL] switch and press the MIX 2 [SEL] switch. The state of MIX 1 will be copied to MIX 2. For details on the parameters that are copied/linked for a pair, refer to "CS1D Reference Manual (Appendices)" (→p.45).

   If you wish to reset the parameters, do so from the screen.

2. **To defeat pairing, hold down the MIX [SEL] switch for one of the paired channels, and press the MIX [SEL] switch for the other channel.**

MIX LAYER section

In this section you can select the group of channels that will be controlled by the MIX channel section.



① **MIX LAYER [1–24]/[25–48] switches and LEDs**
These switches select the channels that will be controlled by the MIX channel section.

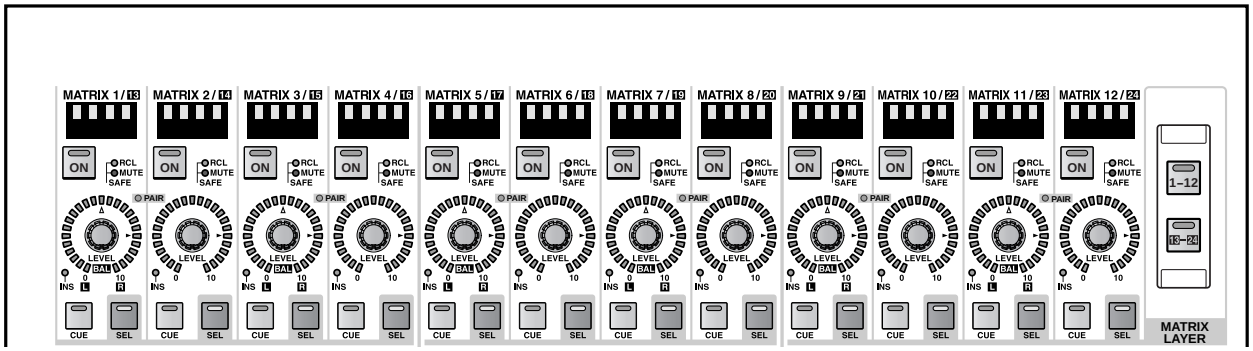
The channels controlled by the MIX channel section will change as follows, according to the switch that is turned on.

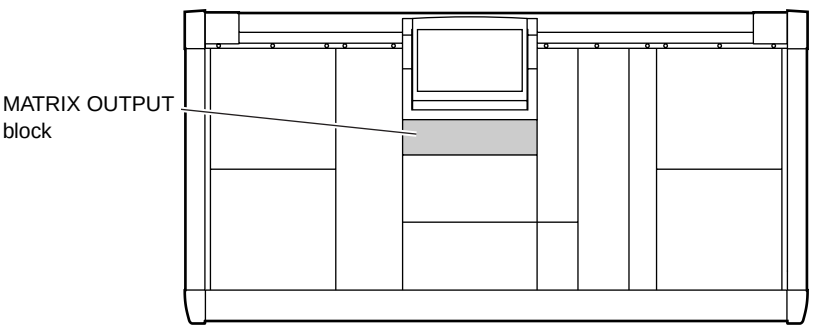
- **When the MIX LAYER [1–24] switch is on**
  MIX channels 1–24 will be controlled.
- **When the MIX LAYER [25–48] switch is on**
  MIX channels 25–48 will be controlled.

MATRIX OUTPUT block

[Function]

In this block you can set the level and on/off status of the signals that are sent from MIX channels 1–48, STEREO A, B channel, and SUB IN channels to MATRIX buses 1–24, and send them to the output unit that is patched to each MATRIX channel.

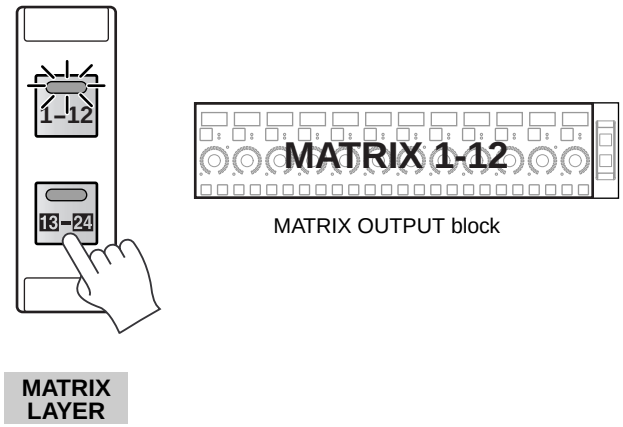


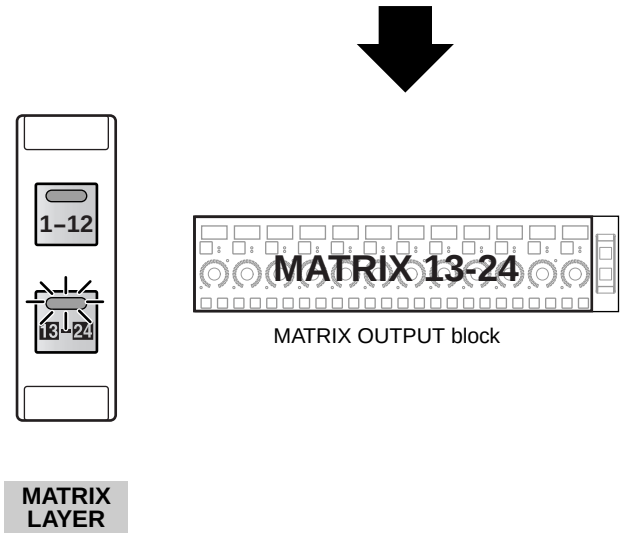


MATRIX OUTPUT block channel assignments

The MATRIX channel section of the MATRIX OUTPUT block contains 12 modules.
When the PM1D system is in its default state, these modules are assigned to control MATRIX channels 1–12.
However, these assignments can be changed as follows by an operation in the MATRIX LAYER section.

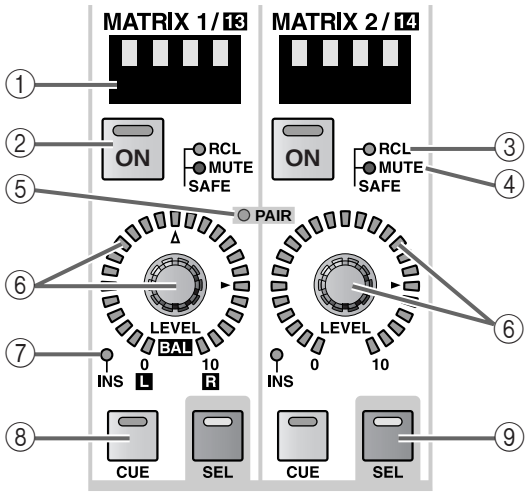
Using the MATRIX LAYER switches to change the MATRIX channel assignments





MATRIX channel section

In this section you can set the on/off status and output level of MATRIX channels 1–24.



① **MATRIX [NAME] indicator**
This displays the short name of the MATRIX channel.

The short name can be input in the display (OUT PATCH function NAME screen, etc.).

② **MATRIX [ON] switch and LED**
This is the on/off switch for the MATRIX channel. (The LED will light when this is on.)

When this switch is off, no signal will be sent to the channel of the output unit that is patched to the corresponding MATRIX channel.

③ **MATRIX SAFE [RCL] LED**
This LED will light if the MATRIX channel has been set to Recall Safe (a state in which the channel is unaffected by scene recall operations).

The parameters of a MATRIX channel for which this LED is lit will not change when a scene memory is recalled.

Recall Safe settings can be made in the SELECTED OUTPUT CHANNEL block or display (SCENE function RECALL SAFE screen).

④ **MATRIX SAFE [MUTE] LED**
This LED will light if the MATRIX channel has been set to Mute Safe (a state in which the channel is unaffected by mute group operations).

A MATRIX channel for which this LED is lit will not be affected even if a mute group to which it belongs is muted.

Mute Safe settings can be made in the SELECTED OUTPUT CHANNEL block or display (OUT DCA/MUTE function MUTE GROUP ASSIGN screen).

⑤ **MATRIX [PAIR] LED**
This LED will light when two adjacent odd and even-numbered MATRIX channels 1–24 are paired (i.e., MATRIX channels 1/2, 3/4, ...).

MATRIX channel pairing can be set or defeated from the console by using the MATRIX [SEL] switches (⑨), or in the display (MATRIX/ST function, etc.).

⑥ **MATRIX [LEVEL/BAL] encoder and LEDs**
This encoder sets the output level of the MATRIX channel 1–24 (the level of the signal that is sent to the output unit patched to that MATRIX channel)

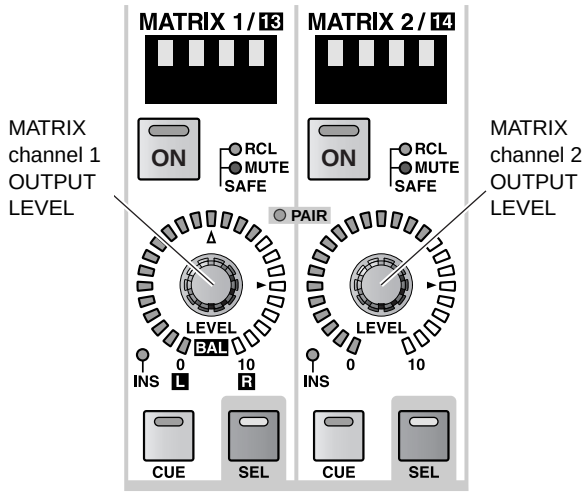
The range is from – ∞ – +10 dB, and the approximate current value is shown by the perimeter LEDs.

The LED at the ► mark will light to indicate nominal level (0 dB).

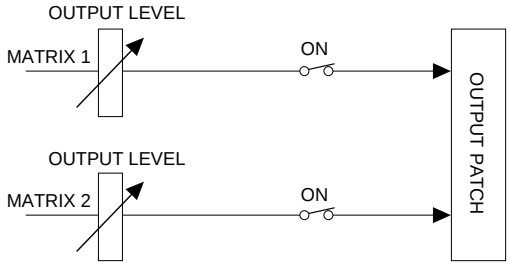
If two adjacent odd and even-numbered MATRIX channels are paired, the right (even-numbered) encoder will function as the MATRIX [LEVEL] encoder to set the common output level of the two channels, and the left (odd-numbered) encoder will function as the MATRIX [BAL] encoder to set the volume balance between the two channels.

In this case as well, the approximate current value is shown by the perimeter LEDs. Of the LEDs around the [BAL] encoder, the LED at the △ mark will light to indicate that the left/right balance is equal.

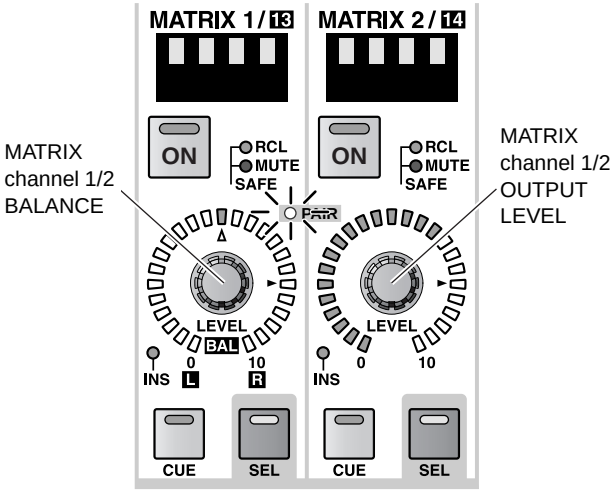
• **When MATRIX channels are not paired**



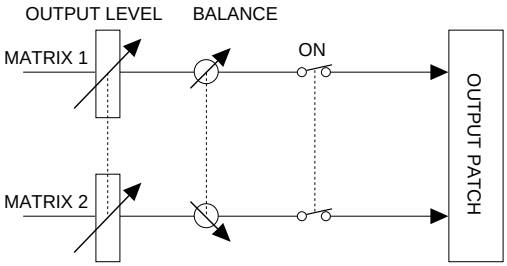
MATRIX CHANNEL



• **When MATRIX channels are paired**



MATRIX CHANNEL



⑦ **MATRIX [INS] LED**
This LED indicates the insertion on/off status for the MATRIX channel.

When insertion is on, the LED will light, and the insert out/in point specified in the display (OUTPUT PATCH function INSERT PATCH screen) will be enabled.

⑧ **MATRIX [CUE] switch and LED**
This switch monitors the currently selected MATRIX channel.

When this switch is pressed, the PFL (pre-fader listen) or POST ON (after the [ON] switch) signal of the corresponding MATRIX channel will be sent to the CUE bus, and can be monitored from the CUE OUT jacks, MONITOR OUT jacks A, or PHONES jack.

The location of the signal that is sent to the CUE bus and the monitoring method can be switched from the console in the MASTER block CUE section, or in the display (MON/CUE function CUE/SOLO screen).

⑨ **MATRIX [SEL] switch and LED**
This switch selects the MATRIX channel that your operations will affect. The MATRIX [SEL] LED of the currently selected MATRIX channel will light.

The MATRIX channel selected by this switch can be controlled in the SELECTED OUTPUT CHANNEL block.

It will also be reflected by the settings in the display.

Hint

If the selected MATRIX channel is paired, the MATRIX [SEL] LED of the other MATRIX channel of the pair will blink.

You can also use the MATRIX [SEL] switches to set/defeat pairing.

[Procedure]

Using the MATRIX [SEL] switches to set/defeat pairing of MATRIX channels

1. **For adjacent odd and even-numbered MATRIX channels, hold down one [SEL] switch and press the other [SEL] switch.**
   The direction in which the channel parameters are copied will depend on the order in which the [SEL] switches are pressed. When creating a pair, the parameters of the channel you pressed first will be copied to the channel that you pressed later, and then the parameters will be linked.

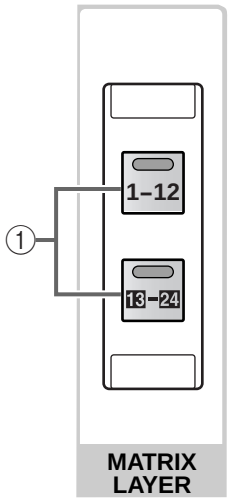
   For example if you wish to pair MATRIX 1 and MATRIX 2, hold down the MATRIX 1 [SEL] switch and press the MATRIX 2 [SEL] switch. The state of MATRIX 1 will be copied to MATRIX 2. For details on the parameters that are copied/linked for a pair, refer to "CS1D Reference Manual (Appendices)" (→p.45).

   If you wish to reset the parameters, do so from the screen.

2. **To defeat pairing, hold down the MATRIX [SEL] switch for one of the paired channels, and press the MATRIX [SEL] switch for the other channel.**

MATRIX LAYER section

In this section you can select the group of channels that will be controlled by the MATRIX channel section.



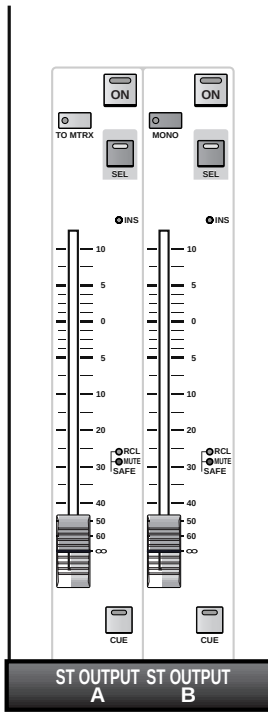
① **MATRIX LAYER [1–12]/[13–24] switches and LEDs**
The channels controlled by the MATRIX channel section will change as follows, according to the switch that is turned on.

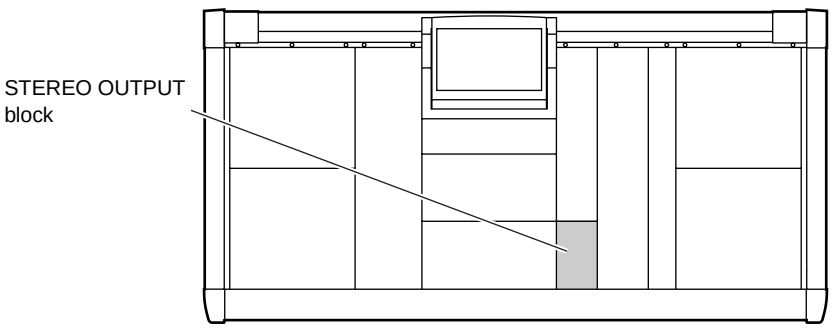
- **When the MATRIX LAYER [1–12] switch is on**
  MATRIX channels 1–12 will be controlled.
- **When the MATRIX LAYER [13–24] switch is on**
  MATRIX channels 13–24 will be controlled.

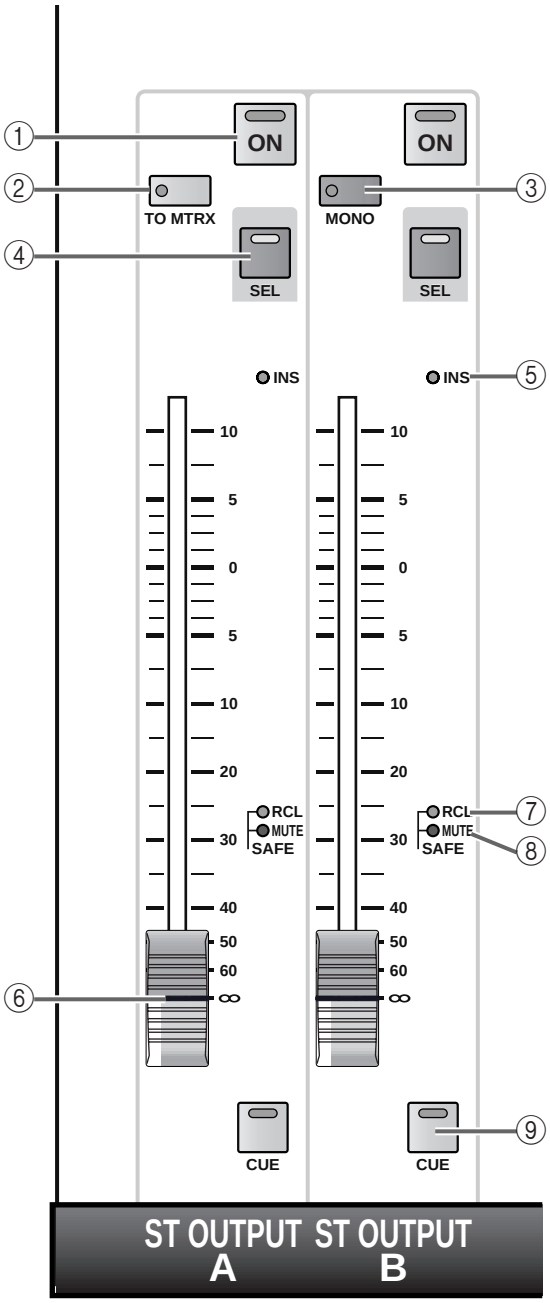
STEREO OUTPUT block

[Function]

This block mixes the signals that are sent from the input channels and the output channels to the STEREO bus, and sends them to the output units that are patched to the STEREO A/B channels. If you are using the PM1D system is used in LCR mode and the CENTER BUS CONTROL button is turned on in the LCR screen of the PAN/ROUTING function or the MATRIX/ST function, the CENTER bus signal will be output from the STEREO B channel. In this case, the STEREO B channel will function as a control channel for the CENTER bus.







① **STEREO [ON] switch and LED**
This is the on/off switch for the STEREO A/B channel. (The LED will light when this is on.)

If this switch is off, no signal will be sent to the channel of the output unit that is patched to the respective STEREO channel.

If you are using the PM1D system in LCR mode so that the STEREO B channel controls the signal of the CENTER bus, the [ON] switch of the STEREO B channel will function as the on/off switch for the CENTER bus.

② **STEREO A [TO MTRX] switch and LED (STEREO A channel only)**
This is the on/off switch for the signal that is sent from the STEREO A channel to the MATRIX buses. (The LED will light when this is on.)

If this switch is off, no signal will be sent from the STEREO A channel to any MATRIX bus.

⚠ When the STEREO A [TO MTRX] switch is on, you can use the knobs in the display (MATRIX/ST function MATRIX/ST ROUTING screen) to set the send levels of the signals that are sent from the STEREO A channel to MATRIX buses 1–24.
Note that these send level settings can be made only in the display.

③ **STEREO B [MONO] switch and LED (STEREO B channel only)**
This switch selects monaural or stereo output for the STEREO B channel.

When the LED is lit, the output of the STEREO B channel will be monaural, and the same signal will be output to the channels of the output units that are patched to STB (L) and STB (R).

In this case, the signals of the left and right channels will be mixed with a 3 dB attenuation.

Hint

The signal that is sent from STEREO B to the MATRIX bus can be switched on/off in the LCD screen.

④ **STEREO [SEL] switch and LED**
This switch selects the STEREO A/B channel to which your operations will apply.

When you press this switch, the STEREO A or STEREO B channel can be controlled in the SELECTED OUTPUT CHANNEL block.

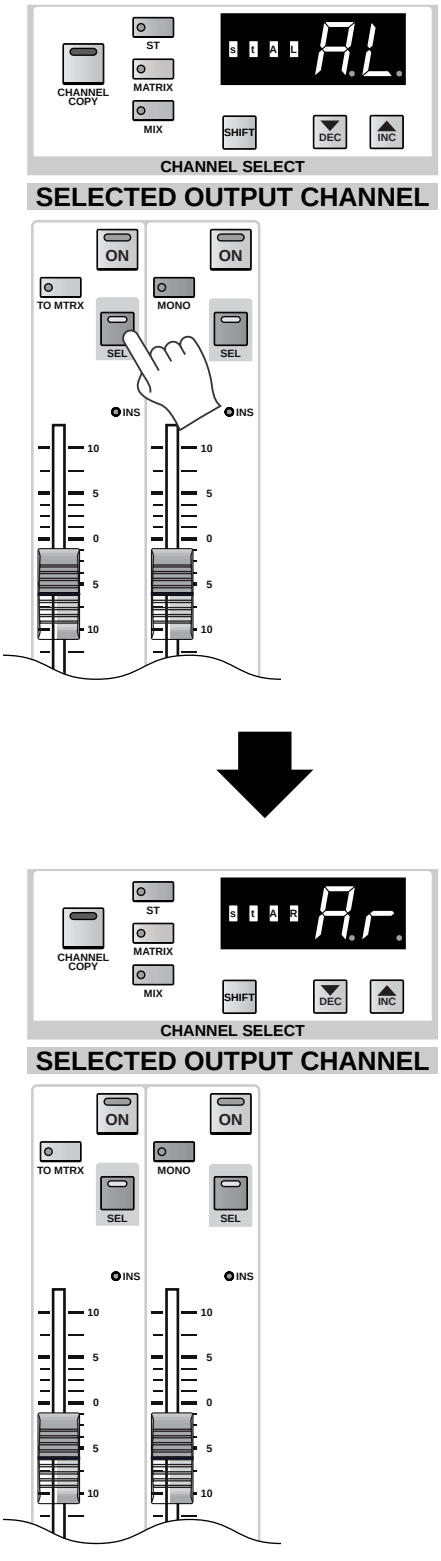
This will also be reflected by the settings in the display.

Hint

Each time you repeatedly press the STEREO [SEL] switch, you will alternate between the L channel and R channel of STEREO A or STEREO B.
For example if you repeatedly press the STEREO A channel [SEL] switch, the CHANNEL SELECT [NUMBER] indicator of the SELECTED OUTPUT CHANNEL block will alternately display "AL" and "Ar."

However since all parameters except for DELAY parameters are linked for the STEREO A/B channels, you will probably not often need to switch between L and R channels.

- **Using the STEREO A channel [SEL] switch to alternate between L and R channels**



⑤ **STEREO [INS] LED**
This LED indicates the insertion on/off status of the STEREO A/B channel.

When insertion is on, the switch LED will light, and the insert out/in points specified in the display (OUTPUT PATCH function INSERT PATCH screen) will be enabled.

⑥ **STEREO fader**
This is a 100 mm fader that adjusts the output level of the STEREO A/B channel.

The range is – ∞ dB – +10 dB.

If you are using the PM1D system in LCR mode so that the STEREO B channel controls the signal of the CENTER bus, the STEREO B channel fader will control the output level of the CENTER bus.

⑦ **STEREO SAFE [RCL] LED**
This LED will light if the STEREO A/B channel is in Recall Safe mode (a condition in which the channel will be unaffected by scene recall operations).

The parameters of a channel whose LED is lit will not change even if a scene memory is recalled.

Recall Safe settings can be made in the SELECTED OUTPUT CHANNEL block or in the display (SCENE function RECALL SAFE screen).

⑧ **STEREO SAFE [MUTE] LED**
This LED will light if the STEREO A/B channel is in Mute Safe mode (a condition in which the channel will be unaffected by mute group operations).

A channel whose LED is lit will not be affected if a mute group to which it belongs is muted.

Mute Safe settings can be made in the SELECTED OUTPUT CHANNEL block or in the display (OUT DCA/MUTE function MUTE GROUP ASSIGN screen).

⑨ **STEREO [CUE] switch and LED**
This switch monitors the STEREO A/B channel.

When you press this switch, the PFL (pre-fader listen) or POST ON (after the [ON] switch) signal of the corresponding channel will be sent to the CUE bus, and can be monitored from the CUE OUT jacks, MONITOR OUT jacks A, and PHONES jack.

The location of the signal sent to the CUE bus and the monitoring method can be selected from the CUE section of the console, or in the display (MON/CUE function CUE/SOLO screen).

For details on the signal flow of the STEREO A/B channels, refer to the block diagram on page 68.

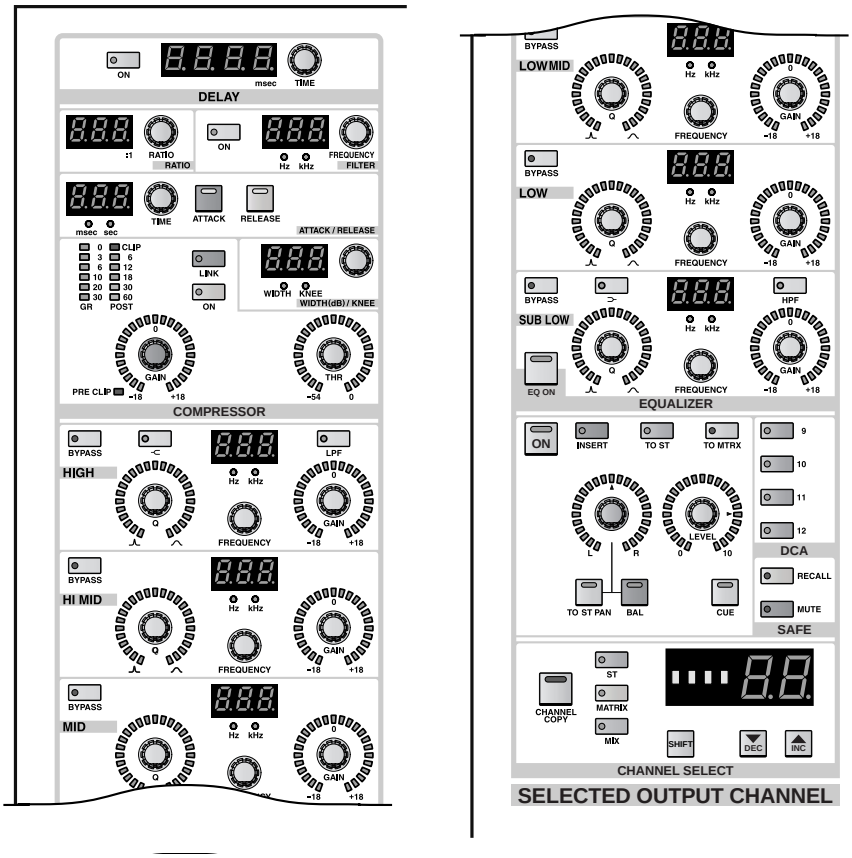
SELECTED OUTPUT CHANNEL block

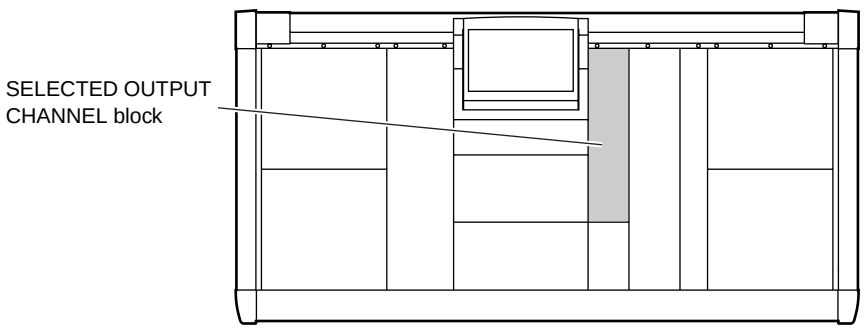
[Function]

In this block you can set and view the parameters of the currently selected input channel (MIX channel, MATRIX channel, L or R channels of STEREO A/B).

Hint

If desired, you can cause the corresponding screen to automatically appear when you operate this block. This setting is made in the UTILITY function PREFERENCE screen.





[Procedure]

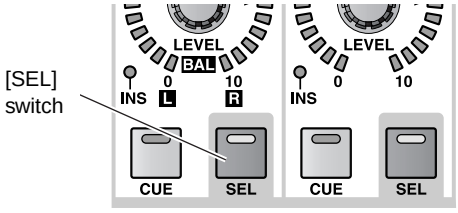
Selecting a channel

The channel to be controlled by the SELECTED OUTPUT CHANNEL block can be selected in the following ways.

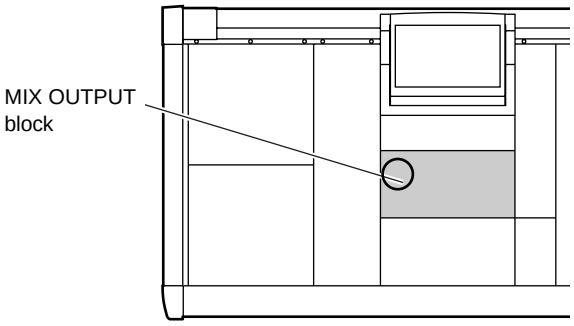
1. **Using the [SEL] switch**
   You can use the following [SEL] switches to directly select the desired output channel.

   The [SEL] switch LED of the currently selected channel will light.

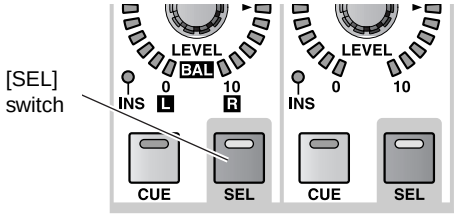
   - **MIX OUTPUT block MIX [SEL] switch**
     Selects a MIX channel 1–48.



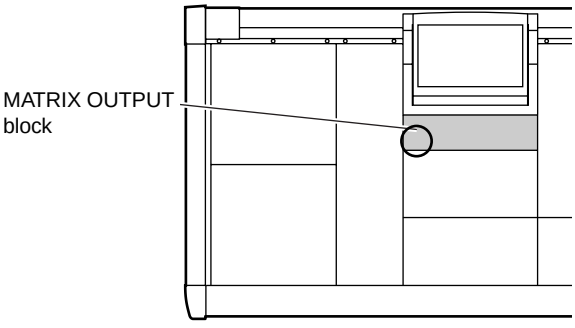
MIX OUTPUT block



   - **MATRIX OUTPUT block MATRIX [SEL] switch**
     Selects a MATRIX channel 1–24.

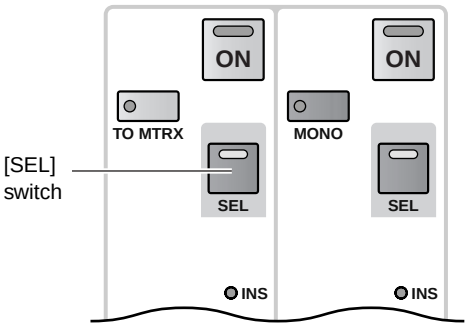


MATRIX OUTPUT block

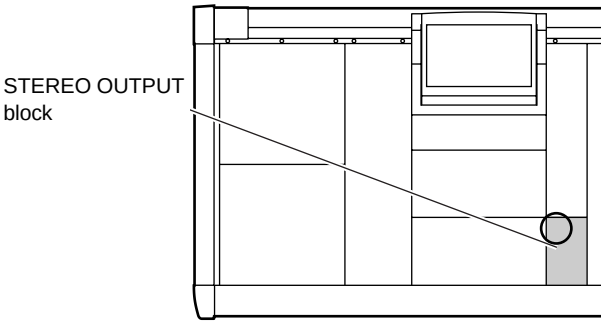


   - **STEREO OUTPUT block STEREO [SEL] switch**
     Selects the L channel or R channel of STEREO A/B.

     If you repeatedly press the same STEREO [SEL] switch, you will cycle between the L and R of that channel.



STEREO OUTPUT block



2. **Using the SELECTED OUTPUT CHANNEL block**
   You can use the CHANNEL SELECT [ST]/[MATRIX]/[MIX] switches of the SELECTED OUTPUT CHANNEL block to select the desired channel group (STEREO A/B, MATRIX, MIX), and then use the CHANNEL SELECT [▼/DEC]/[▲/INC] switches to step through the channels consecutively.

   These switches will operate as follows.

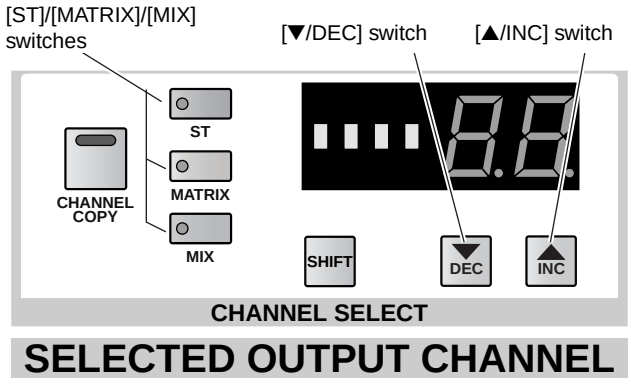
   - **CHANNEL SELECT [ST] switch**
     The channel that was last selected for STEREO will be selected.
   - **CHANNEL SELECT [MATRIX] switch**
     The channel that was last selected for MATRIX will be selected.
   - **CHANNEL SELECT [MIX] switch**
     The channel that was last selected for MIX will be selected.
   - **CHANNEL SELECT [▲/INC] switch**
     The number following the currently selected channel will be selected.

     If the highest-numbered channel is selected, you will move to the first channel in the same group.
   - **CHANNEL SELECT [▼/DEC] switch**
     The number preceding the currently selected channel will be selected.

     If the first-numbered channel is selected, you will move to the last channel in the same group.

     The [ST]/[MATRIX]/[MIX] switch LEDs will indicate the group of the currently selected channel.

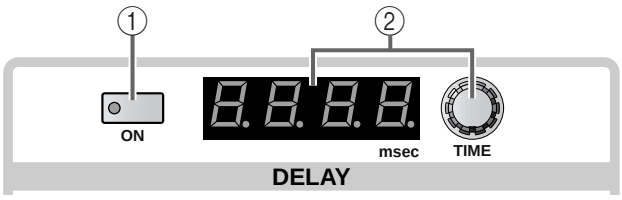
     The CHANNEL SELECT [NAME] indicator and CHANNEL SELECT [NUMBER] indicator located at the right of the switch will indicate the channel number and short name of the currently selected channel.



SELECTED OUTPUT CHANNEL block

DELAY section

In this section you can make settings for the internal delay function.



① **DELAY [ON] switch and LED**
This is the on/off switch for the delay of the selected channel.

When this is on, the switch LED will light, and the input signal will be delayed by the delay time shown in the DELAY TIME [VALUE] indicator (②).

② **DELAY [TIME] encoder and [VALUE] indicator**
The DELAY [TIME] encoder sets the delay time of the selected output channel.

The current delay time will be displayed in the DELAY TIME [VALUE] indicator in millisecond units.

The delay time range is 0 msec – 1000 msec

Hint

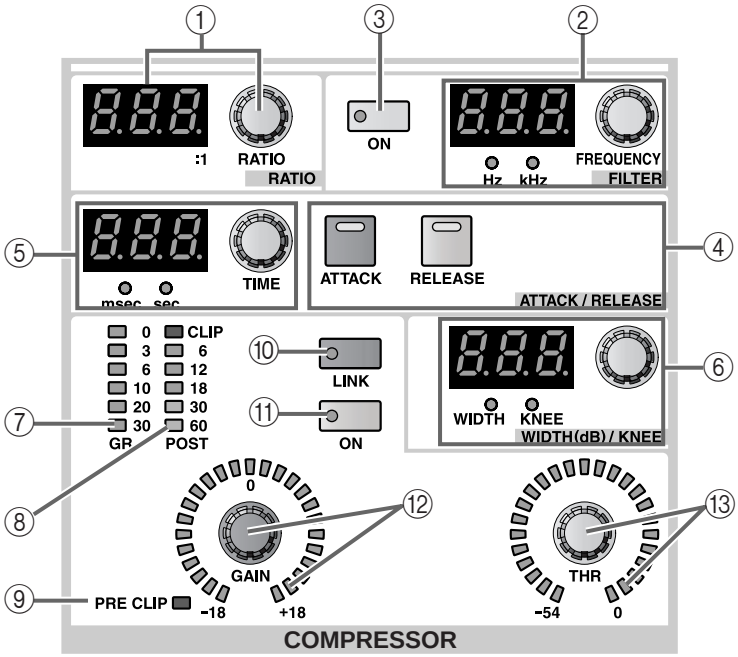
The output channel delay function provides a useful way to compensate for time differences between speakers placed at distant locations.

Even if the internal clock on which the PM1D system operates is switched from 48 kHz to 44.1 kHz (or the opposite), the delay time will not change. However while a PM1D system is synchronized to a word clock supplied from an external device, the displayed time and the actual delay time may differ if the word clock frequency is changed using vari-pitch.

⚠ If you have selected one channel of two paired MIX/MATRIX channels, or the L or R channel of a STEREO channel, the parameters of the DELAY section can be set independently for each channel. If you adjust the delay time here, decimal places that are not subsequently displayed will be rounded off.

COMPRESSOR section

In this section you can make settings for the internal compressor.
All parameters can be controlled from the top panel except for compressor library store/recall operations, compressor type selection, and key-in signal selection.



① **COMPRESSOR [RATIO] encoder and [VALUE] indicator**
This sets the ratio of the internal compressor.

When the compressor type is set to COMP or EXPANDER, the range is 1:1– ∞:1 (16 steps). When the compressor type is set to COMPANDER, the range is 1:1–20:1 (15 steps).

② **COMPRESSOR FILTER [FREQUENCY] encoder and [VALUE] indicator and [Hz]/[kHz] LEDs**
This sets the cutoff frequency of the HPF or LPF that is placed in the first stage of the internal compressor.

The range is 20 Hz – 20 kHz (121 steps).

The current value is shown in the [VALUE] indicator. (Either the [Hz] or [kHz] LED will light to indicate the units of the displayed value.)

The selection of HPF or LPF is made in the display (OUT COMP function COMP PRM screen).

Hint

HPF and LPF cannot be used simultaneously.
If COMP is selected as the internal compressor type, selecting HPF will allow it to function as a "de-esser."

③ **COMPRESSOR FILTER [ON] switch and LED**
This is an on/off switch for the HPF or LPF that is placed in the first stage of the internal compressor.

④ **COMPRESSOR [ATTACK]/[RELEASE] switches and LEDs**
These switches select the function of the ATTACK/RELEASE [TIME] encoder (⑤) located to the left of the switches.

- **When the COMPRESSOR [ATTACK] LED is lit,** the ATTACK/RELEASE [TIME] encoder will set the ATTACK (attack time)
- **When the COMPRESSOR [RELEASE] LED is lit,** the ATTACK/RELEASE [TIME] encoder will set the RELEASE (release time)

⑤ **COMPRESSOR ATTACK/RELEASE [TIME] encoder, [VALUE] indicator, and [msec]/[sec] LEDs**
This encoder adjusts the ATTACK (attack time) or RELEASE (release time) of the internal compressor, according to the setting of the COMPRESSOR [ATTACK]/[RELEASE] switches (④).

The attack time range is 0 msec – 120 msec . The release time range is 5 msec – 42.3 sec.

The current value is shown in the [VALUE] indicator. (Either the [msec] or [sec] LED will light to indicate the units of the displayed value.)

⑥ **COMPRESSOR WIDTH (dB)/KNEE encoder, [VALUE] indicator, and [WIDTH]/[KNEE] LEDs**
The function of this encoder will depend on the currently selected compressor type.

- **When the compressor type is COMP or EXPANDER**
  The encoder will set the KNEE parameter of the COMP or EXPANDER. (The [KNEE] LED will light.)

  You can select from SOFT 1–SOFT 5, or HARD.
- **When the compressor type is COMPANDER**
  The encoder will set the WIDTH parameter of the COMPANDER.

  The range is 1 dB – 90 dB.

⑦ **COMPRESSOR [GR] meter LEDs**
This meter displays the amount of gain reduction caused by the compressor.

Hint

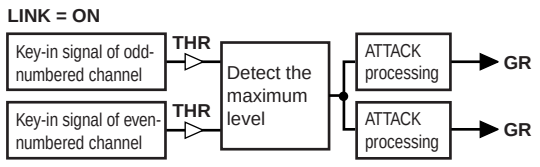
In the UTILITY function PREFERENCE screen you can specify whether the GR meter display will be linked with the compressor on/off setting. If linking is on, the GR meter will be displayed only when the compressor is on; the meter will not be displayed when the compressor is off. If linking is turned off, the GR meter will always be displayed.

⑧ **COMPRESSOR [POST] meter LEDs**
This meter indicates the signal level after the compressor.

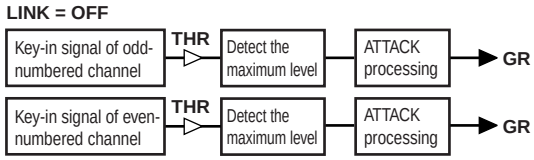
⑨ **COMPRESSOR [PRE CLIP] LED**
This LED will light when the signal has clipped before passing through the compressor.

⑩ **COMPRESSOR [LINK] switch and LED**
This specifies whether the compressors of adjacent odd-numbered and even-numbered MIX channels or MATRIX channels will be linked by their key-in signals (link = on), or will operate using independent key-in signals (link = off). (The LED will light when link is on.)

- **Key-in signal flow when link=on**



- **Key-in signal flow when link=off**



⚠ Linking will occur only if channels of the same COMPRESSOR type are linked. If channels with differing types are linked, the operation will be the same as if link is off.
Be careful not to confuse "compressor linking" with "input channel pairing."

When compressor link is on, the compressor operation will simply be linked by the key-in signal; the compressor parameters themselves will remain independent for each channel.

If output channels are paired, compressor link will automatically be on, and the various compressor parameters will also be linked. However, you are free to turn linking off again if desired.

For the STEREO A/B channels, the compressor parameters of the left and right channels are always linked. However, you are free to turn link on/off if you wish.

⑪ **COMPRESSOR [ON] switch and LED**
This is the on/off switch for the internal compressor.

The LED will light when the compressor is on.

⑫ **COMPRESSOR [GAIN] encoder and LEDs**
This encoder sets the GAIN parameter of the internal compressor.

The perimeter LEDs show the approximate current value.

When the type is COMP/EXPANDER, the range is 0 dB – +18 dB (0.5 dB steps). When the type is COMPANDER, the range is –18 dB – 0 dB (0.5 dB steps).

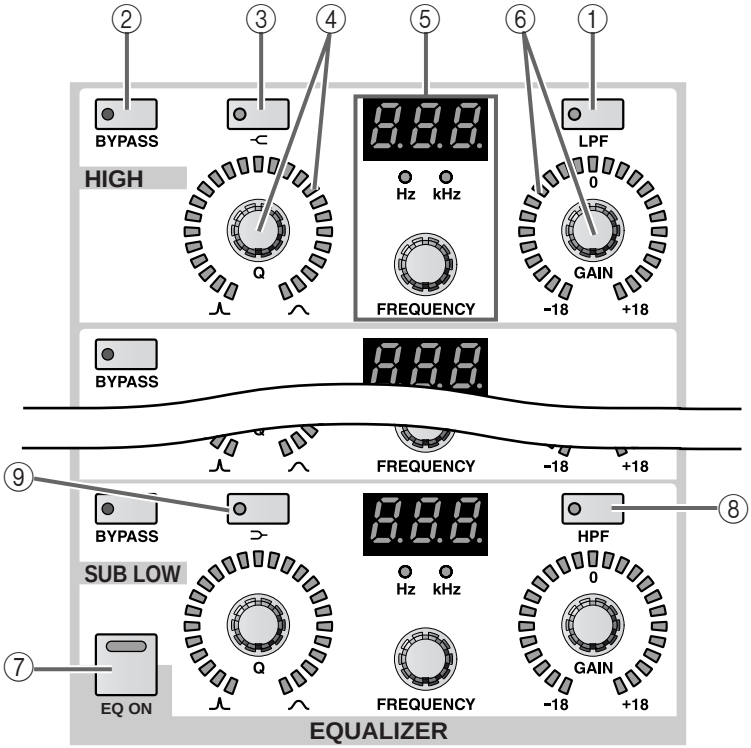
⑬ **COMPRESSOR [THR] encoder and LEDs**
This encoder sets the THRESHOLD LEVEL parameter of the internal compressor.

The perimeter LEDs show the approximate current value.

The range is –54 dB – 0 dB (1 dB steps).

EQUALIZER section

This section sets the internal six-band EQ (HIGH, HIGH MID, MID, LOW MID, LOW, SUB LOW). Of the six bands, HIGH and SUB LOW EQ can be switched between shelving and peaking types. In addition, the HIGH band can function as an LPF, and the SUB LOW can function as an HPF.



① **EQ [LPF] switch and LED (HIGH band only)**
This switch changes the HIGH band EQ type to LPF.

When LPF is selected, the switch LED will light.

In this case, the [Q]/[GAIN] encoders of the HIGH band will have no effect, and the perimeter LEDs will be displayed.

② **EQ [BYPASS] switch and LED**
This switch bypasses each EQ band.

When bypassed, the switch LED will light.

③ **EQ [⊂] switch and LED (HIGH band only)**
This switch changes the HIGH band to high-shelving.

The switch LED will light when high-shelving is selected.

In this case, the HIGH band [Q] encoder will have no effect, and the perimeter LEDs will be displayed.

④ **EQ [Q] encoder and LEDs**
This encoder sets the Q (steepness) of each band.

Rotating it toward the right will make the Q gentler, and rotating it toward the left will make the Q sharper.

The range is 10.0–0.10 (41 steps) for each band.

The current approximate value is shown by the perimeter LEDs.

⑤ **EQ [F] encoder, [VALUE] indicator, and [Hz]/[kHz] LEDs**
This encoder sets the center frequency of each band.

The range is 20 Hz – 20 kHz (121 steps) for each band.

The current value is shown by the [VALUE] indicator, and either the [Hz] or [kHz] indicators will light to indicate the units of the displayed value.

⑥ **EQ [GAIN] encoder and LEDs**
This encoder sets the gain of each band.

The range is –18 dB – +18 dB (0.5 dB units), and the approximate value is shown by the perimeter LEDs.

⑦ **[EQ ON] switch**
This switch turns the entire equalizer on/off.

The switch LED will light when the EQ is on.

⑧ **EQ [HPF] switch and LED (SUB LOW band only)**
This switch changes the SUB LOW band EQ type to HPF.

The switch LED will light when HPF is selected. In this case, the [Q]/[GAIN] encoders of the SUB LOW band will have no function.

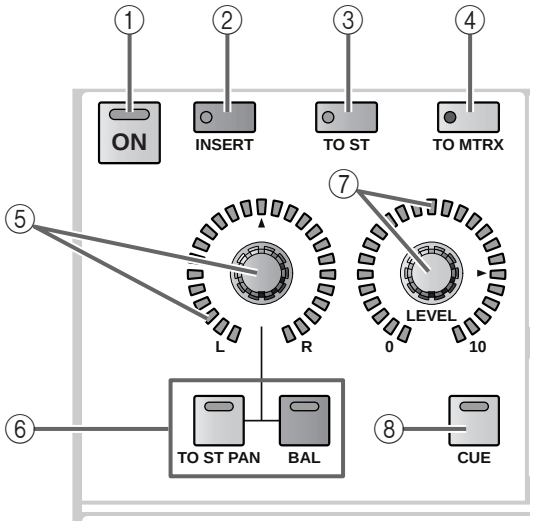
⑨ **EQ [⊃] switch & LED (SUB LOW band only)**
This switch changes the SUB LOW band EQ type to low shelving.

When you switch the type to low shelving, the switch LED will light.

In this case, the SUB LOW band [Q] encoder will have no function, and its peripheral LEDs will go dark.

OUTPUT section

This section switches the currently selected output channel on/off, and adjusts the pan/balance and level of the output signal.



① **OUTPUT [ON] switch and LED**
This switch turns the currently selected channel on/off. (When on, the LED will light.)

② **OUTPUT [INSERT] switch and LED**
This switch turns insertion on/off for the currently selected channel.

When insertion is on, the switch LED will light, and the insert out/in points specified in the display (OUTPUT PATCH function INSERT PATCH screen) will be enabled.

⚠ If the [INSERT] switch is turned on when the insert out/in points are not patched to appropriate jacks, it is possible that no signal will be output from the channel of the output unit patched to that channel. Please use caution.

③ **OUTPUT [TO ST] switch and LED**
When a MIX channel is selected, this is an on/off switch for the signal sent from that MIX channel to the STEREO bus. (When on, the LED will light.)

This is linked to the MIX [TO ST] switch of the MIX OUTPUT block.

⚠ This switch is valid only if a MIX channel is selected in the SELECTED OUTPUT CHANNEL block.

④ **OUTPUT [TO MTRX] switch and LED**
When the STEREO A, B channel or a MIX channel 1–48 is selected, this is an on/off switch for the signal sent from that channel to the MATRIX bus. (When on, the LED will light.)

When this switch is off, no signal can be sent from that channel to any MATRIX bus.

This is linked with the MIX OUTPUT block MIX [TO MTRX] switch and the STEREO OUTPUT block STEREO A [TO MTRX] switch.

The send level settings can be made in the display.

⚠ This switch is valid only when the STEREO A, B channel or a MIX channel is selected in the SELECTED OUTPUT CHANNEL block.

⑤ **OUTPUT [PAN/BAL] encoder and LEDs**
This encoder adjusts the pan or balance, according to the group or pair on/off status of the currently selected output channel.

The approximate current setting is shown by the perimeter LEDs.

⑥ **OUTPUT [TO ST PAN]/[BAL] switches and LEDs**
These LEDs will be lit or dark to indicate the function controlled by the OUTPUT [PAN/BAL] encoder (⑤).

(A) **When the OUTPUT [TO ST PAN]/[BAL] LEDs are dark**
The OUTPUT [PAN/BAL] encoder will have no effect.

This will be the state when an unpaired MATRIX channel is selected in the SELECTED OUTPUT CHANNEL block.

(B) **When the OUTPUT [TO ST PAN] LED is lit**
The OUTPUT [PAN/BAL] encoder will adjust the pan of the signal sent from the MIX channel to the STEREO bus.

This will be the state when a MIX channel is selected in the SELECTED OUTPUT CHANNEL block for that MIX channel.

(C) **When the OUTPUT [BAL] LED is lit**
The OUTPUT [PAN/BAL] encoder will adjust the volume balance of the paired output channels (or of the L/R channels of STEREO A/B).

This will be the state when a paired MIX/MATRIX channel or the STEREO A/B channel is selected in the SELECTED OUTPUT CHANNEL block.

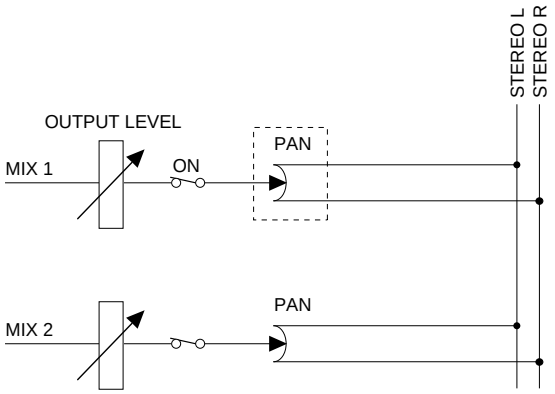
Normally, the OUTPUT [TO ST PAN]/[BAL] switch LED will automatically be lit or dark depending on the type or pair on/off status of the currently selected output channel.

However, only if a paired MIX channel is selected and the OUTPUT [TO ST] switch (③) is turned on for those MIX channels, the OUTPUT [PAN/BAL] encoder can be used for either of the above-listed functions (B) and (C).

In this case, you yourself will need to press the [TO ST PAN] switch or [BAL] switch to specify the function controlled by the encoder.

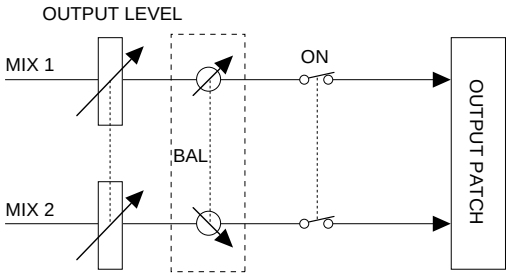
When the [TO ST PAN] switch LED is lit, you can use the OUTPUT [PAN/BAL] encoder to adjust the pan of the signal that is sent from the MIX channel to the STEREO bus. (The section enclosed by dashed lines in the following diagram corresponds to the [PAN/BAL] encoder.)

- **Adjusting the pan of the signal sent from a MIX channel to the STEREO buttons**



Also, when the [BAL] switch LED is lit, you can use the OUTPUT [PAN/BAL] encoder to adjust the volume balance of paired MIX channels. (The section enclosed by dashed lines in the following diagram corresponds to the [PAN/BAL] encoder.)

- **Adjusting the volume balance of paired MIX channels**



⑦ **OUTPUT [LEVEL] encoder and LEDs**
This sets the output level of the currently selected channel.

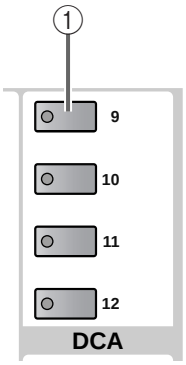
The range is – ∞ dB – +10 dB (1 dB steps), and the approximate current value is shown by the perimeter LEDs.

⑧ **OUTPUT [CUE] switch and LED**
This switch monitors the currently selected MIX channel.

When you press this switch, the PFL (pre-fader listen) or POST ON (after the [ON] switch) signal of the corresponding MIX channel will be sent to the CUE bus, and can be monitored from the CUE OUT jacks, the MONITOR OUT jacks A, or the PHONES jack.

DCA section

This section assigns the currently selected MIX channel to a DCA group. If you wish to assign a single MIX channel to multiple DCA groups, it is convenient to use this section.



① **DCA [9]–[12] switches and LEDs**
These switches assign the currently selected MIX channel to DCA groups 9–12.

When the channel is assigned to a DCA group, the LED of the corresponding switch will light.

⚠ This section is valid only when a MIX channel 1–48 is selected.

[Procedure]

Using the SELECTED OUTPUT CHANNEL block to assign a MIX channel to a DCA group

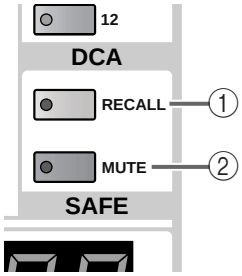
1. **Select the MIX channel that you wish to assign to a DCA group (9–12).**
2. **Use the SELECTED OUTPUT CHANNEL block DCA [9]–[12] switches to select the DCA group(s) that you wish to assign to the channel. (You may select more than one.)**
   The LED for the selected DCA group(s) will light.

⚠

- DCA groups 9–12 can be used for either input channels or output channels (MIX channels).
  However, it is not possible to assign both input channels and output channels to the same DCA group. For this reason, if a input channel is already assigned to DCA group 9–12, attempting to assign a MIX channel will cause a message to be displayed, and you will not be able to do so.
- When a scene is recalled, the DCA group data of recall safe channels may be adjusted so that recall safe settings are consistent within DCA groups 9–12. Also when a channel library is recalled, the data recalled to a channel may be adjusted so that settings are consistent within DCA groups 9–12.

SAFE section

This section sets/defeats Recall Safe and Mute Safe for the currently selected output channel.



① **SAFE [RECALL] switch and LED**
This switch sets/defeats Recall Safe for the currently selected output channel (MIX, MATRIX, STEREO A/B); a state in which the channel will not be affected by scene recall operations.

The switch LED will light for channels for which Recall Safe is selected.

The parameters of a channel whose LED is lit will not change even if a scene memory is recalled.

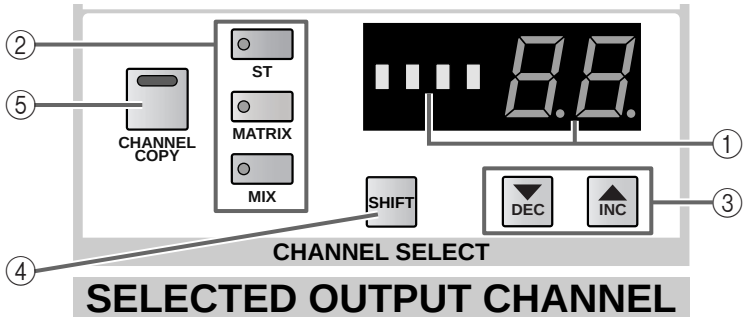
② **SAFE [MUTE] switch and LED**
This switch sets/defeats Mute Safe for the currently selected output channel (MIX, MATRIX, STEREO A/B); a state in which the channel will not be affected by mute groups.

The switch LED will light for channels for which Mute Safe is selected.

Channels whose LED is lit will not change even if a mute group to which that channel belongs is muted.

CHANNEL SELECT section

This section selects the channel that will be controlled in the SELECTED OUTPUT CHANNEL block.



① **CHANNEL SELECT [NAME]/[NUMBER] indicator**

② **CHANNEL SELECT [ST]/[MATRIX]/[MIX] switches and LEDs**
The CHANNEL SELECT [NAME]/[NUMBER] indicators show the short name and number of the currently selected channel.

The [ST]/[MATRIX]/[MIX] switches select the channel group (STEREO A/B, MATRIX, MIX). (The LED of the currently selected switch will light.)

- **When a STEREO A/B channel is selected**
  The [ST] LED will light, and the [NUMBER] indicator will show either AL (L channel of STEREO A), Ar (R channel of STEREO A), bL (L channel of STEREO B), or br (R channel of STEREO B).
- **When a MATRIX channel is selected**
  The [MATRIX] LED will light, and the [NUMBER] indicator will indicate the number 1–24.
- **When a MIX channel is selected**
  The [MIX] LED will light, and the [NUMBER] indicator will indicate the number 1–48.

③ **CHANNEL SELECT [▼/DEC]/[▲/INC] switches**
These switches increment or decrement the currently selected channel number within the channel group selected in ② (MIX, MATRIX, STEREO A/B). For details on operation, refer to page 58.

Hint

If you hold down either of the CHANNEL SELECT [▼/DEC]/[▲/INC] switches, the number will change continuously.

If you hold down both of the CHANNEL SELECT [▼/DEC]/[▲/INC] switches for one second, channel 1 of that group (or the L channel of STEREO A) will be selected.

④ **CHANNEL SELECT [SHIFT] switch**
If you hold down this switch and press either of the CHANNEL SELECT [▼/DEC]/[▲/INC] switches, the number will change in steps of 12 from the current value.

⑤ **[CHANNEL COPY] switch**
Use this switch to copy parameters of an output channel to a different output channel.

[Procedure]

Copying output channel parameters to a different channel

1. **Select the copy source output channel.**
2. **In the SELECTED OUTPUT CHANNEL block, press the [CHANNEL COPY] switch.**
   The [CHANNEL COPY] switch LED will light. However if you do not specify the copy destination within ten seconds, the copy operation will be cancelled.
3. **Press the [SEL] switch of the copy destination output channel (MIX, MATRIX, or STEREO A/B).**
   A popup window will appear, asking you to confirm the copy operation.
4. **To execute the copy operation, click the OK button. To cancel the copy operation, click the CANCEL button.**

Hint

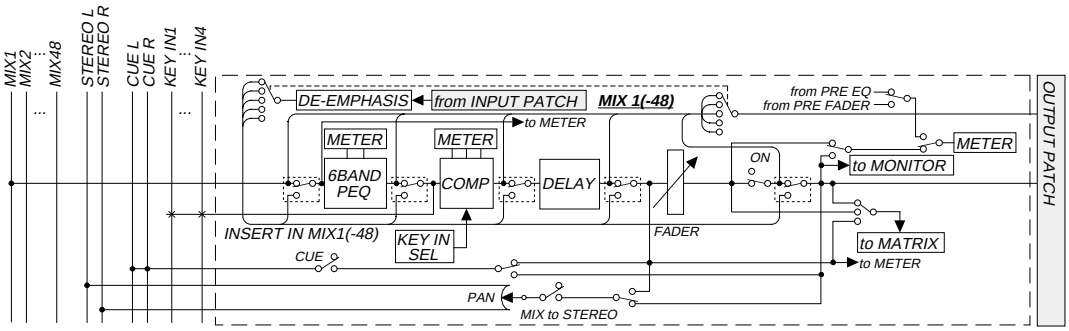
For details on the types of parameter that are copied when you copy between output channels, refer to the appendices (→p.44).

If you wish to perform additional copies, repeat steps 1–4.

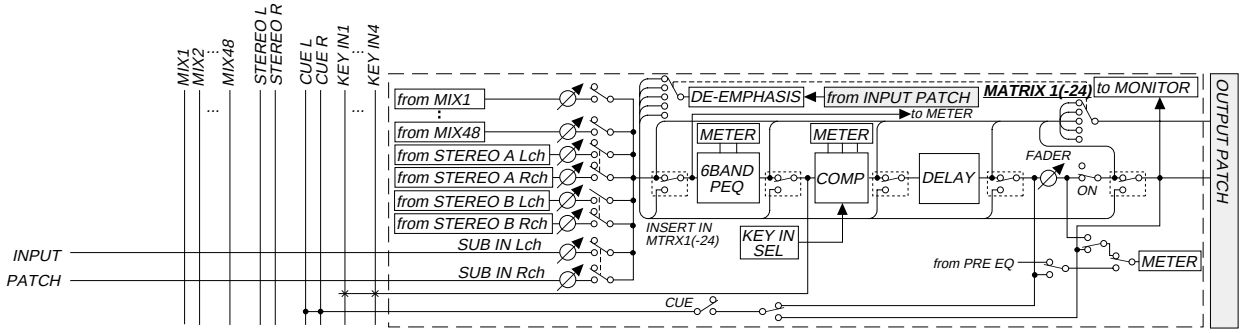
⚠ Copying is possible only between the same type of output channels (between MIX channels, between MATRIX channels, or between STEREO A/B). Furthermore, even for the same type of output channels, it is not possible to copy between a monaural output channel and two paired channels. If you attempt to copy an inappropriate combination of channels, a message of "DATA TYPE CONFLICT! CANCELED" will appear, and copying will not occur.

⚠ It is not possible to use the [▼/DEC]/[▲/INC] switches to select the copy destination channel. The channel copy operation will be cancelled.

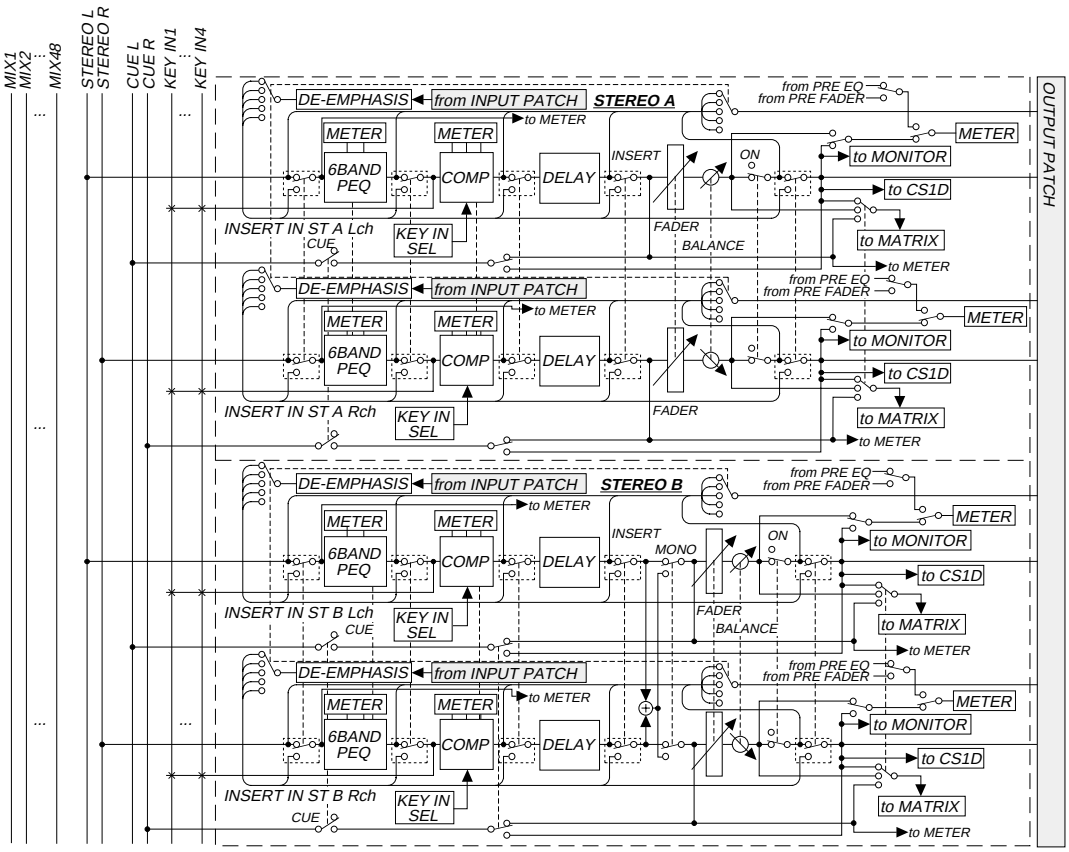
Signal flow for MIX channels



Signal flow for MATRIX channels



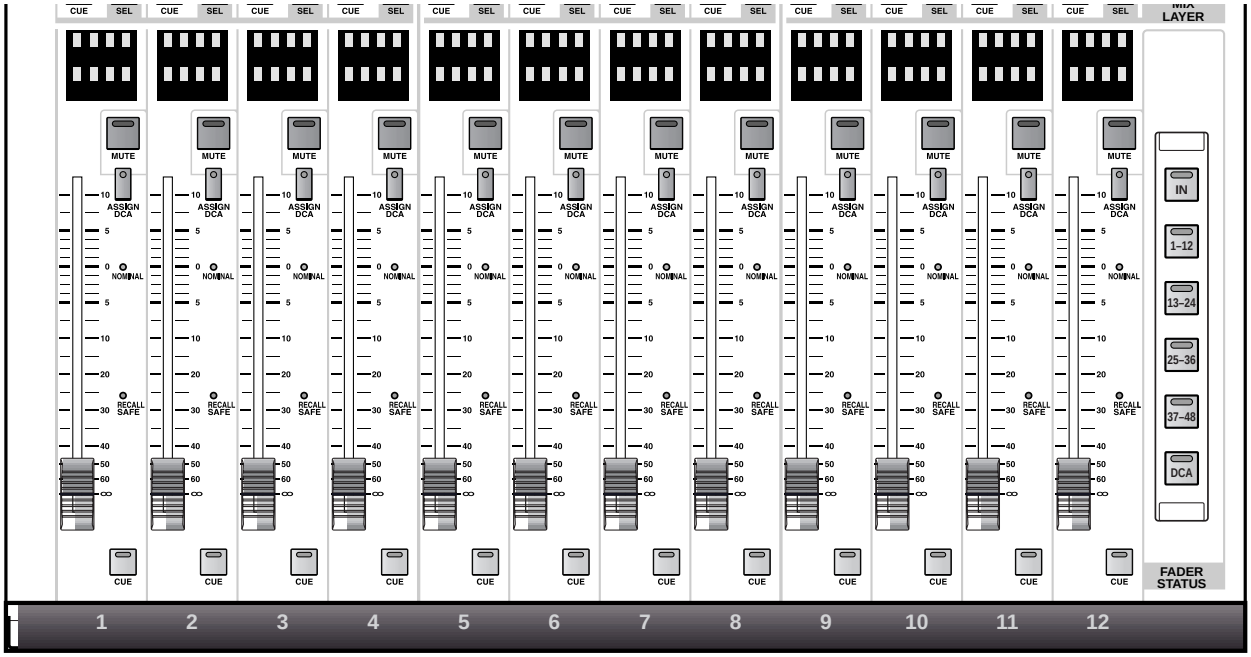
Signal flow for STEREO A/B channels

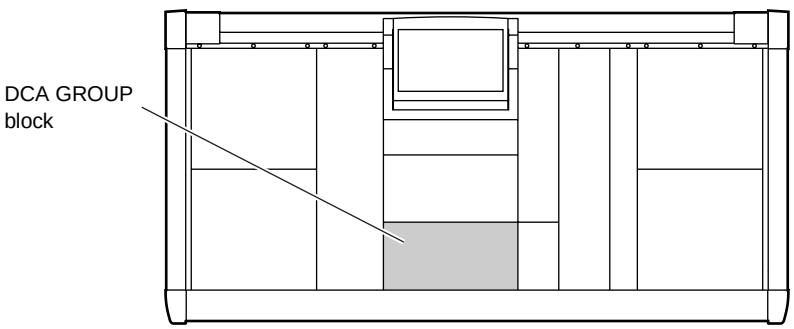


DCA GROUP block

[Function]

In this block, the input channel and output channel groups assigned to DCA 1–12 can be controlled as a group by the DCA faders. As necessary, you can also use these faders to directly control a desired input channel or MIX channel, or boost/cut each band of the internal graphic EQ.





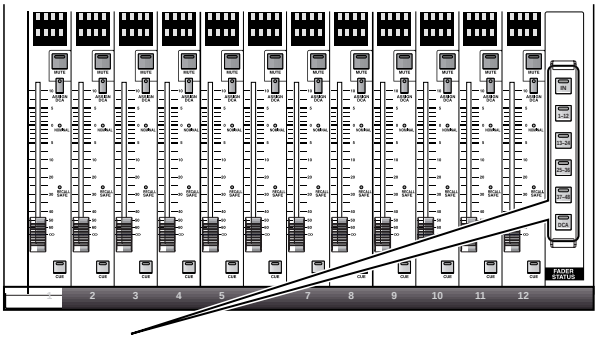
Select the items you wish to control from the DCA faders

The DCA GROUP block contains twelve DCA faders. In the default state of the PM1D system, you can use these faders to control the input channel/output channel groups that are assigned to DCA 1–12. However, you can also make settings in the DCA GROUP block FADER STATUS section to change the items that will be controlled by the DCA faders.

- **When the FADER STATUS [IN] switch is on**
  You can use a DCA fader to directly adjust the input levels of the individual input channels in a desired INPUT block or ST IN block.

  Use an INPUT [SEL] switch to select the INPUT block or ST IN block. (The INPUT block or ST IN block that includes the channel selected by the INPUT [SEL] switch will be assigned to the DCA faders.)
- **When a FADER STATUS [1–12]/[13–24]/[25–36]/[37–48] switch is on**
  The DCA faders will directly control the output levels of the corresponding MIX channels 1–12, 13–24, 25–36, or 37–48.
- **When the FADER STATUS [DCA] switch is on**
  The DCA faders will control the levels of DCA groups 1–12.

Items that can be controlled from the DCA faders



FADER STATUS section

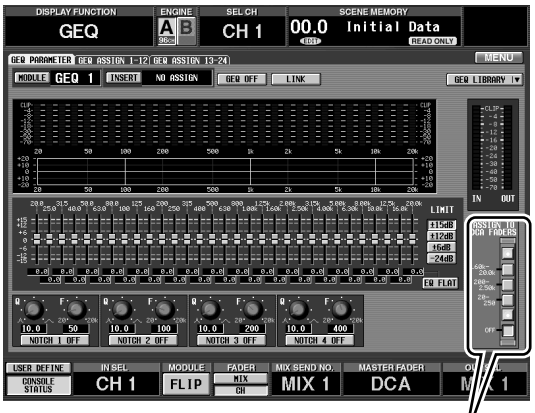
IN	The input channels of the INPUT block or the ST IN channels of the ST IN block currently selected by the [SEL] switch.
1–12	MIX channels 1–12
13–24	MIX channels 13–24
25–36	MIX channels 25–36
37–48	MIX channels 37–48
DCA	DCA groups 1–12
1–12 13–24 25–36	Boost/cut for each band of the graphic EQ

Hint

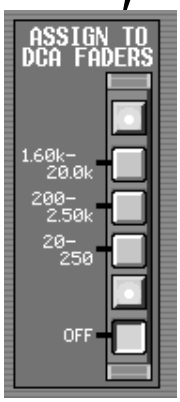
In addition, it is possible to split up the 31-band graphic EQ and assign it to the DCA faders in 12-band units to adjust the boost/cut amount for each band. In order to do this, display the GEQ function GEQ PARAMETER screen, then hold down the [SHIFT/GRAB] switch and press a FADER STATUS section [1–12]/[13–24]/[25–36] switch to call the state of the selected frequency band into the DCA faders.
Alternatively, you can click the ASSIGN TO DCA FADERS button in the GEQ PARAMETER screen.

SHIFT/GRAB + 1–12	1.60k–20.0k
SHIFT/GRAB + 13–24	200–2.50k
SHIFT/GRAB + 25–36	20–250

- **GEQ PARAMETER screen**

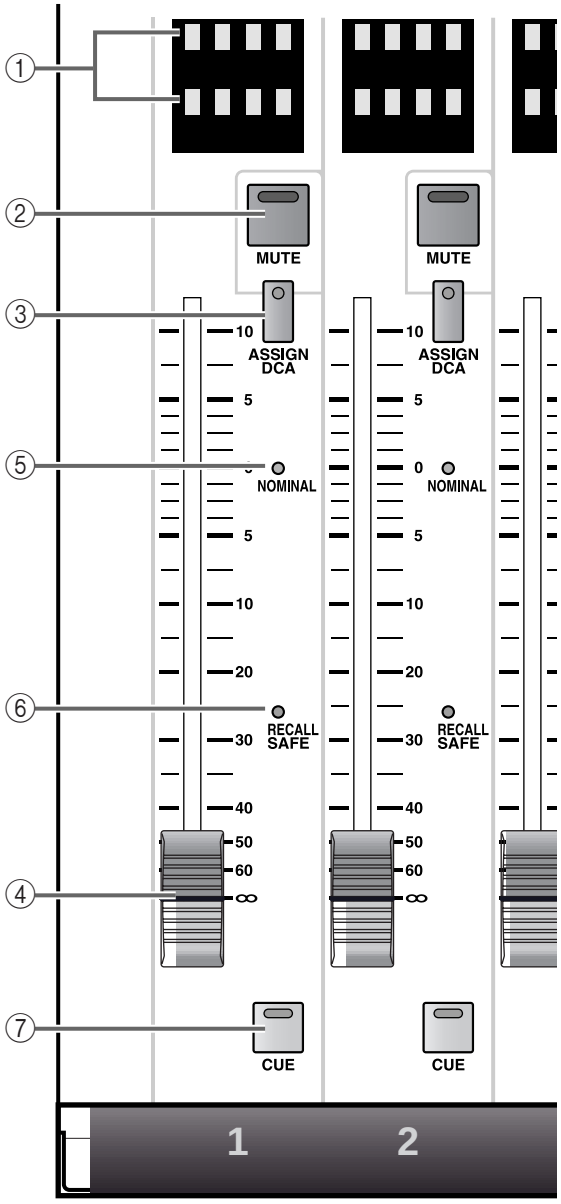


ASSIGN TO DCA FADERS button



DCA fader section

In this section you can control the levels of the DCA groups, input channels, or MIX channels assigned to DCA groups 1–12. You can also use this section to adjust the boost/cut amount for each band of the internal graphic EQ.



① **DCA [NAME] indicator**
The upper row of indicators will show the type and number of the channel that is selected in the FADER STATUS section. (If DCA is selected, this will show display the DCA name of up to 8 characters.)

The display has the following meaning.

- **INxx** .....Twelve input channels will be directly assigned to DCA faders 1–12. The xx digits will indicate the channel number.
- **STxx** .....ST IN 1–8 are directly assigned to DCA faders 1–8. The xx location will indicate a channel number.

  In this case, DCA faders 9–12 will have no effect.
- **MXxx**..... Twelve MIX channels will be directly assigned to DCA faders 1–12. The xx digits will indicate the channel number.
- **Other**..... DCA groups are assigned to DCA faders 1–12, and the long name of the DCA group will be displayed.

The lower row of indicators displays the short name of the channel assigned to the fader or the long name of the DCA group. These names can be input from the display (in the NAME screen of the IN PATCH function or OUTPUT PATCH function).

Hint

If the bands of the internal graphic EQ are assigned to the DCA faders, the upper row of indicators will display the frequency of the corresponding band, and the lower row will display the gain value.

② **DCA [MUTE] switch and LED**
This switch mutes the corresponding DCA group 1–12.

When you press this switch, the DCA [MUTE] LED will light, and the input channels/output channels included in that DCA group will be set to the same status as if the DCA fader were set to the minimum level (– ∞ dB).

When you press the switch once again, the DCA [MUTE] LED will go dark, and muting will be canceled.

Hint

The DCA [MUTE] switch and LED will have no effect if input channels or output channels are directly assigned to the DCA faders, or if the graphic EQ is assigned.

⚠ Be careful not to confuse muting performed by the DCA [MUTE] switch with mute groups (performed in the MASTER block SCENE MEMORY section).

The operation of the DCA [MUTE] switch is identical to the MUTE button in the IN DCA/MUTE function DCA ASSIGN screen and the OUT DCA/MUTE function DCA ASSIGN screen.

③ **DCA [ASSIGN DCA] switch and LED**
This switch selects the DCA group for which input channels or output channels (MIX channels) will be registered.

④ **DCA fader**
This is a 100 mm fader that sets the level of the input channel, output channel, or DCA group selected by the FADER STATUS section.

If the internal graphic EQ is assigned to the DCA faders, this sets the amount of boost/cut for the corresponding band.

⑤ **DCA [NOMINAL] LED**
If input channels or output channels are directly assigned to the DCA faders, or if DCA groups are assigned, this LED will light when the fader is set to nominal level (0 dB).

If the internal graphic EQ is assigned to the DCA faders, this LED will light when the gain value is 0 dB.

⑥ **DCA SAFE [RECALL] LED**
If DCA groups 1–12 are assigned to the DCA faders, this LED will light to indicate DCA groups that are set to Recall Safe (a state in which the DCA group will be unaffected by scene recall operations). A DCA fader for which this LED is lit will not change even if a scene memory is recalled.

If input channels / output channels are directly assigned to the DCA faders, this LED will light to indicate channels that are set to Recall Safe. A channel for which this LED is lit will not change even if a scene memory is recalled.

⚠ Simply setting a DCA fader to Recall Safe means only that the corresponding DCA fader will be exempted from Recall operations, the various channels that belong to that DCA group are not affected by this. If necessary, you must also set the individual channels to Recall Safe.

Recall safe settings can be made in the display (SCENE function RECALL SAFE screen).

If the graphic EQ has been assigned to the DCA faders, this LED will have no function.

⑦ **DCA [CUE] switch and LED**
This switch monitors the channel(s) assigned to the DCA fader.

If this switch is pressed when a DCA group 1–12 is assigned to the DCA fader, all input channels (or output channels) assigned to that DCA group will be sent to the CUE bus, and can be monitored from the CUE OUT jacks, MONITOR OUT jacks A, or PHONES jack.

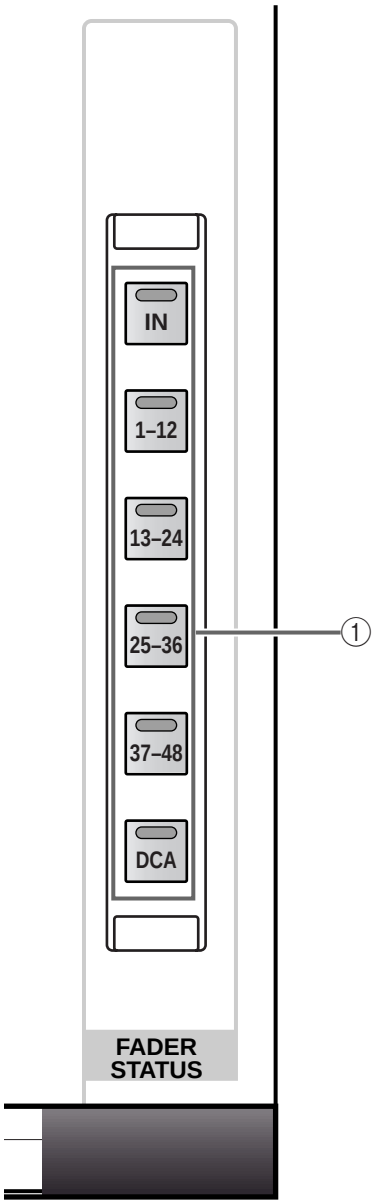
If this switch is pressed when an input channel/output channel is directly assigned to the DCA fader, the signal of the corresponding channel will be sent to the CUE bus. (This will have the same function as the [CUE] switch provided for each channel.)

The location and monitoring method for the signal sent to the CUE bus can be selected on the console in the MASTER block CUE section, or in the display (MON/CUE function CUE/SOLO screen).

If the graphic EQ has been assigned to the DCA faders, this switch will have no function.

FADER STATUS section

In this section you can select what will be controlled by DCA faders 1–12.



① **FADER STATUS [IN]/[1–12]/[13–24]/[25–36]/[37–48]/[DCA] switches and LEDs**
These switches select what will be controlled by DCA faders 1–12.

The LED of the currently selected switch will light.

Each switch selects the following items for control.

- **FADER STATUS [IN] switch**
The DCA faders will control the input level of the input channels in the selected INPUT block. The INPUT block that includes the channel currently selected by an INPUT [SEL] switch will be assigned to the DCA faders. This allows you to control a distantly-located INPUT block without having to reach across the console.

- **FADER STATUS [1–12]/[13–24]/[25–36]/[37–48] switches**
The DCA faders will control the output levels of the corresponding MIX channels 1–12, 13–24, 25–36, or 37–48.

- **FADER STATUS [DCA] switch**
The DCA faders will adjust the level of DCA groups 1–12 to which input channels/output channels have been assigned.

[Procedure]

Using DCA faders to control DCA groups 1–12

1. **Press any one of the DCA GROUP block DCA [ASSIGN DCA] switches to select the DCA group that will be the assign destination.**
   The [DCA] LEDs of all channels assigned to the currently selected DCA group will blink.

2. **In the INPUT block, ST IN block, or MIX OUTPUT block, press the [DCA] switches of the channels that you wish to assign to the above-selected DCA group.**
   For the selected channel(s), the [DCA] LED of the selected assign destination DCA group will light.

   You can assign either input channels (input channels, ST IN channels) or output channels (MIX channels).

   ⚠ Input channels can use DCA groups 1–12, and output channels can use DCA groups 9–12.

   It is not possible to assign an output channel to a DCA group 1–8.

3. **Repeat steps 1 and 2 to assign input channels/output channels to other DCA groups.**
   You can assign multiple channels to a single DCA group, or assign a single channel to multiple DCA groups.

⚠

- It is not possible to assign both input channels and output channels to the same DCA group 9–12. If an input channel is already assigned, attempting to assign an output channel will cause a message to be displayed, and the assignment will not be permitted. (The same is true of the opposite situation.)
- When a scene is recalled, the DCA group data of recall safe channels may be adjusted so that recall safe settings are consistent within DCA groups 9–12. Also when a channel library is recalled, the data recalled to a channel may be adjusted so that settings are consistent within DCA groups 9–12.

Hint

Input channels/output channels can also be assigned to DCA groups in the display (IN DCA/MUTE function DCA ASSIGN screen, or OUT DCA/MUTE function DCA ASSIGN screen).

4. **When you have finished making assignments, press the [ASSIGN DCA] switches whose LED is lit, to turn off the LEDs of all [ASSIGN DCA] switches. Then turn on the FADER STATUS [DCA] switch in the FADER STATUS section.**
   The selected LED will light, and you will be able to use DCA faders 1–12 to control the level of the corresponding DCA group.

5. **Operate DCA faders 1–12.**
   The level of the input channels or output channels assigned to the corresponding DCA group will change.

6. **If you wish to mute a specific group, press the DCA [MUTE] switch.**
   The DCA [MUTE] switch LED will light, and the input channels/output channels included in that DCA group will be set to the same status as when the DCA fader is used to lower the level to the minimum value (– ∞ dB).

7. **When you press the switch once again, the DCA [MUTE] LED will go dark, and muting will be defeated.**

[Procedure]

Using the DCA faders to control the graphic EQ

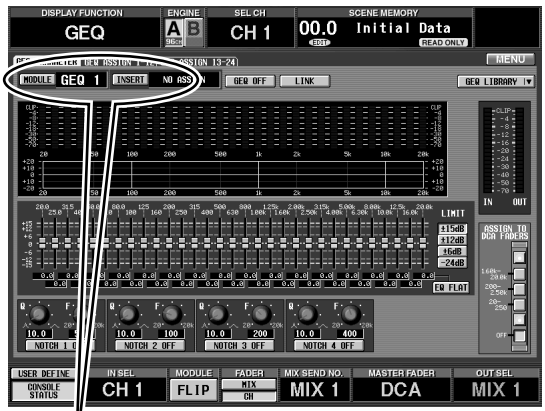
Separately from the parametric EQ provided on each channel, the PM1D system provides twenty-four 31-band graphic EQ modules which can be inserted into the desired input channel, MIX channel, MATRIX channel, or STEREO A/B channel.
By assigning the desired graphic EQ module to the DCA faders, you can use the DCA faders to control the amount of boost/cut for each band in realtime.

1. **In the display, access the GEQ function GEQ PARAMETER screen.**
   The GEQ PARAMETER screen can be accessed in the following ways.

   • **From the top panel**
   In the LCD FUNCTION ACCESS section (MASTER block), press the [GEQ] switch repeatedly until the following screen appears.

   • **In the display**
   Click the MENU button → GEQ button → GEQ PARAMETER tab.

   • **GEQ PARAMETER screen**



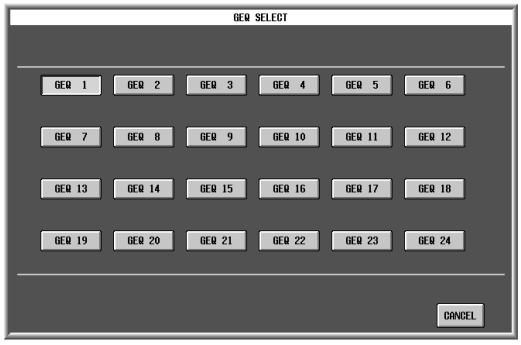
MODULE button:

INSERT button:

2. **Click desired MODULE button located in the upper left of the screen.**
   The MODULE button lets you select the graphic EQ module that you wish to control.

   When you click this button, the following popup window will appear.

Popup window for selecting a graphic EQ module



3. **Click one of the GEQ 1 – GEQ 24 buttons to select a graphic EQ, you will return to the GEQ PARAMETER screen automatically.**
   Confirm that the selected graphic EQ module is displayed at the right of the MODULE button.

Confirm the selected graphic EQ module

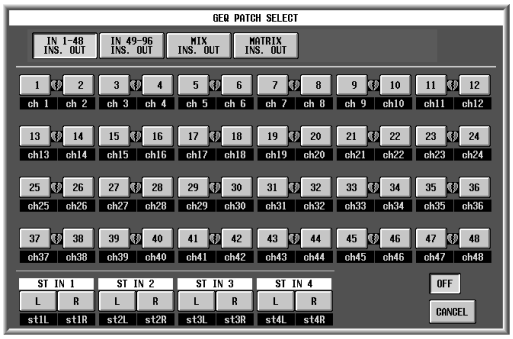
Hint

If a GEQ is inserted in a channel, you can hold down the [SHIFT/GRAB] switch and press the [SEL] switch of that channel to display the GEQ.

4. **Click the INSERT button located in the upper left of the screen.**
   The INSERT button selects the output channel into which the graphic EQ will be inserted.

   When you click this button, the following popup window will appear.

Popup window for selecting the output channel in which the graphic EQ will be inserted



5. **Click a button to select the output channel in which you wish to insert the graphic EQ.**

   • **When inserting to an input channel**
   Click to select the input channel number in the following order: IN 1-48 INSERT OUT button → 1–48 buttons or IN 49-96 INSERT OUT button → 49–96 buttons.

   • **To insert into a MIX channel**
   Click the MIX INSERT OUT button, and then click a 1–48 button to select the number of the MIX channel.

   • **To insert into a MATRIX channel**
   Click the MATRIX INSERT OUT button, and then click a 1–24 button to select the number of the MATRIX channel.

   • **To insert into a STEREO A/B channel**
   Click the button for the desired channel; either AL (L channel of STEREO A), Ar (R channel of STEREO A), bL (L channel of STEREO B), or br (R channel of STEREO B).

   You will return to the GEQ PARAMETER screen automatically.

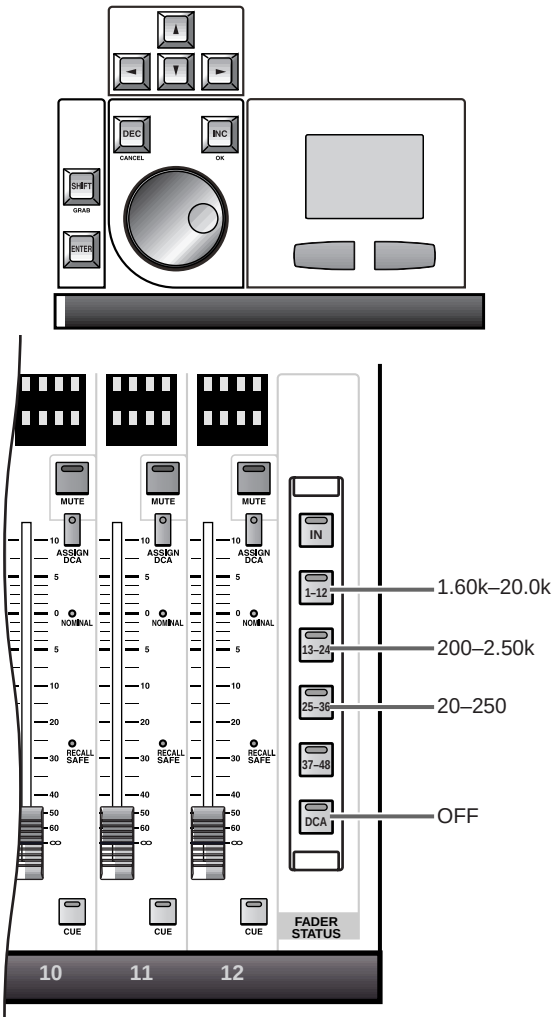
   Confirm that the selected channel is displayed at the right of the INSERT button.

Confirm the selected channel

6. **Select the frequency band that will be assigned to the DCA faders.**

   (1) Using the switch to select
   Hold down the [SHIFT/GRAB] switch (located in the data entry block) and press a [FADER STATUS] switch, and you will be able to operate the graphic EQ.

SHIFT/GRAB + 1–12	1.60k–20.0k
SHIFT/GRAB + 13–24	200–2.50k
SHIFT/GRAB + 25–36	20–250



(2) Switching on-screen

In the ASSIGN TO DCA FADERS buttons located in the lower right of the screen, click the desired button.

- **1.60 k – 20.0 k button**

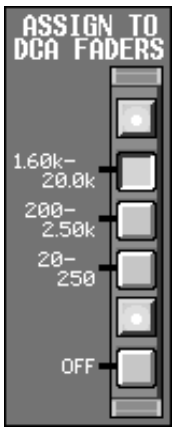
The twelve bands from 1.6 kHz–20 kHz will be assigned to the DCA faders.

- **200–2.50 k button**

The twelve bands from 200 Hz–2.5 kHz will be assigned to the DCA faders.

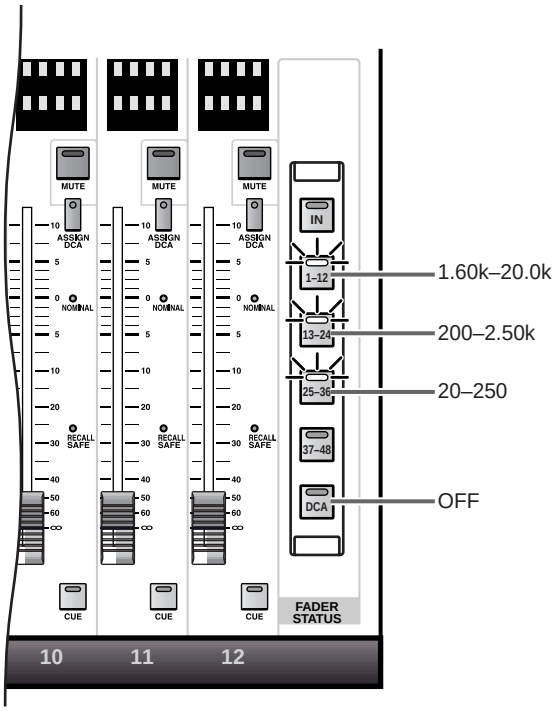
- **20–250 button**

The twelve bands from 20 Hz–250 Hz will be assigned to the DCA faders.



By clicking one of the above buttons, you can use the DCA faders to control the graphic EQ.

In this case, the [FADER STATUS] switches located above the DCA GROUP block on the CS1D top panel will function as band select switches for the bands of the graphic EQ, as shown in the following illustration. (The LEDs will light to indicate the [FADER STATUS] switches that can be used as band select switches.) In this case, the FADER STATUS [IN] switch and the FADER STATUS [37-48] switch will have no effect.



7. **Operate DCA faders 1–12.**
   The corresponding frequency bands will be boosted or cut.
8. **If you wish to use the DCA faders to control other bands, repeat steps 7–8.**
9. **To stop using the DCA faders to control the graphic EQ, press the FADER STATUS [DCA] switch on the CS1D. Alternatively, click OFF in the ASSIGN TO DCA buttons of the GEQ PARAMETER screen.**
   The [FADER STATUS] switches of the CS1D will return to their original state.

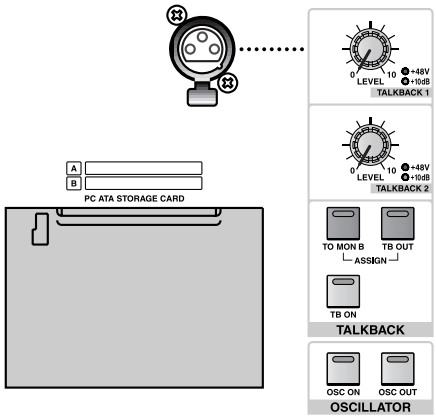
   To once again assign the graphic EQ to the DCA faders, click one of the ASSIGN TO DCA buttons in the GEQ PARAMETER screen.

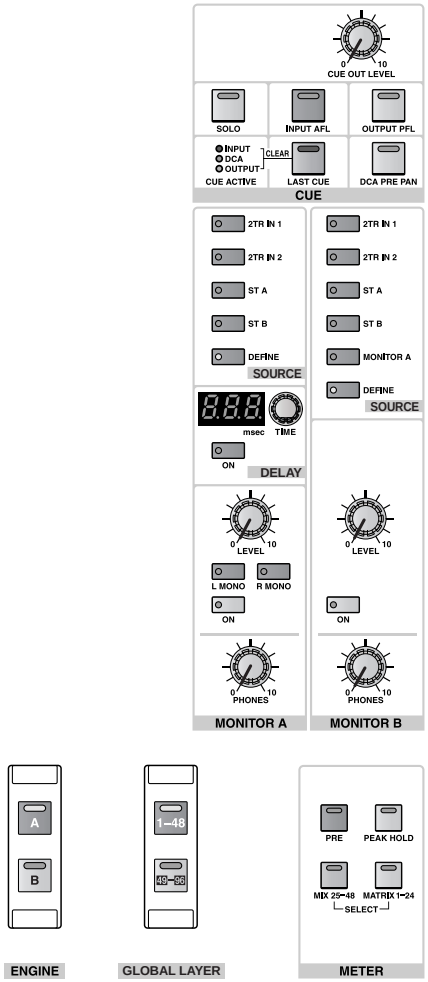
   When you exit the GEQ PARAMETER screen, assignments to the DCA faders will be forcibly canceled, and the DCA faders will return to their previous state.

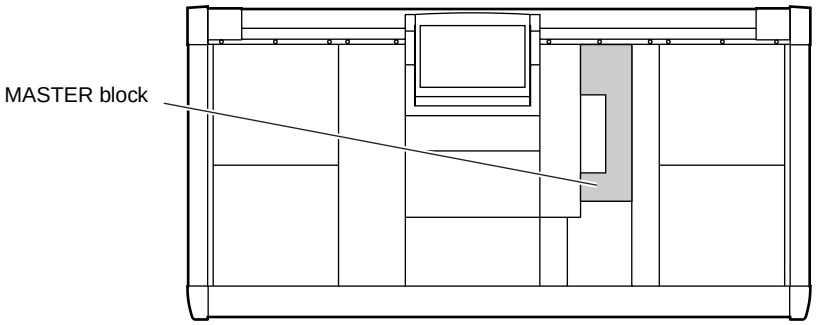
MASTER block

[Function]

In this block you can use functions that apply to the entire CS1D, such as talkback and oscillator operations, selecting the monitor source, and adjusting the monitor level.

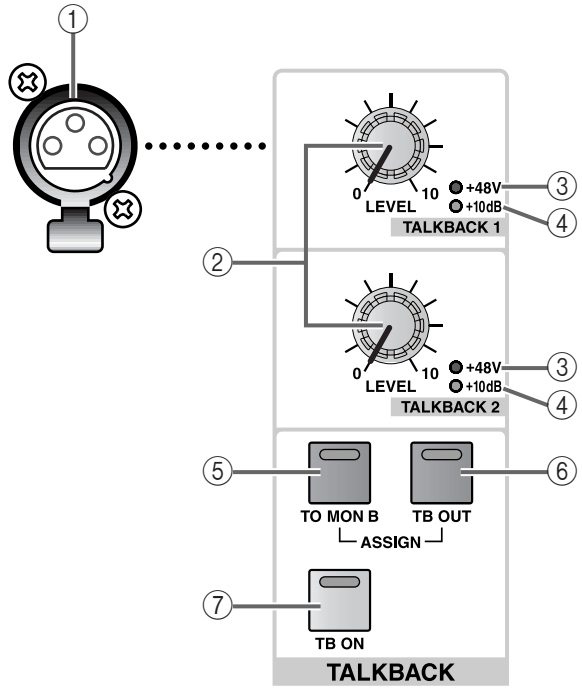






TALKBACK section

This section sends the talkback signal to the desired bus, the MONITOR B jacks, and the desired output jacks.



① **TALKBACK 1 jack**
This is an XLR-3-31 jack for connecting a talkback mic.

Hint
The TALKBACK 2 jack on the rear panel of the CS1D provides another talkback mic input in addition to the TALKBACK 1 jack. The talkback signal that is input from these two jacks is mixed within the CS1D, and sent to the same bus or output jacks.

② **TALKBACK [LEVEL] volumes**
These are analog volume controls for the input levels of talkback 1/2.

Hint
The value of these levels cannot be stored in a scene memory or controlled from outside (or from the internal software).

③ **TALKBACK [+48V] LEDs**
These LEDs indicate the on/off status of phantom power for the TALKBACK 1/TALKBACK 2 jacks. (The LED will light when phantom power is on.)

Phantom power can be switched on/off in the display (MON/CUE function TALKBACK screen).

④ **TALKBACK [+10 dB] LEDs**
These LEDs indicate the input sensitivity of the TALKBACK 1 jack and the TALKBACK 2 jack.

When the input sensitivity is +10 dB, the LED will light and a +10 dB input signal will be nominal input. When off, the LED will be dark and the input sensitivity will be –44 dB.

The input sensitivity can be switched in the display (MON/CUE function TALKBACK screen).

⑤ **TALKBACK ASSIGN [TO MON B] switch and LED**
This switch sends the talkback signal to MONITOR OUT jacks B.

When this is on, the switch LED will light.

⚠ The talkback signal cannot be sent to MONITOR OUT jacks A. If necessary, use the IN PATCH function to patch the talkback signal to an input channel and sent it to MONITOR OUT jacks A.

⑥ **TALKBACK ASSIGN [TB OUT] switch and LED**
This is an on/off switch for the signal that is sent from the talkback direct output. (When on, the switch LED will light.)

The physical output jacks used as the talkback direct output can be selected in the display (MON/CUE function TALKBACK screen).

⑦ **[TB ON] switch and LED**
This is an on/off switch for the talkback signal.

When on, the switch LED will light, and the talkback signal will be sent to the bus and output jacks that were specified in the display (MON/CUE function TALKBACK screen).

The [TB ON] switch can be used in the following two ways.

- **Continue holding the switch for more than 2 seconds**

This is the usual way to use talkback. Talkback will be on only while you continue holding the switch, and will be turned off when you release the switch.

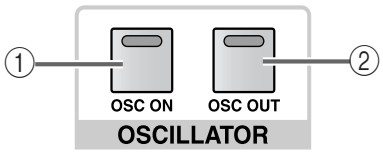
- **Press and immediately release the switch**

The LED will continue light even after you release the switch, and talkback will remain on. When you press and immediately release the switch once again, it will be turned off.

⚠ If the [TB ON] switch is off, [OSC ON] will cause the OSC signal to be sent from the talkback direct output.

OSCILLATOR section

This section sends a sine wave or noise generated by the internal oscillator to the specified bus or output jacks.



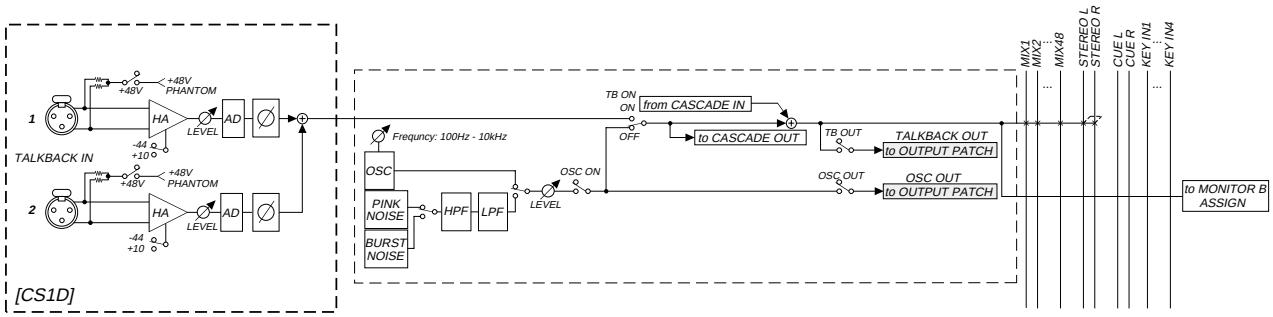
① **[OSC ON] switch and LED**
This is an on/off switch for the signal that is sent from the internal oscillator to the MIX buses, MATRIX buses, and STEREO bus. (When on, the switch LED will light.)

The waveform type, frequency, output level, and output destination can be specified in the display (MON/CUE function OSCILLATOR screen).

② **[OSC OUT] switch and LED**
This is an on/off switch for the signal that is sent from the direct output of the internal oscillator. (When on, the switch LED will light.)

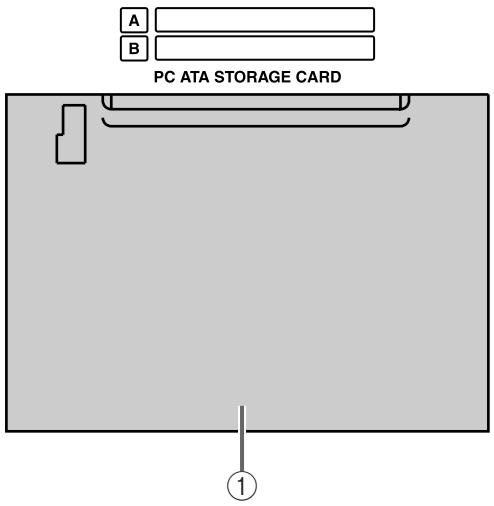
The physical output jacks that are used as the oscillator direct outputs can be selected in the display (MON/CUE function OSCILLATOR screen).

Signal flow in the TALKBACK/OSCILLATOR section



Card slot section

This section saves scene memories and various libraries on PCMCIA Type II cards.



① **[PC ATA STORAGE CARD] card slot**
Up to two PCMCIA Type II compatible cards can be inserted in this slot, and used to load/save scene memories and various libraries.

Load/save operations are performed in the display (UTILITY function LOAD/SAVE screen).

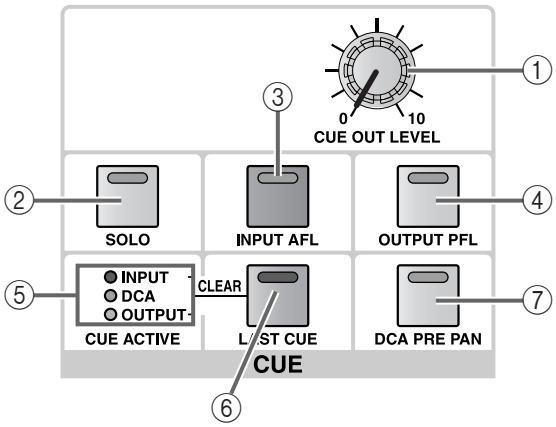
⚠ Please note that Type III cards cannot be used.

This can be used only with an ATA compatible PC flash storage card, or a compact flash with a PC card adapter that is guaranteed to work with that card. Operation is not guaranteed for any other media.

The above-listed media is normally sold in a formatted condition. The CS1D does not have a formatting function, so if you need to format the media, please use an external device such as a computer.

CUE section

This section selects the cue point and monitoring method of the channel selected by the [CUE] switch.



① **[CUE OUT LEVEL] volume**
This is an analog volume that sets the output level of the signal output from the CUE OUT jacks.

Hint
The value of this level cannot be stored in a scene memory or controlled from outside (or from the internal software).

② **[SOLO] switch and LED**
This switch selects either CUE mode or SOLO mode as the monitoring method when the [CUE] switch is used.

CUE mode is selected when this switch is off (LED dark), and SOLO mode is selected when this switch is on (LED blinking). To change from CUE mode to SOLO mode, press and hold the [SOLO] switch for two seconds or longer. To change from SOLO mode to CUE mode, press the [SOLO] switch.

The operation when each mode is selected will be as follows.

- **CUE mode**
The signal of the channel whose [CUE] switch is pressed will be sent to a dedicated CUE bus, and sent via the CUE bus to the CUE OUT jacks, MONITOR OUT jacks A, and PHONES jack for monitoring.

By using this method, you can monitor the signal of an input or output channel without affecting other buses.

- **SOLO mode**
This is the familiar "solo function" that sends the signal of only a specific channel to the MIX, MATRIX, and STEREO A/B buses.

Only the signal of the channel whose [CUE] switch was pressed will be sent to the MIX, MATRIX, and STEREO A/B buses, and other channels will be muted.

When SOLO mode is selected, the signal that is monitored from the CUE OUT jacks, MONITOR OUT jacks A, and PHONES jacks can be selected from either the CUE bus (the signal of the channel whose [CUE] switch is pressed) or the MONITOR bus (the source selected in the MONITOR A block). This setting is made in the display (MON/CUE function CUE/SOLO screen).

Hint
Even if the [SOLO] switch is on, you can exclude the desired input channels or output channels from the solo operation (MON/CUE function CUE/SOLO screen). This is convenient when you wish to protect channels that must not be soloed inadvertently, such as the main STEREO channel or MIX channels that are supplying signals to an external recorder.

③ **[INPUT AFL] switch and LED**
This selects the location in the signal route at which the signal will be monitored when you press the [CUE] switch of an input channel (input channel or ST IN channel).

If this switch is on, the LED will light, and the signal will be sent from the AFL (after-fader listen) position to the CUE bus.

If this switch is off, the signal will be sent from the PFL (pre-fader listen) position to the CUE bus.

Hint
If this switch LED is lit, you can make the further choice of pre-pan or post-pan locations. This selection is made in the display (MON/CUE function CUE/SOLO screen).

④ **[OUTPUT PFL] switch and LED**
This selects the location in the signal route at which the signal will be monitored when you press the [CUE] switch of an output channel (MIX channel, MATRIX channel, STEREO A/B channel).

When this switch is on (the LED will light), the signal will be sent from the PFL (pre-fader listen) position to the CUE bus. When this switch is off, the signal will be sent from the POST ON (immediately after the [ON] switch) position to the CUE bus.

⑤ **CUE ACTIVE [INPUT]/[DCA]/[OUTPUT] LEDs**
These LEDs indicate the state of monitoring.

If even one [CUE] switch is currently on, the LED corresponding to that monitor source will light. The monitor source corresponding to each LED is as follows.

- **INPUT**
This will light when a channel of the INPUT CUE group (input channel, ST IN channel) is being monitored.

- **DCA**
This will light when a channel of the DCA CUE group is being monitored.

- **OUTPUT**
This will light when a channel of the OUTPUT CUE group (MIX channel, MATRIX channel, STEREO A/B channel) is being monitored.

[INPUT]/[DCA]/[OUTPUT] all lit

All three LEDs will light when one of the following buttons or switches of a CUE group other than INPUT/DCA/OUTPUT CUE is pressed.

- EFFECT CUE button (EFFECT function)
- GATE KEY IN CUE button (IN GATE/COMP function GATE PRM screen), or INPUT SELECTED CHANNEL [GATE KEY IN CUE] switch
- SUB IN CUE button (MATRIX/ST function SUB IN screen)

⑥ **[LAST CUE] switch and LED**
This switch specifies what will occur when you press the [CUE] switch of two or more channels.

When the LED is lit, LAST CUE mode is selected. When the LED is dark, MIX CUE mode is selected.

Operation will differ in the following ways.

- **LAST CUE mode**
Only the channel whose [CUE] switch was pressed last will be monitored.

- **MIX CUE mode**
All channels whose [CUE] switches are currently on will be mixed and monitored.

⚠ MIX CUE mode is valid only when you press the [CUE] switches of input channels, output channels, or the DCA section.

For example while the SELECTED INPUT CHANNEL block NOISE GATE KEY IN [CUE] switch is on, only the key-in signal of the noise gate built into that channel will be given priority for monitoring.

Hint

On the PM1D system, Cue can be classified into the following three groups.

1) **INPUT CUE group** (Gate key-in cue signals from input channels or ST IN channels)
2) **DCA CUE group** (cue signals from DCA groups)
3) **OUTPUT CUE group** (cue signals from MIX channels, MATRIX channels, or STEREO A/B channels)
4) **Any CUE group other than INPUT/DCA/OUTPUT CUE** (i.e., the EFFECT CUE button within the EFFECT function, the KEY IN CUE button within the GATE PRM screen or SELECTED INPUT CHANNEL of the IN GATE/COMP function, or the SUB IN CUE button in the SUB IN screen of the MATRIX/ST function)

It is not possible for [CUE] switches or buttons of these four groups to be on simultaneously. The group for the last-pressed [CUE] switch or button will take priority, and the signals of that group can be monitored.

If you switch groups in the order of "OUTPUT CUE →DCA CUE," "OUTPUT CUE → INPUT CUE," "DCA CUE → INPUT CUE," or "INPUT/OUTPUT/DCA CUE → CUE other than INPUT/OUTPUT/DCA," the state of the group or [CUE] switch or button before the change will be remembered, and if the currently-on [CUE] switches or buttons are all turned off, you will return to the previous group.

When you press the [LAST CUE] switch to switch from LAST CUE mode to MIX CUE mode (or vice versa), the previously-effective cue (solo) will be cancelled.

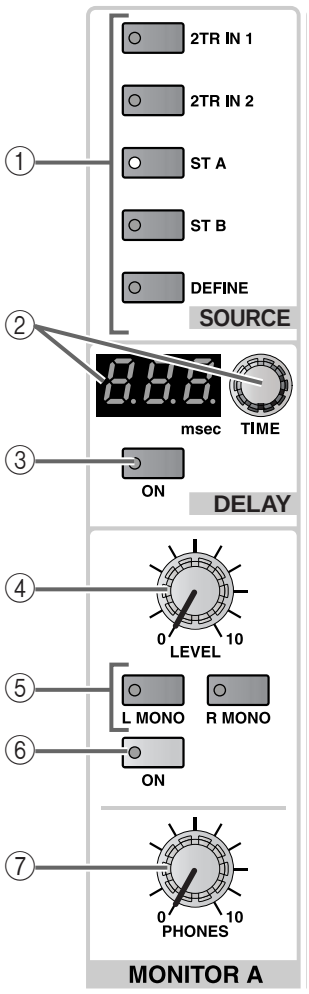
⑦ **[DCA PRE PAN] switch and LED**
This switch selects the location in the signal route at which the signal will be monitored when a [CUE] switch in the DCA GROUP block is used to monitor a DCA group to which input channels are assigned.

If this switch is on, turning on the [CUE] switch of a DCA group to which input channels are assigned will allow monitoring of the signal immediately before pan. If this switch is off, the signal immediately after pan will be monitored.

⚠ This switch is valid only for DCA groups to which input channels are assigned. If you use the [CUE] switch to monitor a DCA group to which output channels are assigned, the signal will always be sent from the POST ON location (after the [ON] switch) to the CUE bus.

MONITOR A section

This section selects the monitor source for the MONITOR A output, and adjusts its level.



① **MONITOR A SOURCE [2TR IN 1]/[2TR IN 2]/[ST A]/[ST B]/[DEFINE] switches and LEDs**
These switches select the monitor source for the MONITOR A outputs.

The switch LED for the currently selected source will light. (It is not possible to select two or more sources.)

Each switch corresponds to the following sources.

- **[2TR IN 1] switch**
Monitor the input signal from the 2-TRACK IN DIGITAL 1 jack or 2-TRACK IN ANALOG 1 jacks located on the rear panel of the CS1D.

  The choice between analog and digital is made in the display (MON/CUE function 2TR IN screen).

- **[2TR IN 2] switch**
Monitor the input signal from the 2-TRACK IN DIGITAL 2 jack or 2-TRACK IN ANALOG 2 jacks located on the rear panel of the CS1D.

  The choice between analog and digital is made in the display (MON/CUE function 2TR IN screen).

- **[ST A] switch**
Monitor the output signal of the STEREO A channel.

- **[ST B] switch**
Monitor the output signal of the STEREO B channel.

- **[DEFINE] switch**
Monitor the signal (MIX 1–48 , MATRIX 1–24 , 2TR IN 3–6, or DIRECT IN) that was previously defined by the user in the display (MON/CUE function MONITOR A screen).

Hint

With the default state of the PM1D, the setting of the MONITOR A SOURCE switches will be ignored if even one [CUE] switch is on, and the cue (solo) signal will be output from the MONITOR OUT A jacks/MONITOR A phones jack.

However, you can make settings so that the state of the [CUE] switches will be ignored and the source selected by the MONITOR A SOURCE switch will always be output from the MONITOR OUT A jacks. This setting is made in the display (MON/CUE function MONITOR A screen).

② **MONITOR A DELAY [TIME] encoder and [VALUE] indicator**
The MONITOR A DELAY [TIME] encoder is used to set the delay time of the delay that is built into the MONITOR A output and the cue output.

The current delay time is shown by the DELAY TIME [VALUE] indicator in millisecond units.

The delay time range is 0 msec – 750 msec.

③ **MONITOR A DELAY [ON] switch and LED**
This is an on/off switch for the internal delay of the MONITOR A output.

The switch LED will light when this is on, and the output signal will be delayed by the time displayed in the MONITOR A DELAY TIME [VALUE] indicator (②).

④ **MONITOR A [LEVEL] volume**
This is an analog volume that sets the MONITOR A output level.

Hint
The value of this level cannot be stored in a scene or controlled from outside (or by the internal software).

⑤ **MONITOR A [L MONO]/[R MONO] switches and LEDs**
These switches select the stereo/monaural state of the MONITOR A output. Depending on the lit/dark status of each switch, the output signal of MONITOR A will change as follows.

MONITOR A [L MONO]/[R MONO] switches

[L MONO] switch	[R MONO] switch	MONITOR A output signal
Dark	Dark	Stereo signal
Lit	Dark	Monaural signal of left channel only
Dark	Lit	Monaural signal of right channel only
Lit	Lit	Monaural signal of mixed left and right channels

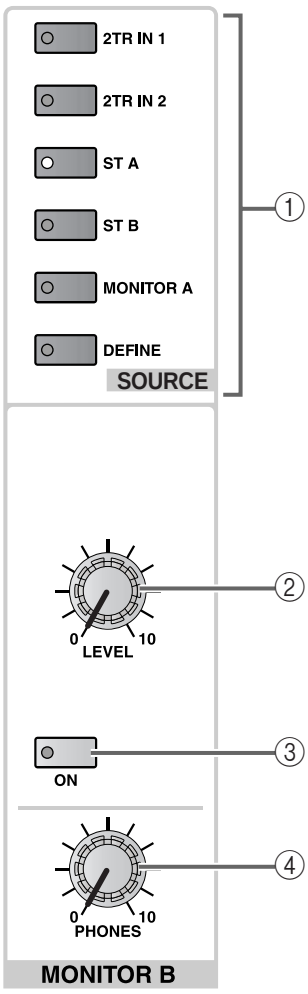
⑥ **MONITOR A [ON] switch and LED**
This is an on/off switch for the MONITOR A output. The switch LED will light when this is on.

⑦ **MONITOR A PHONES [LEVEL] volume**
This is an analog volume that sets the output level of the MONITOR A phones jack.

Hint
The value of this level cannot be stored in a scene or controlled from outside (or by the internal software).

MONITOR B section

This section selects the monitor source for the MONITOR B output, and adjusts its level.



① **MONITOR B SOURCE [2TR IN 1]/[2TR IN 2]/[ST A]/[ST B]/[MONITOR A]/[DEFINE] switches and LEDs**
These switches select the monitor source for the MONITOR B outputs.

The switch LED for the currently selected source will light. (It is not possible to select two or more sources.)

Each switch corresponds to the following sources.

- **[2TR IN 1] switch**
Monitor the input signal from the 2-TRACK IN DIGITAL 1 jack or 2-TRACK IN ANALOG 1 jacks located on the rear panel of the CS1D.

The choice between analog and digital is made in the display (MON/CUE function 2TR IN screen).

- **[2TR IN 2] switch**
Monitor the input signal from the 2-TRACK IN DIGITAL 2 jack or 2-TRACK IN ANALOG 2 jacks located on the rear panel of the CS1D.

The choice between analog and digital is made in the display (MON/CUE function 2TR IN screen).

- **[ST A] switch**
Monitor the output signal of the STEREO A channel.

- **[ST B] switch**
Monitor the output signal of the STEREO B channel.

- **[MONITOR A] switch**
Monitor the signal that is selected as the monitor source by the MONITOR A section.

If this switch is selected, the CUE bus can also be monitored by the MONITOR B section.

- **[DEFINE] switch**
Monitor the signal (MIX 1–48, MATRIX 1–24, 2TR IN 3–6, or DIRECT IN) that was previously defined by the user in the display (MON/CUE function MONITOR B screen).

② **MONITOR B [LEVEL] volume**
This is an analog volume that sets the MONITOR B output level.

Hint
The value of this level cannot be stored in a scene or controlled from outside (or by the internal software).

③ **MONITOR B [ON] switch and LED**
This is an on/off switch for the MONITOR B output.

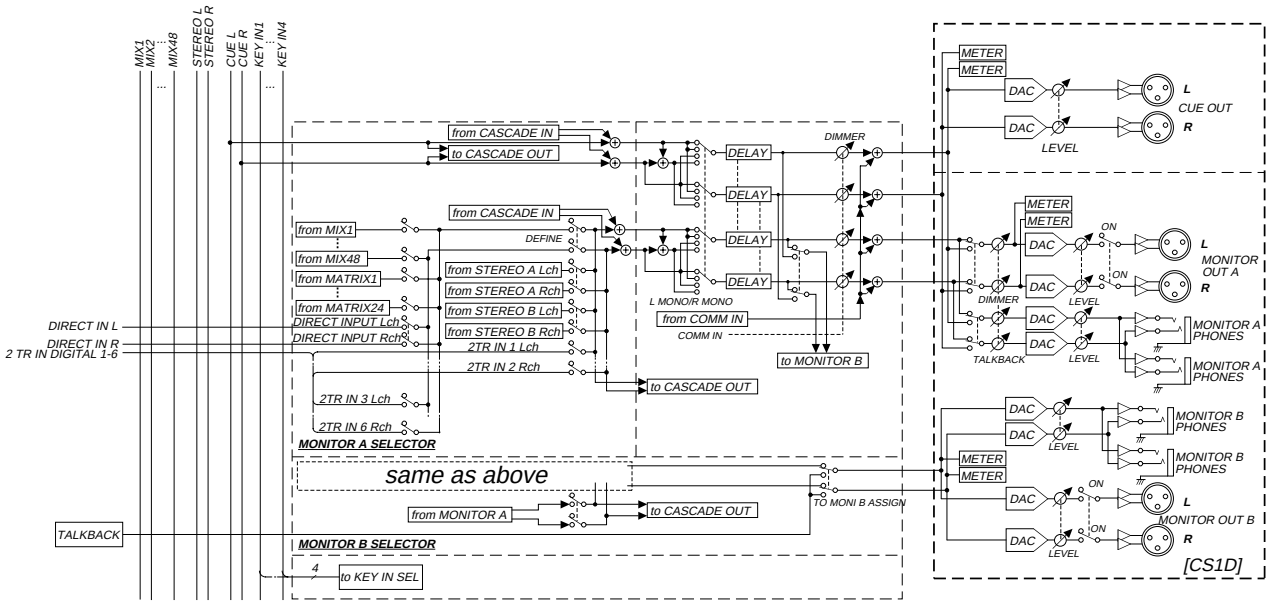
The switch LED will light when this is on.

④ **MONITOR B PHONES [LEVEL] volume**
This is an analog volume that sets the output level of the MONITOR B phones jack.

Hint

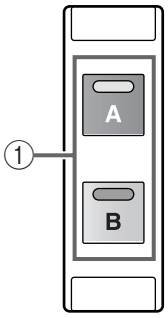
The value of this level cannot be stored in a scene or controlled from outside (or by the internal software).

MONITOR A/B section signal flow



ENGINE section

If two DSP1D (or DSP1D-EX) DSP units are connected to a single CS1D, this section selects the DSP unit that will be controlled.



ENGINE

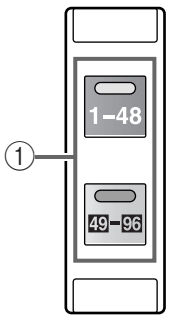
① **ENGINE [A]/[B] switches and LEDs**
These switches select which of two DSP1D (or DSP1D-EX) DSP units will be controlled by the CS1D.

The LED of the currently selected switch will light.

⚠ PM1D system version 1.0 does not support additional DSP units except when using Mirror mode.

GLOBAL LAYER section

On 96 channel models with a DSP card installed in the DSP unit, this section selects the input channels that will be controlled. {On 48 channel models this section has no function.}



GLOBAL LAYER

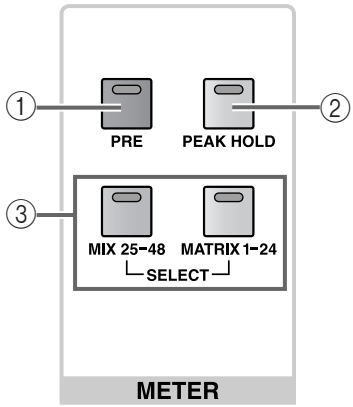
① **[1–48]/[49–96] switches and LEDs**
These switches select either channels 1–48 or 49–96 as the input channels to be controlled by INPUT blocks 1–4 of a 96 channel model.

In the same way you can switch between 1–4 or 5–8 as the ST IN channels that will be controlled in the ST IN block.

The LED of the currently selected switch will light.

METER section

In this section you can select the channels whose level will be shown by the level meter, and specify the level detection point.



① **METER [PRE] switch and LED**
This switch selects either PRE (switch LED lit) or POST (switch LED dark) as the level metering point (the point at which the level is detected) for the output channel modules.

Regardless of whether "PRE" or "POST" is selected, the location in the signal route at which the level is actually detected can be specified in the screen (METER function MIX 1-48 screen, or MATRIX 1-24/ST /MONITOR screen).

The following tables show the metering points that can be selected for input channels and output channels.

Metering points that can be selected for output channels

PRE button	
PRE EQ	Immediately before the EQ
PRE FADER	Immediately before the fader
POST button	
POST FADER	Immediately after the fader
POST ON	After the [ON] switch

Hint

Operations of the [PRE] switch do not affect the level meters of input channels. The metering point for input channels can be selected only in the screen (METER function screen), and can be set to one of the following five points.

Metering points that can be selected for input channels

PRE ATT	Before the attenuator
PRE GATE	Immediately before the internal noise gate
PRE FADER	Immediately before the fader
POST FADER	Immediately after the fader
POST ON	Immediately after the [ON] switch

② **METER [PEAK HOLD] switch and LED**
This is an on/off switch for the Peak Hold function of the output channel meters.

The switch LED will light when this is on, and the meter segment corresponding to the peak level will remain lit.

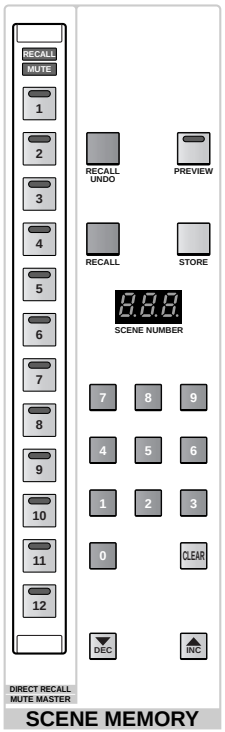
③ **METER SELECT [MIX 25–48]/[MATRIX 1–24] switches and LEDs**
These switches select the channels whose level will be displayed by the 24 meters located on the right side of the meter bridge.

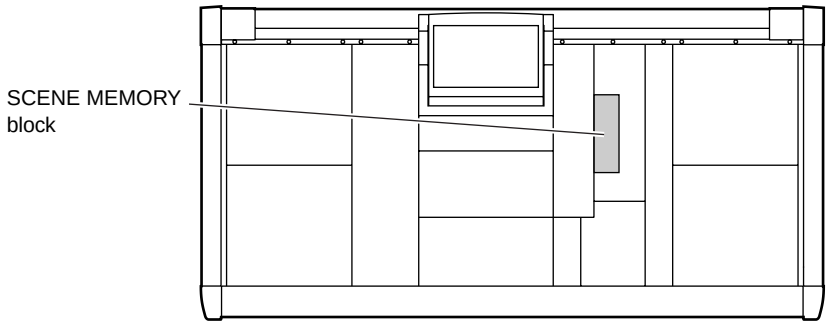
When the [MIX 25–48] switch is on, the level of MIX channels 25–48 will be displayed. When the [MATRIX 1–24] switch is on, the level of MATRIX channels 1–24 will be displayed.

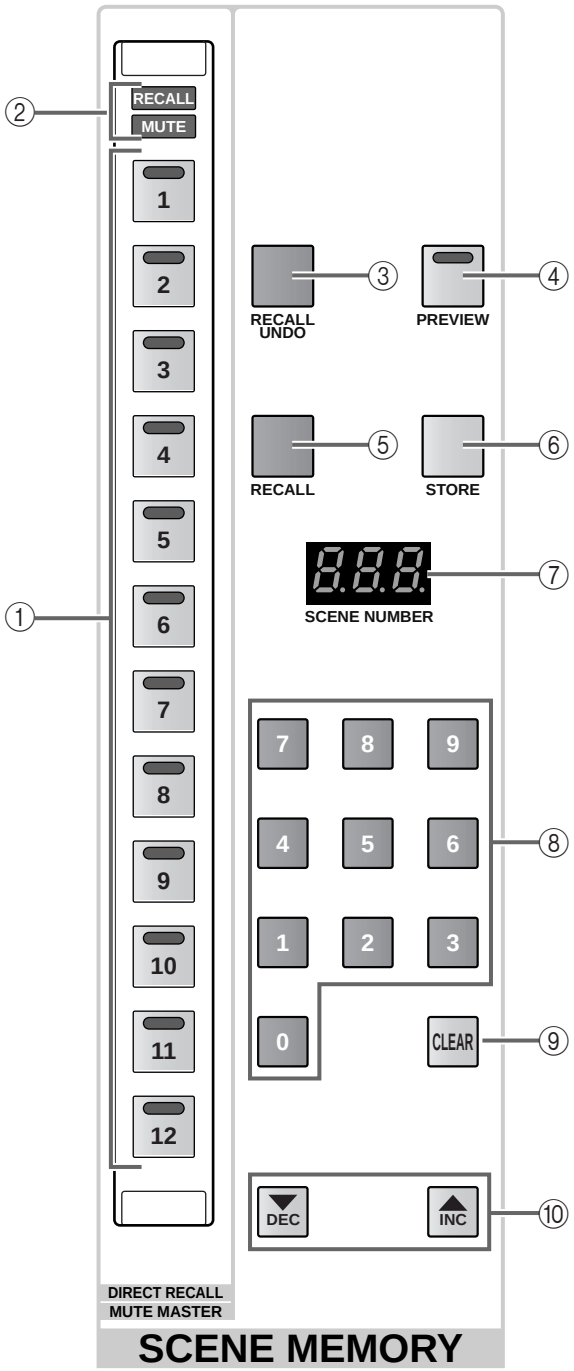
SCENE MEMORY block

[Function]

In this block you can store and recall mix parameters as scene memories. Mute operations for mute groups 1–12 are also performed in this block.







① **SCENE MEMORY [1]–[12] switches and LEDs**
These switches directly recall twelve previously-selected scenes from the scenes stored in memory.

Assignment of a scene number to each switch is performed in the display (SCENE function DIRECT RECALL screen).

Hint

The SCENE MEMORY [1]–[12] switches can also be used as mute master switches to switch muting on/off for mute groups 1–12. The selection of which function is used can be made in the display (SCENE function DIRECT RECALL screen).

② **SCENE MEMORY [RECALL]/[MUTE] LEDs**
These LEDs indicate the function of the SCENE MEMORY [1]–[12] switches (①).

One or the other LED will light depending on the function that is selected in the display (SCENE function DIRECT RECALL screen).

- **When the [RECALL] LED is lit**
The SCENE MEMORY [1]–[12] switches will function as direct recall switches that directly recall the twelve previously assigned scenes.

- **When the [MUTE] LED is lit**
The SCENE MEMORY [1]–[12] switches will function as mute master switches that switch muting on/off for mute groups 1–12.

③ **SCENE MEMORY [RECALL UNDO] switch**
This switch cancels the last-executed scene recall operation.

If you accidentally recall an unwanted scene, you can press this switch to return to the state prior to recalling the scene.

Hint
This switch will have no effect until the first scene is recalled after the PM1D system is powered-on.

④ **SCENE MEMORY [PREVIEW] switch and LED**
This switch selects the mode of operation when a scene recall is performed: either NORMAL mode or PREVIEW mode.

When PREVIEW mode is selected, the switch LED will light. When NORMAL mode is selected, it will be dark.

- **NORMAL mode**

In this mode, scenes will be stored and recalled in the conventional way.

When you recall a new scene in this mode, the mix parameters will be rewritten to the settings of the new scene.

- **PREVIEW mode**

This mode lets you check the scene settings, and unit, patch, name setting stored in a memory without affecting the internal signal processing of the system.

When you recall a scene in this mode, the mix parameters of the new scene will be displayed on the panel of the CS1D, but the internal signal processing will remain the same as before the recall operation.

If you operate the panel switches/encoders, the panel display of the CS1D will change, but here too, the internal signal processing will not be affected. If you wish, you can save the modified content to a desired scene number and library number.

PREVIEW mode is useful when you wish to check the parameter values before recalling a scene, or to modify/save parameter values before recalling a scene.

Hint
If you turn the SCENE [PREVIEW] switch off and exit PREVIEW mode, you will return to the state before PREVIEW mode was entered.

⑤ **SCENE MEMORY [RECALL] switch**
This switch recalls a scene.

- **When the SCENE MEMORY [PREVIEW] switch is off (NORMAL mode)**

Use the SCENE MEMORY [0]–[9] switches (⑧) or the SCENE MEMORY [▼/DEC]/[▲/INC] switches (⑩) to select the scene number that you wish to recall, and press this switch. The scene of the number shown in the [SCENE NUMBER] indicator (⑦) will be recalled from memory, and overwritten onto the current mix parameters.

- **When the SCENE MEMORY [PREVIEW] switch is on (Preview mode)**

When you select a scene number to be loaded and then press this switch, the mix parameter values of that scene will be reflected by the CS1D panel, but the internal signal processing will not be affected.

Hint
If necessary, you can exclude only specific channels from recall operations, so that they will not be affected when you perform a recall (Recall Safe).

The channels that will be excluded from recall operations can be selected in the display (SCENE function RECALL SAFE screen).

⑥ **SCENE MEMORY [STORE] switch**
This switch is used to store a scene.

- **When the SCENE MEMORY [PREVIEW] switch is off (Normal mode)**

When you press this switch, the current mix parameter settings will be saved in the number displayed in the [SCENE NUMBER] indicator (⑦).

If desired, you can change the save destination scene number.

- **When the SCENE MEMORY [PREVIEW] switch is on (PREVIEW mode)**

If you press this switch immediately after entering PREVIEW mode, the parameter values prior to entering PREVIEW mode will be saved in the number shown by the [SCENE NUMBER] indicator.

If desired, you may change the save destination scene number.

If you enter PREVIEW mode, perform a recall operation, and then press this switch, the last-recalled scene will be saved in the number shown by the [SCENE NUMBER] indicator. (Changes you made after the recall operation will be reflected in the save destination.)

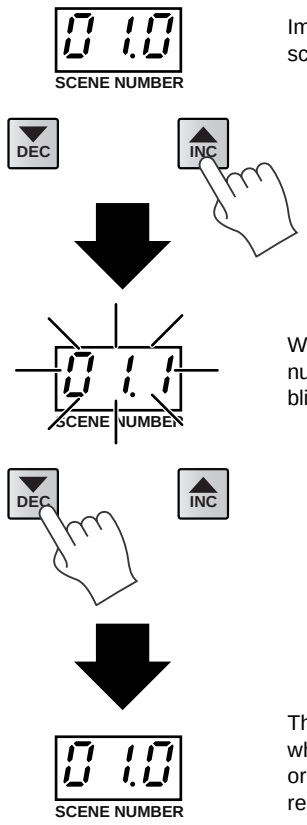
In this case also, you may change the save destination scene number.

⑦ **[SCENE NUMBER] indicator**
This indicator shows the scene memory number. The scene numbers of the PM1D system consist of an integer portion in the range of 00–99, and a decimal portion in the range of .0–.9, allowing 1000 scene memories to be stored in internal memory.

If this indicator shows a number that is different than the last-recalled scene, the number in the indicator will blink. This indicates that the displayed scene number differs from the mix parameters currently being controlled on the CS1D.

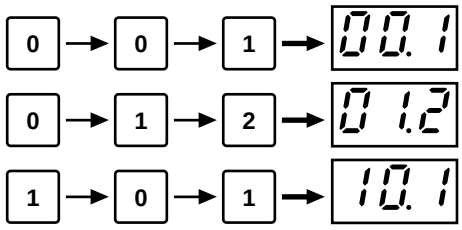
The number will stop blinking if you once again select the last-recalled scene number or if you recall/store a new scene.

[SCENE NUMBER]



⑧ **SCENE MEMORY [0]–[9] switches**
These switches are used to enter a three-digit number to specify the scene memory shown in the [SCENE NUMBER] indicator. Successively input a two-digit integer portion and a one-digit decimal portion. (If the integer portion has only one digit, add a 0 at the beginning.)

Examples of using the SCENE MEMORY [0]–[9] switches to input a scene number

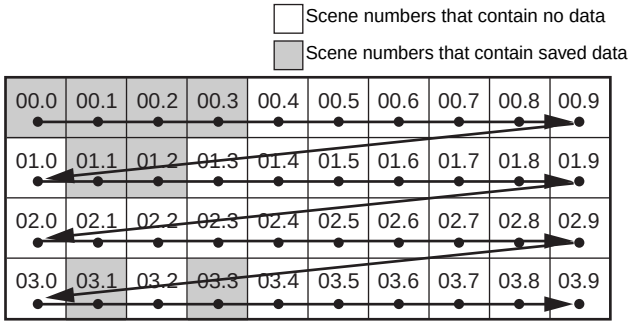


⑨ **SCENE MEMORY [CLEAR] switch**
This switch returns the number displayed in the [SCENE NUMBER] indicator to the number that had been displayed before the change.

⑩ **SCENE MEMORY [▼/DEC]/[▲/INC] switches**
These switches increment or decrement the number shown in the [SCENE NUMBER] indicator.

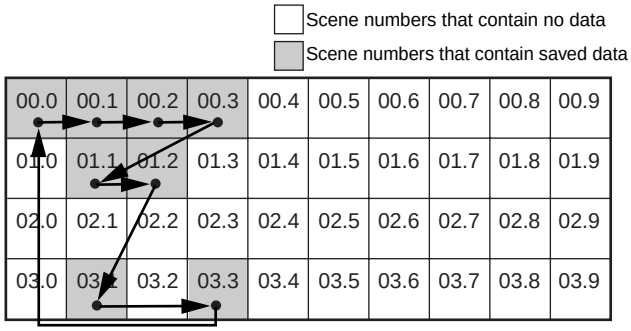
When the PM1D system is in the default state, the number shown in the [SCENE NUMBER] indicator will increase or decrease in steps of 0.1, regardless of whether data is actually saved in the scenes.

For example, if you repeatedly press the SCENE MEMORY [▲/INC] switch, the displayed number will change as follows.



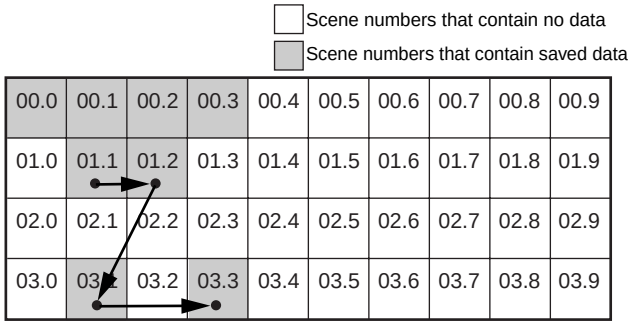
However if you wish, you can skip scene numbers that contain no data. This setting is made in the SCENE function MEMORY screen. If you turn on the BLANK SKIP button in this screen, scene numbers in which no data is saved will be skipped as shown below.

BLANK SKIP applies to all scene memories that can be recalled (including preset scene memories). The selection sequence will also move between scene 00.0 and the highest scene that can be recalled.



Hint

Operation differs from when SCENE MEM INC/DEC RECALL are assigned to USER DEFINE switches. In this case, preset scene memories will be skipped without being included. The selection sequence will not skip between the lowest and highest scene numbers that can be recalled.



[Procedure]

Storing a scene

Here's how to save the current mix settings as a new scene.

Hint

Each scene of the PM1D system includes the settings of all controls of the CS1D (except for display brightness and analog volume settings), as well as the following settings for functions in the display.

- All INPUT functions
- All OUTPUT functions
- EFFECT functions
- GEQ functions

⚠ Before you perform the following procedure, make sure that the SCENE MEMORY block SCENE MEMORY [PREVIEW] switch (④) is turned off (NORMAL mode).

1. **Use the panel controllers of the CS1D to set the mix parameters.**
2. **If necessary, use the SCENE MEMORY [0]–[9] switches or the SCENE MEMORY [▼/DEC]/[▲/INC] switches to select the save destination scene number.**
   When you select a new scene number, the number shown in the [SCENE NUMBER] indicator will blink.

   This blinking indicates that the displayed scene number is different than the mix parameters currently being controlled on the CS1D.
3. **Press the SCENE MEMORY [STORE] switch.**
   The SCENE STORE popup window will appear, allowing you to assign a title to the scene and store it. Assign a title or comment as necessary. (For details on inputting text, refer to "CS1D Operation Manual (Basic Operation)" →p.20.)
4. **Use the [CURSOR] switch to move the cursor to the STORE button in the screen, and press the [ENTER] key.**
   A message confirming the store operation will appear in the display. When you select OK, the current mix parameter settings will be stored in the scene number you selected in step 2.

Hint

If desired, a message can ask you to confirm the store operation when you press the SCENE MEMORY [STORE] switch.
This setting is made in the display (UTILITY function PREFERENCE screen).

⚠ If there are any changes in a UNIT, PATCH, or NAME library that is linked with that scene, a popup window for the corresponding library will appear following the SCENE STORE popup window. Store the library as necessary.

Recalling a scene

Here's how to load a saved scene into memory.

⚠ Before you perform the following procedure, make sure that the SCENE MEMORY block SCENE MEMORY [PREVIEW] switch (④) is turned off (NORMAL mode).

1. **Use the SCENE MEMORY [0]–[9] switches or the SCENE MEMORY [▼/DEC]/[▲/INC] switches to select the scene number that will be loaded.**
   When you select a new scene number, the number shown in the [SCENE NUMBER] indicator will blink.
2. **Press the SCENE MEMORY [RECALL] switch.**
   A message confirming the recall operation will appear in the display. When you select OK, the scene of the number you selected in step 1 will be recalled.

Hint

If desired, a message can ask you to confirm the recall operation when you press the SCENE MEMORY [RECALL] switch.
This setting is made in the display (UTILITY function PREFERENCE screen).
By pressing the SCENE MEMORY [RECALL UNDO] switch, you can return to the state immediately prior to performing the recall operation. However when the Undo operation is not available, such as immediately after power-on or during PREVIEW mode, pressing the [RECALL UNDO] switch will cause a message of "CANNOT UNDO!" to appear.

Using PREVIEW mode

By using PREVIEW mode you can check or modify the contents of a scene stored in memory without affecting the internal signal processing of the system.

1. **Turn on the SCENE MEMORY [PREVIEW] switch to make the switch LED light.**
   The SCENE MEMORY block will be in PREVIEW mode.
2. **Use the SCENE MEMORY [0]–[9] switches or the SCENE MEMORY [▼/DEC]/[▲/INC] switches to select the scene number that you wish to load.**
   When you select a new scene number, the number shown in the [SCENE NUMBER] indicator will blink.
3. **Press the SCENE MEMORY [RECALL] switch.**
   Only the settings of the scene selected in step 2 will be loaded, and shown by the LEDs and the display in the CS1D panel.

   Internal signal processing of the system will not change; it will remain as it was before the recall operation was performed.

Hint

You can recall a specific channel to the SELECTED INPUT CHANNEL block or SELECTED OUTPUT CHANNEL block, or view a specific screen in the display to verify the settings in detail.
Channels set to RECALL SAFE will be safe. However even if FADE TIME is specified, it will have no effect, and the fader will move immediately to the specified value.

4. **As desired, use the controls of the CS1D panel to modify the settings.**
   If you operate the panel controls in PREVIEW mode, the patch whose settings alone you loaded in step 3 will be modified.

   The internal signal processing of the system will not be affected.

5. **If you wish to save the changes you made in step 4, select the store destination as desired, and press the SCENE MEMORY [STORE] switch.**
   The changes you made in step 4 will be stored to memory.

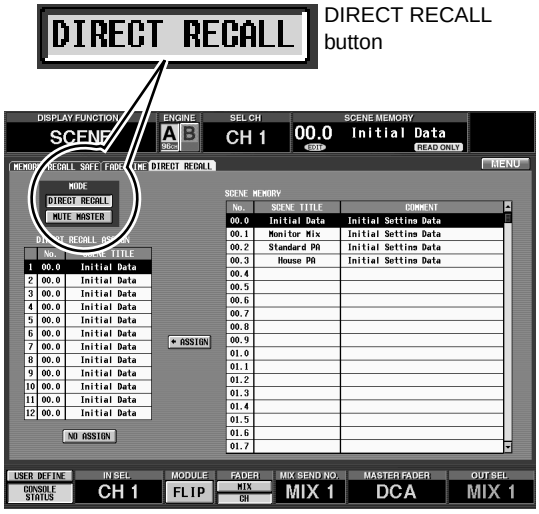
6. **To return the SCENE MEMORY block to NORMAL mode, press the SCENE MEMORY [PREVIEW] switch to make the switch LED go dark.**

Directly recalling a scene

By using SCENE MEMORY [1]–[12] switches, you can directly recall twelve scenes that were previously assigned to these switches.

1. **Assign scenes to the SCENE MEMORY [1]–[12] switches.**
   Scenes can be assigned to the SCENE MEMORY [1]–[12] switches in the SCENE function DIRECT RECALL screen.

SCENE function DIRECT RECALL screen



In the SCENE function DIRECT RECALL screen, click the DIRECT RECALL button.

The SCENE MEMORY block SCENE MEMORY [RECALL] LED will light.

The SCENE MEMORY [1]–[12] switches will function as direct recall switches that directly recall the specified twelve scenes.

Hint

The function of the SCENE MEMORY [1]–[12] switches can be selected in the IN DCA/MUTE function MUTE GROUP ASSIGN screen, and also in the OUT DCA/MUTE function MUTE GROUP ASSIGN screen.

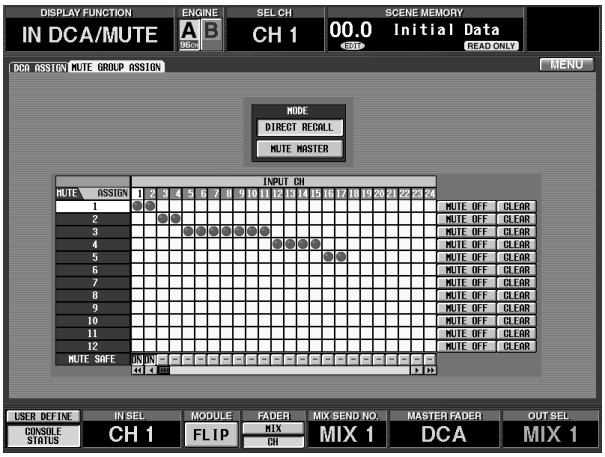
2. **Press one of the SCENE MEMORY [1]–[12] switches.**
   The LED of the corresponding switch will light, and the scene assigned to that switch in step 1 will be loaded.

Using mute groups

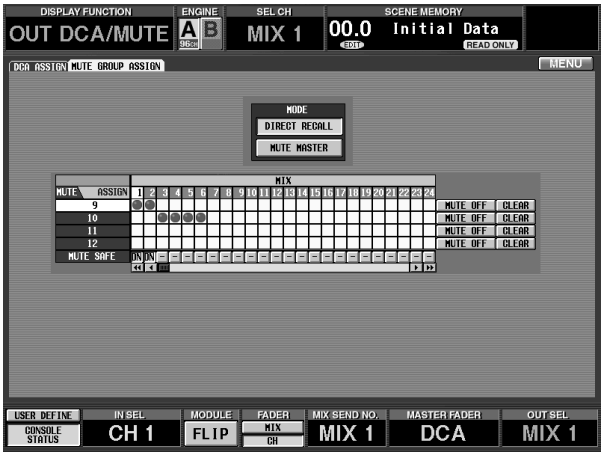
The SCENE MEMORY [1]–[12] switches can also be used as mute master switches that turn muting on/off for mute groups 1–12.

1. **Assign input channels/output channels to mute groups 1–12.**
   Input channels can be assigned to mute groups in the IN DCA/MUTE function MUTE GROUP ASSIGN screen. Output channels can be assigned to mute groups in the OUT DCA/MUTE function MUTE GROUP ASSIGN screen.

IN DCA/MUTE function MUTE GROUP ASSIGN screen



OUT DCA/MUTE function MUTE GROUP ASSIGN screen



⚠ Input channels can be assigned to mute groups 1–12, and output groups can be assigned to mute groups 9–12.

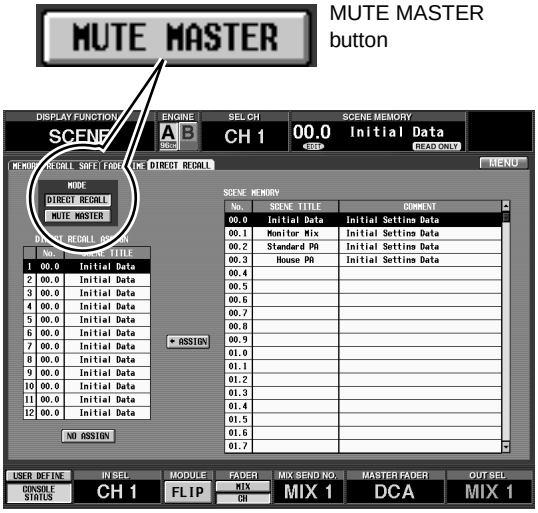
However, it is not possible to assign both input and output channels to a mute group 9–12. For this reason if an output channel is already assigned to a mute group, attempting to assign an input channel to this mute group will cause a message to be displayed, and the assignment will not be made. (The same will apply for the converse situation.)

When a scene is recalled, the DCA group data of recall safe channels may be adjusted so that recall safe settings are consistent within DCA groups 9–12. Also when a channel library is recalled, the data recalled to a channel may be adjusted so that settings are consistent within DCA groups 9–12.

2. In the SCENE function DIRECT RECALL screen, click the MUTE MASTER button.
The SCENE MEMORY block SCENE MEMORY [MUTE] LED will light.

The SCENE MEMORY [1]–[12] switches will function as mute master switches that turn muting on/off for the corresponding mute group.

SCENE function DIRECT RECALL screen



Hint

The function of the SCENE MEMORY [1]–[12] switches can be selected in the IN DCA/MUTE function MUTE GROUP ASSIGN screen, and also in the OUT DCA/MUTE function MUTE GROUP ASSIGN screen.

3. Press a SCENE MEMORY [1]–[12] switch.
The LED of the corresponding switch will light, and the mute group assigned to the switch in step 1 will be muted.

If a previously-on channel is muted by the mute master switch, the [ON] LED of that channel will blink.

Hint

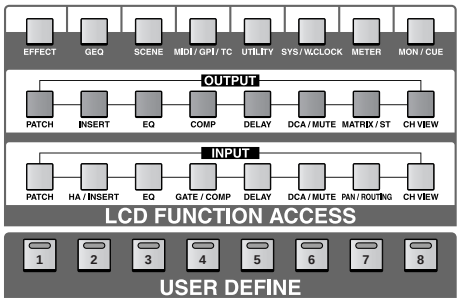
You can also turn on multiple buttons to simultaneously mute multiple mute groups.

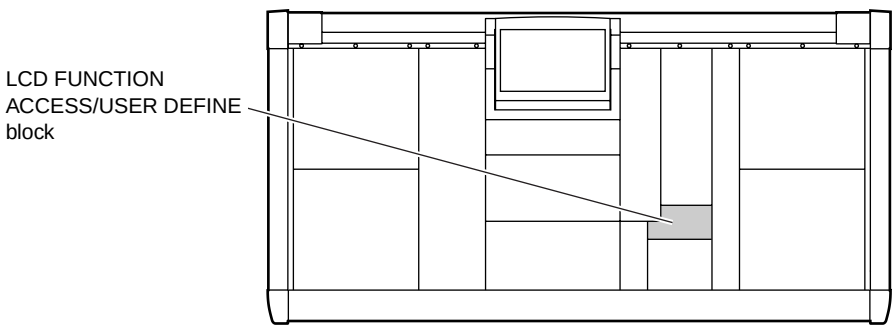
4. To turn muting off, press the SCENE MEMORY [1]–[12] switches whose LEDs are currently lit.

LCD FUNCTION ACCESS/USER DEFINE block

[Function]

In this block you can recall desired functions or screens in the display, or execute functions that were previously defined by the user.

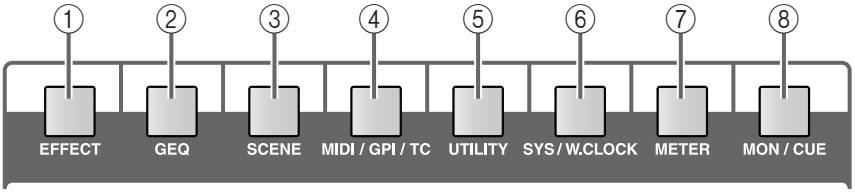




LCD ACCESS GLOBAL section

In this section, functions that affect the entire PM1D system can be recalled to the display.
By repeatedly pressing the same switch, you can select screens within a function.

By holding down the [SHIFT/GRAB] switch of the data entry section and pressing one of these switches, you can access the previous page within that function.
You can also recall the previous screen in that function by continuing to press the switch.



① **[EFFECT] switch**

② **[GEQ] switch**

③ **[SCENE] switch**

④ **[MIDI/GPI/TC] switch**

⑤ **[UTILITY] switch**

⑥ **[SYS/W.CLOCK] switch**

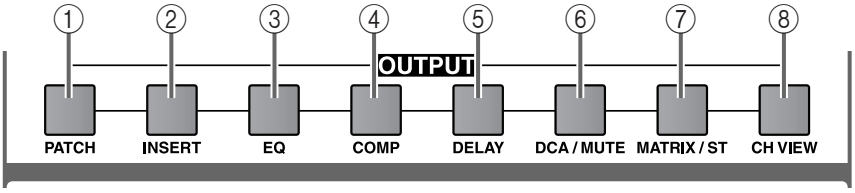
⑦ **[METER] switch**

⑧ **[MON/CUE] switch**

LCD ACCESS OUTPUT section

In this section, functions that affect output channels can be recalled to the display.
By repeatedly pressing the same switch, you can select screens within a function.

By holding down the [SHIFT/GRAB] switch of the data entry section and pressing one of these switches, you can access the previous page within that function.
You can also recall the previous screen in that function by continuing to press the switch.



① **[PATCH] switch**

② **[INSERT] switch**

③ **[EQ] switch**

④ **[COMP] switch**

⑤ **[DELAY] switch**

⑥ **[DCA/MUTE] switch**

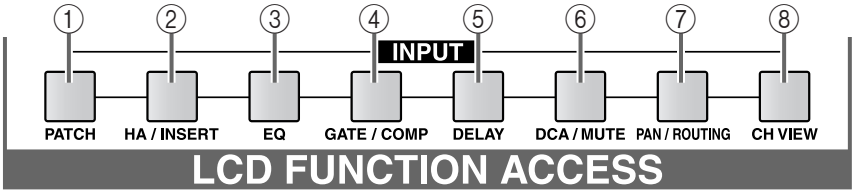
⑦ **[MATRIX/ST] switch**

⑧ **[CH VIEW] switch**

LCD ACCESS INPUT section

In this section, functions that affect input channels can be recalled to the display.
By repeatedly pressing the same switch, you can select screens within a function.

By holding down the [SHIFT/GRAB] switch of the data entry section and pressing one of these switches, you can access the previous page within that function. You can also recall the previous screen in that function by continuing to press the switch.



① **[PATCH] switch**

② **[HA/INSERT] switch**

③ **[EQ] switch**

④ **[GATE/COMP] switch**

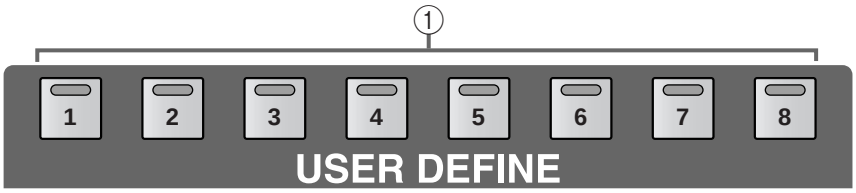
⑤ **[DELAY] switch**

⑥ **[DCA/MUTE] switch**

⑦ **[PAN/ROUTING] switch**

⑧ **[CH VIEW] switch**

USER DEFINE



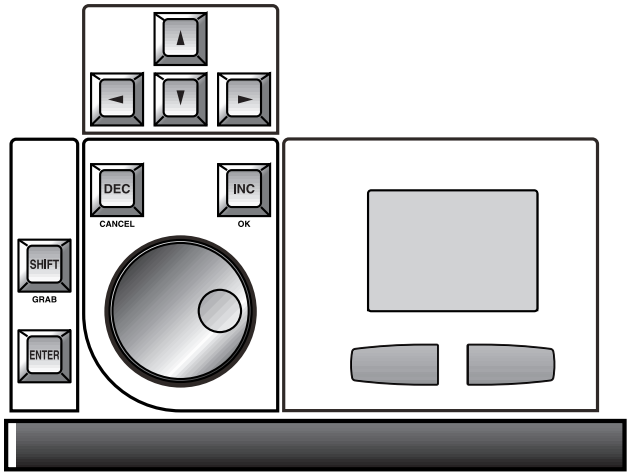
① **[1]–[8] switches and LEDs**
These switches execute functions previously defined by the user.

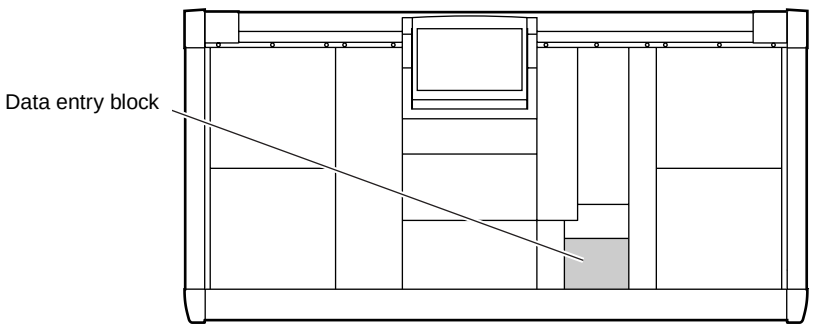
Definitions for each switch can be made in the UTILITY function DEFINE screen.

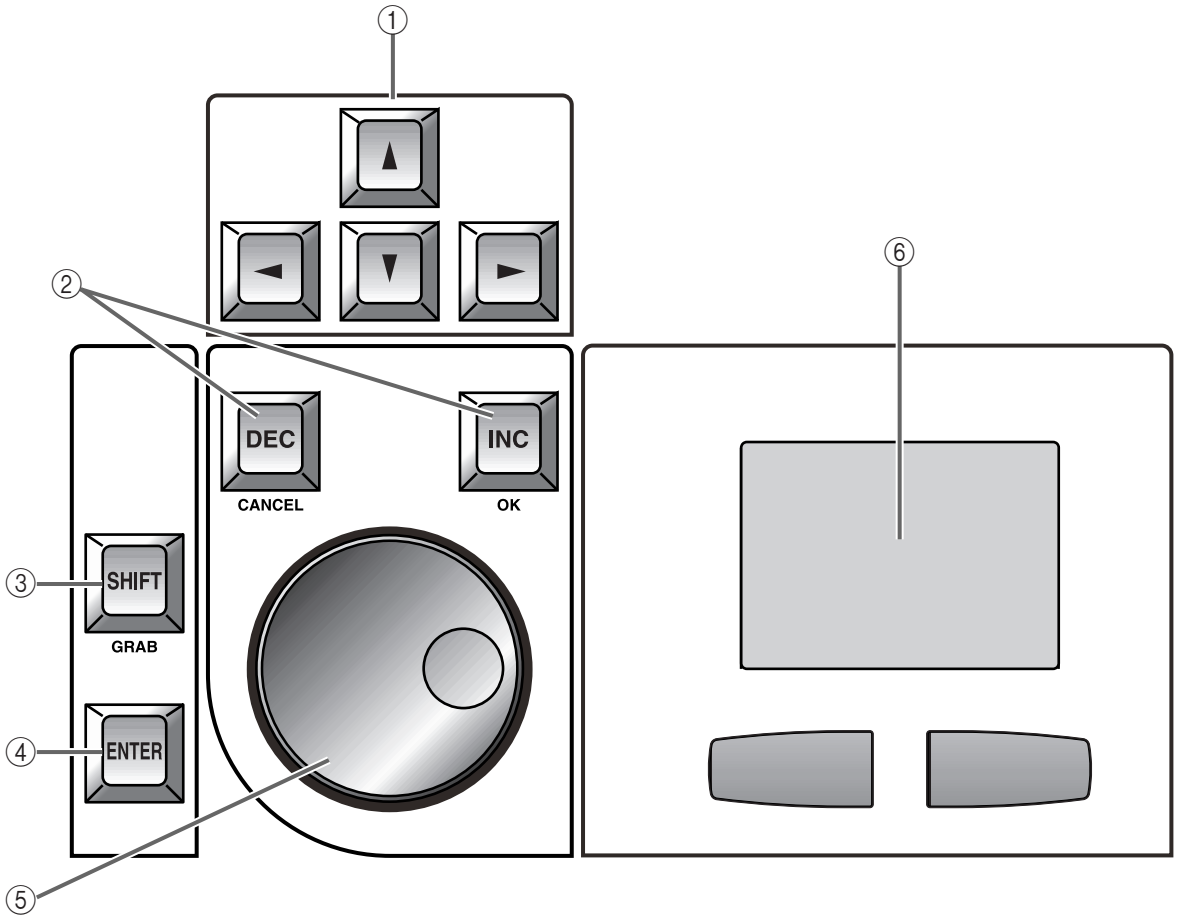
Data entry block

[Function]

This block is used to move the display pointer (the arrow displayed in the screen) or cursor (the red circle that indicates a selection), or to modify the value of a parameter.







① **CURSOR [▲]/[▼]/[◄]/[►] switches**
Use these to move the cursor in the display to the desired parameter.

② **[DEC/CANCEL]/[INC/OK] switches**
Use these to increment or decrement the value of the parameter at which the cursor is located in the display.

When a confirmation window is displayed before executing a Recall or Store operation, these switches can also be used in place of the CANCEL button and OK button in the window.

③ **[SHIFT/GRAB] switch**
If the cursor is located at a knob-type parameter with a wide range of adjustment, the parameter value can be made to change more quickly by holding down this switch and pressing the [DEC/CANCEL]/[INC/OK] switch or rotating the [DATA] encoder.

In some screens, you can hold down this screen and press a CURSOR [▲]/[▼]/[◄]/[►] switch ①, to move the cursor from its current location to another area.

⚠ The GRAB function is not supported on PM1D system version 1.0.

④ **[ENTER] switch**
This switch is used as an on/off switch for the button at which the cursor is located in the display.

⑤ **[DATA] encoder**
This is used to continuously increase or decrease the parameter value in the display where the cursor is currently located.

⑥ **Track pad and left/right switches**
Use this to move the pointer in the display, and to select a specific parameter.

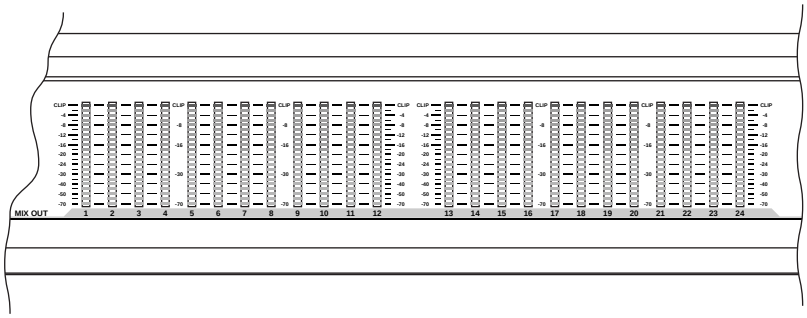
When adjusting a parameter that has a wide range, such as delay time, the parameter value will change more rapidly if you click the right switch of the track pad (mouse) while using the pad to modify the value.

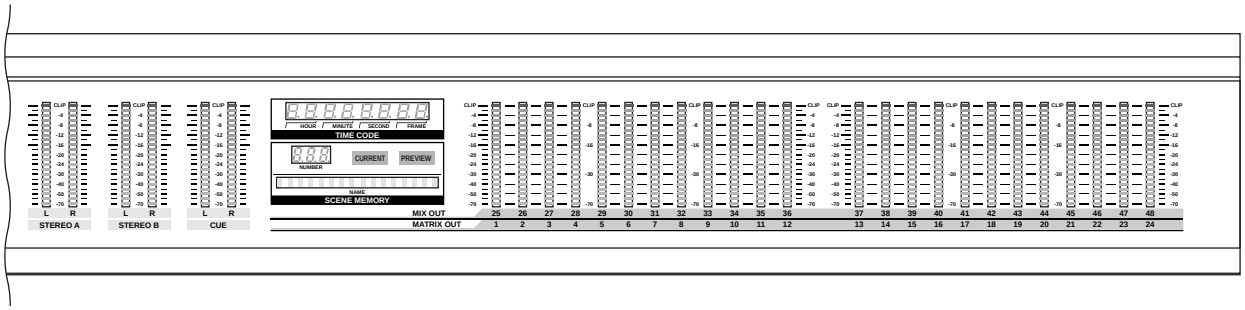
By holding down the left/right switches while you turn on the power, you can initialize internal memory such as scene memory and the various libraries. For details refer to "CS1D Reference Manual (Software), Other" →p.194.

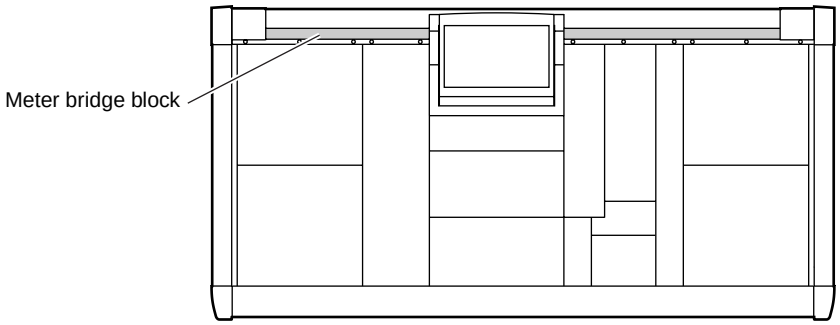
Meter bridge block

[Function]

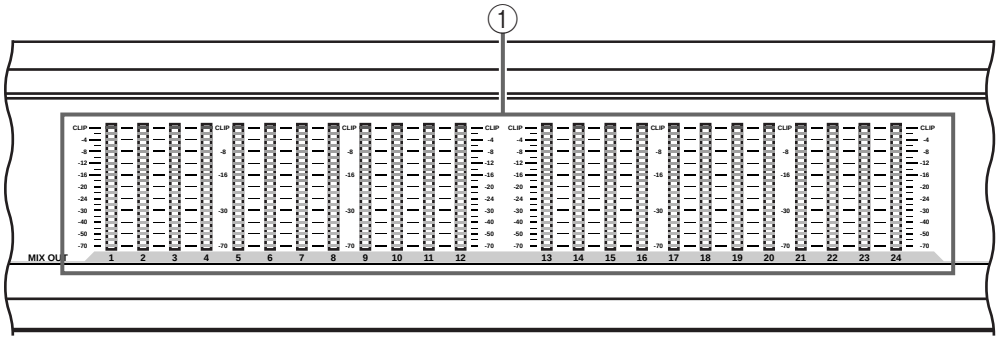
Displays the levels of the output channels and cue output.





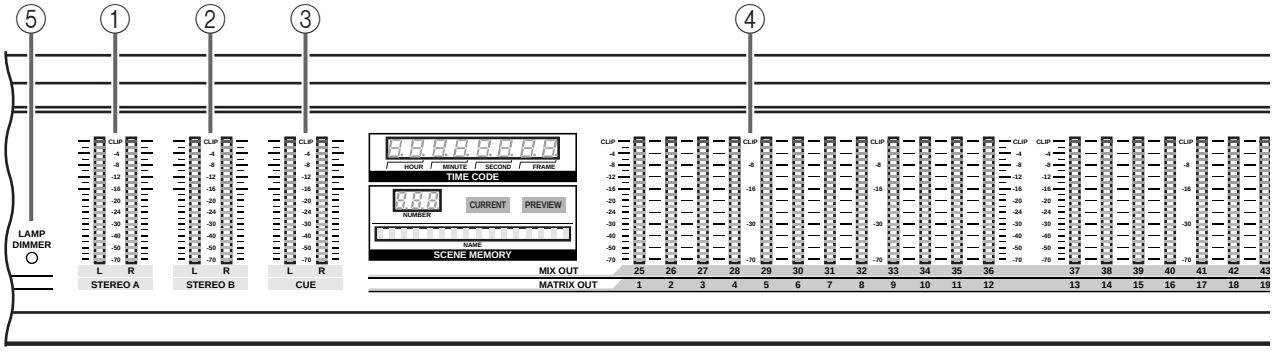


Meter section (left)



① **MIX OUT 1–24 meters**
These LED meters show the output level of MIX channels 1–24.

Meter section (right)



① **STEREO A L/R meters**
These LED meters show the output level of the STEREO A channel.

② **STEREO B L/R meters**
These LED meters show the output level of the STEREO B channel.

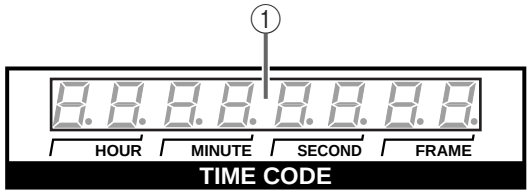
③ **CUE L/R meters**
These LED meters show the output level of the CUE signal.

④ **MIX OUT 25–48 / MATRIX OUT 1–24 meters**
According to the MASTER block METER SELECT switch setting, these LED meters show the output level of MIX channels 25–48 or the output level of MATRIX channels 1–24.

The number of the currently selected channel will light above the meter bridge.

⑤ **LAMP DIMMER encoder**
Refer to page 107 for an explanation.

TIME CODE section



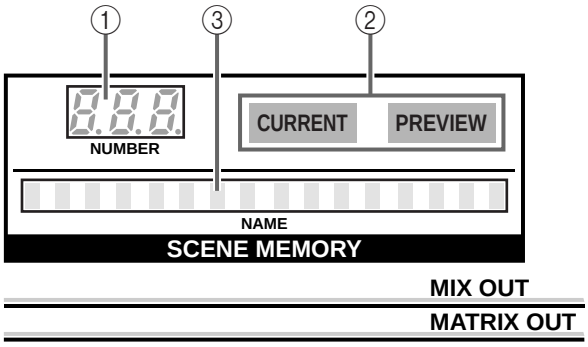
① **TIME CODE indicator**
This is a realtime display of the SMPTE time code (LTC) that is input from the TIME CODE IN connector in the rear panel of the CS1D, or of the time code that is generated within the PM1D system.

This will not be displayed if the TIME CODE IN setting in the TC EVENT screen is turned OFF, or if TIME CODE is not input after changing this setting.

Hint

You can make settings in the display (MIDI/GPI/TC function TC EVENT screen) to select the source (internal or external) of the time code that is displayed.

SCENE MEMORY section



① **SCENE MEMORY [NUMBER] indicator**
This displays the last stored or recalled scene memory number.

② **SCENE MEMORY [CURRENT]/[PREVIEW] LEDs**
These indicate whether Normal mode or Preview mode is selected as the operation when Recall is performed.

- **When the [CURRENT] LED is lit (Normal mode)**
In this mode, scenes will be stored and recalled as usual.

  In this mode, the setting values shown on the CS1D will always match the current state of the mix parameters.

  When you recall a new scene in this mode, the mix parameter values will be rewritten by the new scene.

- **When the [PREVIEW] LED is lit (Preview mode)**
In this mode, you can check or edit a scene stored in memory, a unit, a patch, or a name without affecting the signal processing of the system.

  When you recall a new scene in this mode, the mix parameter values, and unit, patch, name setting values of that scene will be shown by the CS1D top panel, but the internal signal processing will not be affected.

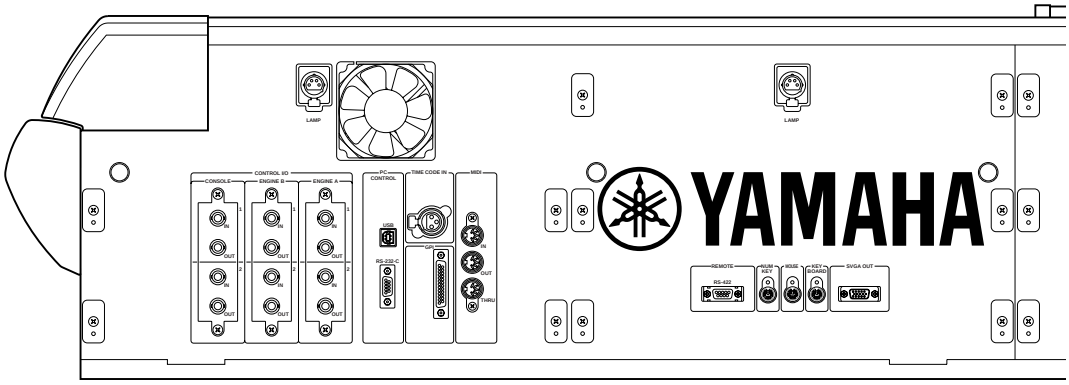
③ **SCENE MEMORY [NAME] indicator**
This displays the title (sixteen characters) of the scene memory shown in the SCENE MEMORY [NUMBER] indicator.

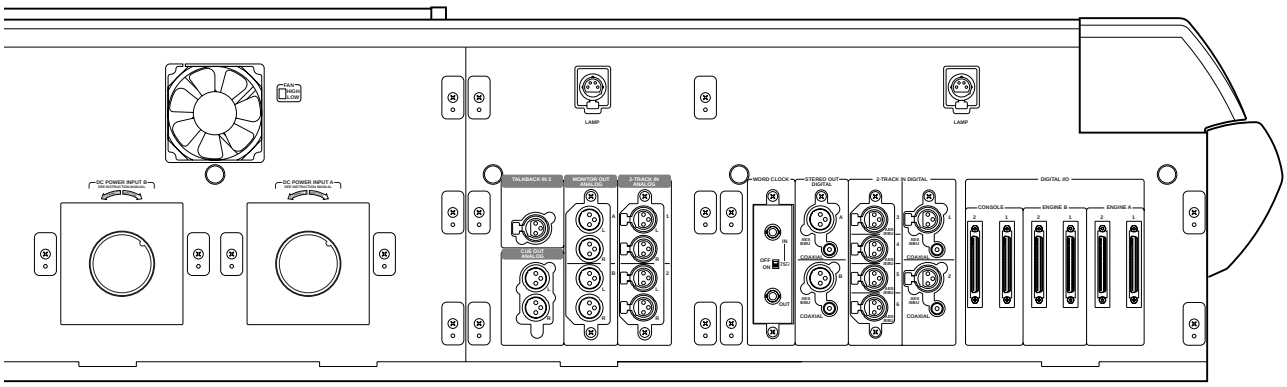
If a scene with a specified FADE TIME is recalled, the title will blink during the fade. For details refer to "CS1D Reference Manual (Software)" (→p.25).

Rear panel block

[Function]

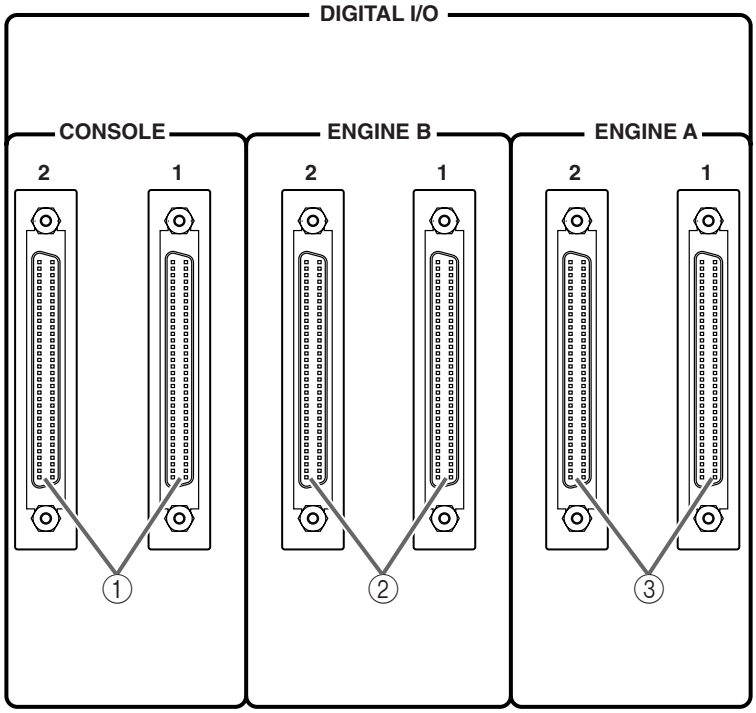
This is the block where the CS1D is connected to external devices. Here you can make connections to other devices of the PM1D system (DSP units, input/output units, power supplies), and to external audio devices such as DAT recorders, monitor systems, and MIDI devices.





⚠ The CS1D is cooled by fan exhaust openings located on its rear panel. Check these regularly and use a vacuum cleaner etc. to ensure that the openings do not become clogged with dust. Before performing this maintenance, you must turn off the POWER switch of the PM1D power supply unit and make sure that the CS1D is not operating.

DIGITAL I/O section



① **DIGITAL I/O CONSOLE connectors (1/2)**
These are 68-pin D-sub connectors that exchange multi-channel digital audio signals with a second CS1D console when two CS1D consoles are used in a single PM1D system (Dual Console mode). Connect the first console's DIGITAL I/O CONSOLE connector to the second console's DIGITAL I/O ENGINE A connector.

② **DIGITAL I/O ENGINE B jacks (1/2)**
These are 68 pin D-sub connectors that exchange multi-channel digital audio signals with the two DSP1D-EX {DSP1D} DSP units (engines A/B) connected in a mirror configuration to a single CS1D.

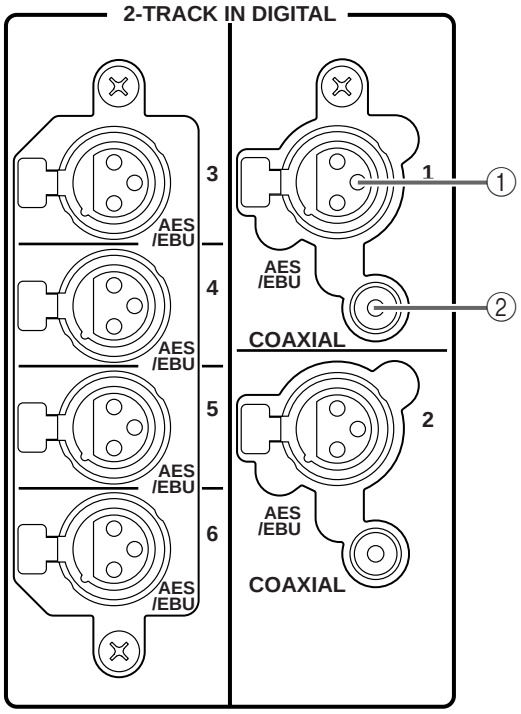
③ **DIGITAL I/O ENGINE A jacks (1/2)**
These are 68 pin D-sub connector that exchange multi-channel digital audio signals with a connected DSP1D-EX {DSP1D}.

When using two CS1D consoles in a single PM1D system (Dual Console mode), connect the first console's DIGITAL I/O CONSOLE connector to the second console's DIGITAL I/O ENGINE A connector.

Hint

The connectors of the DIGITAL I/O section will operate correctly if either connector 1 or 2 is connected. However by connecting both 1 and 2, you can use one as a standby in the event of unexpected problems. For normal operation, only one of the cables will be used. If a communication error occurs and transmission becomes impossible, the PM1D system will automatically switch to the correctly-functioning cable and will attempt to reestablish communication.

2-TRACK IN DIGITAL section



① **2-TRACK IN DIGITAL AES/EBU jacks (1–6)**
These are AES/EBU (XLR-3-31) jacks for inputting AES/EBU format digital sources from external devices such as CD players and DAT recorders.

② **2-TRACK IN DIGITAL COAXIAL jacks (1–2 only)**
These are coaxial (RCA phono) jacks for inputting coaxial format (consumer IEC60958) digital sources from external devices such as CD players and DAT recorders.

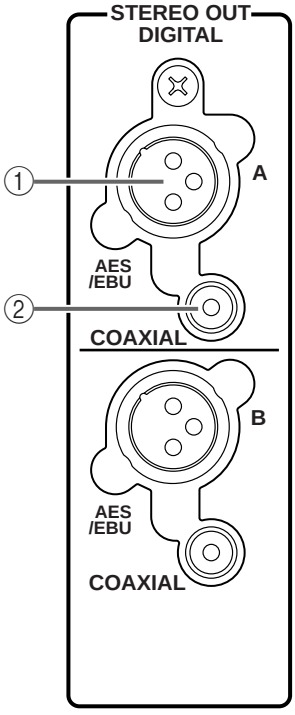
Hint

The signals that are input from 2-TRACK IN DIGITAL jacks 1–6 can be patched to the desired input channels or ST IN channels in the display (IN PATCH function INPUT PATCH screen).

Each of the 2-TRACK IN DIGITAL jacks 1–6 has its own built-in sample rate converter. For this reason, it is not necessary for the word clock of these sources to be synchronized to the word clock of the PM1D system.

⚠ It is not possible to use the AES/EBU jack 1 simultaneously with the COAXIAL jack 1, nor the AES/EBU jack 2 simultaneously with the COAXIAL jack 2. The jack that will be used can be selected in the display (MON/CUE function 2TR IN screen).

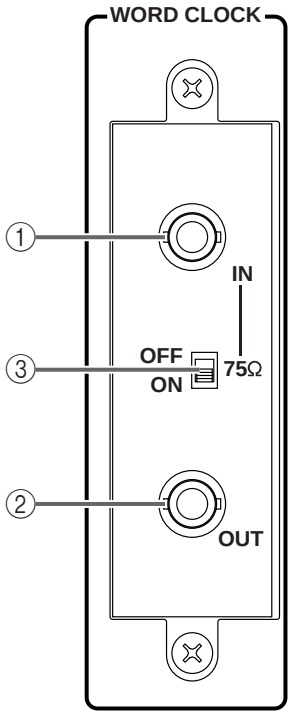
STEREO OUT DIGITAL section



① **STEREO OUT DIGITAL AES/EBU jacks (A/B)**
These are AES/EBU (XLR-3-32) jacks that digitally output the STEREO A/B channel signals in AES/EBU format.

② **STEREO OUT DIGITAL COAXIAL jacks (A/B)**
These are coaxial (RCA phono) jacks that digitally output the STEREO A/B channel signals in coaxial format (consumer IEC60958).

WORD CLOCK section



① **WORD CLOCK IN connector**
This is a BNC connector that supplies a word clock from an external device to the CS1D. Synchronization must be achieved with the word clock that is being input to other devices of the PM1D system.

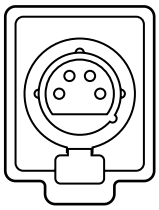
② **WORD CLOCK OUT connector**
This is a BNC connector that supplies a word clock from the CS1D to an external device.

③ **75 Ω [ON/OFF] switch**
This switch terminates the word clock connector.

In general, this should be turned ON if the CS1D is the last device in the word clock connection chain, or if nothing is connected to the WORD CLOCK IN/OUT connectors.

LAMP connectors

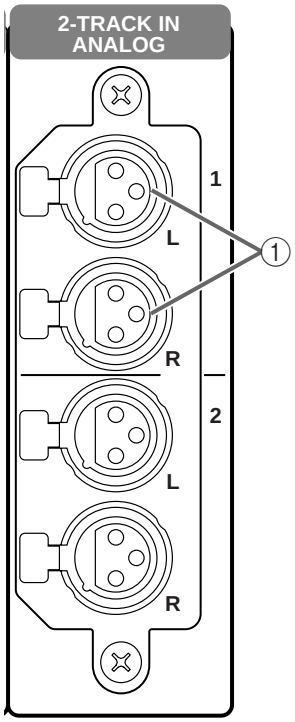
These are 4-pin female XLR output jacks that supply power to the optional lamps. (These jacks are provided in four locations.)



LAMP

LAMP DIMMER encoder
An encoder for controlling the brightness of the lamp connected to the LAMP connector is located at the left side of the meter section (right). Rotating this toward the right will brighten the lamps; rotating it toward the left will darken them.

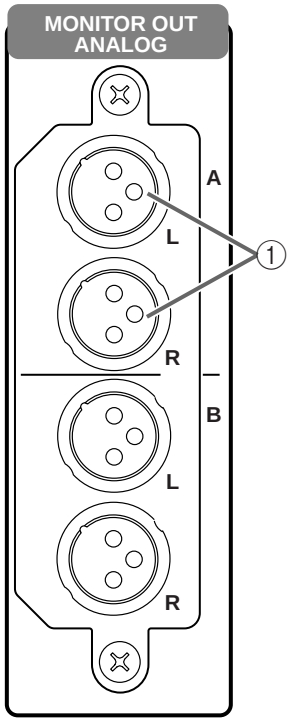
2-TRACK IN ANALOG section



① **2-TRACK IN ANALOG L/R jacks (1–2)**
These are XLR-3-31 (balanced) jacks that input stereo analog signals from external devices.

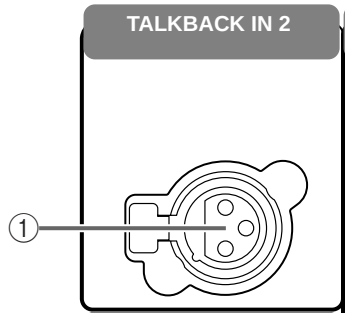
Hint
The signals that are input from these jacks can be patched in the display (IN PATCH function INPUT PATCH screen)to any desired input channel or ST IN channel.

MONITOR OUT ANALOG section



① **MONITOR OUT L/R jacks (A/B)**
These are XLR-3-32 (balanced) jacks that output the monitor A/B signals.

TALKBACK IN 2 section



① **TALKBACK IN 2 jack**
This is an XLR-3-31 jack for connecting a talkback mic.

The talkback signal that is input from this jack will be mixed within the CS1D with the signal from the TALKBACK 1 jack on the top panel, and sent to the same buses or output jacks.

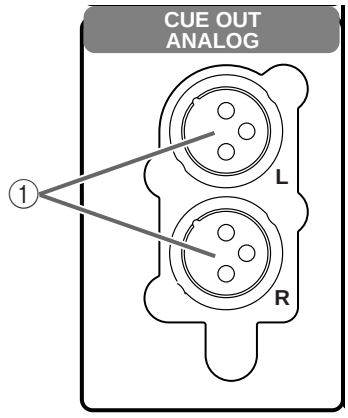
Hint

Phantom power for the TALKBACK IN 2 jack can be switched on/off in the display (MON/CUE function TALKBACK screen).

The level of the signal that is input from the TALKBACK IN 2 jack can be adjusted on the top panel (TALKBACK [LEVEL] volume).

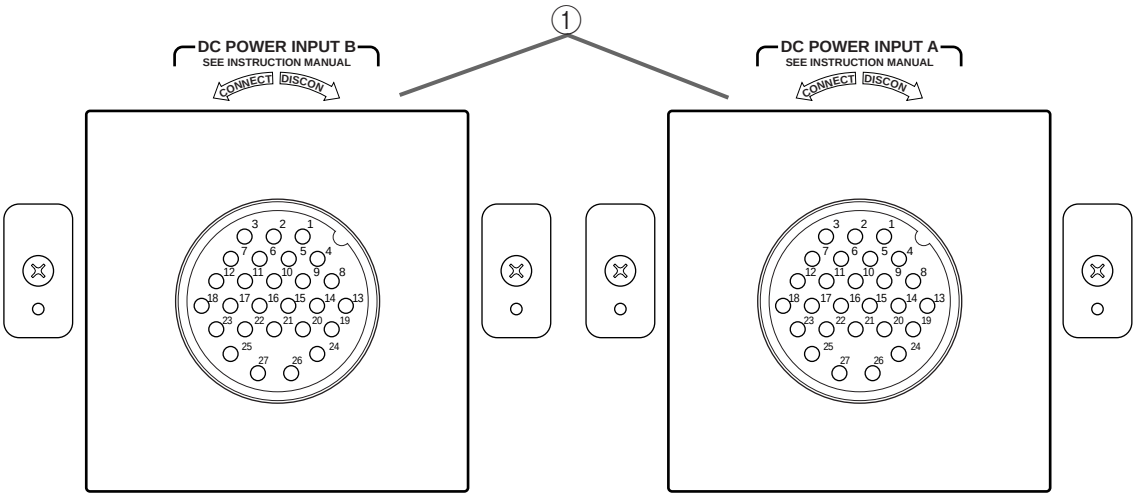
The input sensitivity of the TALKBACK 1 jack and TALKBACK 2 jack can be switched individually. When the input sensitivity is +10 dB, a +10 dB input signal will be nominal input. The input sensitivity is switched in the MON/CUE function TALKBACK screen.

CUE OUT ANALOG section



① **CUE OUT L/R jacks (A/B)**
These are XLR-3-32 (balanced) jacks that output the cue signal.

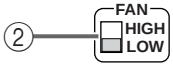
DC POWER section



① **DC POWER INPUT connector**
The PW1D power supply can be connected to these connectors.

Hint

The CS1D will operate normally if a PW1D is connected to just one of the two DC POWER INPUT connectors. However it is also possible to connect two PW1Ds to each DC POWER INPUT connector respectively. In this case, power will be supplied from both PW1D units during normal operation, but even if one of the PW1D units should fail, power will continue to be supplied from the remaining PW1D.



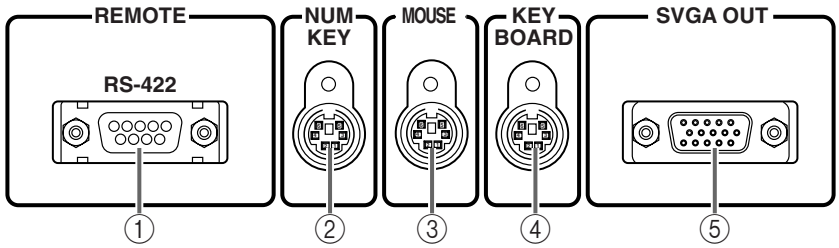
② **FAN HIGH/LOW switch**
This switches the cooling fan between high and low settings.

For normal use, set this to LOW.

However if the CS1D is in a location of high temperature or is outside in direct sunlight, set this to HIGH.

You should also set this to HIGH if you feel that the front panel of the console is warmer than usual.

CONTROL section ①



① **REMOTE RS422 connector**
This is a 9-pin D-sub connector for controlling an HD recorder or tape recorder. You can use serial commands to control functions such as Play and Stop on the recorder.

② **NUM KEY connector**
A PS/2 compatible numeric keypad can be connected to this connector.

A keypad connected here can be used to input values and numbers.

The function of each key is as follows.

Key	Function
0–9	Same function as the SCENE MEMORY block [0]–[9] switches
Enter	Same function as the SCENE MEMORY block [RECALL] switch
+	Same function as the SCENE MEMORY block [▲/INC] switch + [ENTER] switch (recall the next-numbered scene)
-	Same function as the SCENE MEMORY block [▼/DEC] switch + [ENTER] switch (recall the previously-numbered scene)
/	Not used
*	

③ **MOUSE connector**
A PS/2 compatible mouse can be connected to this connector.

A mouse connected here can be used in the same way as the track pad.

This cannot be used simultaneously with the MOUSE connector of the front panel block. Only one or the other can be connected.

④ **KEYBOARD connector**
A PS/2 compatible keyboard can be connected to this connector.

A keyboard connected here can be used to input channel names or scene titles.

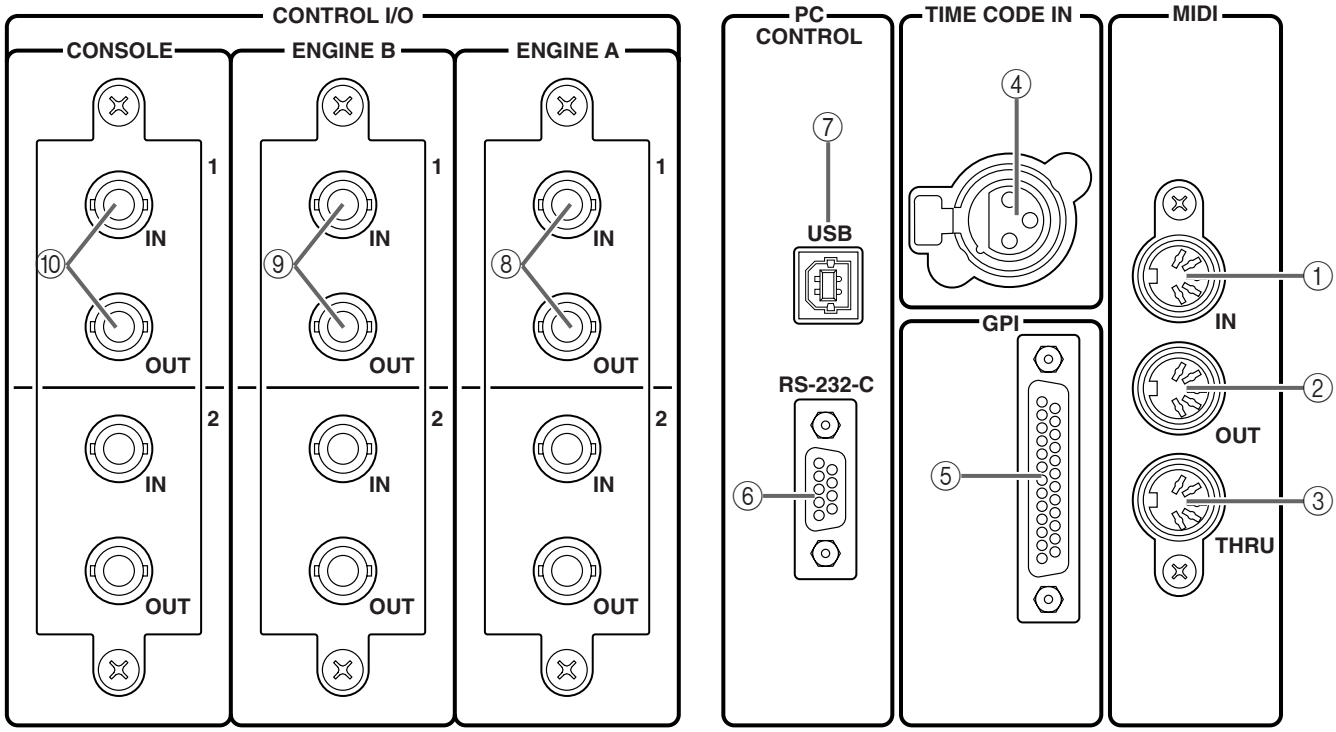
⚠ Only 101 or 104 type US keyboards can be used. The system will not operate correctly with any other type of keyboard.
This cannot be used simultaneously with the KEYBOARD connector of the front panel block. Only one or the other can be connected.

CS1D	Corresponding keypad
[INC]	PageUp
[DEC]	PageDown
CURSOR ← → ↑ ↓	 ← Keypad 4 with NumLock defeated → Keypad 6 with NumLock defeated ↑ Keypad 2 with NumLock defeated ↓ Keypad 8 with NumLock defeated
[DATA]	Alt + PageUp (INC direction) Alt + PageDown (DEC direction)
[SHIFT/GRAB]	Shift
[ENTER]	Return, Enter
Varions text pattete operation	Ctrl + ← (◀ button click) Ctrl + → (▶ button click) Ctrl + c (Copy button click) Ctrl + v (PASTE button click) Insert (INS button click) Delet (DEL button click] BackSpace (Back space function) Ctrl + ↑, Cntl + ↓, tab (Switch the object of editing in the text input box)
Display Click menu	ESC
Display popup window closed (CANCEL/ EXIT)	ESC (except when MENU is displayed)
Switch display tabs	Tab 1: Alt+1, Tab 2: Alt+2, Tab 3: Alt+3, Tab 4: Alt+4, Tab 5: Alt+5, Tab 6: Alt+6, Tab 7: Alt+7, Tab 8: Alt+8, Tab 9: Alt+9, Tab 10: Alt+0, Tab 11: Alt+–, Tab 12: Alt+=, Tab 13: Alt+\, Tab 14: Alt+’

⑤ **SVGA OUT connector**
An external monitor can be connected to this connector to output the same image as the built-in display of the CS1D.

Connect a display that supports a resolution of 800 × 600 dots.

CONTROL section ②



① **MIDI IN connector**

② **MIDI OUT connector**

③ **MIDI THRU connector**
These are 5-pin DIN connectors that function as MIDI IN, MIDI OUT, and MIDI THRU respectively.

④ **TIME CODE IN connector**
This is an XLR-3-31 connector (balanced) for supplying time code from an external device.

Hint
The time code source to be displayed (either external or internal) and the frame rate can be selected in the display (MIDI/GPI/TC function TC EVENT screen).

⑤ **GPI connector**
This is a 25-pin D-sub connector for sending and receiving eight channels of GPI (General Purpose Interface) signals to and from an external device.

⑥ **PC CONTROL RS-232-C connector**
This is a 9-pin D-sub connector for connection to the RS232C connector of a PC, to allow the PM1D Manager to control the software of the PM1D system.

Use a D-sub 9-pin (female ← → female) cross cable to connect this to the serial (COM) connector of your PC.

⑦ **PC CONTROL USB connector**
Connect this to the USB connector of a computer to allow the PM1D system software to be controlled from PM1D Manager.

⑧ **ENGINE A I/O connectors (1/2)**
These are BNC connectors for connection to ENGINE A so that control signals can be received and transmitted.

⑨ **ENGINE B I/O connectors (1/2)**
These are BNC connectors for connection to the DSP1D-EX {DSP1D} used as ENGINE B when two engines (A/B) are connected in a mirror configuration to a single console. They are used to transmit and receive control signals.

⑩ **CONSOLE IN/OUT connectors (1/2)**
These BNC connectors are used to send and receive control signals to and from a second CS1D console when two CS1D consoles are used in a single PM1D system (Dual Console mode).

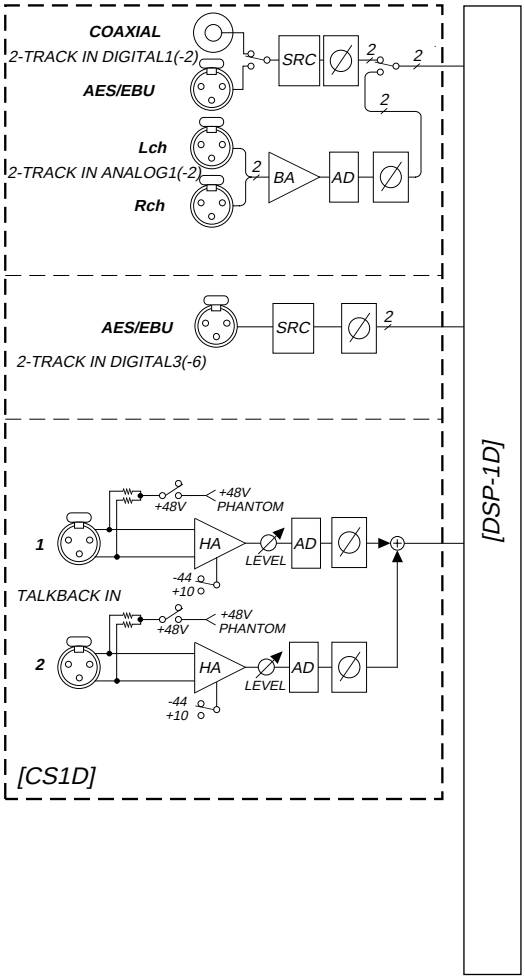
Hint
The PM1D system will operate normally if either set 1 or set 2 of the ENGINE A IN/OUT connectors (⑧) is connected. However it is also possible to connect both sets 1 and 2 so that one of them will function as a standby. In normal operation, only one set of cables will be used. However if a communication error occurs and transmission becomes impossible, the PM1D system will automatically switch to the valid set of cables and attempt to re-establish communication.
However, the system will not function properly unless both the IN and OUT connectors of at least one set (set 1 or set 2) are connected correctly. For details on connections, refer to "CS1D Operation Manual (Start-up)."

Input/output signal flow

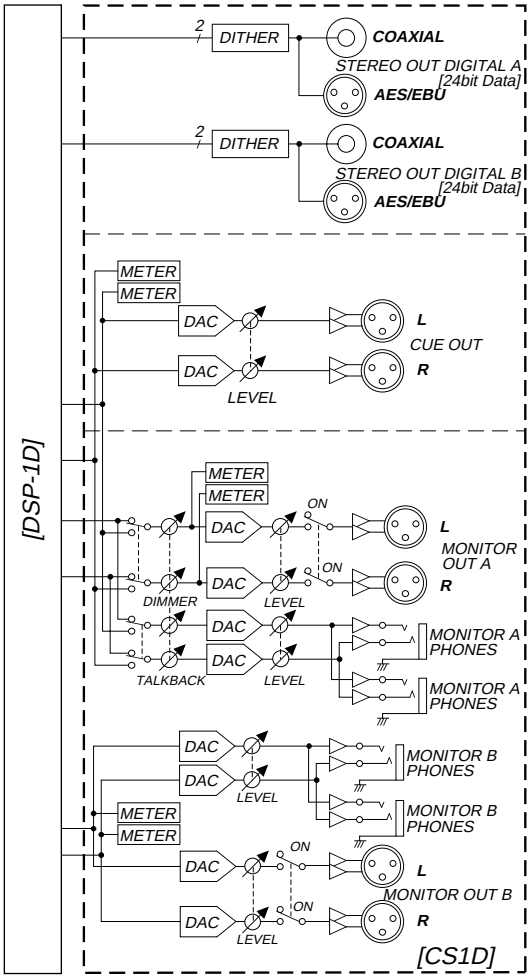
The following diagram shows the signal flow from the input jacks of the CS1D until the signal is sent to the DS1D DSP unit.

The following diagram shows the signal flow from the DS1D DSP unit until the signal is sent to the CS1D.

Input signal flow



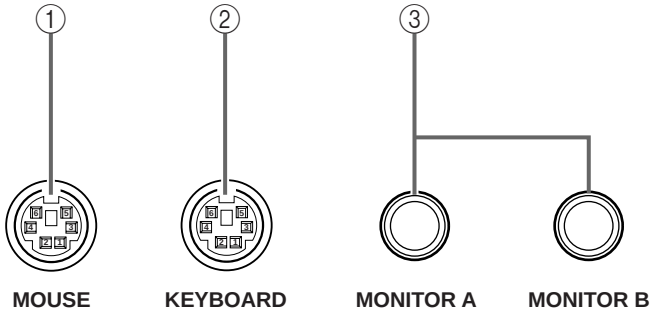
Output signal flow



Front panel block

[Function]

Keyboard, mouse, and monitoring headphones can be connected here.



① **MOUSE connector**
A PS/2 compatible mouse can be connected to this connector.

A mouse connected here can be used in the same way as the track pad.

This cannot be used simultaneously with the MOUSE connector of the CONTROL section ①. Only one or the other can be connected.

② **KEYBOARD connector**
A PS/2 compatible keyboard can be connected to this connector.

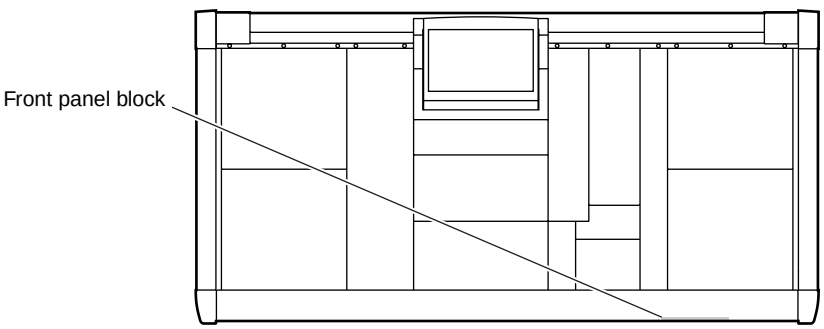
A keyboard connected here can be used to input channel names or scene titles.

For details on how keyboard operations correspond to operations on the CS1D, refer to page 111.

⚠ Only a 101 or 104 type US keyboard can be used. Other types of keyboards will not function correctly.
This cannot be used simultaneously with the KEYBOARD connector located in the CONTROL section ①. Only one or the other can be connected.

③ **MONITOR A / MONITOR B jacks**
These are headphone jacks for monitoring MONITOR A and MONITOR B.

⚠ Do not use the front panel headphone jacks at the same time as the top panel headphone jacks. Doing so can cause the CS1D to malfunction due to excessive current.



CS1D

CONTROL SURFACE

Reference Manual (Software)

PM1D

DIGITAL AUDIO MIXING SYSTEM

Contents

How the "CS1D Reference Manual (Software)" is organized

In the "CS1D Reference Manual (Software)," the screens that appear in the display of the console (CS1D) are organized into the following four sections. This manual explains how to access the screens, the function of each part, and related procedures.

Global functions
Here you can make settings that affect the entire PM1D system.

Output functions
Here you can make settings that affect the output channels (MIX channels, MATRIX channels, STEREO A/B channels).

Input functions
Here you can make settings that affect input channels (monaural input channels, ST IN channels).

Library
This is an internal memory area that allows you to save and reuse PM1D system settings such as patch data, EQ data, compressor data, and effect data.

- For details on setting up and connecting the PM1D system, refer to "CS1D Operating Manual (Start-up)."
- For details on operating the PM1D system, refer to "CS1D Operating Manual (Basic Operation)."
- For details on the functions and operation of the controllers and connectors on the top panel, rear panel, and front panel of the CS1D, refer to "CS1D Reference Manual (Hardware)."

⚠ Screen shots shown in this manual are taken from a prototype. Please be aware that they may differ slightly from the actual screens on your unit.

Printing conventions in the "CS1D Reference Manual (Software)"

- **Difference between the 96 channel model and 48 channel model**
  In general, the "CS1D Reference Manual (Software)" is written with the 96 channel model (i.e., the model whose engine uses the DSP1D-EX) in mind. In cases where the specifications differ between the 96 channel model and the 48 channel model (whose engine uses the DSP1D), the specifications of the 48 channel model will be enclosed in curly brackets { }.

  Example: x will indicate a number in the range of 1–96 {1–48}.
- **Distinguishing between the controls of the CS1D and the on-screen knobs/buttons**
  Controls (switches, encoders, volumes) on the top panel, rear panel, and front panel of the CS1D are enclosed in square brackets [ ] to distinguish them from the knobs and buttons that appear in the display.

  Example: Press the [ENTER] switch. (This refers to an operation on the top panel of the CS1D.)

  Example: Click the STORE button. (This refers to an operation within the display.)
- **Various icons**
  The following icon indicates useful tips or related pages for reference.

  Hint

  The following icon indicates particularly important items or operations that must be used with caution.

  ⚠
- **Accessing screens**
  The method of accessing a screen is described on the first page of the explanation for that screen. Most screens can be accessed either by using the switches of the console or by using the buttons in the display.

  Example:

  ■ Console

  LCD FUNCTION ACCESS block **INPUT [PATCH]** switch (press repeatedly until the screen shown at the right appears)

  This means that you are to press the INPUT [PATCH] switch on the CS1D (located in the LCD FUNCTION ACCESS block) repeatedly to access the desired screen.

  Example:

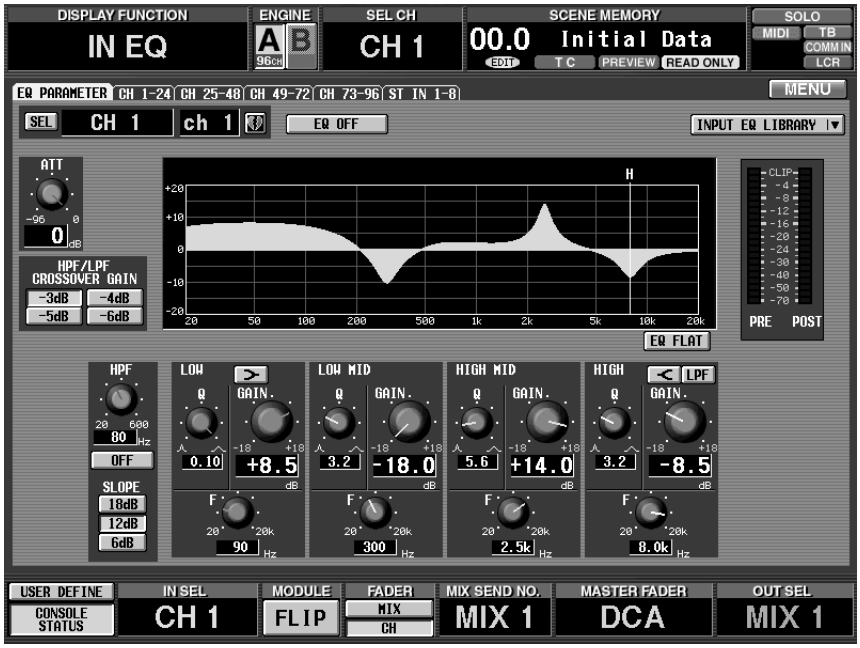
  ■ Display

  MENU button → **INPUT PATCH** button → **INSERT/DIRECT VIEW** tab

  This means that you are to successively click the MENU button → INPUT PATCH button → INSERT/DIRECT VIEW tab that appear in the display to access the desired screen.

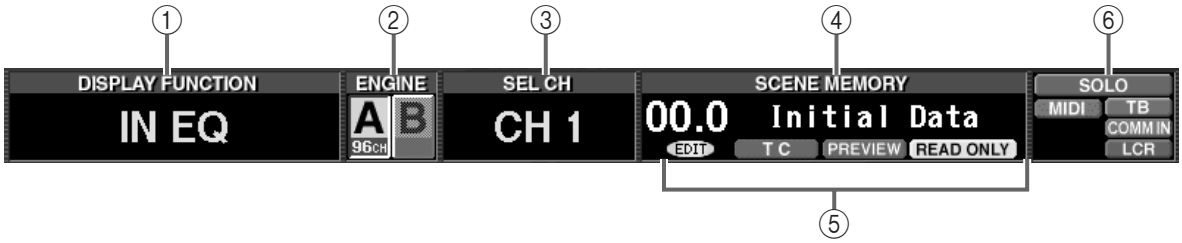
Information shown in the display

A typical screen of the CS1D



The following information is shown in the display of the CS1D.

[Upper part of the display (Common to each screen)]



① **DISPLAY FUNCTION**
This displays the abbreviation for the currently selected function.

② **ENGINE**
When the PM1D is being used in Mirror mode, this indicates the currently valid engine (A or B) and the number of channels that can be used. (The currently-used button is highlighted.) You can also click this button to switch between engines A and B.

⚠ When the PM1D is being used in Standard mode, engine A alone will be valid at all times. Engine B will be shaded, and cannot be selected. When the PM1D is being used in Mirror mode, engines A/B will both be valid.
If a valid engine is not functioning correctly, or if the connection has been broken, an X symbol will be displayed over the A or B symbol.

③ **SEL CH (selected channel)**
This shows the currently selected channel. If an input function screen is accessed, this will show the currently selected input channel. If an output function screen is accessed, this will show the currently selected output channel.

The abbreviations here have the following meanings.

- **CH x** ..... Input channel (x will be a number in the range of 1–96 {1–48})
- **STINx[L]/[R]** ..... ST IN channel L or R (x will be a number in the range of 1–8 {1–4})
- **MIX x** ..... MIX channel (x will be a number in the range of 1–48)
- **MTRX x**..... MATRIX channel (x will be a number in the range of 1–24)
- **ST A[L]/[R]** ..... STEREO A channel L or R
- **ST B[L]/[R]** ..... STEREO B channel L or R

④ **SCENE MEMORY**
This displays the number and title of the currently selected scene memory. If this is changed to a scene number other than the one that was last stored or recalled, the title area will blink. At this time, you can click the blinking title area to return to the last stored or recalled scene number.

⑤ **Indicators**
One of the following indicators will be displayed according to the state of the CS1D.

• **EDIT** 

This indicator will appear if a parameter included in a scene, patch, unit, or name setting has been edited after recalling a scene memory. This indicator will disappear when you save the current settings into a scene memory or recall a new scene from a scene memory. This indicator may not disappear in certain cases, such as when Recall Safe is in effect.

• **TC** 

This will light if the TC EVENT screen parameter EVENT RECALLING is set to ENABLE TC. While this symbol is lit, it is not possible to rewrite the contents of the SCENE or UNIT/PATCH/NAME libraries. This means that functions such as STORE, STORE UNDO, LINK ON/OFF, TITLE EDIT, SORT, and LOAD will be unavailable. Before performing these functions, you must set EVENT RECALLING to DISABLE.

• **OFFLINE** 

This symbol will be displayed only in PM1D Manager for Windows software running on your computer. (It will not appear in the display of the CS1D.) This symbol displayed on your computer indicates that your computer and the CS1D are offline.

⚠ If you are unable to switch to online mode, check the following points.

1)Have the connections between RS-232-C connectors been made correctly?

2)Are you using an RS-232-C cross cable?

3)Is the power of the CS1D turned on?

4)Has the PM1D editing software been installed appropriately?

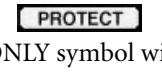
5)Is the RS232C connector of your computer disabled?

• **PREVIEW** 

This indicator will appear when the PM1D system is in PREVIEW mode.

In this mode you can view, edit, and save scene settings stored in memory.

• **READ ONLY** 

PROTECT 

The READ ONLY symbol will be displayed if the scene currently selected for store/recall (shown by the scene number in the upper right of the display) is read-only (numbers 00.0–00.9), and the PROTECT symbol will be displayed if the scene is protected.

⑥ **Operation indicators**
The following indicators will appear according to the operating state of the CS1D.

• **SOLO** 

This indicator will appear when Solo mode is on.

• **TB** 

This indicator will appear when Talkback is on.

• **OSC** 

This indicator will appear when the internal oscillator is on.

• **MIDI** 

This indicator will appear when a valid MIDI message is received.

• **COMM IN** 

A red COMM IN symbol will be displayed if a signal is being input to COMM IN and the COMM IN DIMMER for MONITOR A is operating.

While this symbol is displayed, you can attenuate the monitor signal level by using the DIMMER knob in the MONITOR A screen of the MON/CUE function.

• **LCR** 

This indicator will light when one or more channels is set to LCR mode.

• **BUSY** 

The BUSY symbol will be displayed if data is being written to the internal memory or the card inserted in the card slot.

• **INPUT CUE** 

This symbol will be displayed if the [CUE] switch of an input channel is on.

• **OUTPUT CUE** 

This symbol will be displayed if the [CUE] switch of an output channel is on.

• **DCA CUE** 

This symbol will be displayed appear if the [CUE] switch of a DCA group is on.

• **EFFECT CUE** 

This symbol will be displayed if a CUE button is on in the EFFECT function EFFECT 1–EFFECT 8 screens or the EFFECT ASSIGN screen.

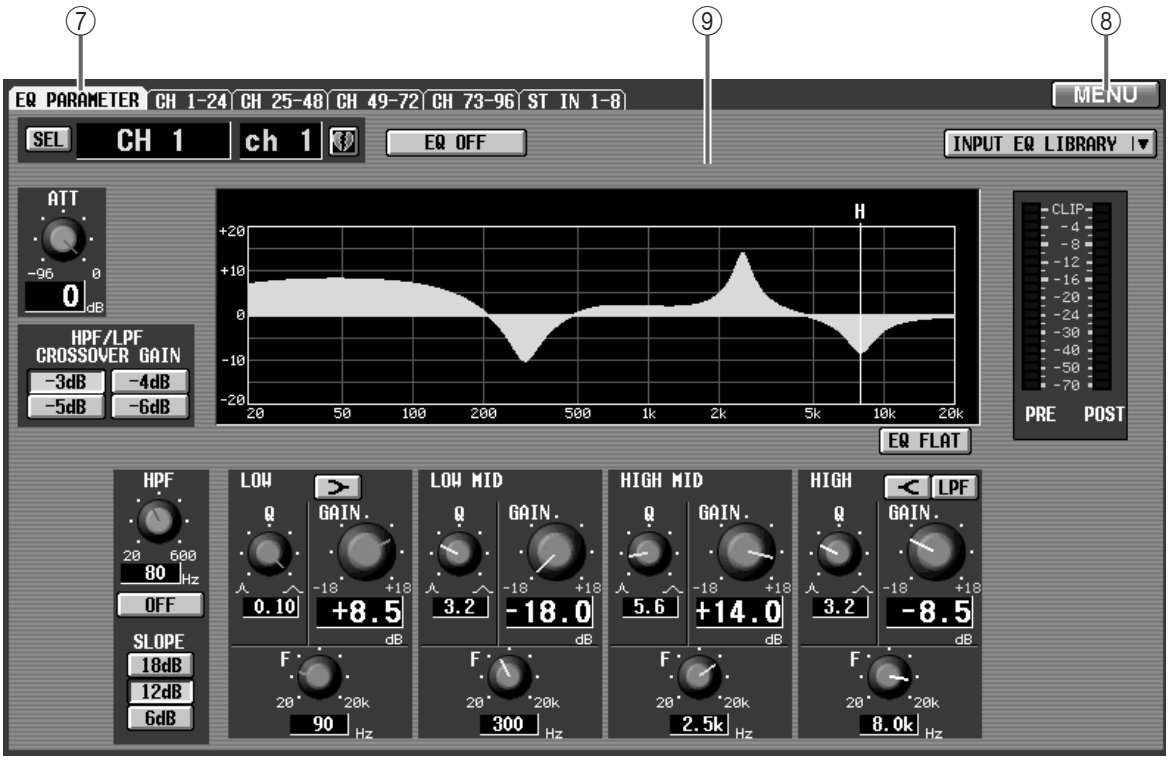
• **KEY IN CUE** 

This symbol will be displayed if a KEY IN CUE button is on in the IN GATE/COMP function GATE PRM screen.

• **SUB IN CUE** 

This symbol will be displayed if the KEY IN CUE button is on in the IN GATE/COMP function GATE PRM screen.

[Center of the display]



⑦ **Tab**
If a function consisting of multiple screens is selected, you can click this area to switch screens within that function. The number and content of the screens will depend on the function.

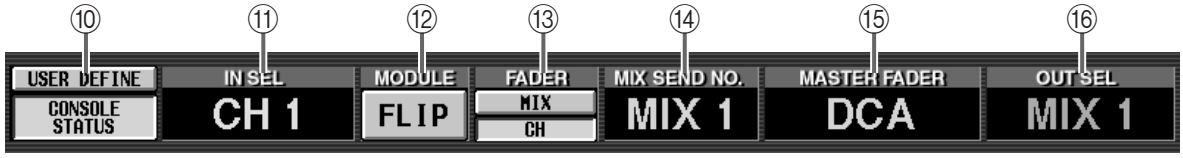
Hint

An alternate method of switching screens within a function is to repeatedly press the corresponding function switch in the LCD FUNCTION ACCESS block. (The result will be the same as if you clicked the tabs in succession.)

⑧ **MENU**
This button accesses the function menu. This button is located at the same place in all screens other than the function menu itself.

⑨ **Function parameters**
This area displays the parameters for the currently selected function or screen.

[Lower part of the display (Common to each screen)]



⑩ **CONTROL STATUS/ USER DEFINE**
These buttons switch the information that is displayed at the bottom of the screen. (The currently selected button is displayed in green.)

- **When CONSOLE STATUS is on**
The status of the currently selected channel and of the CS1D will be displayed.

- **When USER DEFINE is on**
A list of the functions assigned to the USER DEFINE [1]–[8] switches of the USER DEFINE block will be displayed.

Hint

Functions can be assigned to the USER DEFINE [1]–[8] switches in the UTILITY function USER DEFINE screen.

⑪ **IN SEL (selected input channel)**
This shows the input channel that is currently selected by the [SEL] switch.

⑫ **MODULE**
This shows the on/off status of the MODULE [FLIP] switch in the SELECTED INPUT CHANNEL block. (When on, this will be displayed in green.) You can also click this button to turn the MODULE [FLIP] switch on/off (“CS1D Reference Manual (Hardware) →p.13).

⑬ **FADER**
This shows the status of the FADER FLIP section of the SELECTED INPUT CHANNEL block. (When the FADER FLIP [MIX] switch is on, the MIX button will be displayed in green. When the FADER FLIP [CH] switch is on, the CH button will be displayed in green.) If you click either of these buttons, the setting of the FADER FLIP section will follow your selection (“CS1D Reference Manual (Hardware) →p.10).

⑭ **MIX SEND NO. (mix send number)**
This shows the number of the MIX bus (the number shown by the MIX SEND [NUMBER] indicator) that is selected as the send destination for INPUT blocks 1–4 of the CS1D (“CS1D Reference Manual (Hardware) →p.6).

⚠ If the INPUT block MIX SEND [LOCAL] switch is turned on, the send destination MIX bus can be selected independently of the other INPUT blocks. Thus, for INPUT blocks in which the MIX SEND [LOCAL] switch is turned on, the number of the currently selected MIX bus may be different than the number that is displayed here.

⑮ **MASTER FADER**
This shows the function that is currently assigned to DCA faders 1–12 of the CS1D (located in the DCA GROUP block) (“CS1D Reference Manual (Hardware) →p.71).

The abbreviations have the following meanings.

- **IN**..... Input levels of the 12 input channels of any INPUT block and 8 input channels of the ST IN block
- **MIX 1-12/MIX13-24/MIX25-36/MIX37-48**
Output levels of the corresponding 12 MIX channels
- **DCA**..... DCA groups 1–12
- **GEQ LOW / GEQ MID / GEQ HIGH**
Amount of boost/cut for the 12 selected bands of the internal graphic EQ

⑯ **OUT SEL (currently selected output channel)**
This indicates the output channel that is currently selected by the [SEL] switch.

⚠ Areas ⑩–⑯ are display areas used to show temporary messages if a malfunction has occurred in the PM1D system or if there has been a problem with operation. Important messages will be displayed in a popup window.

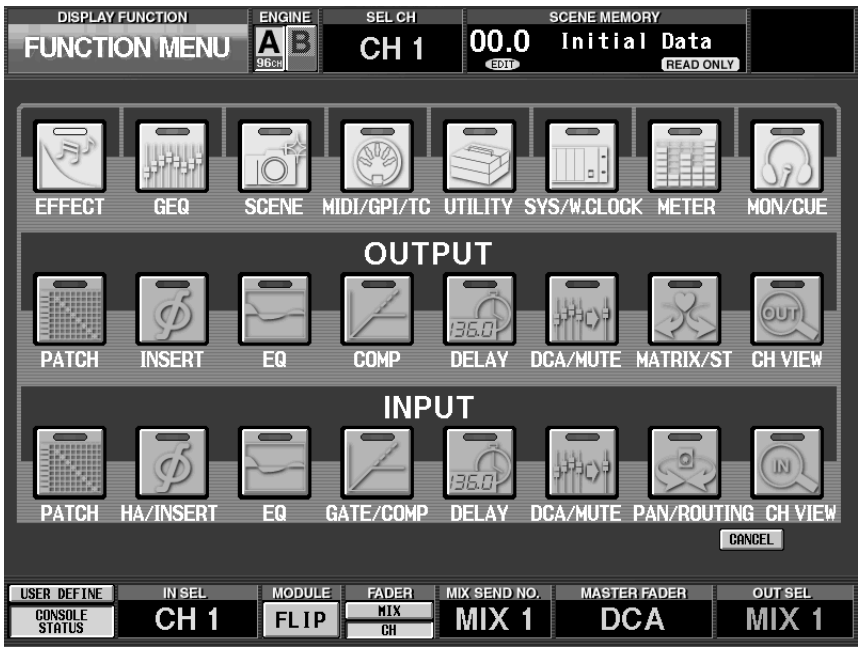
Function menu

Selecting a function

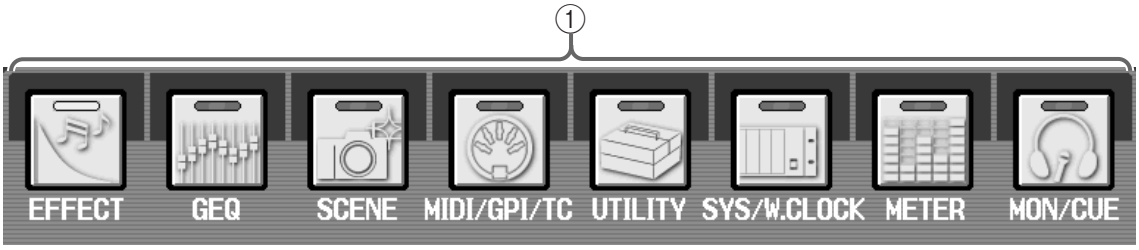
[Function]

Here you can select the function that will be shown in the display. This menu will be the starting point when you use operations in the display to select a specific screen.

■ **Display**
MENU button



[Screen functions]



① **Global functions**
These buttons access global functions that affect the entire PM1D system.

The content of each function is as follows.

- **EFFECT**
Set parameters and specify routing for the internal effects 1–8 (→p.9).

- **GEQ**
Set parameters and select the insert destination for the internal 31-band graphic EQ (→p.13).

- **SCENE**
Store/recall scene memories, and set the Recall Safe, Fade Time, and Direct Recall functions (→p.18).

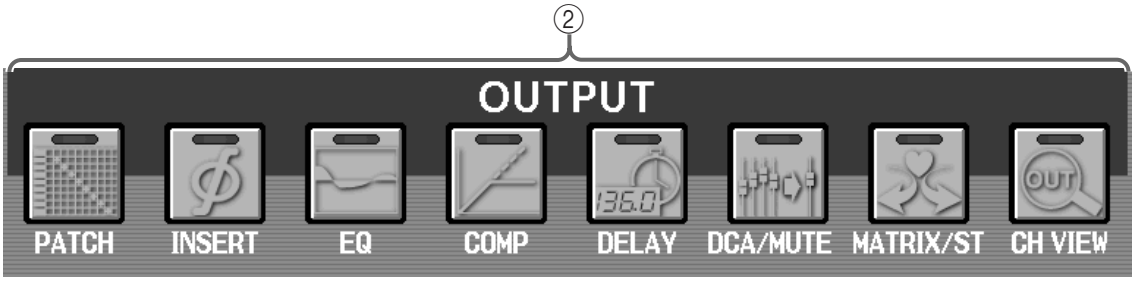
- **MIDI / GPI / TC**
Assign desired events to MIDI program change messages and time code (→p.29).

- **UTILITY**
Make settings that affect the basic operation of the PM1D, such as default values for internal settings, and the date and time. Here you can also load/save scene memories and library data between the PM1D system and a PC ATA flash storage card (→p.36).

- **SYS/W.CLOCK**
Check the type and connections of the various components in the PM1D system, and the type of cards installed in each unit. Here you can also make word clock and dither settings (→p.44).

• **METER**
Make settings for the meters on the top panel of the CS1D, the meters in the meter bridge block, and the meters that appear in the display (→p.58).

• **MON/CUE**
Make settings for talkback, the internal oscillator, and monitor/cue (→p.62).



② **Output functions**
These buttons access functions related to the output channels (MIX channels, MATRIX channels, STEREO A/B channels).

The content of each function is described below. (The abbreviated function name shown in the display is given in parentheses.)

• **PATCH (OUT PATCH)**
Assign output units to output channels (→p.76).

• **INSERT (OUT INSERT)**
Make insertion settings for output channels (→p.86).

• **EQ (OUT EQ)**
Make EQ settings for output channels (→p.89).

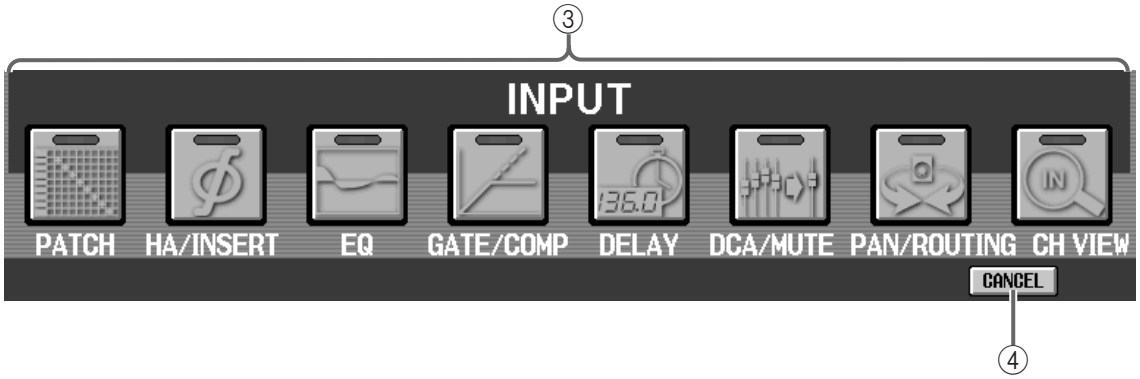
• **COMP (OUT COMP)**
Make compressor settings for output channels (→p.93).

• **DELAY (OUT DELAY)**
Make delay settings for output channels (→p.99).

• **DCA/MUTE (OUT DCA/MUTE)**
Assign output channels to DCA groups or mute groups (→p.101).

• **MATRIX/ST (MATRIX/ST)**
Make routing settings for MIX channels → MATRIX bus / STEREO bus, SUB IN → MATRIX bus. Here you can also make LCR mode settings for the MIX channels (→p.105).

• **CH VIEW (OUT CH VIEW)**
Here you can view the parameters for a single output channel. You can also edit the channel parameters (→p.114).



③ **Input functions**
These buttons access functions for the input channels (monaural input channels, ST IN channels).

The content of each function is described below. (The abbreviated function name shown in the display is given in parentheses.)

- **PATCH (IN PATCH)**
Assign input units to input channels (→p.118).
- **HA/INSERT (IN HA/INSERT)**
Make settings for the head amps of an analog input card, and insertion settings for input channels (→p.131).
- **EQ (IN EQ)**
Make EQ settings for input channels (→p.134).
- **GATE/COMP (IN GATE/COMP)**
Make noise gate and compressor settings for input channels (→p.139).
- **DELAY (IN DELAY)**
Make delay settings for input channels (→p.148).
- **DCA/MUTE (IN DCA/MUTE)**
Assign input channels to DCA groups or mute groups (→p.150).
- **PAN/ROUTING (PAN/ROUTING)**
Make pan/routing settings for input channels. Here you can also switch the MIX bus type (FIX or VARI) (→p.154).
- **CH VIEW (IN CH VIEW)**
Here you can view the parameters for a single input channel. You can also edit the channel parameters (→p.162).

④ **CANCEL**
This button returns to the previous screen. When you click this button, you will go back to the screen that was displayed before you entered the menu screen.

Global functions

EFFECT functions

Using internal effects 1–8

EFFECT 1–EFFECT 8

[Function]

For internal effects 1–8, select the type, edit parameters, and patch inputs and outputs.

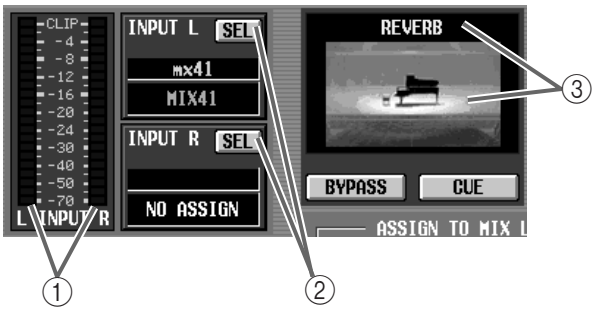
■ **Console**

In the **LCD FUNCTION ACCESS** block, press the [**EFFECT**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**

MENU button → **EFFECT** button → **EFFECT 1–EFFECT 8** tab

[Screen functions]



① **Level meter**
These level meters display the peak level of the signal being input to the internal effect.

② **INPUT L/R (input channel select)**
These buttons select the signal route that will be patched to the L/R input channels of the internal effect.

When you click these buttons, a popup window will appear in which you can select the signal.

The following signal routes can be selected.

1. **CH1 INS–CH96 INS {CH1 INS–CH48 INS}**
   Insert Out of input channels 1–96 {1–48}
2. **ST1 INS–ST8 INS {ST1 INS–ST4 INS} (L/R)**
   Insert Out of ST IN channels 1–8 {1–4} (L/R)
3. **MIX 1–MIX 48**
   Output of MIX channels 1–48
4. **MTRX 1 – MTRX 24**
   Output of MATRIX channels 1–24
5. **MIX 1 INS – MIX 48 INS**
   Insert Out of MIX channels 1–48
6. **MTRX 1 INS – MTRX 24 INS**
   Insert Out of MATRIX channels 1–24
7. **ST A [L/R]**
   Output of STEREO A channel [L/R]

8. ST B [L/R]
Output of STEREO B channel [L/R]

9. ST A [L/R] INS
Insert Out of STEREO A channel [L/R]

10. ST B [L/R] INS
Insert Out of STEREO B channel [L/R]

Hint

If a signal route 1–6 is selected, you can choose L/R independently. (But not if the corresponding channel is paired.)

If both L/R are "OFF" (i.e., when no signal route has been assigned), selecting one of a pair of channels or one side of the STEREO A/B channel will cause both channels to automatically be assigned to L/R.

③ **Effect**
The currently selected effect is shown by name and by graphic.

⚠ It is not possible to switch the type of effect in this screen. If you wish to use a different effect, use the effect library to recall a program that contains the desired effect.

Hint

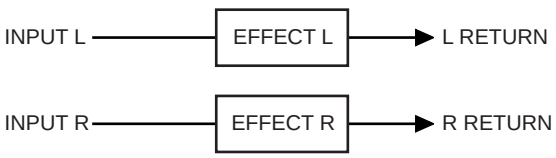
If a signal route is assigned only to the input channel of one side of the effect, the effect will be processed as mono-in/stereo-out.

If signal routes are assigned to both input channels, the processing will depend on the effect type. "STEREO" types independently process the input signals from the L/R channels. "MIX" types mix the L/R channel signals before processing them, and output the result in stereo. For details on the type to which each effect belongs, refer to "CS1D Reference Manual (Appendices)."

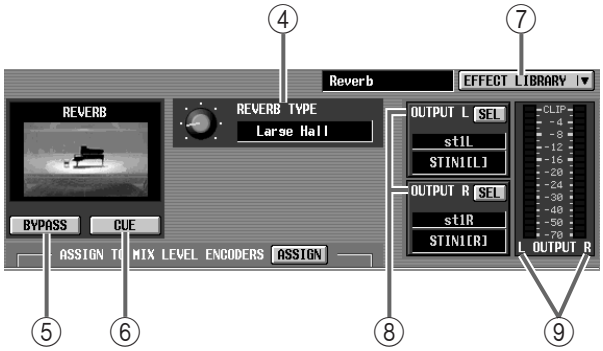
- **When the signal path is assigned to only one input channel**

- **When the signal path is assigned to both input channels**

STEREO type effects



MIX type effects



④ **TYPE**
This knob selects the type of effect.

The types available for selection will depend on the effect that is displayed in ③.

⑤ **BYPASS**
This button temporarily bypasses the effect.

While this button is turned on, only the original ("dry") sound will be output.

⑥ **CUE**
This button monitors the effect output. CUE will be defeated when you switch screens.

⑦ **EFFECT LIBRARY**
This button accesses the EFFECT LIBRARY popup window, in which you can store/recall parameters as effect programs (→p.190).

⑧ **OUTPUT L/R**
These buttons select the signal route that will be patched to the L/R output channels of the internal effect.

When you channel these buttons, a popup window will appear, in which you can select the signal.

The following signal routes can be selected.

- **CH1–CH96 {CH1–CH48}**
Input of input channels 1–96 {1–48}
- **CH1 INS–CH96 INS {CH1 INS–CH48 INS}**
Insert In of input channels 1–96 {1–48}
- **ST1–ST8 {ST1–ST4} [L/R]**
Input of ST IN channels 1–8 ({1–4}.
- **ST1 INS–ST8 INS {ST1 INS–ST4 INS} (L/R)**
Insert In of ST IN channels 1–8 {1–4} (L/R)
- **MIX 1 INS–MIX 48 INS**
Insert In of MIX channels 1–48
- **MTRX 1 INS – MTRX 24 INS**
Insert In of MATRIX channels 1–24
- **ST A [L/R] INS**
Insert In of STEREO A channel (L/R)
- **ST B [L/R] INS**
Insert In of STEREO B channel (L/R)

⑨ **Level meters**
These level meters display the peak level of the signal being output from the internal effect.

⑩ **ATTENUATOR**
These knobs adjust the dedicated attenuator for the internal effect.

The range is –96 – 0 dB.

⚠ This attenuator is used to prevent the signal from clipping after effect processing. If the signal clips at the input meter, adjust the send level of the send channel to lower the level.

⑪ **FILTER**
These knobs adjust the cutoff frequency for the dedicated filters (HPF/LPF) of the internal effect.

The range is as follows.

- **HPF** .....Thru (bypass), 21 Hz–8.00 kHz
- **LPF**.....50 Hz – 16.0 kHz, Thru (bypass)

⚠ This filter is applied to the signal before it is processed by the effect. For some effect types, there is no filter.

⑫ **Effect parameters**
These parameters determine the effect.

The type of effect parameters will depend on the currently selected effect (③).

For details on the effect parameters, refer to "CS1D Reference Manual (Appendices)".

⑬ **BALANCE**
This knob adjust the balance between the original (dry) sound and the effect (wet) sound.

A setting of 0(%) is only the original sound, and 100(%) is only the effect sound.

⑭ **ASSIGN**
This button assigns the effect parameters to the encoders of the MIX OUTPUT block, allowing you to edit the parameters in realtime. For details on operation, refer to Basic Operation p.130.

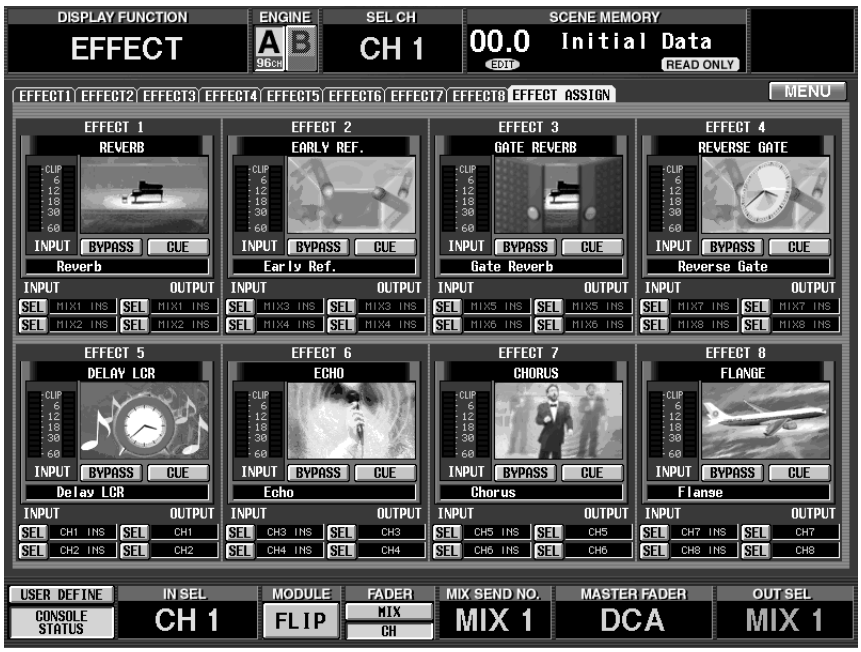
EFFECT ASSIGN

[Function]

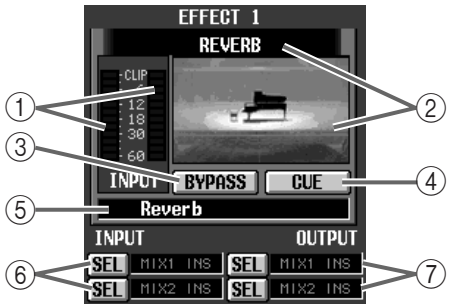
Displays a list of the effect types, the signal routes assigned to input and output, and the bypass and cue settings used by internal effects 1–8.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**EFFECT**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **EFFECT** button → **EFFECT ASSIGN** tab



[Screen functions]



① **Level meters**
These level meters show the peak level of the signal that is input to the internal effect.

② **Effect**
The currently selected effect is shown by name and by graphic.

You can click this area to access the corresponding EFFECT 1–EFFECT 8 screen. In addition, you can drag and drop the graphic to copy all settings of an effect (including the effect type) between EFFECT 1–EFFECT 8.

③ **BYPASS**
This button switches bypass on/off.

④ **CUE**
This button monitors the output of the corresponding effect. Cue will be defeated when you switch screens.

⑤ **TYPE**
This indicates the type of the currently selected effect.

⑥ **INPUT (input channel)**
This shows the signal route that is patched to input channels L/R of the internal effect.

You can also click the SEL button and select the signal route.

⑦ **OUTPUT (output channel)**
This shows the signal route that is patched to output channels L/R of the internal effect.

You can also click the SEL button and select the signal route.

GEQ (graphic EQ) functions

Using the internal 31 band graphic EQ on the output channels

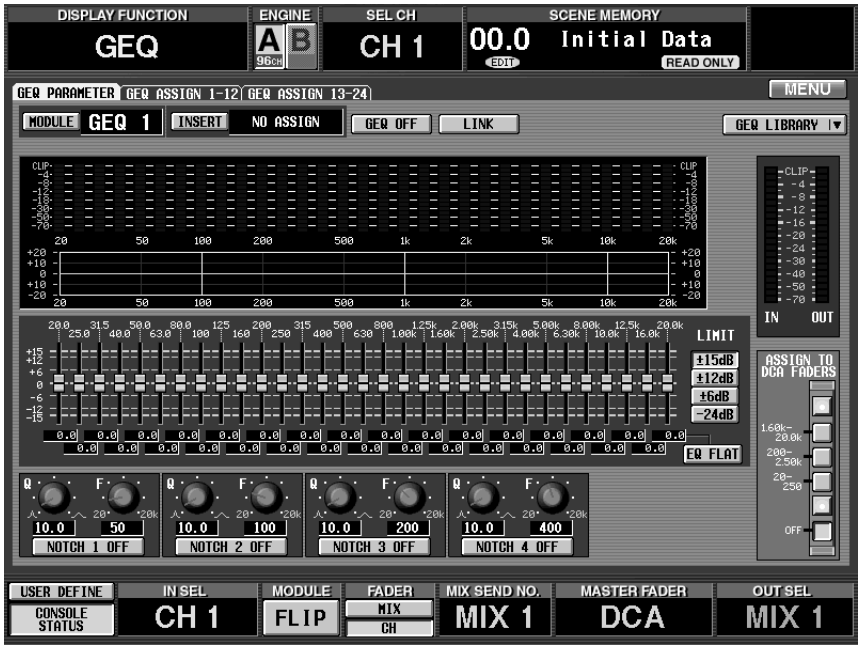
GEQ PARAMETER

[Function]

In this screen you can make settings for the twenty-four 31-band graphic EQ modules that are provided for insertion into input/output channels. Here you can assign signal routes, specify the boost/cut amount for each band, and make notch filter settings, etc.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**GEQ**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **GEQ** button → **GEQ PARAMETER** tab



[Screen functions]

① **MODULE**
Select the desired module of the twenty-four graphic EQ modules (GEQ 1–GEQ 24).

When you click this button, the GEQ SELECT popup window will appear.

② **INSERT**
Select the signal route into which this module will be inserted.

When you click this button, the GEQ PATCH SELECT popup window will appear.

The following signal routes can be selected.

- **INPUT 1-96 INS**
  Insert In/Out of input channels 1–96
- **MIX 1 INS–MIX 48 INS**
  Insert In/Out of MIX channels 1–48
- **MTRX 1 INS – MTRX 24 INS**
  Insert In/Out of MATRIX channels 1–24
- **ST A [L/R] INS**
  Insert In/Out of the STEREO A channel (L/R)
- **ST B [L/R] INS**
  Insert In/Out of the STEREO B channel (L/R)

If you insert into the STEREO A/B channel or into a pair of input channels or MIX channels, adjacent odd-numbered → even-numbered modules will be assigned automatically.

However, if executing this would cause a module previously assigned to a different channel to be cancelled, a popup window will appear, warning you of this.

If you select an input channel as the GEQ insert destination, the INS. button of the corresponding channel will automatically be turned on in the IN PATCH function INSERT/DIRECT POINT screen.

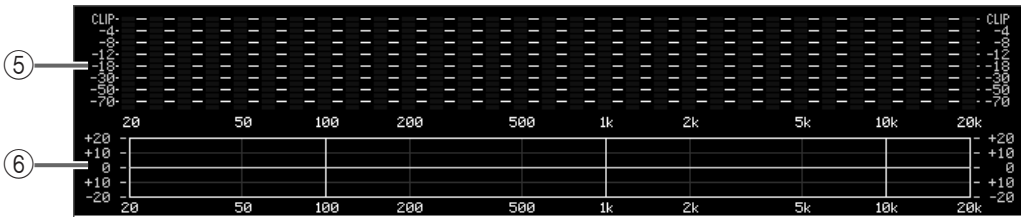
If you select an output channel as the GEQ insert destination, the INS. button of the corresponding channel will automatically be turned on in the OUT PATCH function INSERT POINT screen.

③ **GEQ ON/OFF**
This button switches the currently displayed graphic EQ on/off.

Hint

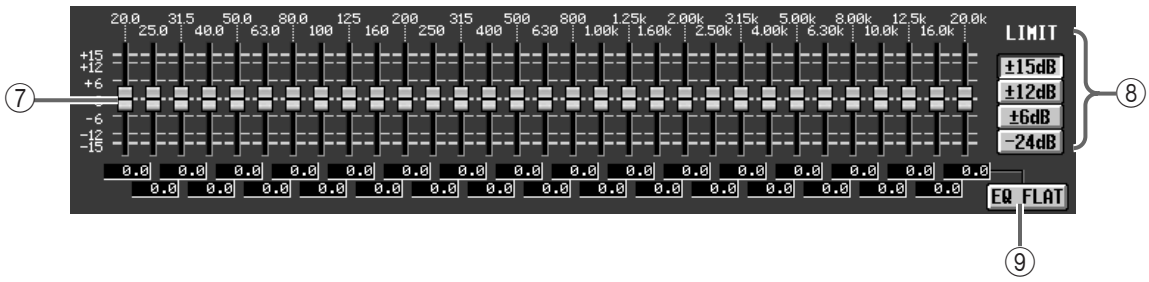
This button does not affect the notch filters (⑩).

④ **LINK**
This button links adjacent odd-numbered → even-numbered GEQ modules.



⑤ **Spectrum analyzer**
This spectrum analyzer displays the level of each frequency band in the input signal.

⑥ **EQ graph**
This graph shows the current frequency response of the graphic EQ.



⑦ **Faders**
These faders boost/cut each frequency band of the graphic EQ. The amount of boost/cut is shown in the numerical box below.

Hint

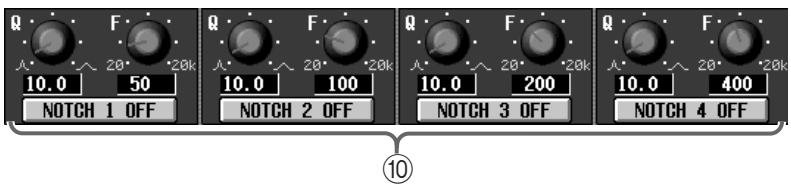
The allowable maximum range and direction of change for the faders will depend on the setting of the LIMIT parameter (⑧).

A red line displayed in the knob portion of the fader indicates that it can currently be controlled by the DCA faders of the CS1D.

⑧ **LIMIT**
This button sets the allowable maximum range and direction of change for the faders.

You can ±15 dB, ±12 dB, ±6 dB (for both boost or cut), or –24 dB (for cut only).

⑨ **EQ FLAT**
This button resets the faders of all bands to the 0 dB position.

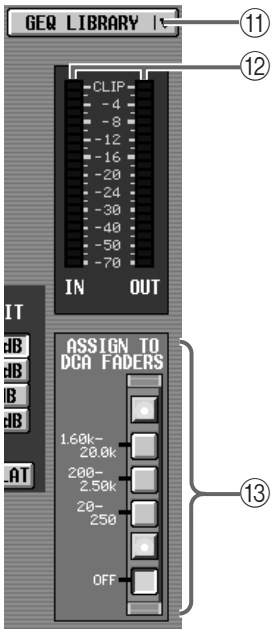


⑩ **NOTCH 1–4**
These are four notch filters that operate on the signal route selected by INSERT (②).

Use the NOTCH 1–NOTCH 4 buttons to switch each filter on/off, use the Q knob to adjust the steepness, and use the F knob to adjust the center frequency.

Hint

Notch filters 1–4 are independent of the graphic EQ, and are not affected by the GEQ ON/OFF button. After recalling a graphic EQ module, you can turn off the graphic EQ, and use only the notch filters if desired.



⑪ **GEQ LIBRARY (graphic EQ library)**
This button accesses the GEQ LIBRARY popup window, in which you can store/recall the settings of the GEQ PARAMETER screen (including the notch filters). (→p.192)

⑫ **Level meters**
These level meters show the peak levels before and after the graphic EQ.

⑬ **ASSIGN TO DCA FADERS**
This button allows the 31 bands of the graphic EQ to be divided into 12-band groups and assigned to the DCA faders of the CS1D top panel, so that the faders can be used to control the boost/cut amount of each band.

1) **1.60 k–20.0 k button**
When you click this button, the 12 bands from 1.6 kHz–20 kHz will be assigned to the DCA faders.

2) **200–2.50 k button**
When you click this button, the 12 bands from 200 Hz–2.5 kHz will be assigned to the DCA faders.

3) **20-250 button**
When you click this button, the 12 bands from 20 Hz–250 Hz will be assigned to the DCA faders.

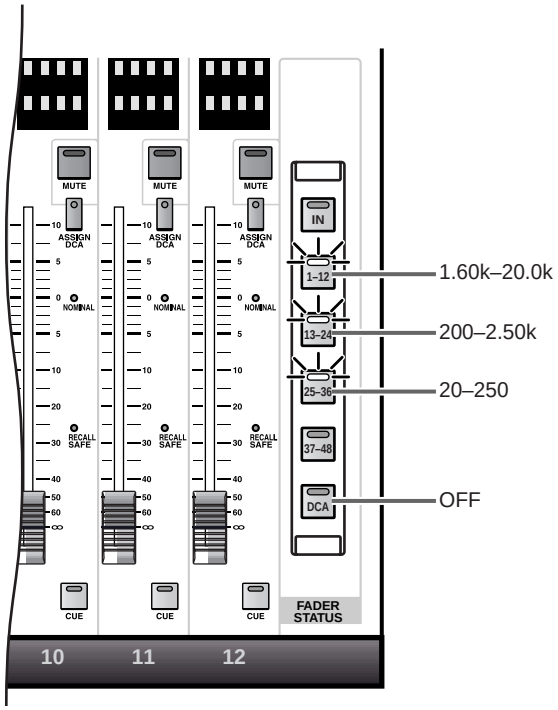
4) **OFF button**
When you click this button, assignments to the DCA faders will be cancelled.

Hint

When you click one of the above buttons 1)–3) in the GEQ PARAMETER screen, the FADER STATUS switches in the DCA block of the CS1D will function as graphic EQ band switches. This state will remain in effect until you click the OFF button.

When you click the OFF button in the GEQ PARAMETER screen, the FADER STATUS switches will revert to their normal function, and DCA faders 1–12 will function as DCA group control faders.
The same result can be produced by pressing the FADER STATUS [OFF] button of the CS1D.

- **Using the FADER STATUS switches as band select switches**



Hint

While GEQ PARAMETER or the GEQ PARAMETER popup window are accessed, you can hold down the panel [SHIFT/GRAB] switch and press a FADER STATUS switch [1-12]/[13-24]/[25-36] to produce the same result as clicking on ⑬.

GEQ ASSIGN 1-12/13-24 (graphic EQ assign 1–12/13–24)

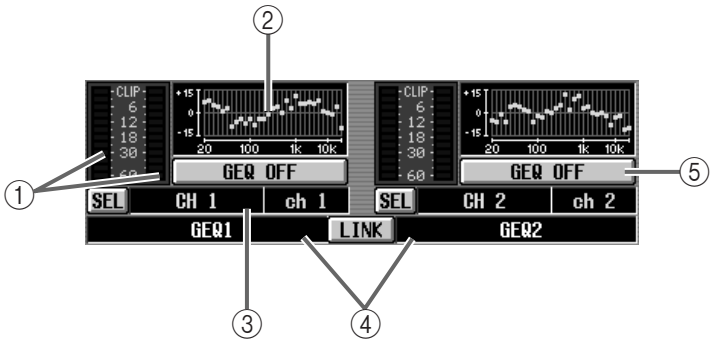
[Function]

This screen displays the GEQ 1–24 settings, the signal routes in which they are inserted, and the input/output levels.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**GEQ**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **GEQ** button → **GEQ ASSIGN 1-12/GEQ ASSIGN 13-24** tab

[Screen functions]



① **Level meters**
These level meters show the peak levels before and after the graphic EQ.

② **Fader graph**
This graph indicates the fader positions of each band.

You can also click this portion to recall the GEQ PARAMETER screen for the corresponding module.

③ **Insert**
This displays the signal route in which this module is inserted, and the name of that channel.

You can also click the SEL button at the left and select the signal route.

④ **Module number**
This is the graphic EQ module number.

If adjacent odd-numbered → even-numbered modules are linked, the LINK indicator will light.

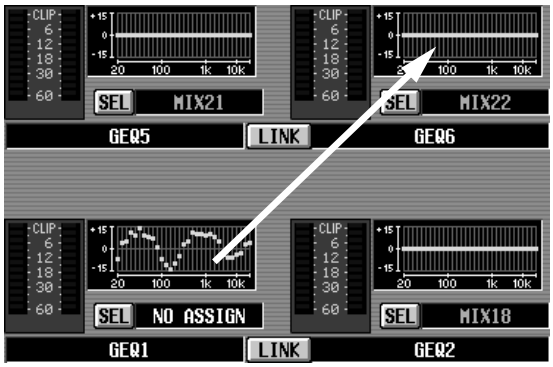
⑤ **GEQ ON/OFF button**
This switches the GEQ on/off.

⑥ **DISPLAY ORDER REVERSE button**
This button reverses the order of the GEQs. By default, the GEQs are arranged in ascending order from bottom to top, but will be arranged in ascending order from top to bottom when you turn on this button.

[Procedure]

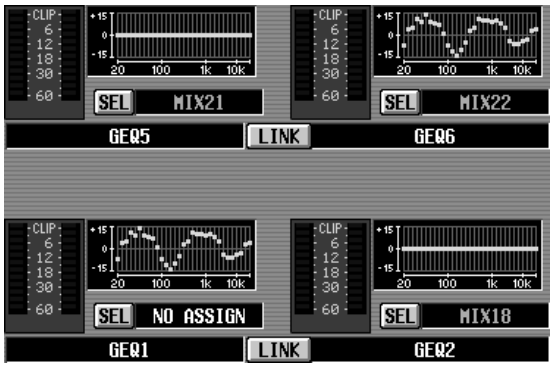
Copying GEQ settings to an input channel within the same tab (Example: copying from GEQ1 to GEQ6)

1. **Drag the mini-graph from the copy source input channel and drop it onto the copy destination input channel.**



A window will appear, asking you to confirm the copy. To execute the copy, click the OK button. To cancel, click the CANCEL button.

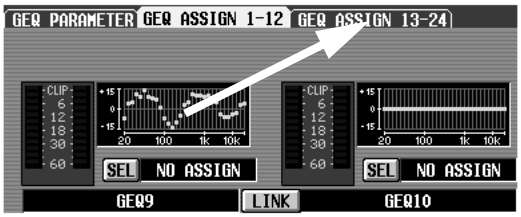
2. **Click the OK button, and the settings will be copied.**



Copying GEQ settings to an input channel located in a different tab (Example: copying from GEQ9 to GEQ22)

1. **Drag the mini-graph from the copy source input channel onto the tab of the copy destination.**

⚠ It is not possible to copy the data by dropping it on any screen other than the CH 1-24, CH 25-48, CH 49-72, CH 73-96 or ST IN 1-8 screens that are displayed when you press the INPUT [GEQ] switch in the LCD FUNCTION ACCESS block of the CS1D console.



2. **The copy destination tab screen will appear.**

3. **Drag and drop the mini-graph on the copy destination input channel.**
A window will appear, asking you to confirm the copy. To execute the copy, click the OK button. To cancel, click the CANCEL button.

4. **Click the OK button, and the settings will be copied.**

SCENE functions

Operating scene memories

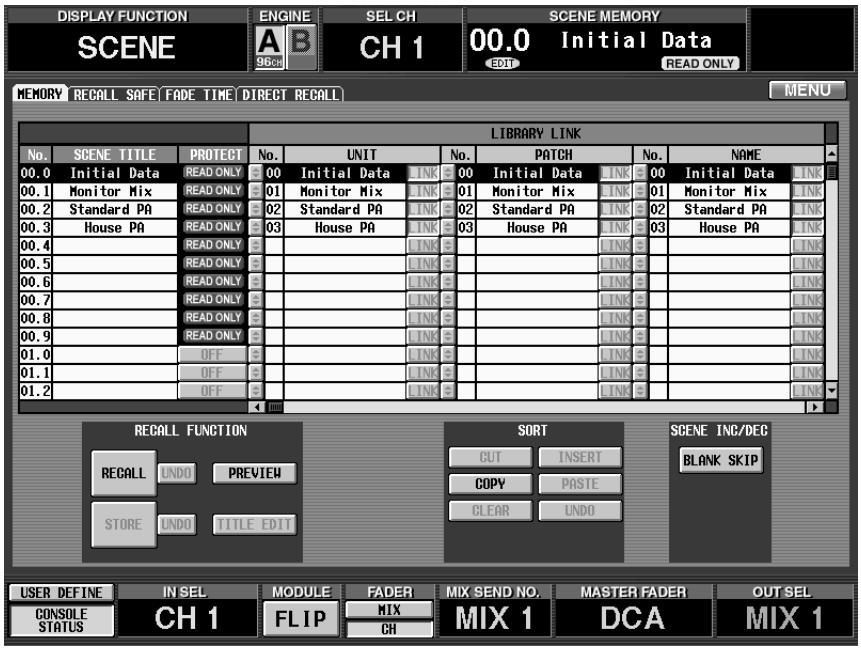
MEMORY

[Function]

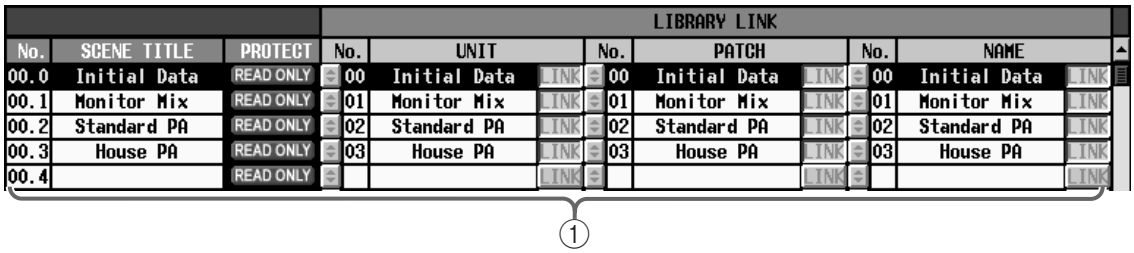
Store mix parameters into a scene memory, or recall a previously-stored scene.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**SCENE**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **SCENE** button → **MEMORY** tab



[Screen functions]



① **Scene list**
This is a list of the scenes stored in scene memory.

⚠ If the EVENT RECALLING button is set to "ENABLE" in the TC EVENT screen of the MIDI/GPI/TC function, the ⇕ buttons and LINK button will be grayed and cannot be used.
You must first set the EVENT RECALLING button to "DISABLE."

Each scene contains the following elements.

- **No. (scene number)**
This is the scene number. The scene numbers of the PM1D consist of an integer portion of 00–99 and a decimal portion of .0–.9, together covering a range of 00.0–99.9 to handle 1,000 scenes. Of these, new scenes can be stored in numbers 01.0–99.9.

- **TITLE**
The name assigned to each scene

- **PROTECT**
This button switches protect on/off for each scene.

A scene for which Protect is on cannot be overwritten.

Hint

Numbers 00.0–00.9 contain scenes with various factory-preset settings. Since these preset scenes are read-only and cannot be overwritten, the PROTECT field will indicate "READ ONLY."

• **LIBRARY LINK**
This shows the number and library names for the UNIT library, PATCH library, and NAME library used by each scene.

• **button**
This button is used to select the UNIT library, PATCH library, and NAME library used by that scene. When you click this button, a popup window will appear, allowing you to make a selection from the corresponding library.

• **LINK button** LINK
This button specifies whether Recall operations of the UNIT, PATCH, and NAME libraries will also occur when a scene is recalled. Each scene of the PM1D system stores only the number of the linked UNIT, PATCH, or NAME library, rather than the contents of the settings themselves. If there is a library for which the LINK button is on when you recall a scene, the library of the corresponding number will be recalled at the same time. Libraries whose LINK button is off will not change when a scene is recalled.

Hint

The scene that is highlighted in the scene list is currently selected for operations. To switch to a different scene, directly click the line of the desired scene to make the highlighted that line. To view scenes in the list that are not currently visible, use the scroll bar located at the right of the list.

By moving the scroll bar located at the bottom of the list, you can view the date at which the scene was stored and the COMMENT field in which you can input a comment for each scene.

② **RECALL FUNCTION**
These buttons are used to store/recall scene memories.

⚠ If the EVENT RECALLING button is set to "ENABLE" in the TC EVENT screen of the MIDI/GPI/TC function, the STORE button, STORE UNDO button, and TITLE EDIT button will be grayed, and cannot be used. Before you can use these operations, you must first set the EVENT RECALLING button to "DISABLE."

• **RECALL**
The currently selected scene will be loaded into the PM1D system.

• **STORE**
The current mix settings of the PM1D system will be saved in the selected scene.

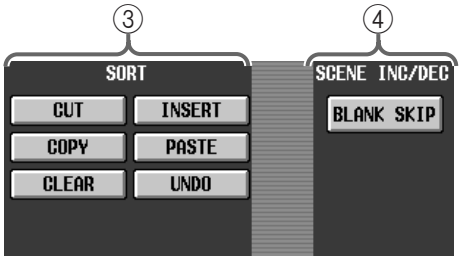
• **UNDO**
This button cancels the previously-performed recall operation or store operation.

⚠ UNDO cannot be used if the PREVIEW button is on.
UNDO will also become unavailable if you perform the SORT operation or if you execute LOAD in the UTILITY function LOAD/SAVE screen.

• **PREVIEW**
If this button is turned on, the PM1D system will be placed in PREVIEW mode, so that you can view or modify the settings of a scene in memory without affecting the signal processing of the system.

This is linked with the SCENE MEMORY [PREVIEW] switch in the SCENE MEMORY block of the CS1D.

• **TITLE EDIT**
When you click the button, the SCENE TITLE EDIT popup window will appear, in which you can edit the title and comment for the currently selected scene. You can also save the edited title and comment.



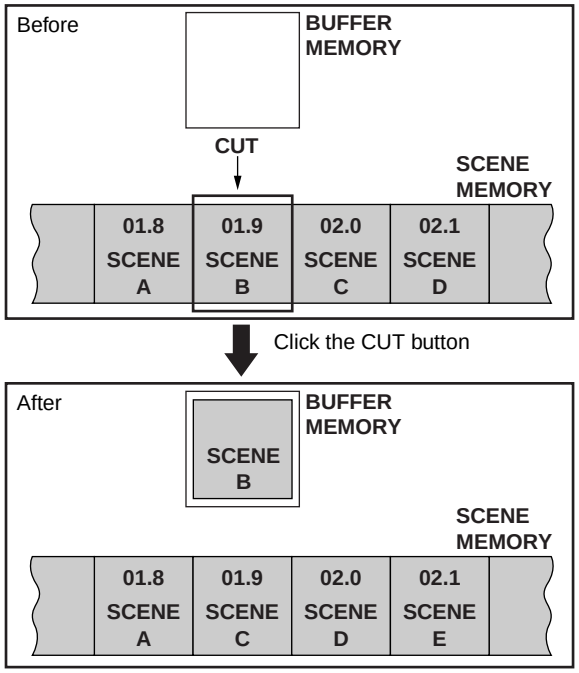
③ **SORT**
These buttons change the order of the scenes that are saved in memory.

⚠ If the EVENT RECALLING button is set to "ENABLE" in the TC EVENT screen of the MIDI/GPI/TC function, the buttons of the SORT section will be grayed, and cannot be used. Before you can use these operations, you must first set the EVENT RECALLING button to "DISABLE."

⚠ Undo will no longer be possible if you perform a SCENE STORE/STORE UNDO operation or if you exit the MEMORY screen.

• **CUT**

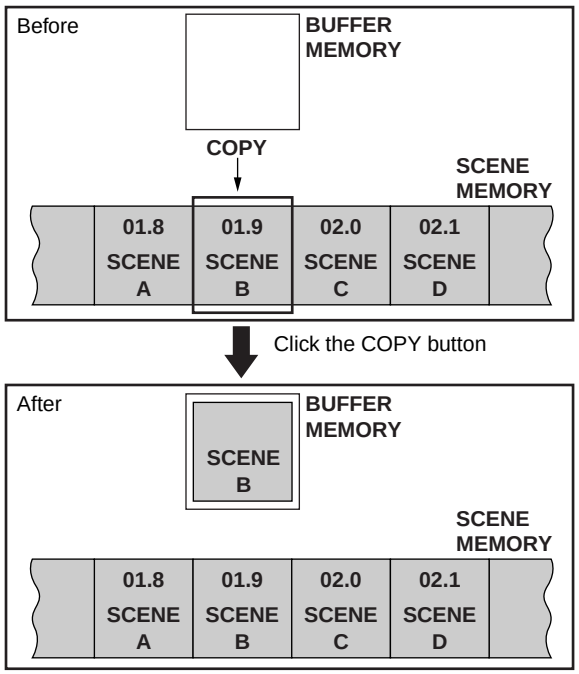
Deletes the currently selected scene, and temporarily saves it in the buffer memory.
The scenes following the deleted number will move forward by one number.



⚠ If a certain scene is assigned to a Direct Recall [1]–[12] switch, deleting that scene will also cause the assignment to be cancelled. However, this will not affect other scenes assigned to the Direct Recall [1]–[12] switches or other scenes stored in the MIDI PROGRAM screen or TC EVENT screen. (In some cases, you may need to re-make the settings so that these functions will operate correctly.)

• **COPY**

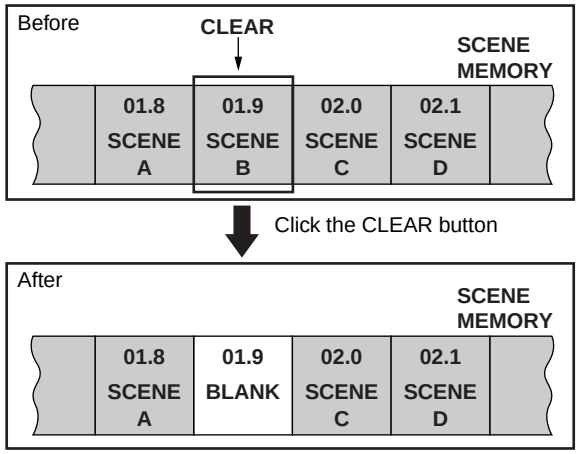
Copies the currently selected scene, and temporarily saves it in the buffer memory.
The original scene will not be affected.



• **CLEAR**

Erases the currently selected scene.

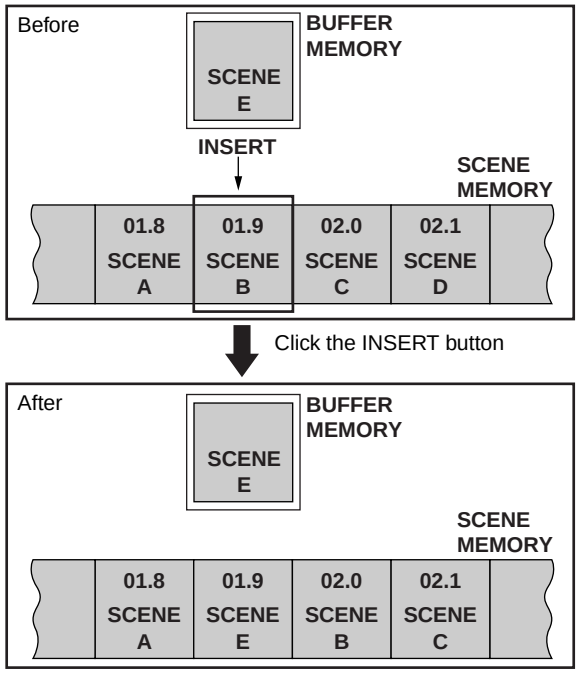
Scenes of other numbers will not be affected.



• **INSERT**

Inserts the scene from the buffer memory at the currently selected location.

The scenes following the inserted scene will be moved forward by one number.

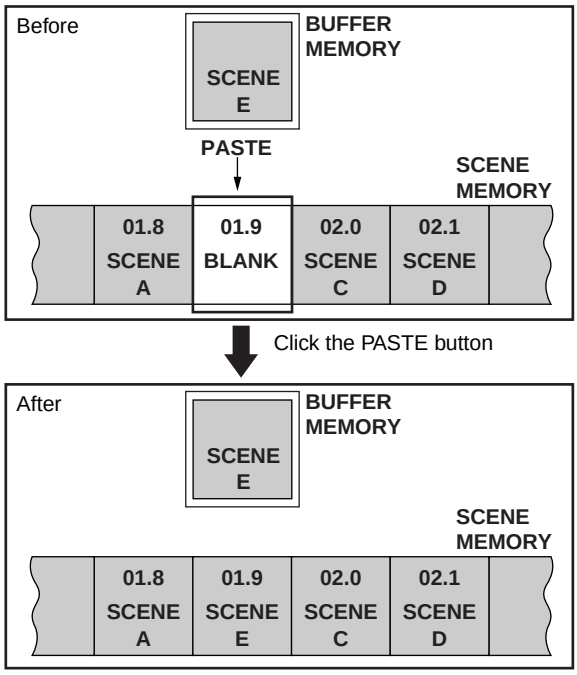


⚠ If a scene is stored in number 99.9, the INSERT button will be grayed and cannot be used.

• **PASTE**
Overwrites the scene from the buffer memory onto the currently selected location.

Scenes of other numbers will not be affected.

The data can be only pasted into a blank scene (i.e., a scene in which no data has been stored). If you wish to paste into a scene that already contains data, you must first use the CLEAR button to erase the data.

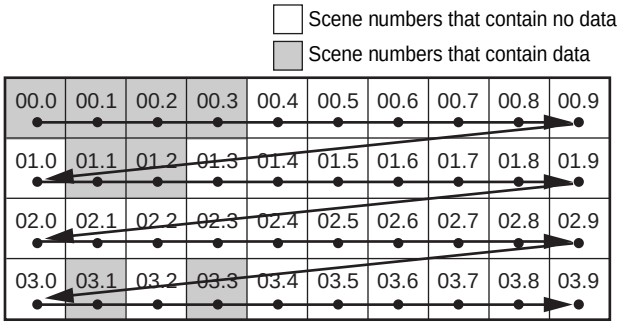


• **UNDO**
Cancels the previously-executed Cut, Clear, Insert, or Paste operation to return to the previous state.

④ **SCENE INC/DEC (scene increment/decrement)**
These buttons select the function of the SCENE MEMORY [▼/DEC]/[▲/INC] switches located in the SCENE MEMORY block of the CS1D.

• **When the BLANK SKIP button is off**
Each time you press the SCENE MEMORY [▼/DEC]/[▲/INC] switches, the number shown in the [SCENE NUMBER] indicator will increment or decrement in steps of 0.1, regardless of whether or not data has actually been saved.

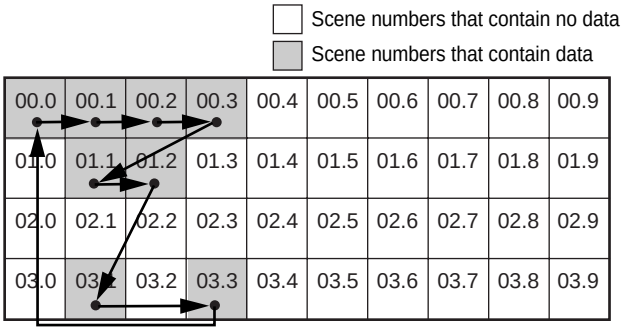
In this state, repeatedly pressing the SCENE MEMORY [s/INC] key will cause the displayed number to change as shown below.



• **When the BLANK SKIP button is on**
Each time you press a SCENE MEMORY [▼/DEC]/[▲/INC] switch, the number displayed in the [SCENE NUMBER] indicator will increase or decrease, skipping numbers in which no data has been stored, including presets.

This sequence will continue between the highest scene number that can be recalled and scene number 00.0.

In this state, repeatedly pressing the SCENE MEMORY [▲/INC] key will cause the displayed number to change as shown below.



[Procedure]

Storing a scene in the MEMORY screen

Here's how to use the SCENE function MEMORY screen to save the current mix settings as a new scene.

⚠ Before you perform the following procedure, make sure that the PREVIEW button located in the SCENE function MEMORY screen is turned off.

1. **Use the CS1D panel controls and the on-screen knobs and sliders to set the mix parameters.**

2. **Access the SCENE function MEMORY screen, and select the scene number in which the data will be saved.**
When you click directly on the desired scene, the cursor will move to that number. The newly selected scene number will blink in the upper right of the display.

   To see scenes that are not currently shown in the list, use the scroll bar located at the right of the list.

3. **Click the STORE button.**
The SCENE STORE popup window will appear, in which you can assign a title to the scene and save it.

   Assign a title and comment to the scene as necessary.

⚠ If the EVENT RECALLING button is set to "ENABLE" in the TC EVENT screen of the MIDI/GPI/TC function, the buttons of the SORT section will be grayed, and cannot be used. Before you can use these operations, you must first set the EVENT RECALLING button to "DISABLE."

4. **To execute the Store operation, click the STORE button in the SCENE STORE popup window.**
   The current settings of the mix parameters will be saved in the scene number you selected in step 2.

⚠ If there are any changes in a UNIT, PATCH, or NAME library that is linked to that scene, a popup window for the corresponding library will then appear. Store the library as necessary. If you press the [EXIT] button without storing, the linked library number will remain the previously-linked number.

If a UNIT, PATCH, or NAME library is stored in a different number, the link destination will be automatically stored as a new number when you store the scene.

Hint

By clicking the STORE UNDO button, you can return to the state prior to when the scene memory was stored.

⚠ When you use the SCENE MEMORY [▼/DEC]/[▲/INC] switches and the [STORE] switch to perform the Store operation, scene numbers that contain no data will not be displayed if the BLANK SKIP button is on.

Recalling a scene in the MEMORY screen

Here's how to use the SCENE function MEMORY screen to load a scene that was previously saved in memory.

⚠ Before you perform the following procedure, make sure that the PREVIEW button located in the SCENE function MEMORY screen is turned off.

1. **Access the SCENE function MEMORY screen, and select the scene number that you wish to recall.**
   The newly selected scene number will blink in the upper right of the display.
2. **Click the RECALL button.**
   The scene of the number you selected in step 1 will be loaded.

Hint

By clicking the RECALL UNDO button, you can return the mix parameters of the PM1D system to the state prior to when the scene was recalled.

Using PREVIEW mode in the MEMORY screen

In the SCENE function MEMORY screen, you can click the PREVIEW button to put the PM1D system in Preview mode.

By using PREVIEW mode, you can view (or edit and save) the scene, unit, patch, or name settings stored in memory without affecting the internal signal processing of the system.

1. **Click the PREVIEW button to turn it on.**
   The PM1D system will enter Preview mode.
2. **Select the scene number that you wish to load.**
3. **Click the RECALL button.**
   Only the settings of the scene you selected in step 2 will be loaded, and will be shown by the LEDs and display of the CS1D panel.

   However, the internal signal processing of the system will remain unchanged from its state before you recalled the scene.

Hint

You can also recall a specific channel to the SELECTED INPUT CHANNEL block or SELECTED OUTPUT CHANNEL block of the CS1D, and view a specific screen in the display to see the settings in detail.

4. **Use the panel controls or the on-screen knobs and faders to modify the mix parameters.**
   Even if you modify the mix parameter settings in Preview mode, the internal signal processing of the system will not be affected.
5. **If you wish to save the changes you made in step 4, select the store destination scene number as necessary, and click the STORE button.**
   The SCENE STORE popup window will appear.
6. **To execute the Store operation, click the STORE button in the SCENE STORE popup window.**
   The values that you modified in step 4 will be stored into memory.
7. **To return the PM1D system to Normal mode, click the PREVIEW button in the MEMORY screen once again.**

Hint

A scene memory contains all input and output functions, and the EFFECT and GEQ global functions. The short names/long names assigned to channels and DCA groups are stored in the NAME library, the patch data for channels and insert I/O is stored in the PATCH library, and input/output jack information such as head amp gain and phase is stored in the UNIT library.

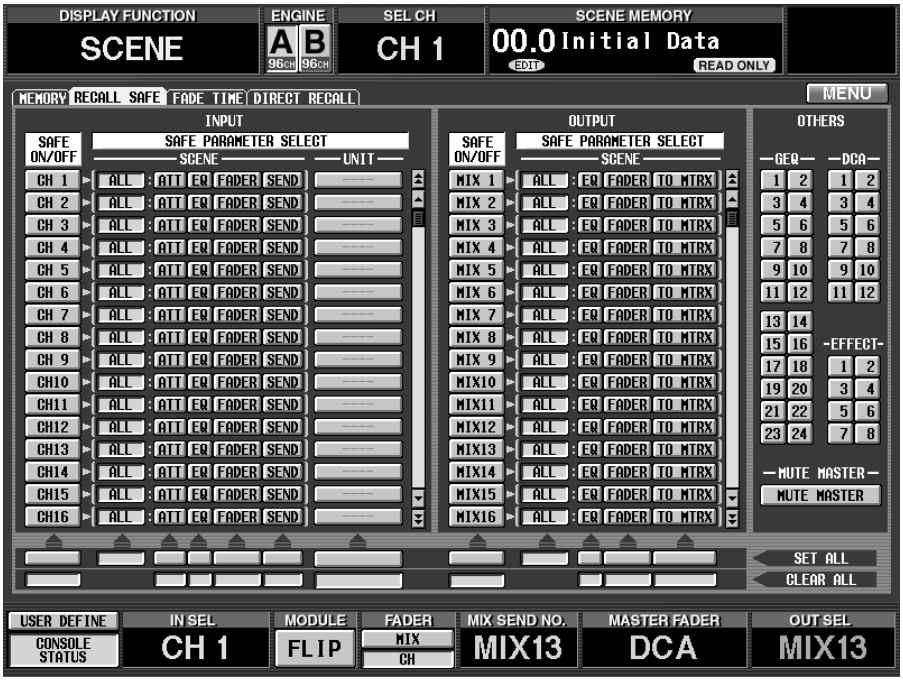
RECALL SAFE

[Function]

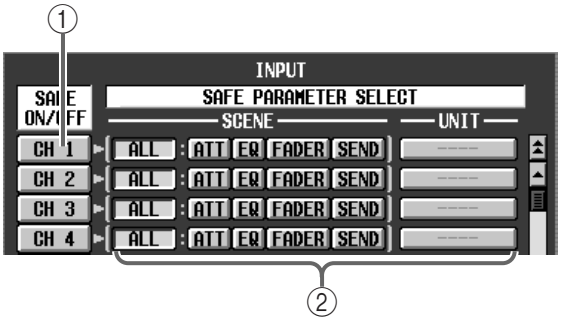
Select the channels, parameters, or units that you wish to set to Recall Safe (a state of being excluded from Recall operations). For example if you have specified Recall Safe for a channel that you always want to operate manually, the parameters of that channel will not change even if you recall a new scene.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**SCENE**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **SCENE** button → **RECALL SAFE** tab



[Screen functions]



① **SAFE ON/OFF buttons**
These buttons turn Recall Safe on/off for each channel. This can be set for the following channels.

- **CH 1–96 {1-48}** .....Input channels 1–96 {1–48}
- **ST IN 1–8 {1–4}**.....ST IN channels 1–8 {1–4}
- **MIX 1–48**.....MIX channels 1–48
- **MTRX 1–24** .....MATRIX channels 1–24
- **ST A/B**.....STEREO A/B channels

Hint

Recall Safe on/off settings are also shown by the RECALL SAFE LED on the control panel, and in the INPUT CHANNEL VIEW screen and OUTPUT CHANNEL VIEW screen.

② **SAFE PARAMETER SELECT buttons**
For each channel, select the parameters that you wish to set to Recall Safe. The following parameters can be selected.

- **ALL**.....All parameters of that channel
- **ATT**.....The ATT parameter of that channel
- **EQ**.....The EQ parameters of that channel (except ATT)
- **FADER** .....The fader of that channel (includes BALANCE for STEREO A/B)
- **SEND/TO MTRX** .... The SEND/TO MATRIX parameters of that channel (ON, LEVEL, PAN, PRE/POST, PAN, PRE POINT)
- **UNIT** ..... The parameters of the unit patched to that channel (HA GAIN GANG and HA A/B LINK are included in ALL)

Simply turning on the above buttons does not enable the Recall Safe function. To enable Recall Safe, you must turn on the SAFE ON/OFF button (①) for the corresponding channel.

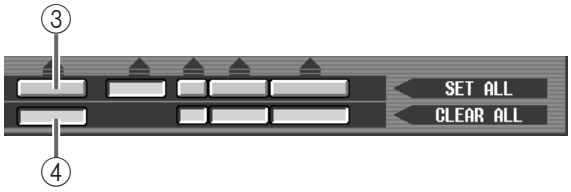
However, Unit Recall Safe is independent of Channel Recall Safe. For this reason, simply turning on the UNIT button will exclude the corresponding unit from recall operations even if the SAFE ON/OFF button is off.

Hint

You may select two or more parameters for the same channel (except for ALL).
ALL will automatically be selected for channels for which individual parameters are not selected.

⚠

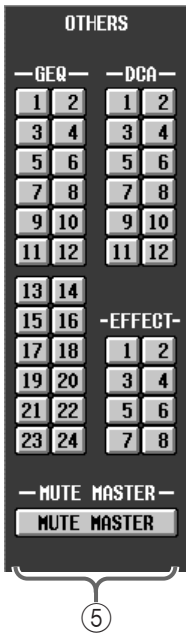
- Selecting all parameters other than ALL will not apply Recall Safe to all parameters of that channel. If you want to protect all parameters of the channel, you must select ALL.
- Even if a certain unit is set to Recall Safe, HA AB LINK will not be subject to Recall Safe. Also, HA GAIN GANG will operate according to the setting prior to the recall operation. These are included in ALL.
- If the unit or card type is changed when a new scene or unit library is recalled, the Recall Safe setting of that unit will be defeated.



③ **SET ALL**
When you click this button, the SAFE PARAMETER SELECT button of the corresponding parameter/unit will be turned on for all channels.

⚠ If the SET ALL button is on, even units not displayed in this screen will all be set to Recall Safe. Be aware that units not currently patched and units that are patched to Insert will also be affected.

④ **CLEAR ALL**
When you click this button, the SAFE PARAMETER SELECT button of the corresponding parameter/unit will be turned off for all channels.



⑤ **OTHERS**
Using these buttons, elements other than the above channel parameters can be selected for Recall Safe status. The following parameters can be selected.

- **DCA 1–12** ..... DCA groups 1–12
- **GEQ 1–24**..... Graphic EQ modules 1–24
- **EFFECT 1–8**..... Internal effects 1–8
- **MUTE MASTER**..... Turn all mute groups on/off

⚠ Recall Safe is not possible for GEQ and EFFECT when an individual library is recalled.

⚠ It is not possible to specify Recall Save individually for mute groups 1–12.

For parameters like those listed below of which there is only one for a pair of two adjacent odd-numbered → even-numbered channel, Recall Safe will be valid only if Recall Safe is set for both channels.

- HA GAIN GANG
- HA A/B LINK
- GATE LINK
- COMP LINK
- DELAY GANG
- PAN MODE
- GEQ LINK

Hint

In the case of two paired channels, a ST IN channel, or the STEREO A/B channels, all settings that are set to Recall Safe will be linked for both channels.

⚠

- Recall Safe is not possible if a scene is recalled during PREVIEW.
- If Recall Safe is specified for either (not both) the odd-numbered or even-numbered channel of two channels, and you recall a scene in which these two channels are paired, pairing will be forcibly defeated, and the channel that was set to Recall Safe will maintain the state prior to the recall.
- For channels in which the SEND parameter is set to Recall Safe, VARI PAN LINK will forcibly be defeated when a new scene is recalled.
- If you specify Recall Safe for channels whose pairing settings would be modified by a scene recall, the SAFE PARAMETERS of both paired channels will be forcibly handled as "ALL."
- If a MIX channel that is set to Recall Safe has a different mix type (VARI or FIX) before and after a scene recall, the mix type prior to the recall will remain valid.

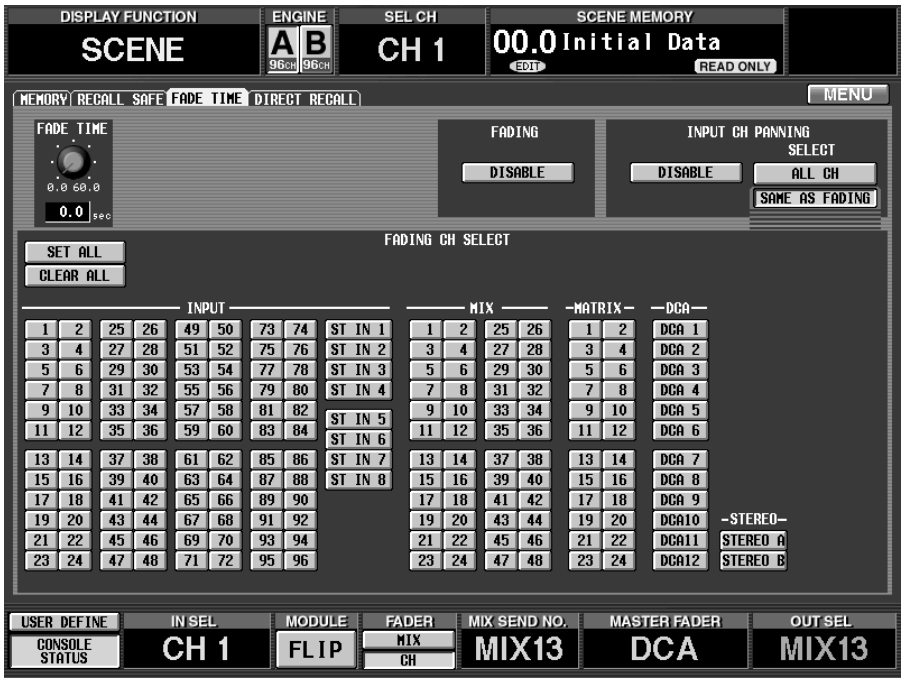
FADE TIME

[Function]

Make settings for the Fade function that smoothly changes the faders until they reach the levels specified by a newly selected scene.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**SCENE**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **SCENE** button → **FADE TIME** tab

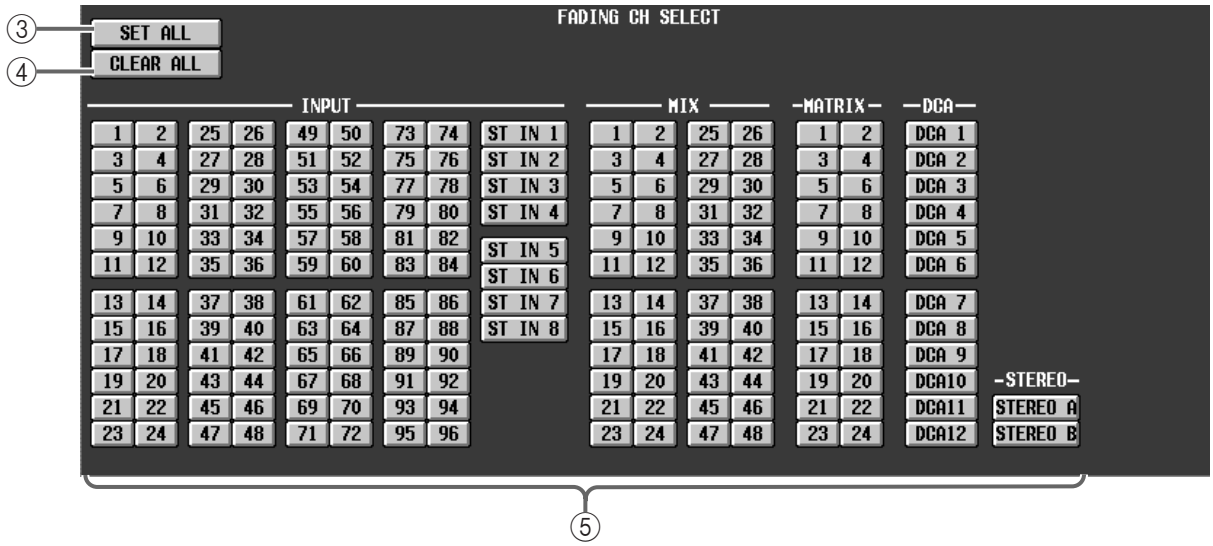


[Screen functions]

① **FADE TIME**
This knob specifies the time over which the faders (LEVEL parameters) will change to the new values when a scene is selected. The range is 0.0 sec–60.0 sec.

The current setting is shown in the number box immediately below.

② **FADING ENABLE**
The Fade function will be enabled if this button is on.

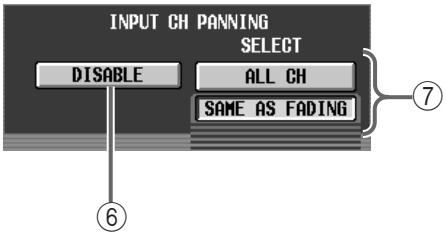


③ **SET ALL**
This button turns on the fade function of all channels.

④ **CLEAR ALL**
This button clears all channels for which the Fade function was enabled.

⑤ **Channels**
Select the channels that will use the Fade function, from the following.

- **INPUT 1–96 {1–48}** ... Input channels 1–96 {1–48}
- **ST IN 1–8 {1–4}** .. ST IN channels 1–8 {1–4}
- **MIX 1–48** ..... MIX channels 1–48
- **MATRIX 1–24** .... MATRIX channels 1–24
- **DCA 1–12** ..... DCA groups 1–12
- **STEREO A/B** ..... STEREO A/B channels



⑥ **INPUT CH PANNING ENABLE**
If this button is on, the Fade function will also apply to the PAN parameter of the input channels (input channels and ST IN channels).

⑦ **INPUT CH PANNING SELECT**
These buttons select the channels for which the Fade function will be enabled for the PAN parameter.

- **When the ALL CH button is on**
The Fade function will be enabled for the PAN parameters of all input channels.
- **When the SAME AS FADING button is on**
The Fade function will be enabled for the PAN parameters of only the input channels selected in ④.

⚠ The Fade function for the PAN parameter is valid only for input channels and ST IN channels. This will not function for MIX, STEREO A/B, MATRIX, and DCA.

If you manually control a LEVEL or PAN parameter while the corresponding parameter is being faded, fading will be halted for that parameter.

If a scene with the same settings for the various parameters is recalled while the LEVEL or PAN parameters are being faded, the fade will be halted and the parameters will change immediately to the target values.

Hint

If you recall a scene for which a fade time has been specified, the panel SCENE MEMORY NAME will blink during the fade.

Change in how fade-time processing of each channel is defeated

Up through PM1D system software v1.2, operating a fader while the fade time was being executed caused fade-time processing for that channel to be cancelled. However since it is easy to operate a fader inadvertently, this version of the software disables this automatic cancellation, in order to prevent accidents.
If you want to cancel fade-time processing as before, operate the fader while holding down one of the following:

- The [SHIFT/GRAB] switch of the data entry block
- The [SHIFT] switch in the CHANNEL SELECT section of the SELECTED INPUT CHANNEL block
- The [SHIFT] switch in the CHANNEL SELECT section of the SELECTED OUTPUT CHANNEL block

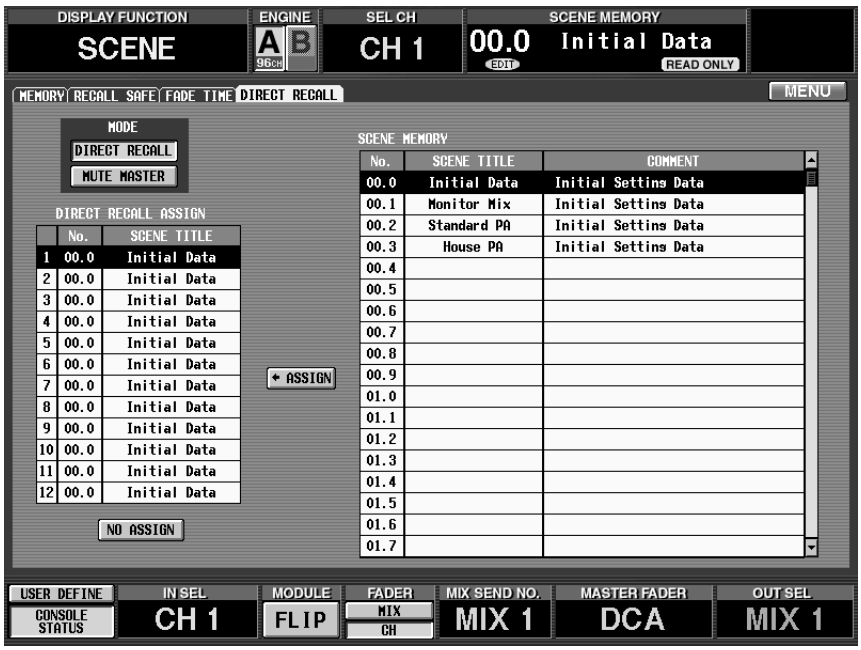
DIRECT RECALL

[Function]

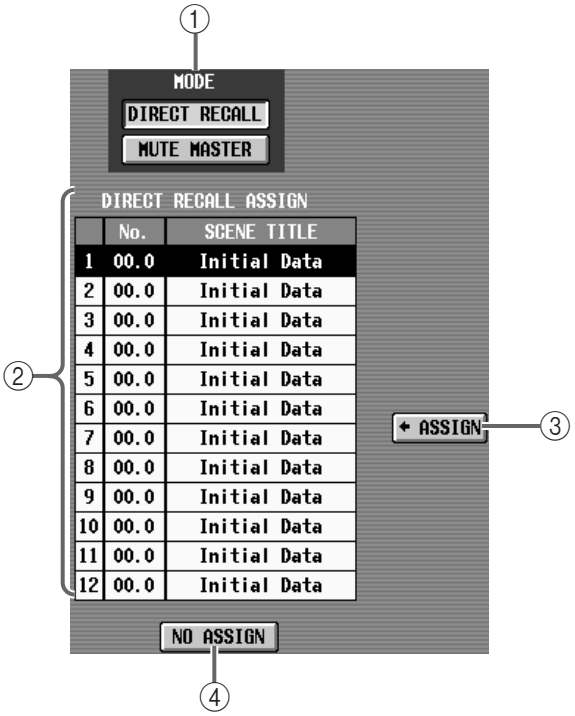
Make settings for the Direct Recall function that allows you to use the SCENE MEMORY [1]–[12] switches (SCENE MEMORY block) of the CS1D to directly recall specific scenes.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**SCENE**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **SCENE** button → **DIRECT RECALL** tab



[Screen functions]



① **MODE**
These buttons select the function of the SCENE MEMORY [1]–[12] switches.

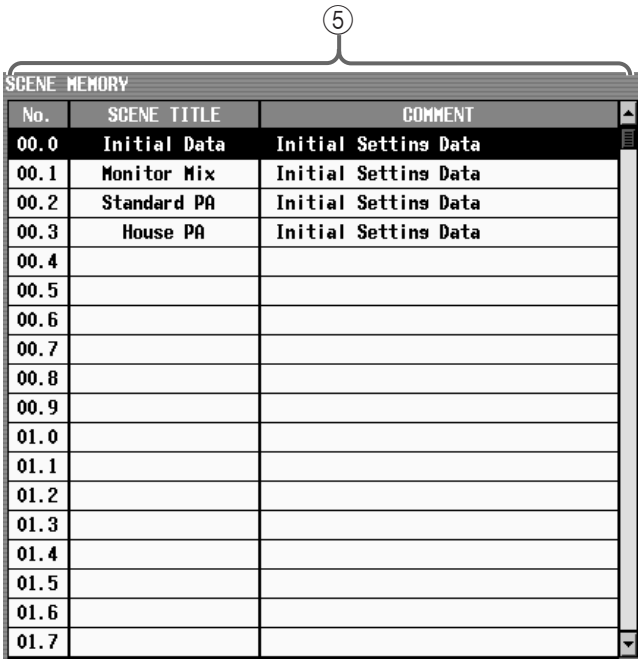
- **When the DIRECT RECALL button is on**
The SCENE MEMORY [1]–[12] switches will function as direct recall switches that directly recall the twelve previously-assigned scenes.
- **When the MUTE MASTER button is on**
The SCENE MEMORY [1]–[12] switches will function as mute master switches that turn muting on/off for mute groups 1–12.

② **DIRECT RECALL ASSIGN**
This list shows the scenes that are assigned to the SCENE MEMORY [1]–[12] switches.

To assign a scene, click this list, and select the number of the switch for the desired assign destination. (The cursor will move to that line and displayed in reverse.)

③ **ASSIGN**
When you click this button, the scene you selected in ⑤ will be assigned to the switch you selected in ②.

④ **NO ASSIGN**
No scene will be assigned to the SCENE MEMORY [1]–[12] switch selected in ②. (The corresponding switch will have no function.)



⑤ **SCENE MEMORY**
From this list you can select the scene memory that will be assigned.

Click the line for the desired scene, and it will be selected.

To display a scene that is not currently shown in the list, use the scroll bar at the right of the list.

[Procedure]

Assigning a scene to a SCENE MEMORY [1]–[12] switch

Here's how to assign a scene to each switch so that the SCENE MEMORY [1]–[12] switches of the CS1D can be used to recall scenes directly.

1. **Access the SCENE function DIRECT RECALL screen. In the DIRECT RECALL ASSIGN list, click the line for the desired number to select the switch to which the scene will be assigned.**
2. **In the SCENE MEMORY list, click the line for the desired scene to select the scene that will be assigned.**
   To display scenes that are not currently displayed in the list, use the scroll bar at the right of the list.
3. **Click the ASSIGN button.**
   The scene you selected in step 2 will be assigned to the switch you selected in step 1.
4. **Repeat steps 1–3 to assign the desired scenes to the SCENE MEMORY [1]–[12] switches.**
5. **To use the SCENE MEMORY [1]–[12] switches as direct recall switches, click the DIRECT RECALL button to turn it on.**
   The SCENE MEMORY [RECALL] LED (SCENE MEMORY block) of the CS1D will light. In this condition, you can press SCENE MEMORY [1]–[12] switches to recall the previously-assigned scenes.

Hint

The function of the SCENE MEMORY [1]–[12] switches can also be changed in the IN DCA/MUTE function MUTE GROUP ASSIGN screen, and in the OUT DCA/MUTE function MUTE GROUP ASSIGN screen.

⚠ The SCENE MEMORY [1]–[12] switches are assigned scene memory numbers – not the actual content of the scenes themselves. For this reason if the content of one of these scenes has been changed, the content that is recalled by the direct recall function will also change accordingly.

MIDI/GPI/TC function

Make MIDI/GPI/time code -related settings

MIDI PROGRAM (MIDI program change)

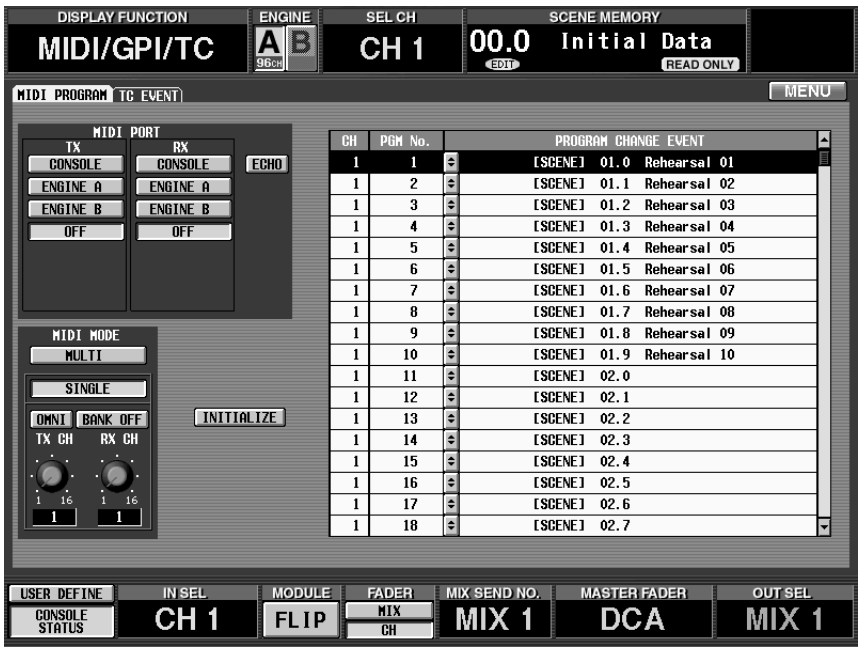
[Function]

When a MIDI program change is received from an external device, the event (scene recall/effect recall) that you specified for that program number will be executed.
Also, when the corresponding event is executed on the CS1D, a MIDI program change message will be transmitted to the external device.

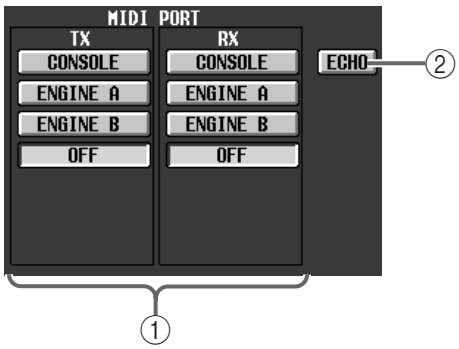
⚠ This function will operate only while the CS1D and DSP1D are connected and operating.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**MIDI/GPI/TC**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **MIDI/GPI/TC** button → **MIDI PROGRAM** tab



[Screen functions]

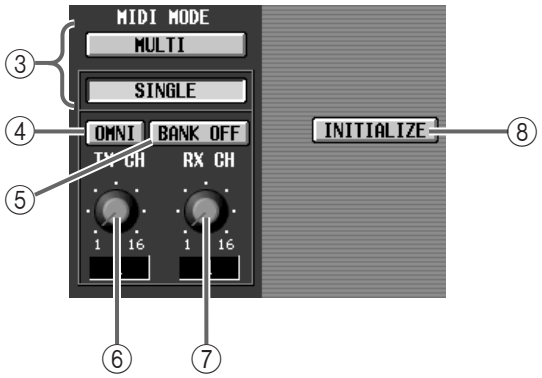


① **MIDI PORT TX/RX (MIDI transmission/reception port)**
From the following choices, select the port that will transmit (TX) or receive (RX) MIDI program change messages.

- **CONSOLE** ..... The MIDI IN/OUT connectors on the rear panel of the CS1D
- **ENGINE A** ..... The MIDI IN/OUT connectors of the DSP1D-EX {DSP1D} connected to the ENGINE A connector of the CS1D
- **ENGINE B** ..... The MIDI IN/OUT connectors of the DSP1D-EX {DSP1D} connected to the ENGINE B connector of the CS1D
- **OFF**..... MIDI messages will not be transmitted or received

Hint
You can specify different ports for transmission and reception.

② **ECHO**
If this button is on, the program change message received at the MIDI IN connector will be echoed-back from the MIDI OUT connector.



③ **MIDI MODE**
These buttons select one of the following two modes by which program changes will be transmitted and received.

• **Single mode (when the SINGLE button is on)**
In this mode, program changes will be transmitted/received using a single MIDI channel.

In this mode, program changes 1–128 that are received on the MIDI channel (RX CH) specified by the RX CH knob (⑦) will execute the event that has been assigned to each program number.

When you execute the corresponding event on the CS1D, a program change 1–128 will be transmitted to an external device on the MIDI channel (TX CH) specified by the TX CH knob (⑥).

If this mode is selected, turning the BANK button (⑤) on will allow more selections (a maximum of 2,048) to be made using a single MIDI channel than would be possible when using program changes 1–128 alone.

• **Multi mode (when the MULTI button is on)**
In this mode, program changes will be transmitted/received using multiple MIDI channels.

In this mode, program changes 1–128 that are received on MIDI channels 1–16 will execute the event that has been assigned to each MIDI channel/program number.

When you execute the corresponding event on the CS1D, a program change 1–128 will be transmitted to an external device on a MIDI channel 1–16.

⚠ In Multi mode, the OMNI button (④), BANK ON/OFF button (⑤), and TX CH/RX CH knobs (⑥⑦) will have no effect.

④ **OMNI**
If this button is on when Single mode is selected, program change messages can be received on all MIDI channels.

If Multi mode is selected, this button will have no effect.

⚠ Do not confuse Single mode/OMNI=ON with Multi mode. When the OMNI button is on, only the events assigned to program changes 1–128 of the RX CH can be executed.

⑤ **BANK (bank select)**
If this button is on when Single mode is selected, Bank Select messages can be transmitted/received.

When messages are received in the sequence of Bank Select 1–16 → Program Change 1–128 on the RX CH, the events assigned to the corresponding bank number/program number will be executed.

When the corresponding event is executed on the CS1D, messages will be transmitted on the TX CH in the sequence of Bank Select 1–16 → Program Change 1–128.

If Multi mode is selected, this button has no effect.

⑥ **TX CH (transmit channel)**
If Single mode is selected, this knob selects the MIDI transmit channel.

If Multi mode is selected, this knob has no effect.

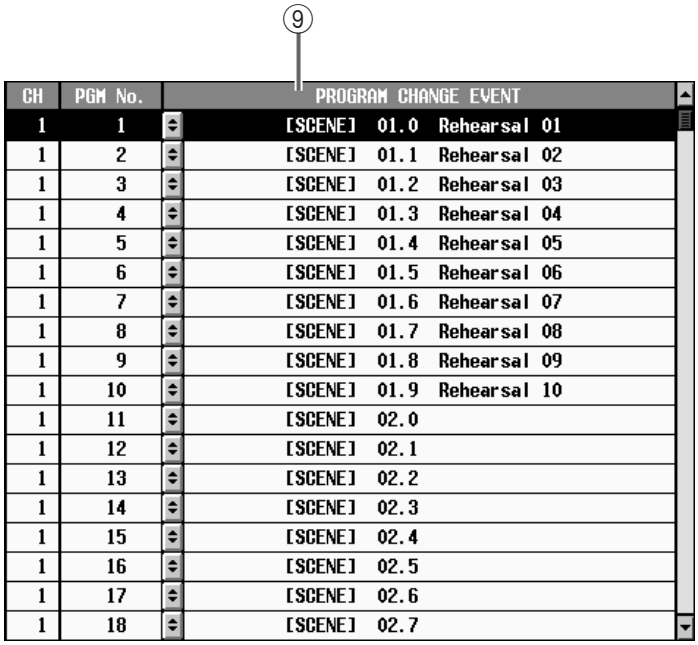
⑦ **RX CH (receive channel)**
If Single mode is selected, this knob selects the MIDI receive channel.

If Multi mode is selected, this knob has no effect.

⑧ **INITIALIZE**
This button initializes the events assigned to the program change numbers.

Hint
The following table shows the MIDI channels and types of message that can be transmitted/received in Single mode or Multi mode.

MIDI mode	OMNI	BANK	MIDI channels that can be received	MIDI channels that can be transmitted	Messages that can be transmitted/received	
					BANK SELECT	PROGRAM CHANGE
Single	OFF	OFF	RX CH only	TX CH only	--	1–128
	ON	OFF	CH 1–16	TX CH only	--	1–128
	OFF	ON	RX CH only	TX CH only	1–16	1–128
	ON	ON	CH 1–16	TX CH only	1–16	1–128
Multi	--	--	CH 1–16	CH 1–16	--	1–128



⑨ **List**
This list shows the event (scene recall/effect recall) that is assigned to each program change number.

- **CH**

This is the MIDI channel on which the program change will be transmitted/received.

In Single mode when the BANK button is on, the number in this column will indicate the bank number.

- **PGM No.**

This shows the program number 1–128.

⚠ Be aware that some external devices may display the program number as 0–127. When transmitting program changes from such an external device to the PM1D system, add 1 to the program number.

- **PROGRAM CHANGE EVENT**

This shows the event that will be executed when the program number of the corresponding MIDI channel is received.

When you click the ⇕ button in the list, a popup window will appear in which you can select the event to be assigned to that program number.

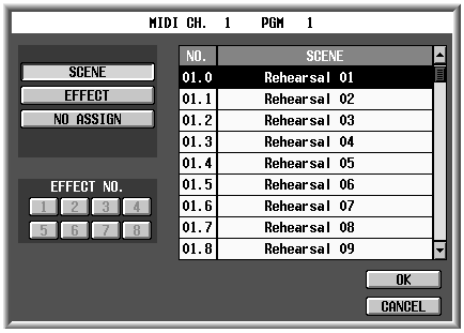
When the event displayed in this column is executed on the CS1D, the program change of the corresponding MIDI channel will be transmitted.

[Procedure]

Executing a specific event when a given program change is received

Here's how to make settings so that when a given program change message is received from an external device, the specific event (scene recall/effect recall) assigned to that program change message will be executed.

1. **Connect the MIDI OUT connector of the external device to the [MIDI IN] connector of the CS1D or to the [MIDI IN] connector of the DSP1D-EX {DSP1D}.**
2. **Access the MIDI/GPI/TC function MIDI PROGRAM screen, and use the MIDI PORT buttons to select the port at which you wish to receive the program changes.**
3. **Turn on one of the MIDI MODE buttons to select either Multi mode or Single mode as the program change reception/transmission mode.**
4. **If you selected Single mode in step 2, use the TX CH/RX CH knobs to specify the MIDI channels that will be used to transmit and receive program change messages. As necessary, turn on the OMNI button or BANK button.**
5. **From the PROGRAM CHANGE EVENT list, select the program number to which you wish to assign an event, and click the ⇕ button in that column.**
A popup window will appear, in which you can select the event to assign.



Hint

If you selected Multi mode in step 3, you can use MIDI channels 1–16/program changes 1–128.

If you selected Single mode in step 3, you can use only program changes 1–128 of the MIDI channel that is selected by the RX CH knob.

If you selected Single mode in step 3 and turned the BANK button on, you can use bank select 1–16/program changes 1–128 of the MIDI channel that is selected by the RX CH knob. In this case, the number shown in the CH column of the Program Change Event list will be the bank number.

6. **Click one of the following buttons to select the type of event.**

   1) **SCENE**
   Scene memory recall operation

   2) **EFFECT**
   Effect recall operation

   3) **NO ASSIGN**
   No event assignment

7. **If you selected 1) in step 6, select the number of the scene to be recalled from the list in the right side of the popup window, and click the OK button.**

8. **If you selected 2) in step 6, use the buttons in the lower left of the popup window to select the internal effect (1–8) that the recall operation will affect, then use the list shown at the right to select the effect library that will be recalled, and click the OK button.**

9. **Repeat steps 5–8 until you have assigned all the necessary events to program numbers.**

10. **Transmit program change (or bank select + program change) messages from the external device on the appropriate MIDI channel.**
    The event assigned to that program number will be executed.

Hint

Program changes can also be transmitted from the PM1D system to an external device. To do so, connect the MIDI OUT connector of the CS1D or DSP1D-EX {DSP1D} to the MIDI IN connector of the external device, and execute the event on the CS1D that was assigned to the program number in step 9.
If the same event is assigned to more than one program number, the lowest-numbered program change will be transmitted.

TC EVENT (time code event)

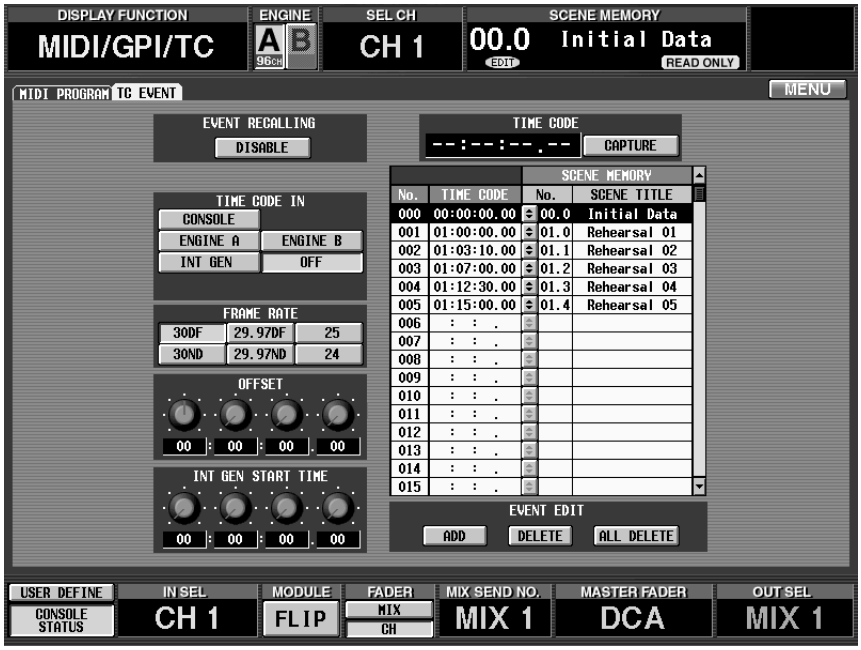
[Function]

When LTC time code received from an external device (or time code generated within the CS1D) reaches a certain time, the specified scene will be recalled.

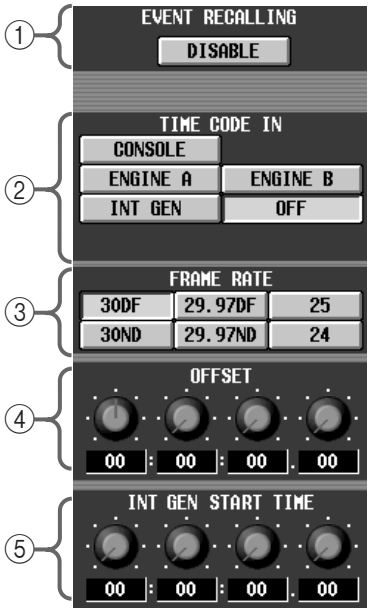
⚠ This function will operate only while the CS1D and DSP1D are connected and operating.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**MIDI/GPI/TC**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **MIDI/GPI/TC** button → **TC EVENT** tab



[Screen functions]



① **EVENT RECALLING (event recall on/off)**
This button specifies whether or not the scene recall will be executed when the received time code (or the internally generated time code) reaches the specified location.

Be aware that while this button is set to "ENABLE", it is not possible to store scenes, units, patches or names, or to load memory card data.

② **TIME CODE IN**
These buttons select the time code source. You can select from the following sources.

- **CONSOLE** .....Time code (LTC) will be received from the [TIME CODE IN] connector of the CS1D.
- **ENGINE A** .....Time code (LTC) will be received from the [TIME CODE IN] connector of the DSP1D-EX {DSP1D} connected to the ENGINE A connector of the CS1D.
- **ENGINE B**.....Time code (LTC) will be received from the [TIME CODE IN] connector of the DSP1D-EX {DSP1D} connected to the ENGINE B connector of the CS1D.
- **INT GEN**.....The time code generated by the PM1D system itself will be used. The instant you click this button, the time code internally generated by the PM1D will start at the time specified by INT GEN START TIME (④).

- **OFF** ..... Click this button if you do not wish to use time code. No time code will be received from outside, and time code will not be displayed in this screen or in the meter bridge block.

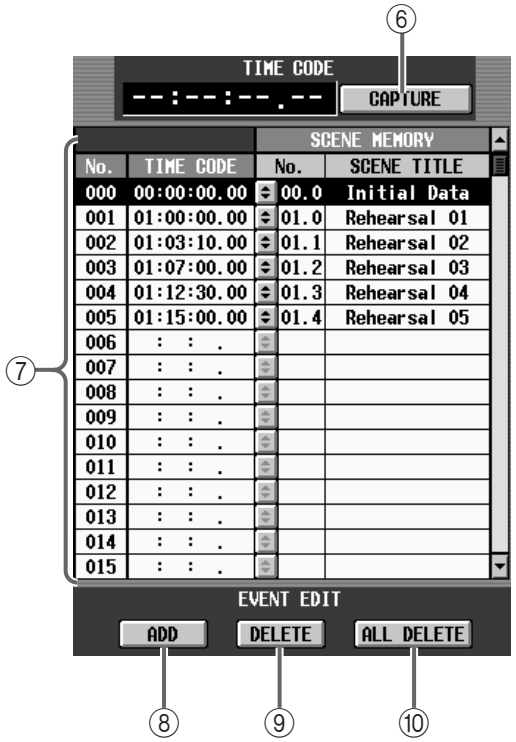
③ **FRAME RATE**
Select the frame rate of the received time code (or the internally generated time code) from the following.

- **24**.....24 frames/second
- **25**.....25 frames/second
- **29.97 ND**.....29.97 frames/second (non-drop)
- **29.97 DF** .....29.97 frames/second (drop frame)
- **30 ND**.....30 frames/second (non-drop)
- **30 DF**.....30 frames/second (drop frame)

④ **OFFSET**
This knob sets an offset value which specifies a forward or backward adjustment to the timing at which recall will occur, relative to the received time code.

The offset value can be adjusted in hour: minute: second: frame units.

⑤ **INT GEN START TIME (Internal time code start time)**
When the INT GEN button (②) is on, this specifies the starting time of the internally-generated time code.



⑥ **CAPTURE (time code capture)**
This button captures time code. When time code is being received from an external device (or being generated internally), you can click the CAPTURE button to add that time (displayed at the left of the CAPTURE button) to the SCENE MEMORY list (⑦).

⑦ **List**
This lists the captured time codes.

When you click the button, a TC EVENT popup window will appear, in which you can select the scene to which the captured time code will be assigned.

⑧ **ADD**
This button adds a new time code to the SCENE MEMORY list.

⑨ **DELETE**
Of the time code or scene memories registered in the SCENE MEMORY list, this button deletes the currently-highlighted one.

⑩ **ALL DELETE**
This button deletes all time code/scene memory items that were registered in the SCENE MEMORY list.

⚠ The FRAME RATE button or the OFFSET, INT GEN, and START TIME knobs can be operated only while "OFF" is selected in the TIME CODE IN section.

The CAPTURE, ADD, DELETE, and ALL DELETE buttons can be operated only while the EVENT RECALLING button is set to "DISABLE."

[Procedure]

Capturing the time code and assigning a scene to be recalled at that time

1. **Connect the time code output connector of the external device to the [TIME CODE IN] connector of the CS1D or to the [TIME CODE IN] connector of the DSP1D-EX {DSP1D}.**
2. **Access the MIDI/GPI/TC function TC EVENT screen, and in the TIME CODE IN section, click the button for the connector to which the external device was connected in step 1.**
3. **Use the FRAME RATE buttons to select the frame rate of the time code that is being received.**
4. **Start time code output on the external device.**
The currently-received time code will be displayed in realtime in the TIME CODE CAPTURE section of the TC EVENT screen.
5. **At each moment that you wish to recall a scene, click the CAPTURE button.**
Each time you click the CAPTURE button, the time at that instant will be added to the list immediately below.

If an event is already registered at the same time location, the original event will take priority.

6. **When you have captured each of the desired time locations, stop time code output on the external device.**

7. **In the list, click the button in the line of the first-captured time code.**
   The TC EVENT popup window will appear, in which you can select scene memories.

8. **Use the buttons in the RECALL SCENE area to select the scene that you wish to recall, as described below.**

   • **DIRECT**
   Recall a specific scene number. If this button is turned on, you must use the SCENE NO. knob located at the right to specify the scene number that you wish to recall.

   If you specify a scene number that has not been stored, that event will be ignored.

   • **INC**
   Recall the scene that follows the scene number that was stored/recalled immediately before starting TC EVENT.

   However, scene numbers that have not been stored will be skipped. Also, this will be ignored if the range of scene memory numbers (maximum 99.9) is exceeded.

   • **DEC**
   Recall the scene that precedes the scene number that was stored/recalled immediately before starting TC EVENT.

   However, scene numbers that have not been stored will be skipped. Also, scene numbers preceding 01.0 will not be recalled.

   • **DISABLE**
   The corresponding event will be disabled.

9. **If necessary, use the knobs of the TIME CODE area to make fine adjustments to the captured time code location.**

10. **Repeat steps 7–8 until the desired scenes have been assigned to each of the time codes that you captured.**

11. **Click the EVENT RECALLING button to set it ENABLE.**

12. **Once again, start time code output on the external device.**
    Each time a time location in the list is reached, the corresponding scene will be recalled.

UTILITY functions

Initial settings for the PM1D system, and loading/saving data or libraries

PREFERENCE

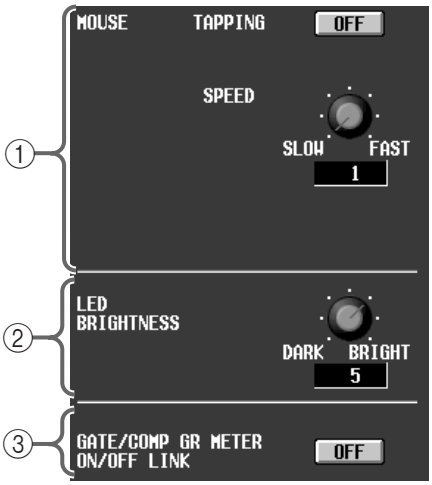
[Function]

Make initial settings for the PM1D system.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**UTILITY**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **UTILITY** button → **PREFERENCE** tab

[Screen functions]



① **MOUSE**
Make settings for the track pad built into the CS1D and for the mouse connected to the [MOUSE] connector.

⚠ On the included software "PM1D Manager for Windows," this setting has no effect.

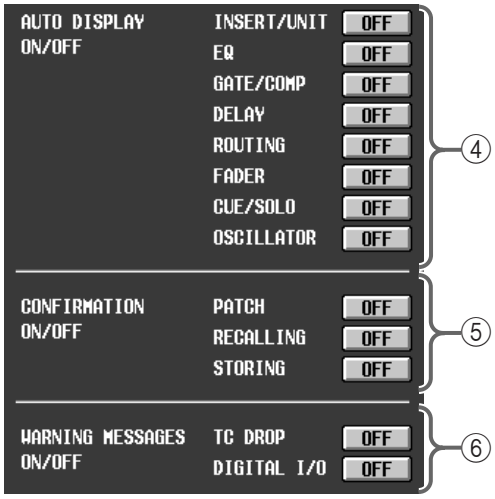
- **TAPPING**
Select whether or not tapping the built-in track pad (as a substitute for clicking) will be enabled.

- **SPEED**
This knob specifies the speed at which the pointer will be moved by the built-in track pad of the CS1D or by the mouse connected to the [MOUSE] connector. You can select from four levels: 1–4.

② **LED BRIGHTNESS**
This knob specifies the brightness of the LEDs of the CS1D.

You can select from seven levels: 1–7.

③ **GATE/COMP GR METER ON/OFF LINK (Gate/compressor GR meter on/off link)**
If this button is on, the GR meters in the screen and on the CS1D panel will be either visible or hidden depending on the on/off status of the internal compressor.



④ **AUTO DISPLAY ON/OFF**
These buttons specify whether or not the corresponding screen will appear in the display when you move a particular controller in the SELECTED INPUT CHANNEL/SELECTED OUTPUT CHANNEL block on the CS1D.

The controllers corresponding to each button and the screens that appear are as follows.

Button	Controller	Selected screen
INSERT/UNIT button	[INSERT] switch	INSERT/DIRECT VIEW or INSERT VIEW
	UNIT-related controller	HA/INSERT
EQ button	ATT, EQ-related controllers	EQ PARAMETER
GATE/COMP button	Gate/compressor-related controllers	GATE PRM / COMP PRM
DELAY button	Delay-related controllers	IN DELAY / OUT DELAY
ROUTING button	Routing-related controllers	PAN/ROUTING / MATRIX/ST or OUT CH VIEW
FADER button	Input/output channel faders and [ON] switch	IN CH VIEW / OUT CH VIEW
CUE/SOLO button	Input/output channel [CUE] switches	IN CH VIEW / OUT CH VIEW
OSCILLATOR button	[OSC ON] switch, [OSC OUT] switch	OSCILLATOR

⚠ These functions will not operate if a popup window is displayed.

⑤ **CONFIRMATION ON/OFF**
This button specifies whether or not a confirmation message will appear when you perform certain operations on the CS1D.

Each button corresponds to the following operations.

Button	Operation
PATCH button	Patching changes in the OUT PATCH screen/IN PATCH screen
RECALLING button	Scene or library recall operations
STORING button	Scene or library store operations

⚠ Even if the RECALLING button is turned on, the scene will be recalled without a confirmation message in the following cases.

- Recall by MIDI program change
- Recall from the TC EVENT screen
- Direct recall
- Recall using a USER DEFINE switch

⑥ **WARNING MESSAGES ON/OFF**
These buttons specify whether or not a warning message will appear if an error occurs in the connection between the PM1D system and an external device. Each button corresponds to the following errors.

Button	Error
TC DROP	A drop-out has occurred in the time code.
DIGITAL I/O	A word clock that is not synchronized with the PM1D system was input.

⑦ **INTERNAL CALENDAR/CLOCK**
These buttons set the year/month/day of the PM1D system's internal calendar and the time of its internal clock. Use the knobs to set the date or time, and press the SET button to apply the new date and time.

⚠ On the included PC software, the SET switch has no effect, and it is not possible to change the date or time. (The internal calendar and clock settings of the computer will be displayed.)

⑧ **BATTERY**
This displays the remaining amount of the internal batteries for the console and engine A/B (DSP1D-EX {DSP1D}.
When the battery runs down, the display will indicate "EMPTY."

[Procedure]

Setting the date of the internal calendar or the time of the internal clock

1. **Access the UTILITY function PREFERENCE screen, and use the six knobs of the INTERNAL CALENDAR/CLOCK section to set the date and time.**

2. **To finalize the new date and time, click the SET button.**
The instant you click the SET button, the new date and time will take effect. If you click the CANCEL button instead of the SET button, the date and time will revert to the original settings.

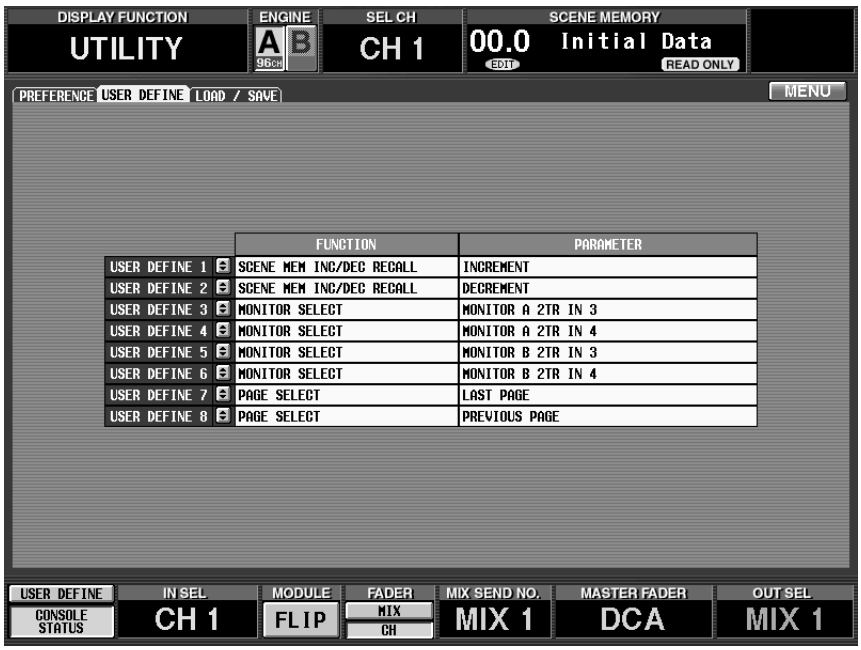
USER DEFINE

[Function]

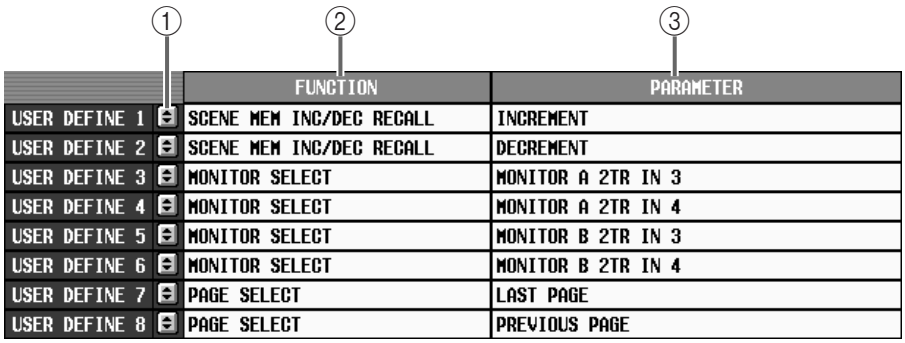
Assign the function to be executed by the USER DEFINE [1]–[8] switches in the USER DEFINE block of the CS1D.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**UTILITY**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **UTILITY** button → **USER DEFINE** tab



[Screen functions]



① **Buttons**
When you click these buttons, the USER DEFINE KEY SETUP popup window will appear, where you can select the function that will be assigned to the USER DEFINE [1]–[8] switches.

② **FUNCTION**
This area displays the functions that are currently assigned to the USER DEFINE [1]–[8] switches.

③ **PARAMETER**
Select the optional parameter for the function that you selected in ②.

The functions and their parameters that can be selected are as follows.

- **NO ASSIGN**

No function will be assigned. (The corresponding switch will have no function.)

- **SCENE RECALL (parameter: –1/+1)**

Recall the scene of the previous (or next) number from the currently selected scene.

- **MONITOR A SOURCE SELECT (parameter: 2TR IN 3–6, DIRECT, MIX 1–48, MTRX 1–24)**
- **MONITOR B SOURCE SELECT (parameter: 2TR IN 3–6, DIRECT, MIX 1–48, MTRX 1–24)**

As the source to be monitored by MONITOR A/B, select 2TR IN 3–6, DIRECT, MIX 1–48, or MTRX 1–24. You can select up to four sources for monitoring.

The LED of a USER DEFINE switch to which this function is assigned will light when the currently selected monitor source matches the parameter.

⚠ When you use the USER DEFINE [1]–[8] switches to change the monitor source, the MONITOR A SOURCE switch and MONITOR B SOURCE switch of the CS1D will have no effect until the next time you select the monitor source from the panel.

- **PAGE SELECT (parameter: PREVIOUS, NEXT, LAST)**

Access the specified screen in the display.

PREVIOUS: The last-selected screen within the same function will be displayed.

NEXT: The next screen within the same function will be displayed.

LAST: The last-selected screen will be displayed once again.

- **BOOKMARK**

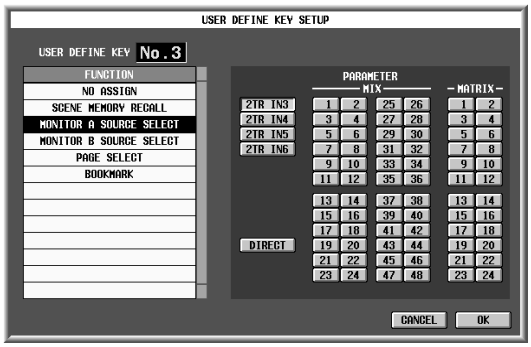
Access the screen that was last bookmarked. The LED of a USER DEFINE switch to which this function is assigned will light when a screen has been memorized. Also, when the functions of the USER DEFINE [1]–[8] switches are shown at the bottom of the display, the name of the screen memorized as a bookmark will be displayed at the location of the corresponding switch.

To register a screen, press and hold the corresponding USER DEFINE switch for two seconds or longer. If you release your hand in less than two seconds, the last-registered screen will be recalled.

[Procedure]

Assigning a function to the USER DEFINE [1]–[8] switches

1. **Access the UTILITY function USER DEFINE screen.**
2. **From the USER DEFINE [1]–[8] switches, select the switch to which you wish to assign a function, and click the ⇕ button for that number.**
   The following USER DEFINE KEY SETUP popup window will appear.

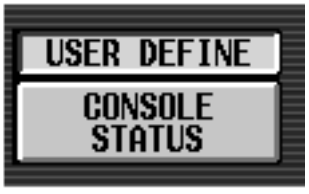


3. **From the list in the FUNCTION section, select the function that you wish to assign.**
4. **As necessary, click a button in the PARAMETER section to select the parameter.**
5. **Click the OK button.**
6. **Repeat steps 2–5 until you have assigned the desired functions to the USER DEFINE [1]–[8] switches.**
7. **To execute an assigned function, press one of the USER DEFINE [1]–[8] switches in the USER DEFINE block.**

Hint

The functions assigned to the USER DEFINE [1]–[8] switches can also be executed in the display. To do so, click the USER DEFINE button located at the lower left of the screen to display the USER DEFINE 1–8 buttons, and click the desired button.

- **USER DEFINE buttons**



Display the USER DEFINE 1–8 buttons in the lower part of the screen

LOAD/SAVE

[Function]

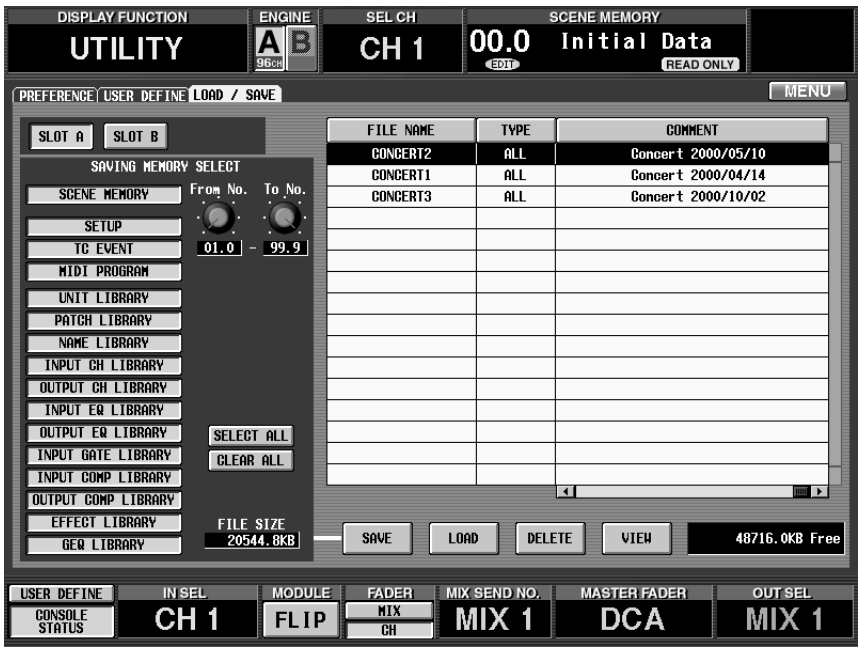
Load scene or library data stored on a PC ATA flash storage card into the PM1D system, or save scene or library data from the PM1D system to a PC ATA flash storage card.

■ **Console**

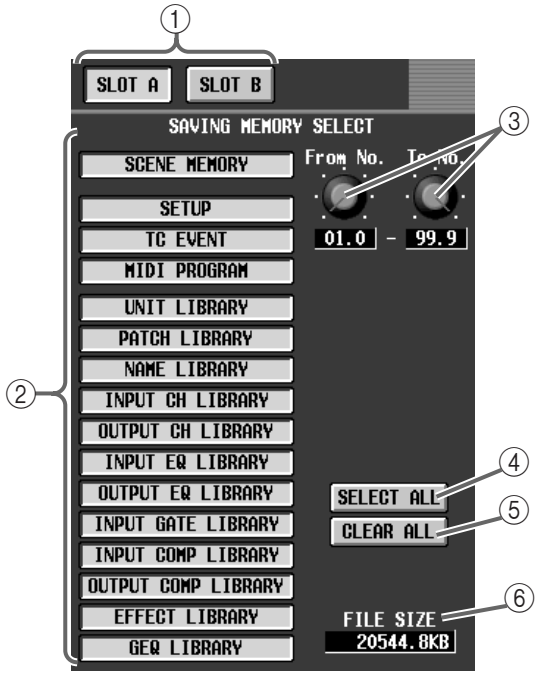
In the **LCD FUNCTION ACCESS** block, press the [**UTILITY**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**

MENU button → **UTILITY** button → **LOAD/SAVE** tab



[Screen functions]



① **SLOT A/B**

These buttons select whether the memory card inserted into slot A or B will be the subject of the operation.

If you switch the SLOT A/B buttons when a memory card is inserted into both slots, the list of files for each card will change accordingly.

⚠ On the included software "PM1D Manager for Windows," the DRIVE button will be displayed in this location, allowing you to select the drive for saving/loading.

② **SAVING MEMORY SELECT (select item to save)**

These buttons select the item(s) to be saved to the memory card. Use these buttons to select the item(s) that you wish to save (you may select more than one). Then click the SAVE button (⑧) to save the corresponding item(s) to the memory card.

The following items can be selected

- **SCENE MEMORY** .. Scene memory contents
- **SETUP** ..... Internal parameters not stored in a scene, template name list
- **TC EVENT** ..... Settings of the MIDI/GPI/TC function TC EVENT screen
- **MIDI PROGRAM** .. Settings of the MIDI/GPI/TC function MIDI PROGRAM screen
- **UNIT LIBRARY/PATCH LIBRARY/NAME LIBRARY/INPUT CH LIBRARY/OUTPUT CH LIBRARY/INPUT EQ LIBRARY/OUTPUT EQ LIBRARY/INPUT GATE LIBRARY/INPUT COMP LIBRARY/OUTPUT COMP LIBRARY/ EFFECT LIBRARY/GEQ LIBRARY**
  The contents of the corresponding library

③ **From No./To No. (specify range)**
These knobs specify the range (numbers) of the scene memories in SAVING MEMORY SELECT (②) that will be affected by the operation.

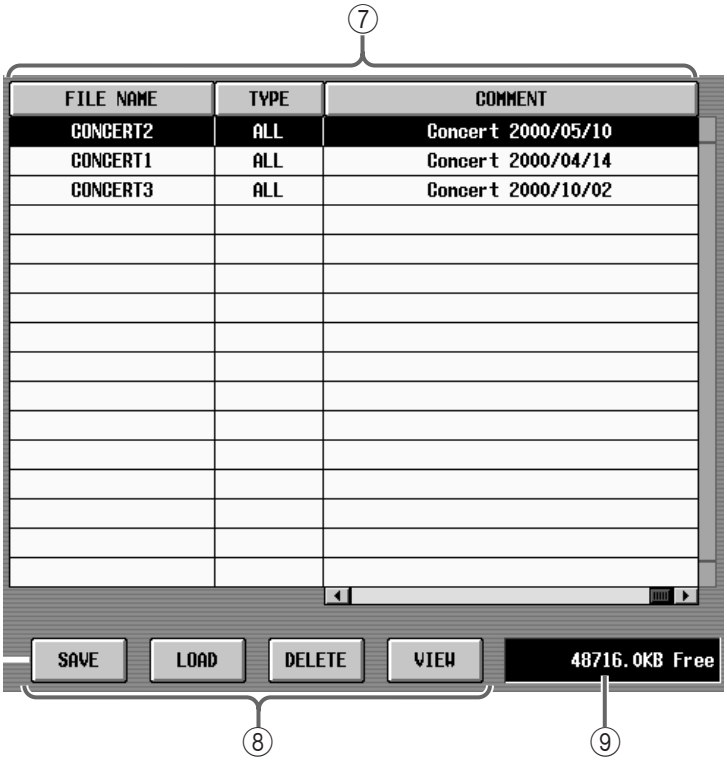
Use the From No. knob to specify the first number, and the To No. knob to specify the last number.

④ **SELECT ALL**
Select all items of the SAVING MEMORY SELECT section (②).

⑤ **CLEAR ALL (clear all selections)**
De-select all items in the SAVING MEMORY SELECT section (②).

⑥ **FILE SIZE**
Display the estimated size required to save the items selected in the SAVING MEMORY SELECT section (②).

⚠ The value shown in the FILE SIZE field assumes that data is saved in all areas of the specified range of scene memories and libraries. For this reason, the actual file size may be different than this number.



⑦ **File list**
This will show a list of the files on the item that was selected in (①). For each file, the following items will be displayed.

- **FILE NAME**
This is a filename of up to 8 characters.

- **TYPE**
This indicates the type of file.

The following types can be selected.

- **ALL** ..... All contents of scene memories, libraries, SETUP, TC EVENT, and MIDI PROGRAM.
- **COMPOSITE**.... A portion of the scene memories/libraries (a file saved by using the From No. knob and To No. knob to specify the range)
- **Other** ..... A file in which only a specific item was saved

- **DATE/SIZE**
The date and time at which the file was last saved.

- **COMMENT**
The comment added when the file was saved.

Hint

Use the scroll bar located below to switch between COMMENT and DATE/SIZE.
By using the buttons in the top line of the list, you can select how the files in the list will be sorted. You can specify that the files be sorted in the order of their FILE NAME (alphabetically), TYPE (by type), DATE/SIZE (by date), or COMMENT (alphabetically).

⑧ **Button**
Use these buttons to select the operation that you wish to execute. The following operations can be selected.

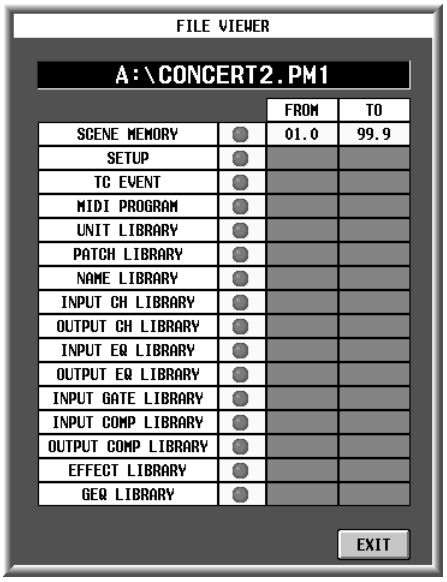
• **SAVE**
Save the selected PM1D internal data on a memory card as a file.

• **LOAD**
Load the selected file from memory card.

• **DELETE**
Delete the selected file from memory card.

• **VIEW**
Check the contents of the selected file on memory card.

In the file list (⑦), select one file that you wish to view, and click the VIEW button. The contents of that memory card file will be displayed.



⑨ **Free space**
This displays the free space (1 Kbyte = 1024 Bytes) on the memory card selected in ①.

[Procedure]

Saving a file on a memory card

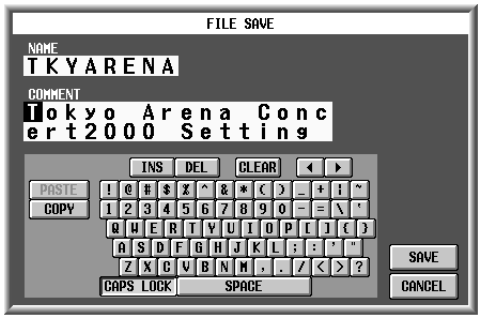
1. **Insert a PC ATA flash storage card into [PC] card slot A or B, located on the top panel of the CS1D.**

⚠ You can use either PCMCIA Type II ATA compatible memory cards or compact flash media inserted into a PC card adapter (in either case, types with 3.3V/5V power supply voltage). Operation is not guaranteed for other types of media.

Normally, the memory cards listed above are sold in a formatted state. This means that you do not need to format a card before using it on the PM1D system.

If you need to format a card, use an external device such as a computer to do so.

2. **Access the UTILITY function LOAD/SAVE screen.**
3. **Click the SLOT A/SLOT B button to select the memory card that you wish to use.**
4. **In the SAVING MEMORY SELECT section, click the button for the item that you wish to save on the memory card.**
According to the item you select, a list of the files saved on the memory card will be displayed.
5. **If you selected scene memory or a library in step 4, use the From No. knob and To No. knob to specify the data that will be affected. (Alternatively, select "ALL.")**
For example if in the DISPLAY SELECT section you select scene memories, and set the From No. knob = 01.0 and the To No. knob = 02.9, the data saved in scene memories 01.0–02.9 of the PM1D system will be saved to the memory card. When you later load this file from the memory card, the data will be loaded into the identically-numbered scene memories of the PM1D system.
6. **Click the SAVE button.**
A popup window will appear, in which you can input the filename and comment.



7. **Assign a filename and comment as necessary, and click the SAVE button.**
The data you specified in steps 4–5 will be saved to the memory card.

⚠ If you save (overwrite) using the same filename as an existing file, the previous file will be deleted. Once you have pressed the button to execute this operation, never insert or remove a memory card in the PC ATA storage card slot or turn off the power of the CS1D. Doing so may damage the file. Please be aware that the switches in the LED function section of the CS1D can not be operated while the operation is executing.

⚠ If you press the [CANCEL] button while saving is in progress, all files that had been written up to that point will be deleted. Be aware that if you were saving by overwriting, the previous files will also be deleted.
If the EVENT RECALLING button is set to "ENABLE" in the MIDI/GPI/TC function TC EVENT screen, the SAVE button will be grayed, and data cannot be written.

You must first switch the EVENT RECALLING button to "DISABLE."

If you format a card using a PC, format it as FAT16. The CS1D supports only FAT16 and FAT12.

In order to store all data of the PM1D, you must use a PC ATA storage card that has 32 Mbytes or more of free area.

⚠ The following characters cannot be used in a filename. They will be ignored if you attempt to input them. (Also, the SPACE character is unusable only at the beginning of the filename.)

(SPACE)				\	/	:	*	?	"
<	>	|	+	=	[	]	;	,	.

⚠ It is not possible to PASTE the filename into the FILE SAVE popup window.

[Procedure]

Loading a file from memory card

1. **Insert a PC ATA flash storage card into [PC] card slot A or B, located on the top panel of the CS1D.**
2. **Access the UTILITY function LOAD/SAVE screen.**
3. **From the list shown at the right, select the file that you wish to load, and click it.**
   The cursor will move to that line.
4. **Click the LOAD button.**
   The file you selected in steps 3 will be loaded from the memory card into the PM1D system.

⚠ Once you have pressed the button to execute this operation, never insert or remove a memory card in the PC ATA storage card slot or turn off the power of the CS1D. Doing so may damage the file. Please be aware that the switches in the LCD function section of the CS1D can not be operated while the operation is executing.

⚠ If the file being loaded has a type of ALL/COMPOSITE, all or part of the PM1D scene memories/libraries may be rewritten unexpectedly. Be sure that you do not inadvertently erase important scenes or libraries.

If the EVENT RECALLING button is set to "ENABLE" in the TC EVENT screen of the MIDI/GPI/TC function, the LOAD button will be grayed and loading will not be possible.
You must first switch the EVENT RECALLING button to "DISABLE."

⚠ Be aware that if you press the [STOP] button while a scene memory is being loaded, all settings that would have been loaded will be cleared.

SYS/W.CLOCK (system/word clock) function

Make settings related to system/word clock

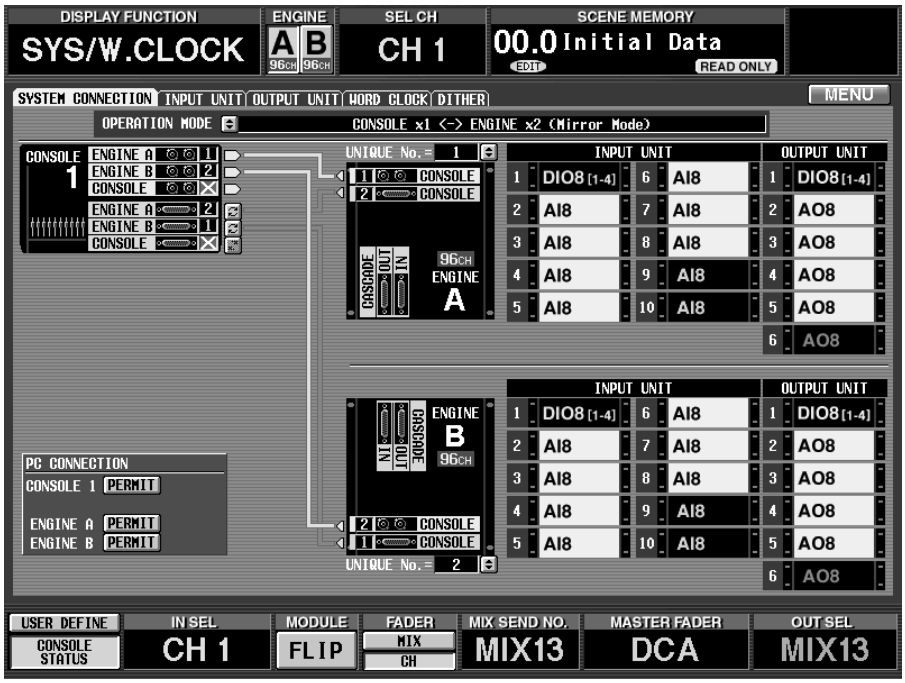
SYSTEM CONNECTION

[Function]

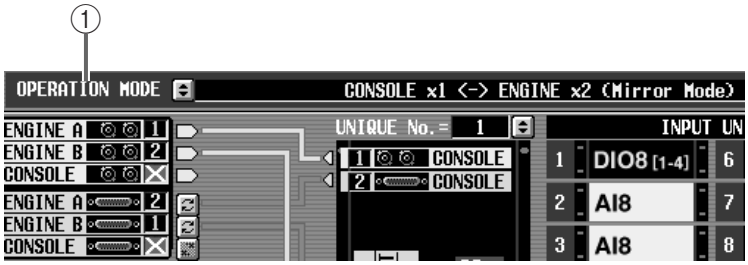
Here you can check connections between units in the PM1D system. You can also select the operation mode that determines the operation of the entire system.

■ **Console**
IN the **LCD FUNCTION ACCESS** block, press the [**SYS/W.CLOCK**] switch (press repeatedly until the screen shown at the right appears)

■ **DisplayDisplay**
MENU button → **SYS/W.CLOCK** button → **SYSTEM CONNECTION** tab



[Screen functions]



① **OPERATION MODE**
Specify the system configuration and connection method of the console (CS1D) and engine (DSP1D-EX {DSP1D}).

By clicking the ⇕ button you can choose between the following two modes.

Select the mode appropriate for the system configuration or connections you are using.

- **Console x 1 <–> Engine x 1**

This is a system consisting of one console and one engine.

If the engine is the DSP1D-EX, the system will operate with 96 monaural input channels. If the engine is the DSP1D, the system will operate with 48 monaural input channels.

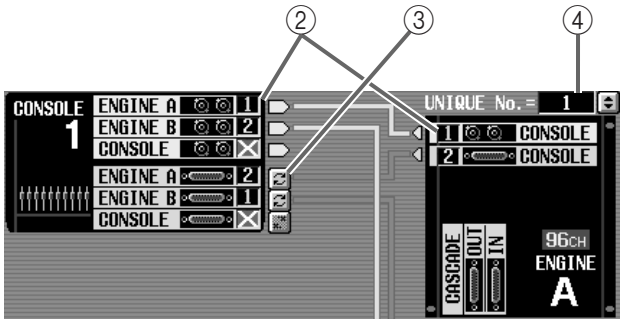
- **Console × 1 <–> Engine × 2 (Mirror Mode)**

This is a system consisting of one console and two engines in a mirrored connection.

In this mode, one of the two engines (A/B) performs the actual signal processing, and the other is used as a spare.

If the engine currently in use develops a problem, you can manually switch to the other unit. (For details on mirror connection, refer to "CS1D Operating Manual (Start-up).")

⚠ PM1D system version 1.0 does not support a 192-channel operation mode using two engines.

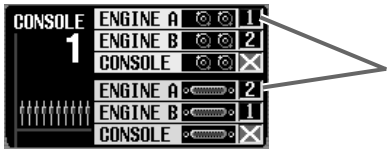


② **Connection status**
This indicates the state of connections between the console and engine.

Light blue lines in the screen indicate control signal connections (BNC connectors), and red lines indicate digital audio signal connections (68 pin D-sub connectors).

If both of the two sets of identical connectors (1/2) on the rear panel of the console and engine are connected, two lines will be shown in the screen.

At this time, the connector area of the transmitting graphic will indicate the number of the connector that is currently valid. (If the connection is broken, an "x" symbol will be displayed instead of the number.)



The engine graphic will indicate the number of channels for that system. (If the connection between the console and engine is broken, or if the engine is not operating correctly, an "x" symbol will be added to the A or B characters.

Hint

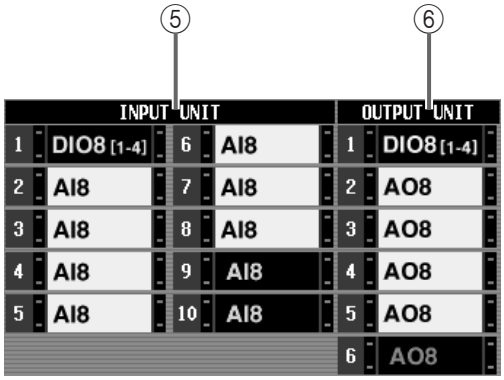
If both sets of connectors (1/2) are connected, connector set 1 will be given priority when the power is turned on.

If the currently enabled connector becomes unusable, the receiving device will automatically switch to the other connector.

Digital audio signal output connectors 1/2 always output the same signals. If the currently enabled connector no longer provides a word clock, the receiving device will automatically switch to the other connector.

⚠ Since a pair or control signal cables (BNC cables) are required in order to function bi-directionally, both cables of the pair must be connected correctly for each connection.

⚠ PM1D system version 1.0 does not provide a way to manually switch between the two sets of control signals or digital signals.



③ **INPUT UNIT**
This shows the type of input units that are connected to INPUT connectors 1–10 of engine A/B (DSP1D-EX {DSP1D}).

When you click the name of a unit, the SYS/W.CLOCK function INPUT UNIT screen will appear, allowing you to view the type and operating status of the cards connected to each unit.

④ **OUTPUT UNIT**
This shows the type of output units that are connected to OUTPUT connectors 1–6 of engine A/B (DSP1D-EX {DSP1D}).

When you click the name of a unit, the SYS/W.CLOCK function OUTPUT UNIT screen will appear, allowing you to view the type and operating status of the cards connected to each unit.

⚠ A unit displayed in yellow indicates that it is virtually connected (→p.49).

A unit displayed in red indicates that the input unit is connected to the connector of the output unit (or vice versa).

Hint

If the state of unit connections differs from the stored state, a popup window like the following will appear.

This popup window will appear when a previously-specified unit is no longer detected. If you click the LEAVE IT AS A VIRTUAL UNIT button, the corresponding unit will be changed to a virtual unit, and the unit and patch settings will be maintained without change. If you click the DISPATCH IT button, the corresponding unit will be considered a blank (empty) unit; the unit settings will be initialized and the patch settings will be discarded.

This popup window will appear when a real unit changes to an actual unit. When you click the OK button, the unit settings will be initialized.

This popup window will appear when a virtual unit changes to a real unit. If the real unit is of the same type as the virtual unit, the unit and patch settings will be maintained when you click the OK button. If the real unit is different than the virtual unit, the unit and patch settings will be discarded when you click the OK button.

This popup window will appear when the system detects a unit that is of a different type than previously remembered. The unit and patch settings will be discarded when you click the OK button.

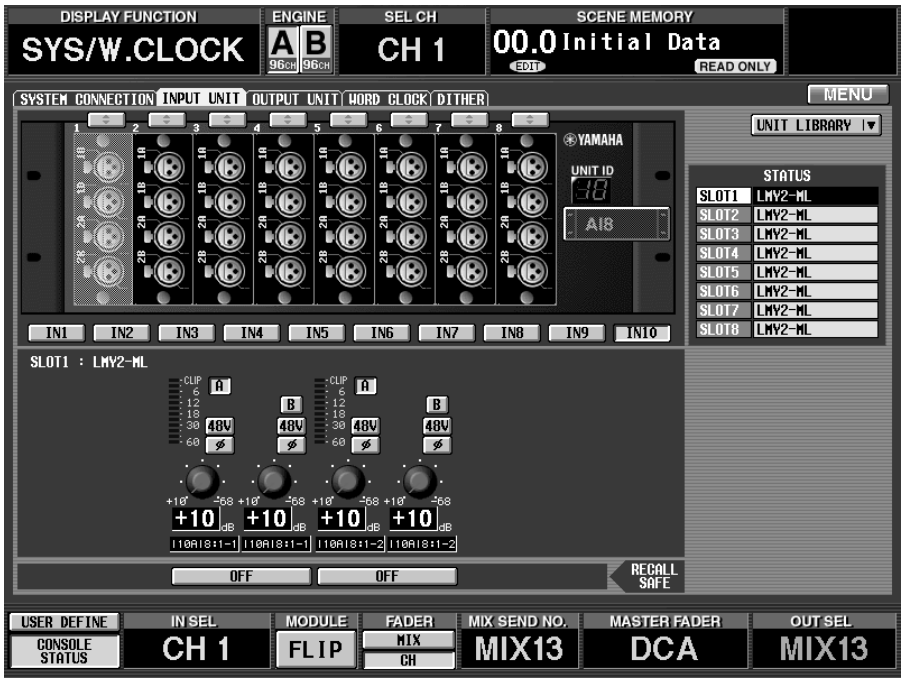
INPUT UNIT

[Function]

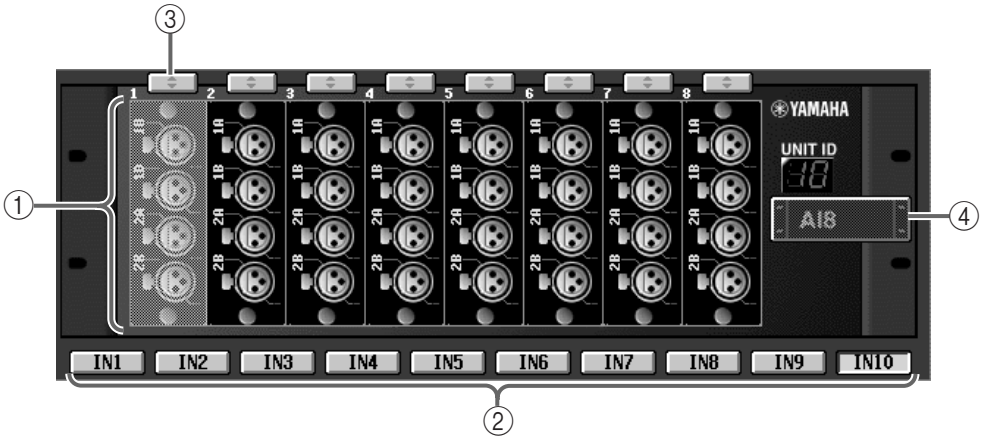
This screen displays the type and operating status of the cards installed in an input unit. In this screen you can also specify virtual connections of input units and cards, and make Recall Safe settings for a unit.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**SYS/W.CLOCK**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **SYS/W.CLOCK** button → **INPUT UNIT** tab



[Screen functions]



① **Selected unit**
This displays the status of the currently selected input unit.

The types of I/O card installed in that unit will be shown by graphics.

When you select a card, the status of that card will be displayed in the card settings window (⑥). The selected card will be displayed with green shading.

⚠ The card will be displayed with shading if it is not installed correctly, or if it is a card that cannot be controlled.

② **IN1–IN10 buttons**
The input unit displayed in ① can be selected by number using these buttons. When editing off-line, you can select DSP1D-EX {DSP1D} INPUT jacks for virtual connection to input units.

The input unit connected to [INPUT] connector 1 of the DSP1D-EX will be displayed as "IN1," the input unit connected to [INPUT] connector 2 as "IN2," and so forth.

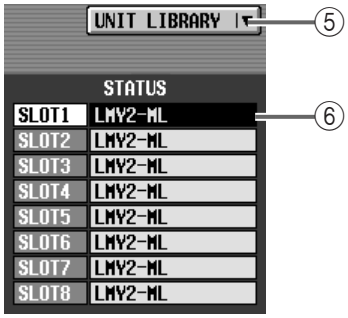
Hint

A card with an indication of "VIRTUAL" on a yellow background is virtually connected.

If a card is indicated as "ILLEGAL" on a red background, an input card is installed in an output unit (or vice versa).

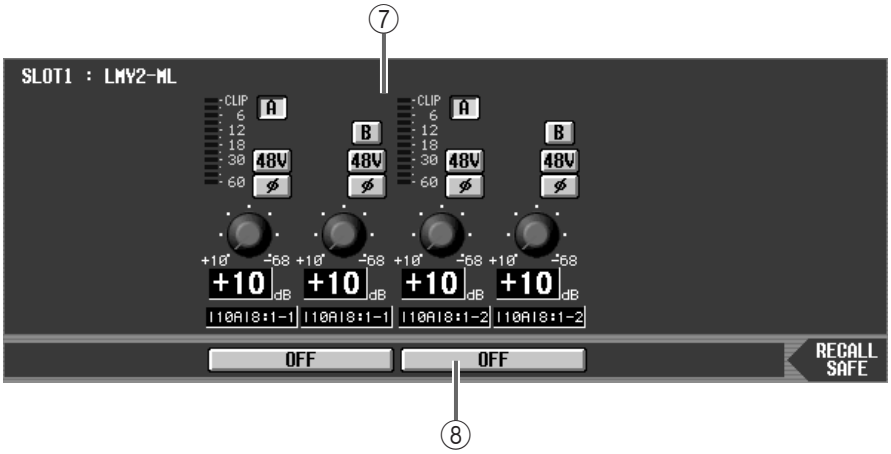
③ **Card assignment buttons**
These buttons are used to assign an I/O card to each slot of the input unit. By clicking this button for a slot in which no card has been installed, you can assign a virtual card.

④ **UNIT SELECT**
This button is used to virtually connect a unit to the jack selected by the IN 1 – IN 10 buttons.



⑤ **UNIT LIBRARY**
This button accesses the UNIT LIBRARY, where you can store/recall setting data for an entire unit. This is the same function as the UNIT LIBRARY button in the ST IN INS/UNIT LIB screen (IN HA/INSERT function).

⑥ **Card type**
This shows the type of I/O card installed in each slot 1–8 of the currently selected input unit.



⑦ **Card settings window**
The settings of the selected I/O card are displayed in this area.

If an AD card with head amp (LMY2-ML) is selected, you can switch phantom power on/off, switch the phase, select between input jacks A/B, and adjust input gain.

⑧ **RECALL SAFE**
Sets the Recall Safe status of the currently selected unit. In this screen, Recall Safe can be turned on/off for each input jack.

Hint

Recall Safe for a unit can be set independently from channel Recall Safe. Operation is also independent.

⚠

- Even if the type of unit or card changes when a new scene or a unit library is recalled, the Recall Safe setting of that unit will be maintained.
- The card will be displayed with shading if it is not installed correctly, or if it is a card that cannot be controlled (except when the unit is the DIO8).

[Procedure]

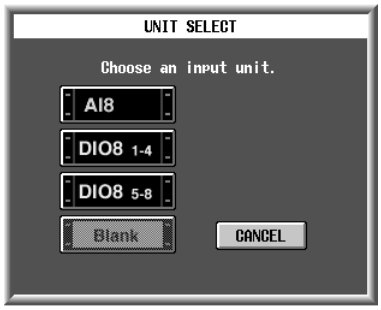
Making virtual connections for an input unit

You can make virtual connections for input units or cards that are not actually connected.

⚠ Virtual connections can be made only if a unit/card is not actually connected.

1. **Access the SYS/W.CLOCK function INPUT UNIT screen.**
2. **Use the IN1–IN10 buttons to select the jack to which the input unit will be virtually connected.**
   The IN1–IN10 buttons correspond respectively to INPUT jacks 1–6 of the DSP1D-EX {DSP1D}.
3. **To virtually connect a unit to the currently selected jack, click the UNIT SELECT button.**

UNIT SELECT popup window



The UNIT SELECT popup window will appear, in which you can select the type of unit.

The following units can be selected in this window.

- **AI8 (AI8 input unit)**
- **AI8-ML8 (an input unit in which eight mic/line input cards are installed)**
- **AI8-ML4AD4 (an input unit in which four mic/line input cards + four AD cards are installed)**
- **AI8-AD (an input unit in which eight AD cards are installed)**
- **DIO8 1-4 (OUTPUT A jacks of DIO8 digital input/output unit)**
- **DIO8 5-8 (OUTPUT B jacks of DIO8 digital input/output unit)**
- **BLANK (no unit)**

⚠ If you wish to independently use the OUTPUT A jacks and OUTPUT B jacks of the DIO8 digital input/output unit, you must set the PORT B SELECTOR of the DIO8 to the 5-8 position. With this setting, signals will be sent from the OUTPUT A jacks to slots 1–4, and from the OUTPUT B jacks to slots 5–8.

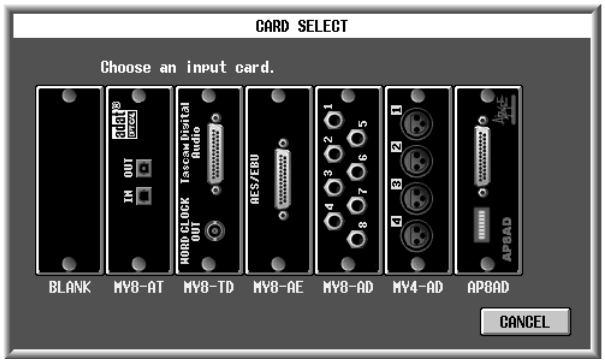
4. **Click an icon to select the unit that you will connect virtually.**
   If you select a unit of a different type than was specified previously, a window will appear to warn you of this. Click the OK button, and the patching that had been specified for the previous unit will be defeated.

UNIT CONFLICT window warning that the unit has been changed

Hint

Virtually connected units are shown by a yellow icon.

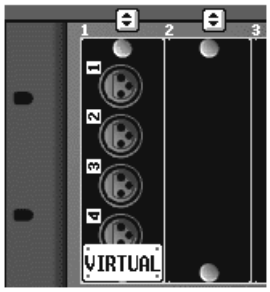
5. **To virtually connect a card to the currently selected unit, click the card assign button for the desired slot.**
   A list of the cards that can be installed in that unit will be displayed.



6. **Click the card that you wish to virtually connect.**

Hint

Virtually-connected cards will be indicated by "VIRTUAL" displayed on a yellow background.



7. **Make virtual connections for other units and cards in the same way.**

Hint

When the CS1D goes off-line, and the virtually-connected units/cards differ from the physically-connected units/cards, a popup window will appear, informing you that the settings have been modified according to the units/cards that are actually connected.

If in step 3 you selected the model name (AI8-ML8, AI8-ML4AD4, AI8-AD8) of a unit in which a card is already installed, it is not necessary to specify the card.

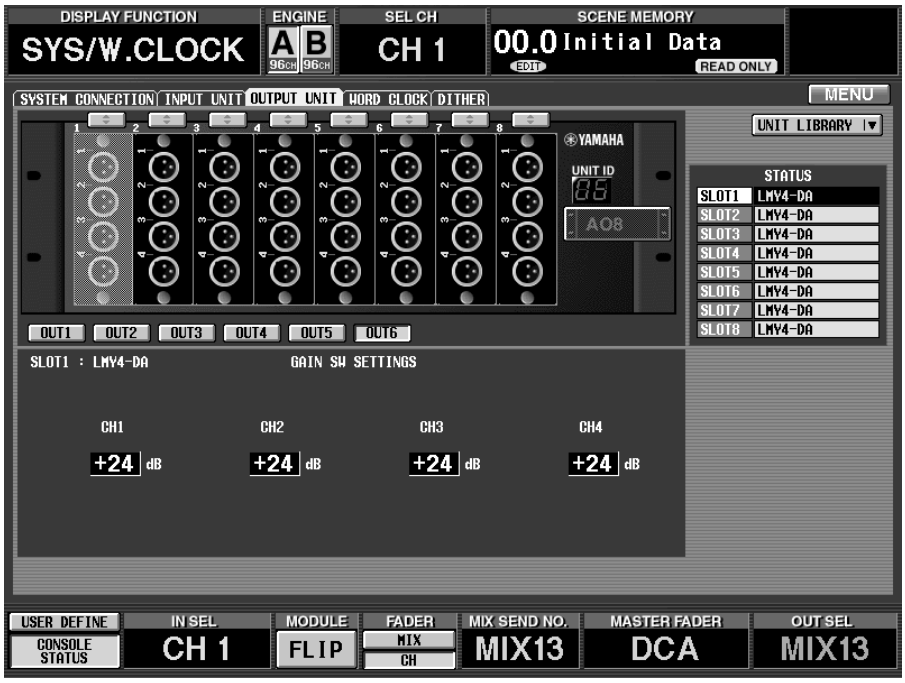
OUTPUT UNIT

[Function]

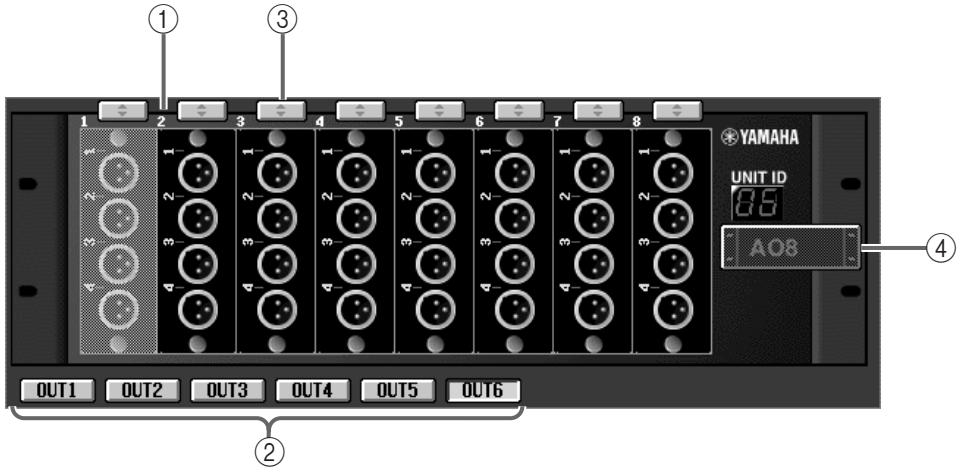
Displays the type of card that is connected to the output unit. You can also use this screen to make virtual connections for output units and cards.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **[SYS/W.CLOCK]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **SYS/W.CLOCK** button → **OUTPUT UNIT** tab



[Screen functions]



① **Selected unit**
This displays the status of the currently selected output unit.

The types of I/O card installed in that unit will be shown by graphics.

When you select a card, the status of that card will be displayed in the card settings window (⑥). The selected card will be displayed with green shading.

⚠ The card will be displayed with shading if it is not installed correctly, or if it is a card that cannot be controlled.

② **OUT1–OUT6 buttons**
The output unit displayed in ① can be selected by number using these buttons. When editing off-line, you can select DSP1D-EX {DSP1D} INPUT jacks for virtual connection to output units.

The output unit connected to [OUTPUT] connector 1 of the DSP1D-EX will be displayed as "OUT1," the output unit connected to [OUTPUT] connector 2 as "OUT2," and so forth. The number of the currently selected unit is indicated by the graphic in the screen.

Hint

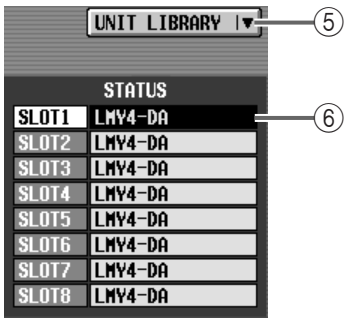
A card with an indication of "VIRTUAL" on a yellow background is virtually connected.

If a card is indicated as "ILLEGAL" on a red background, an input card is installed in an output unit (or vice versa).

③ **Card assignment buttons**
These buttons are used to assign an I/O card to each slot of the output unit.

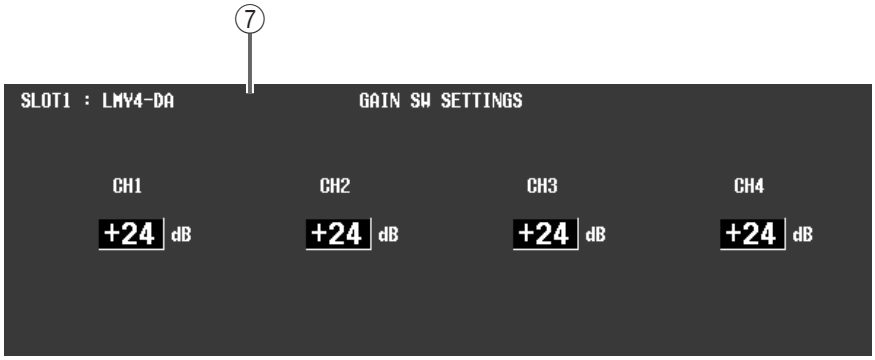
By clicking this button for a slot in which no card has been installed, you can assign a virtual card.

④ **UNIT SELECT**
This button is used to virtually connect an output unit to the jack selected by the OUT 1 – OUT 6 buttons.



⑤ **UNIT LIBRARY**
This button accesses the UNIT LIBRARY window, in which you can store/recall settings for all units. This is the same function as the UNIT LIBRARY button in the ST MAS INS/UNIT LIB screen of the OUT INSERT function.

⑥ **Card type**
This shows the type of I/O card installed in each slot 1–8 of the currently selected output unit.



⑦ **Card settings window**
The settings of the selected I/O card are displayed in this area.

[Procedure]

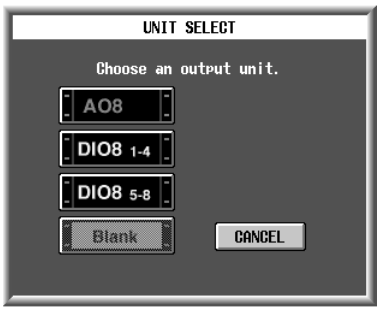
Making off-line virtual connections for an output unit

By using the included software "PM1D Manager for Windows," you can make virtual connections for output units or cards that are not actually connected.

⚠ Virtual connections can be made only if a unit/card is not actually connected.

1. **Access the SYS/W.CLOCK function OUTPUT UNIT screen.**
2. **Use the OUT1–OUT6 buttons to select the jack to which the output unit will be virtually connected.**
   The OUT1–OUT6 buttons correspond respectively to OUTPUT jacks 1–6 of the DSP1D-EX {DSP1D}.
3. **To virtually connect a unit to the currently selected jack, click the UNIT SELECT button.**

UNIT SELECT popup window



The UNIT SELECT popup window will appear, in which you can select the type of unit. The following units can be selected in this window.

- **AO8 (AO8 output unit)**
- **AO8-DA8 (an output unit in which eight DA cards are installed)**
- **DIO8 1-4 (INPUT A jacks of DIO8 digital input/output unit)**
- **DIO8 5-8 (INPUT B jacks of DIO8 digital input/output unit)**
- **BLANK (no unit)**

⚠ If you wish to independently use the INPUT A jacks and INPUT B jacks of the DIO8 digital input/output unit, you must set the PORT B SELECTOR of the DIO8 to the 5-8 position. With this setting, signals will be sent from the INPUT A jacks to slots 1–4, and from the INPUT B jacks to slots 5–8.

4. **Click an icon to select the unit that you will connect virtually.**
   If you select a unit of a different type than was specified previously, a window will appear to warn you of this. Click the OK button, and the patching that had been specified for the previous unit will be defeated.

Hint

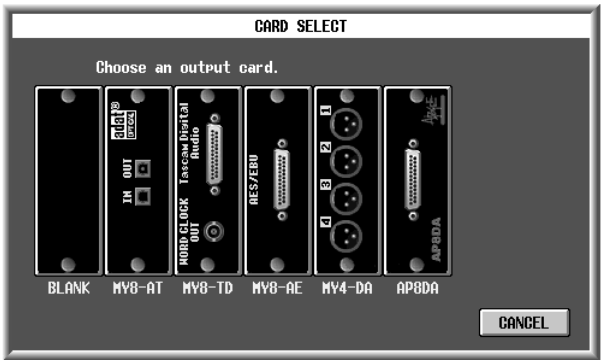
Virtually connected units are shown by a yellow icon.

UNIT CONFLICT window warning that the unit has been changed

Hint

Virtually connected units are shown by a yellow icon.

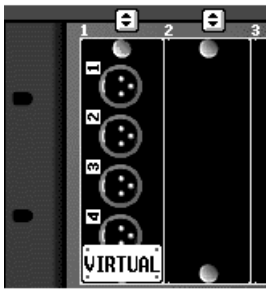
5. **To virtually connect a card to the currently selected unit, click the card assign button for the desired slot.**
   A list of the cards that can be installed in that unit will be displayed.



6. **Click the card that you wish to virtually connect.**

Hint

Virtually-connected cards will be indicated by "VIRTUAL" displayed on a yellow background.



7. **Make virtual connections for other units and cards in the same way.**
   If in step 3 you selected the model name (AO8-DA8) of a unit in which a card is already installed, it is not necessary to specify the card.

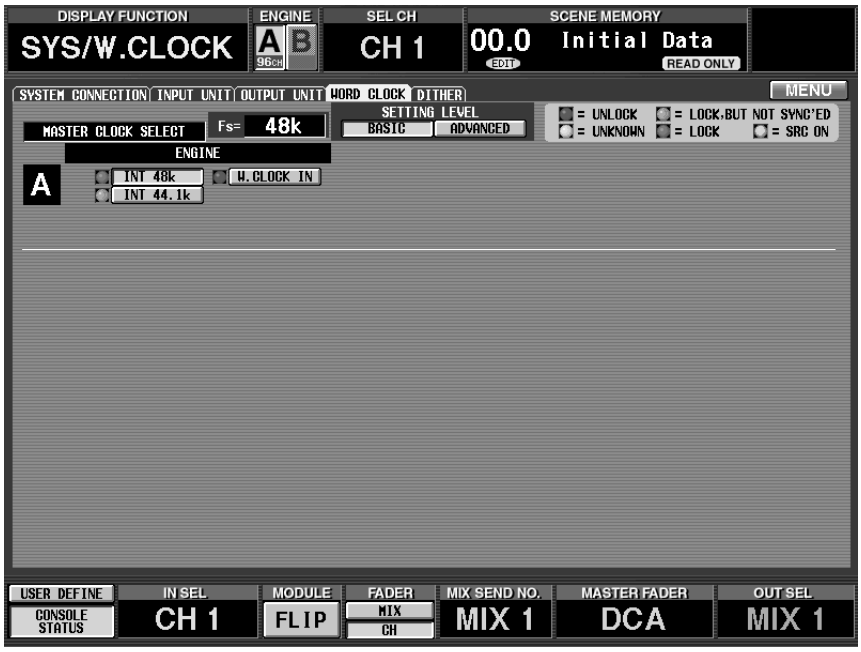
WORD CLOCK

[Function]

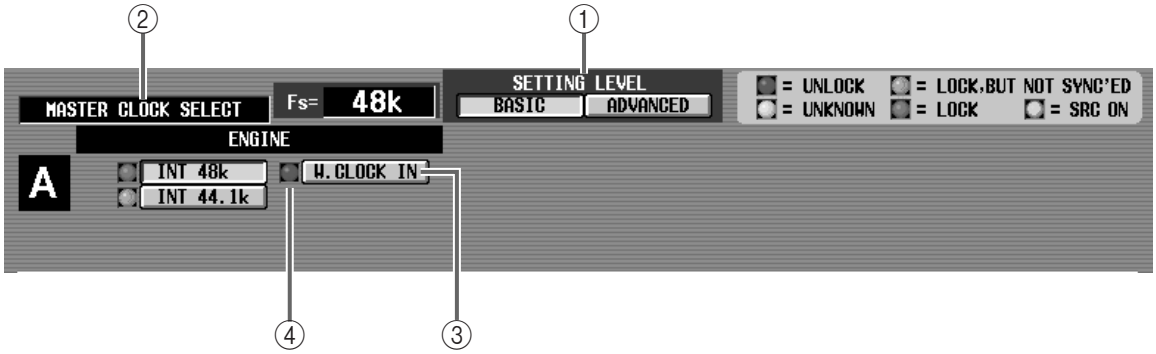
Although the PM1D system is designed to continue audio processing as far as possible even if there are synchronization-related problems or incorrect settings, word clock synchronization (audio system clock) must be established for all devices in the system. In this screen you can specify the word clock that will operate the PM1D system. In general, the frequency of this clock is referred to as the sampling rate or sampling frequency.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press [**SYS/W.CLOCK**] (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **SYS/W.CLOCK** button → **WORD CLOCK** tab



[Screen functions]



① **SETTING LEVEL**
Select one of the following two modes for making word clock settings.

- **BASIC**
  This mode simplifies word clock settings for the PM1D system by limiting the items that can be set. You can automatically set all word clock settings of the PM1D to their optimal state simply by selecting the word clock (the reference word clock) that will be the master clock. Unless you need to make special settings, we recommend that you normally use this level.
- **ADVANCED**
  This level allows more detailed settings to be made.

⚠ If MASTER CLOCK SELECT is other than INT 48k/INT 44.1k/W.CLOCK IN, changing from ADVANCED to BASIC will forcibly select INT 48k.

② **MASTER CLOCK SELECT**
Select the clock source that will be the master clock. The entire PM1D system will be controlled so that it operates in synchronization with the selected clock source. This setting will determine the sampling rate of the PM1D system.

When the BASIC button is on, the clock source can be selected from the following devices.

⚠ When you change the word clock settings, noise may be heard from the output jacks of the CS1D and AO8, particularly if an MY8-AT digital I/O card is installed in the DIO8. To protect your speaker system, you must turn down the power amp output before changing the word clock settings. Such a change in the word clock settings can occur not only when PM1D system internal settings are changed, but also when the word clock setting is switched on an external device (e.g., a CD player or a recording device).

Hint

In the case of one console and two engines connected in a Mirror configuration, there will also be an Engine B select button, allowing you to make settings. However, the settings of engine A and engine B will be linked.

- **ENGINE A (DSP1D-EX {DSP1D})**

  INT 48 k
  Internal clock of engine A (48 kHz)

  INT 44.1 k
  Internal clock of engine A (44.1 kHz)

  W.CLOCK IN
  Word clock supplied to the WORD CLOCK IN connector of engine A

- **ENGINE B (DSP1D-EX {DSP1D})**

  INT 48 k
  Internal clock of engine B (48 kHz)

  INT 44.1 k
  Internal clock of engine B (44.1 kHz)

  W.CLOCK IN
  Word clock supplied to the WORD CLOCK IN connector of engine B

  If the ADVANCED button is on, the clock source can be selected from the following devices, as well as from engines A/B listed above.

- **UNIT**

  ENGINE A
  CH 1/2, CH 3/4, CH 5/6, CH 7/8

  The word clock included in the input signal for each channel of the digital input/output unit (DIO8) connected to engine A.

  ENGINE B
  CH 1/2, CH 3/4, CH 5/6, CH 7/8

  The word clock included in the input signal for each channel of the digital input/output unit (DIO8) connected to engine B.

⚠ The only clock source that can be selected as the master is the clock that is extracted from the digital I/O card installed in slot number 1 of unit number 1.
If the digital I/O card type is MY8-AE (AES/EBU format), you can also use the 1/2–7/8 buttons to select the input channel.
If the type of digital I/O card is MY8-TD (Tascam format) or MY8-AT (ADAT format), operation will be the same regardless of which of the four buttons you select. In the case of an analog card such as the MY8-AD or MY4-AD, the status will always be UNLOCK, and operation will not be correct even if you select this.

- **CONSOLE**

  INT 48k
  Internal clock (48 kHz) of the console (CS1D)

  INT 44.1
  Internal clock (44.1 kHz) of the console (CS1D)

  W.CLOCK IN
  Word clock supplied to the WORD CLOCK IN jack of the console (CS1D)

  2TR IN
  Clock extracted from 2-TRACK IN DIGITAL AES/EBU jack 3 of the console (CS1D)

③ **WORD CLOCK INPUT SELECT (displayed only if ADVANCED level is selected)**
For each device within the PM1D system, you can specify the jack that will supply the word clock used for synchronization.

This button will be displayed only for a unit that is connected or virtually connected. Buttons for a unit that cannot be controlled will be grayed out, and the setting cannot be changed.

For each device, you can select one of the following three settings.

- **If the AUTO button is on**

A valid word clock will automatically be detected in the priority order of the WORD CLOCK IN connector of that device → the 68 pin D-sub connector connected to the engine, and the connector that receives the word clock will be specified accordingly. However if, while the unit is operating on the word clock supplied from the 68 pin D-sub connector, a word clock valid for synchronization begins to be received from the WORD CLOCK IN connector, the word clock source will automatically switch to the WORD CLOCK IN connector.

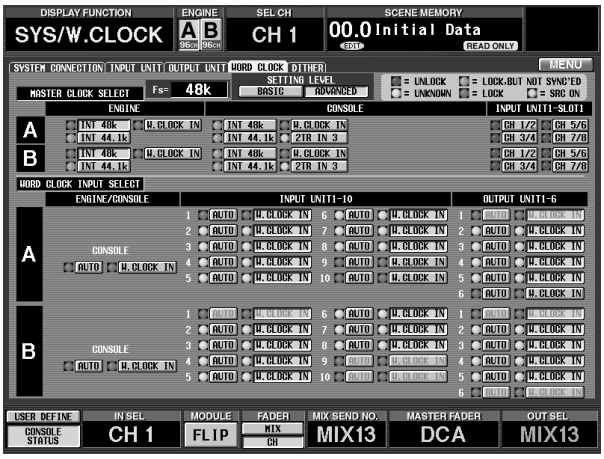
Hint

This automatic detection is always enabled. This means that even if one of the clocks should be interrupted, the clock source will be switched immediately to re-establish synchronization.

- **If the W.CLOCK button is on**

If this button is on, the WORD CLOCK IN connector of that device will be selected.

• **If both buttons are off**
The 68 pin D-sub will be selected.



④ **Status**
The ◯ symbol at the left of the button indicates the clock status that is being input to that connector.

This indicates the result of selecting the connector, and whether audio signals of that status are being correctly input/output between the various devices.

The various statuses have the following significance.

• **LOCK (blue)**
A clock synchronized to the source selected in ② is being input.

If the clock of the selected connector displays this status, the device to which that connector belongs is correctly performing input/output within the PM1D system.

⚠ This status may be displayed even when unsynchronized, if the sampling frequency is close.

• **UNLOCK (red)**
A valid clock is not being input.

If the clock of the selected connector has this status, the device to which that connector belongs is unable to function with that clock.

As a result, that device is operating with its own clock, and therefore unable to input/output correctly within the PM1D system. A clock that is synchronized with the source selected in ② must be input to the selected connector.

• **LOCK, BUT NOT SYNC'ED (orange)**
A valid clock is being input, but is not synchronized to the source selected in ②.

If the clock of the selected connector has this status, the device to which that connector belongs is unable to correctly perform input/output within the PM1D system.

A clock that is synchronized with the source selected in ② must be input to the selected connector.

• **UNKNOWN (yellow)**
This indicates that the clock status of that connector cannot be known, because it is a virtual connection or is unconnected.

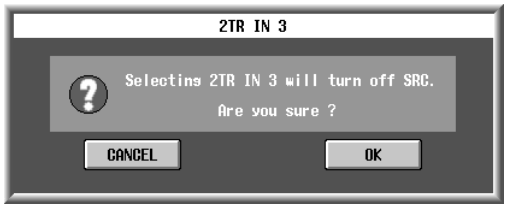
Although it is possible to select this connector, valid synchronization with the PM1D system cannot be established until an actual connection is made.

• **SRC ON (green)**
This is a special status belonging only to 2-TRACK IN DIGITAL connector 3.

The clock status is "LOCK" or "LOCK, BUT NOT SYNC'ED", but since an SRC (Sampling Rate Converter) is provided on the audio input section, the audio is being input normally into the PM1D system by virtue of this function, even if it is actually not synchronized.

In order for the PM1D system to operate correctly, the status of the selected connectors must all be in the LOCK (blue) state.

⚠ If the 2-TRACK IN DIGITAL connector 3 SRC is on, and you attempt to select this connector as the word clock master, a message of "Selecting 2TR IN 3 will turn off SRC. Are you sure?" will be displayed. When you click the OK button, the SRC will be defeated.



⚠ When using an MY8-AT card to handle ADAT format signals, synchronization may tend to be lost easily, depending on the device that is connected. For more reliable synchronization, we recommend that the word clock for the combination of digital audio equipment you are using be taken from other than the ADAT format connector.

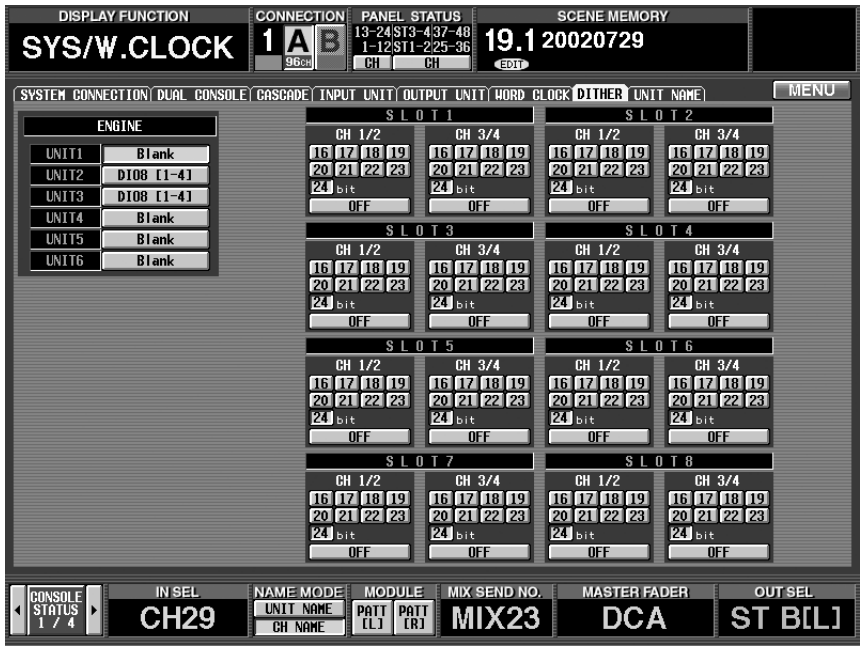
DITHER

[Function]

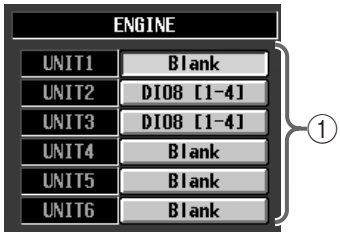
For each output channel of the output unit, turn dithering on/off and specify the bits to which dithering will be applied.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**SYS/W.CLOCK**] switch (press repeatedly until the screen shown at the right appears)

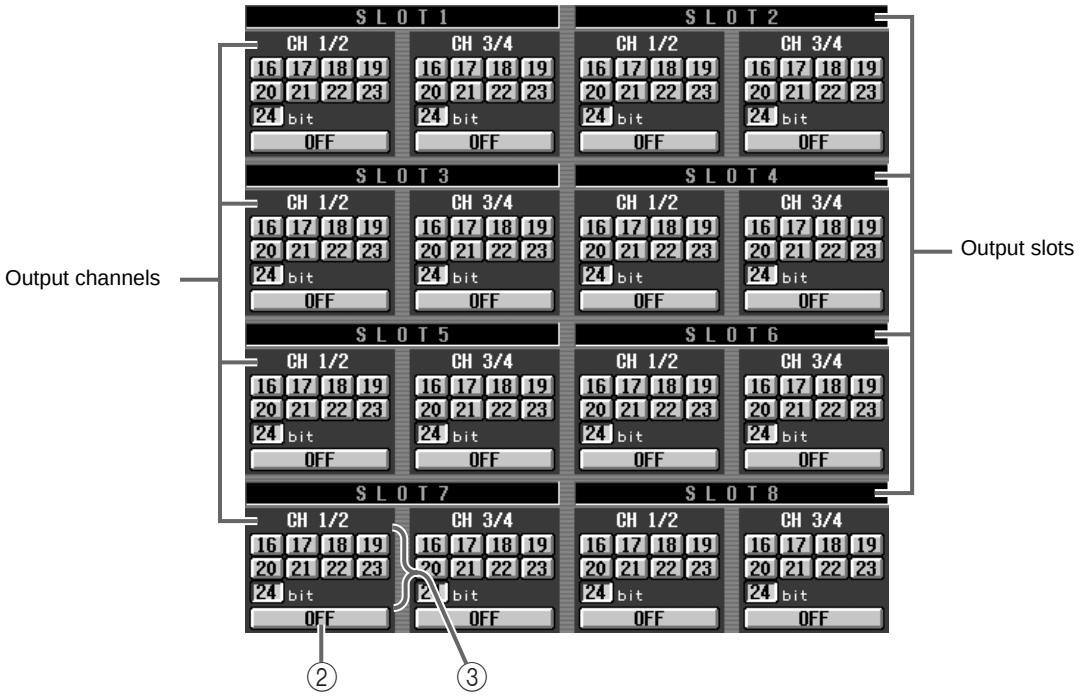
■ **Display**
MENU button → **SYS/W.CLOCK** button → **DITHER** tab



[Screen functions]



① **Unit select**
Select the output unit for which you will turn dithering on/off.



② **On/off buttons**
These buttons switch dithering on/off in two-channel units for each output slot of the output unit.

③ **Bit number**
These buttons select the number of valid bits in two-channel units for each output slot of the output unit. Dithering will be applied to bits below the value you specify.

You can select from a range of 24 bits – 16 bits.

⚠ You can make this setting even if a unit is not connected. The number of valid bits will differ depending on the output card, so you must be sure to check this. Otherwise, noise may occur.

METER functions

Make meter-related settings

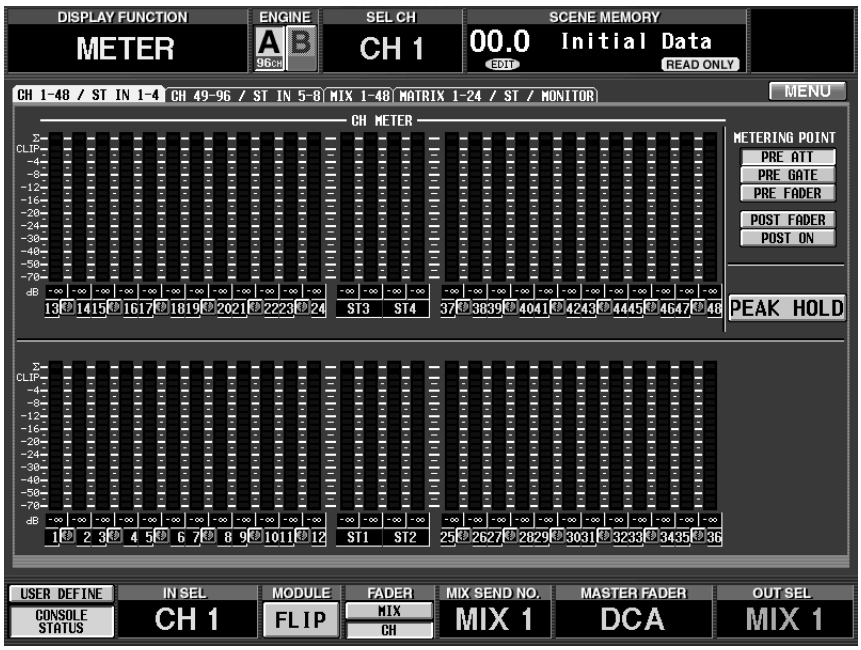
Input metering

[Function]

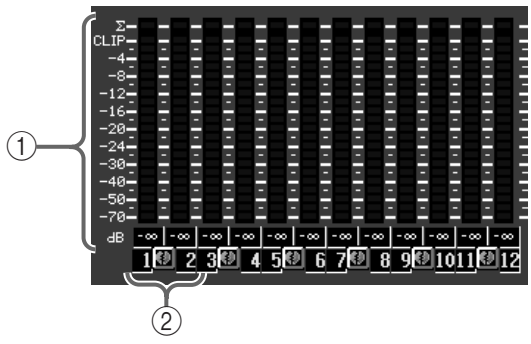
Display the input levels of input channels 1–96 {1–48} and ST IN channels 1–8 {1–4}. The location (metering point) at which the input levels are measured can also be selected.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**METER**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **METER** button → tab for the desired channel



[Screen functions]



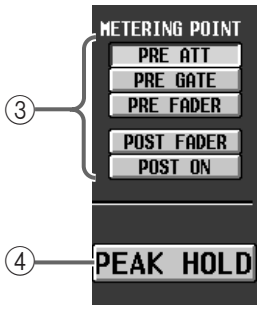
① **Meters**
These are peak level meters that show the input level of each channel.

The current fader level is shown in the numerical box located below.

The ∑ and CLIP meter will light if clipping occurs at a metering point, PRE ATT, POST EQ, POST GATE, POST COMP, or INSERT IN point in the currently selected channel.

② **Pairing icon**
This indicates the channel number and pairing status.

By clicking this area, you can set/defeat pairing.



③ **METERING POINT**
These buttons select the metering point at which the input levels will be measured, from the following choices.

- **PRE ATT** .....Before the attenuator
- **PRE GATE** .....Immediately before the internal gate
- **PRE FADER**.....Immediately before the fader
- **POST FADER**.....Immediately after the fader
- **POST ON**.....Immediately after the [ON] switch

⚠

- These five buttons are independent of the METER [PRE] switch in the METER section (MASTER block) of the CS1D top panel.
- The peak hold function will be momentarily cleared when you change the metering point.

④ **PEAK HOLD**
If this button is on, the peak level of each meter will be held.

When this button is turned off, the peak level display that had been held until then will be cleared.

Peak hold will also be cleared when you change the METERING POINT (③) setting.

⚠ The PEAK HOLD button in the input meter screen is independent of the METER [PEAK HOLD] switch in the METER section (MASTER block) of the CS1D top panel.

Output metering

[Function]

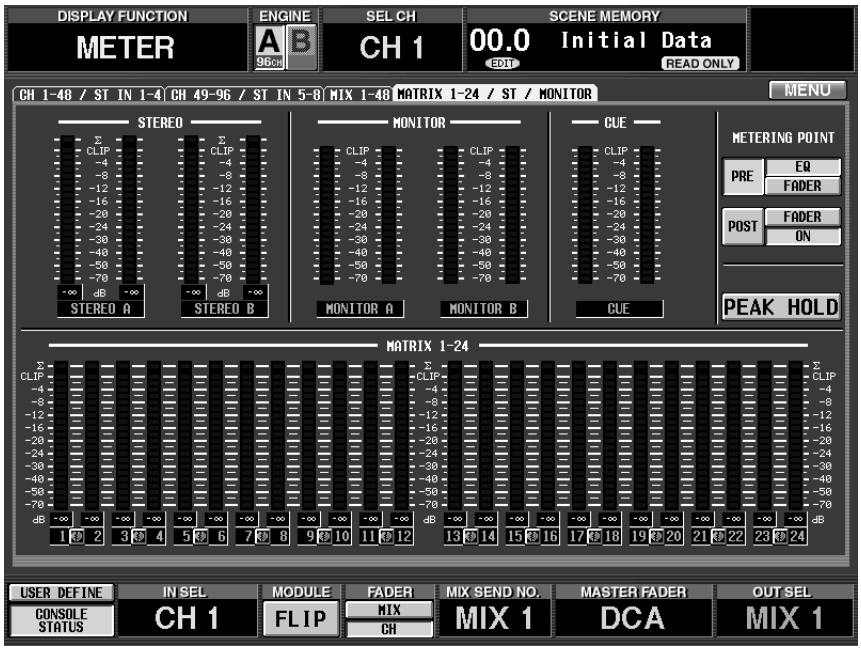
Display the output levels of MIX channels 1–48, MATRIX channels 1–24, STEREO A/B channels, MONITOR OUT jacks A/B, and CUE OUT jacks. The location at which the output levels are measured can also be selected.

■ **Console**

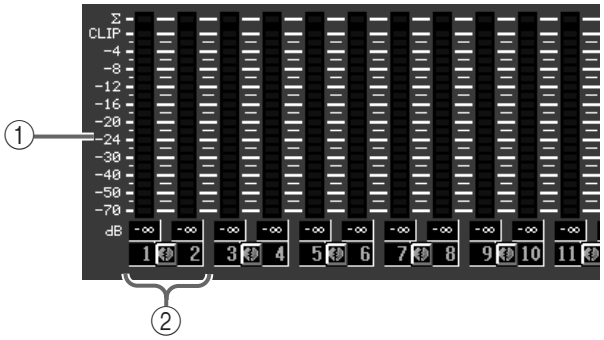
In the **LCD FUNCTION ACCESS** block, press the [**METER**] switch (press repeatedly until the screen shown at the right appears)

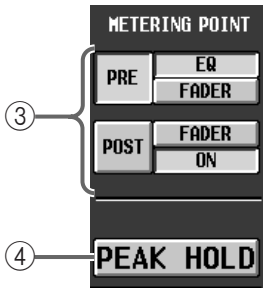
■ **Display**

MENU button → **METER** button → tab for the desired channel



[Screen functions]





① **Meters**

These are peak level meters that show the output levels from the various channels and output jacks.

The current master level is shown in the number box located below.

The Σ and CLIP meter will light if clipping occurs at a metering point, PRE EQ, POST EQ, POST COMP, or INSERT IN point in the currently selected channel.

However, the MONITOR A/B CUE meter does not have a Σ or CLIP indicator.

② **Pairing icon**

This shows the channel number and the pairing status.

By clicking this area, you can set/defeat pairing.

③ **METERING POINT**

You can pre-specify metering points for PRE and POST, and then use the PRE button and POST button to switch between the two selected metering points.

The following metering points can be selected for each.

PRE button

- **PRE EQ** ..... Immediately before the EQ
- **PRE FADER** ..... Immediately before the fader

POST button

- **POST FADER** .... Immediately after the fader
- **POST ON** ..... After the [ON] switch

Hint

These buttons are linked with the METER [PRE] switch in the METER section (MASTER block) of the CS1D top panel, and their setting will also affect the level meters in the meter bridge block.

When the PRE EQ or PRE FADER button is on, the METER [PRE] switch LED will light.

When the POST FADER or POST ON button is on, the METER [PRE] switch LED will be dark.

⚠ The peak hold function will be momentarily cleared when you change the metering point.

④ **PEAK HOLD**

This button is linked with the METER [PEAK HOLD] switch of the METER section (MASTER block) on the CS1D top panel, and its setting will also affect the level meters of the meter bridge block.

If this button is on (the METER [PEAK HOLD] switch LED will light), peak levels of each meter will be held.

When this button is turned off, the peak level display that had been maintained until then will be cleared.

MON/CUE (monitor/cue) functions

Make settings related to monitor and cue

TALKBACK

[Function]

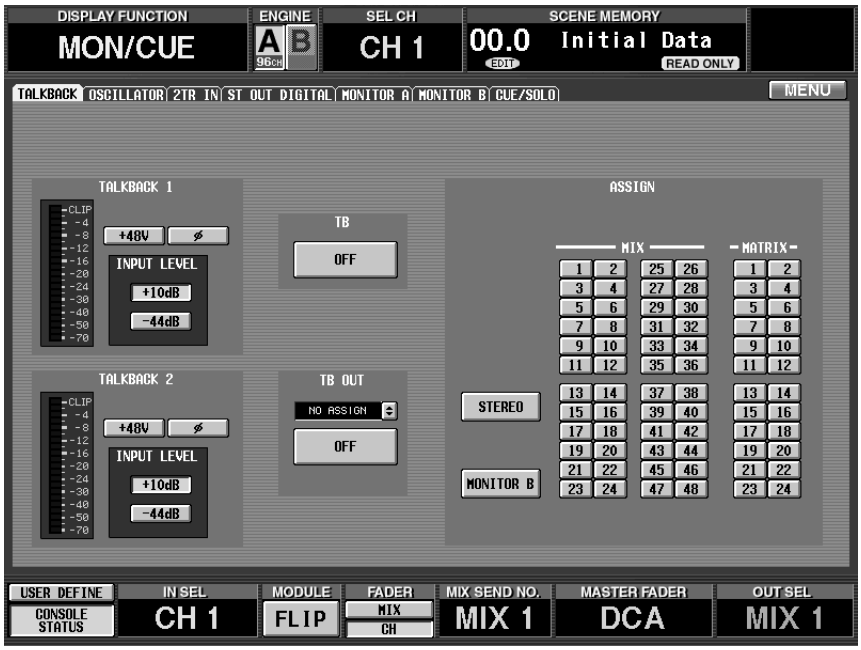
Switch talkback on/off, and select its assignment destination

■ **Console**

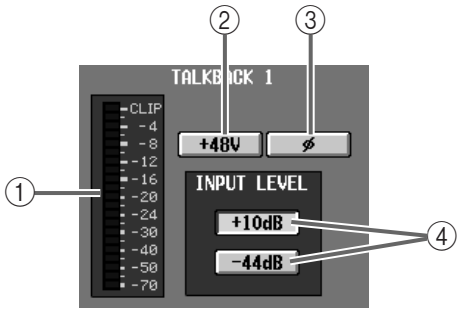
In the **LCD FUNCTION ACCESS** block, press the [**MON/CUE**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**

MENU button → **MON/CUE** button → **TALKBACK** tab



[Screen functions]



① **Level meter**
This level meter indicates the peak level of the signals that are input from the TALKBACK 1 jack located on the CS1D top panel and from the TALKBACK 2 jack located on the rear panel.

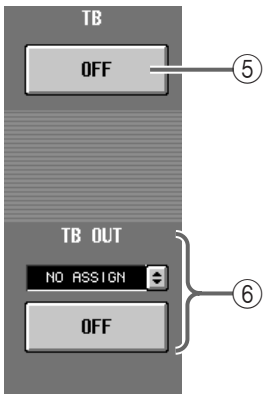
② **+48V (phantom power)**
This button turns phantom power on/off for the TALKBACK 1/TALKBACK 2 jacks. (When on, the TALKBACK [+48V] LED located on CS1D top panel will light.)

③ **ø (phase)**
This button switches the phase of the TALKBACK 1/TALKBACK 2 jacks between normal/inverted.

④ **INPUT LEVEL**
This button selects the input level of the TALKBACK 1/TALKBACK 2 jacks.

Levels of +10 dB and –44 dB are supported.

When the +10 dB button is on, the TALKBACK [+10 dB] LED located on the CS1D top panel will light.



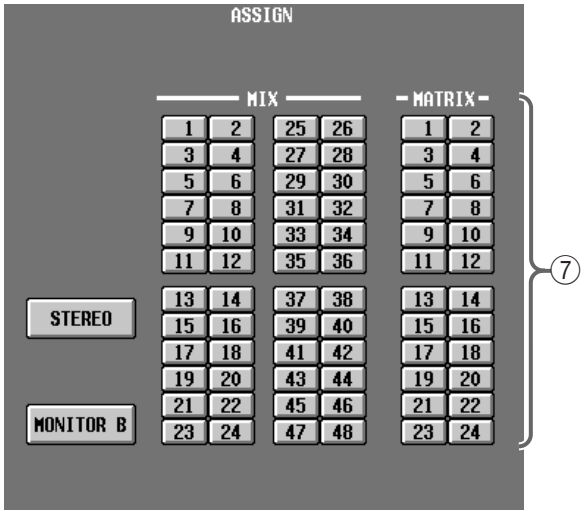
⑤ **TB ON/OFF (talkback on/off)**
This switch turns talkback on/off.

This switch is linked with the [TB ON] switch on the CS1D top panel.

⑥ **TB OUT (talkback direct output)**
In this section you can patch the talkback signal to physical output jacks for direct output.

When you click the ⇕ button, the TB DIRECT OUT popup window will appear, in which you can select the jacks for direct output.

You can also use the ON/OFF button to switch direct output on/off. (The ON/OFF button is linked with the TALKBACK ASSIGN [TB OUT] switch located on the CS1D top panel.)



⑦ **ASSIGN**
Select the bus or output jack that will send the talkback signal, from the following choices. (More than one may be selected.)

- **STEREO**.....STEREO bus
- **MONITOR B**.....MONITOR OUT jack B
- **MIX 1–48**.....MIX buses 1–48
- **MATRIX 1–24** ....MATRIX buses 1–24

Hint

The MONITOR B button is linked with the TALKBACK ASSIGN [TO MON B] switch located on the CS1D top panel.

You can also send the talkback signal to a desired input channel, and use it as a dedicated talkback channel. To do so, use the IN PATCH function INPUT PATCH screen to patch the talkback signal to the desired input channel.

[Procedure]

Using the Talkback function

1. **Connect a talkback mic to the TALKBACK 1 jack located on the CS1D top panel, and to the TALKBACK 2 jack located on the rear panel.**

   Hint

   The input signals from the TALKBACK 1 jack and the TALKBACK 2 jack are mixed by the PM1D system, and are output to the same bus or output jack. Both jacks can be used simultaneously.

2. **Access the MON/CUE function TALKBACK screen. As appropriate for your mic(s), turn phantom power on/off, switch the phase between normal/inverted, and set the input level.**

3. **Use the buttons of the TALKBACK screen ASSIGN section to select the bus or output jack to which the talkback signal will be output.**
   If necessary, you can also use the TB OUT section to select a jack that will directly output the talkback signal, or use the IN PATCH function INPUT PATCH screen to patch the talkback signal to the desired input channel.

4. **Press the [TB ON] switch located in the TALKBACK section (MASTER block) of the CS1D.**
   The [TB ON] switch can be used in the following two ways.

   - **Press and hold the switch for two seconds or longer**

   This is the usual way to use talkback.

   Talkback will be on only while you continue pressing the switch, and will be off when you release the switch.

   - **Press and immediately release the switch**

   The LED will stay lit even after you release the switch, and Talkback will stay on.

   When you once again press and immediately release the switch, talkback will be turned off.

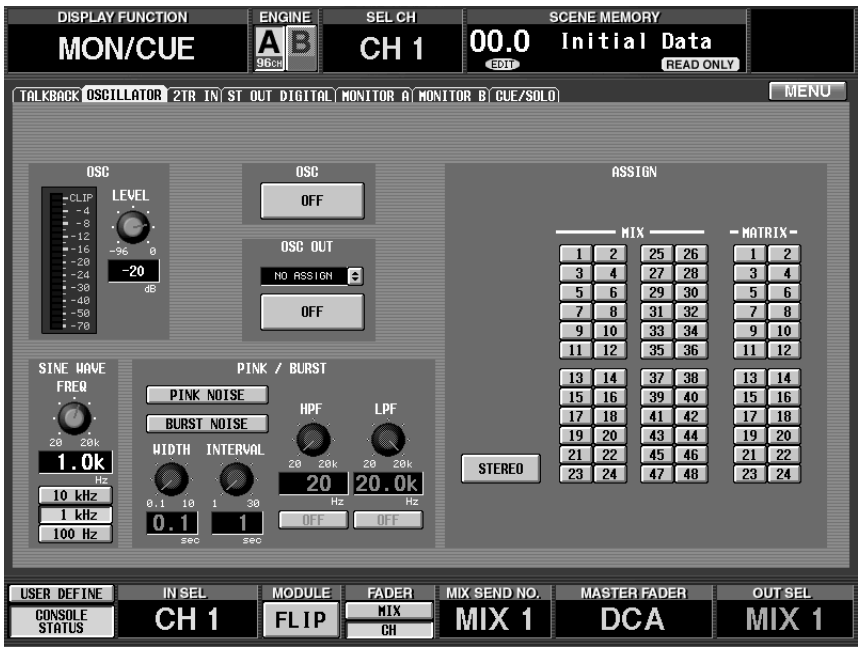
OSCILLATOR

[Function]

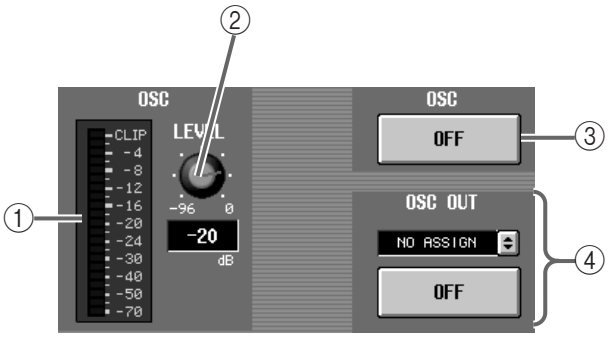
Switch the internal oscillator on/off, and select its assignment destination. The internal oscillator can be used to measure the acoustical response of the concert hall, or to match levels with external devices.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**MON/CUE**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **MON/CUE** button → **OSCILLATOR** tab



[Screen functions]



① **Level meter**
This level meter shows the output level of the oscillator.

② **OSC LEVEL (oscillator output level)**
This knob adjusts the output level of the oscillator.

The range is from – 96 – 0 dB.

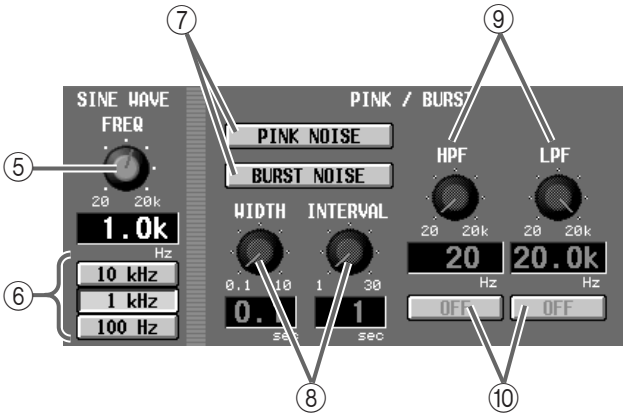
③ **OSC ON/OFF (oscillator on/off)**
This is an on/off switch for the oscillator.

This switch is linked with the [OSC ON] switch located on the CS1D top panel.

④ **OSC OUT**
In this section you can patch the oscillator signal to a physical output jack for direct output.

When you click ⇕ button, the OSC DIRECT OUT popup window will appear, in which you can select the jack for direct output.

You can also use the ON/OFF button to switch the direct output on/off. (The ON/OFF button is linked with the [OSC OUT] switch located on the CS1D top panel.)



⑤ **SINE WAVE FREQ (sine wave frequency)**
This knob sets the frequency of the sine wave that is output by the oscillator.

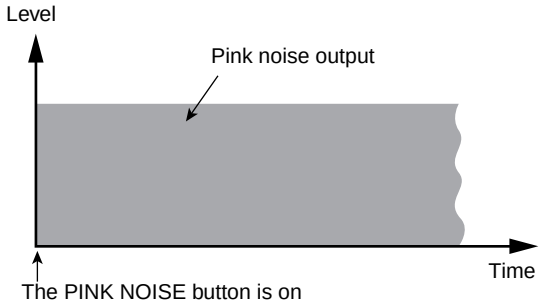
The range is 20 Hz–20 kHz, and the current value is shown in the number box below.

⑥ **10 kHz/1 kHz/100 Hz**
These buttons select preset sine wave frequencies.

⑦ **PINK NOISE/BURST NOISE**
These buttons output noise instead of a sine wave.

- **When the PINK NOISE button is on**

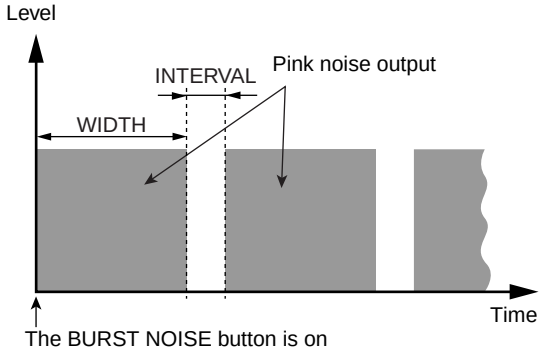
Pink noise at a continuous level will be output to the specified bus or output jack.



- **When the BURST NOISE button is on**

Repeated bursts of pink noise will be output to the specified bus or output jack.

The duration of the noise (WIDTH) and the time interval between the beginning of each noise burst (INTERVAL) can be set using the respective knobs (⑧).



- **When the PINK NOISE/BURST NOISE buttons are off**

A sine wave will be sent to the specified bus or output jack.

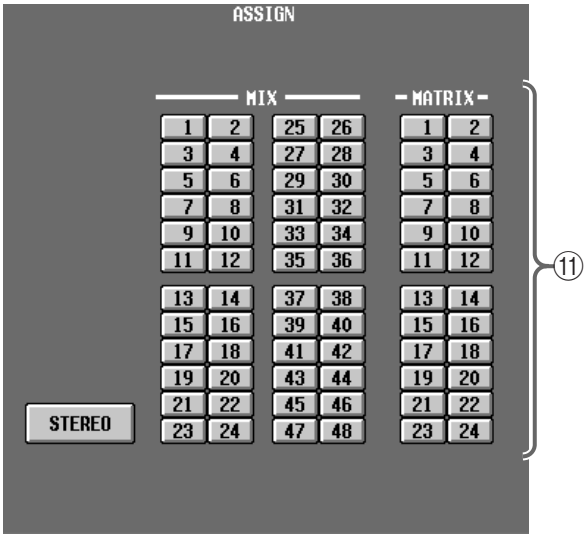
⑧ **WIDTH & INTERVAL**
When burst noise is selected, these knobs adjust the time duration of the noise itself, and the spacing at which each burst will begin.

The range is 0.1–10 seconds for WIDTH, and 1–30 seconds for INTERVAL. (The current value is shown in the numerical box immediately below.)

⑨ **LPF/HPF knobs**
These knobs set the cutoff frequency of the LPF/HPF through which the pink noise/burst noise will pass.

The range is 20 Hz – 20 kHz for both knobs, and the current value is shown in the numerical box immediately below.

⑩ **LPF/HPF ON, OFF**
These are on/off switches for the LPF/HPF.



⑪ **ASSIGN**
Select the bus or output jack to which the sine wave or noise will be output, from the following choices. (You may select more than one.)

- **STEREO** ..... STEREO bus
- **MIX 1–48** ..... MIX buses 1–48
- **MATRIX 1–24**.... MATRIX buses 1–24

[Procedure]

Using the internal oscillator

1. **Access the MON/CUE function OSCILLATOR screen, and use the PINK NOISE/BURST NOISE buttons to select the type of signal that will be output (sine wave, pink noise, burst noise).**
2. **If you selected sine wave in step 1, use the SINE WAVE knob or the 10 kHz/1 kHz/100 Hz buttons to set the frequency of the sine wave.**
3. **If you selected pink noise/burst noise in step 1, set the WIDTH/INTERVAL and LPF/HPF parameters as necessary.**
4. **Use the LEVEL knob to adjust the output level of the oscillator.**
5. **Use the buttons of the ASSIGN section to select the bus or output jack to which the oscillator signal will be sent.**
   If necessary, you can also use the OSC OUT section to select a jack to which the oscillator signal will be output directly.
6. **Press the [OSC ON] switch located in the OSCILLATOR section (MASTER block) of the CS1D. (Alternatively, you can click the OSC ON/OFF buttons located in the OSCILLATOR screen to turn the oscillator on.)**
   The oscillator signal will be sent to the bus or output jack you selected in step 5.

   If you press the same switch once again (or click the OSC ON/OFF button once again), the oscillator will be turned off.

2TR IN (2 track in)

[Function]

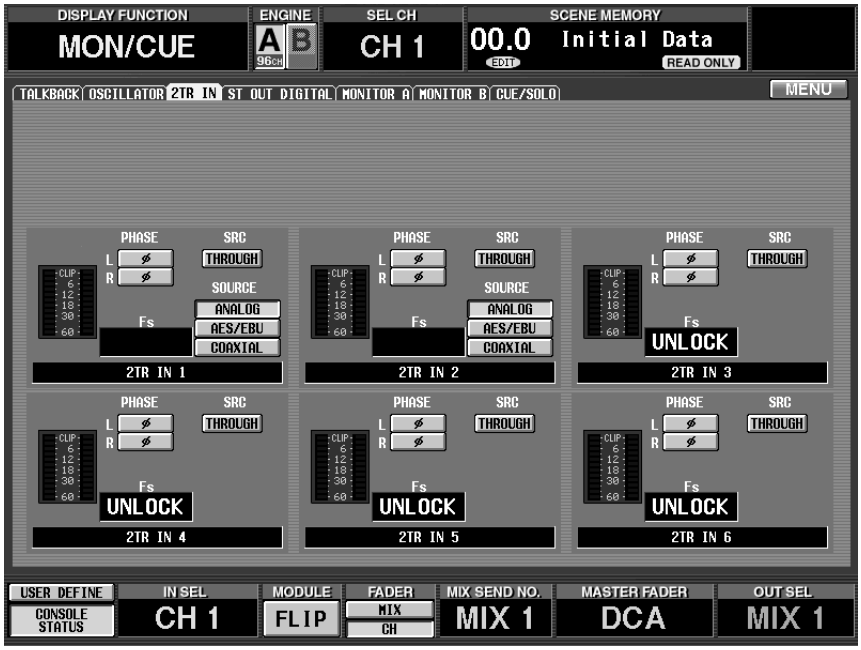
Make settings for the 2-TRACK IN jacks of the CS1D.

■ **Console**

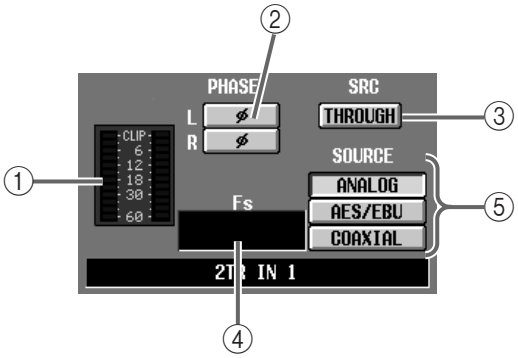
In the **LCD FUNCTION ACCESS** block, press the [**MON/CUE**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**

MENU button → **MON/CUE** button → **2TR IN** tab



[Screen functions]



① **Level meter**
This level meter shows the input level from the corresponding 2-TRACK IN jack.

② **PHASE**
This button switches the input signal of the corresponding 2-TRACK IN jack between normal/inverted phase. This can be set independently for L and R.

③ **SRC (sample rate converter)**
This is an on/off switch for the sample rate converter provided on each 2-TRACK IN jack.

This will be displayed as "ON" when the converter is being used, or "THROUGH" when it is not being used. This SRC button cannot be operated if 2-TRACK IN connector 3 is selected as the word clock master.

④ **Fs (sampling frequency)**
This indicates the sampling frequency of the signal that is input from the corresponding 2-TRACK IN jack.

⑤ **SOURCE (2TR IN 1/2 only)**
These buttons select the input jack that will be used for 2TR IN 1/2.

The following input jacks correspond to each button.

- **ANALOG**..... 2-TRACK IN ANALOG L/R jacks
- **AES/EBU**..... 2-TRACK IN DIGITAL AES/EBU jacks
- **COAXIAL**..... 2-TRACK IN DIGITAL COAXIAL jacks

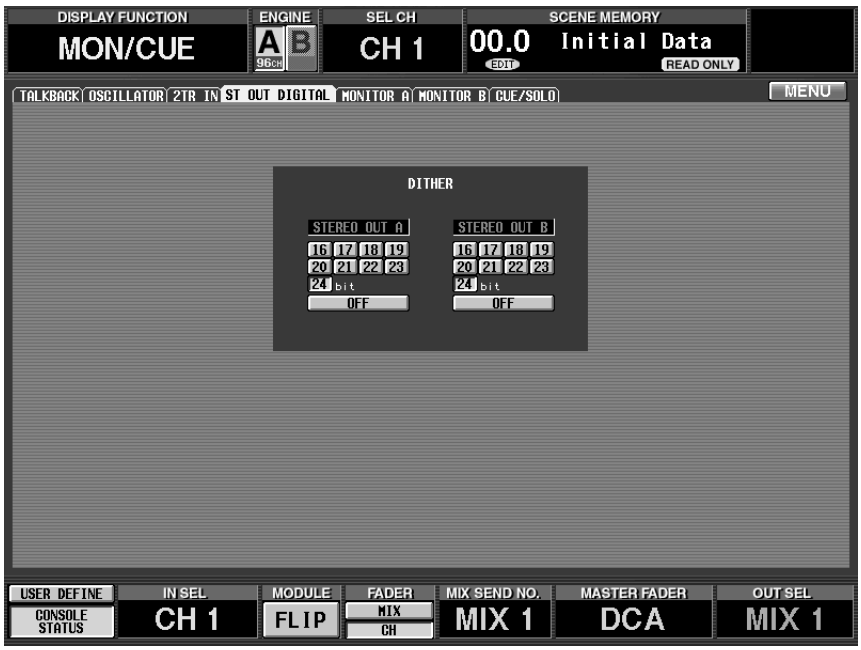
ST OUT DIGITAL (stereo out digital)

[Function]

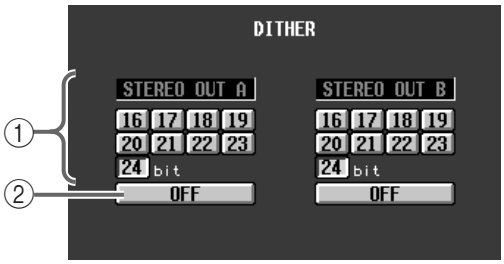
For the two STEREO OUT DIGIGAL jacks (A/B) of the CS1D, turn dithering on/off and specify the number of quantization bits for the output signal.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**MON/CUE**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **MON/CUE** button → **ST OUT DIGITAL** tab



[Screen functions]



① **DITHER ON/OFF**
Switch dithering on/off for STEREO OUT DIGITAL jacks A/B.

② **Number of bits**
Select the number of quantization bits for STEREO OUT DIGITAL jacks A/B.

You can select from 24 bits – 16 bits.

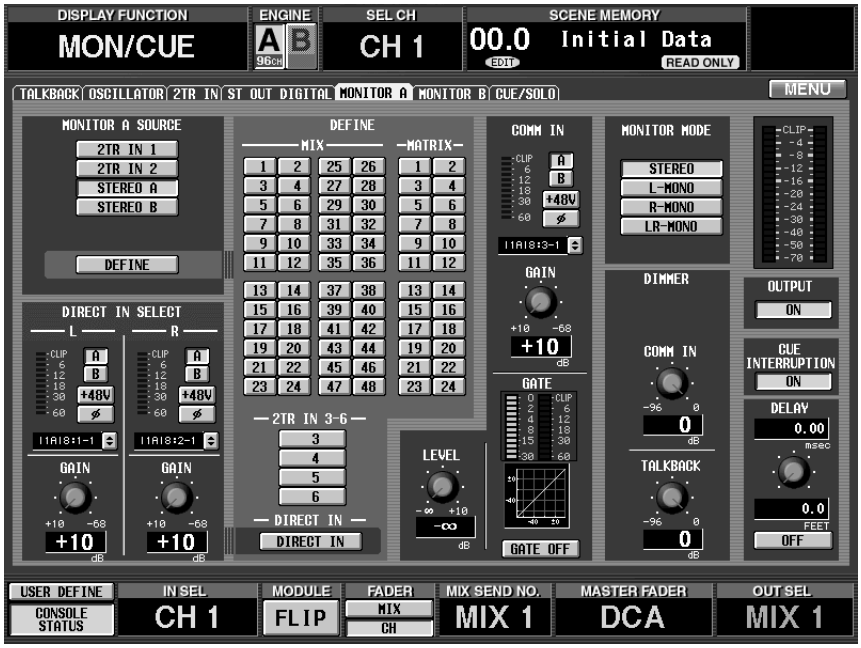
MONITOR A

[Function]

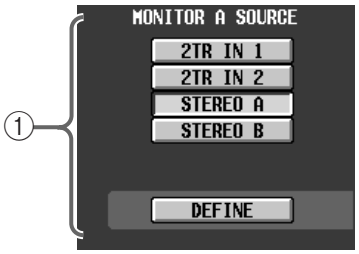
Make settings and operations for the MONITOR A output.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**MON/CUE**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **MON/CUE** button → **MONITOR A** tab



[Screen functions]



① **MONITOR A SOURCE (monitor A source)**
These buttons select the monitor source for the MONITOR A output. (Multiple selections are not possible.)

These are linked with the MONITOR A SOURCE switches located on the CS1D top panel.

Each button corresponds to the following source.

- **2TR IN1**
Monitor the input signal from the 2-TRACK IN DIGITAL/ANALOG 1 jacks located on the rear panel of the CS1D.

- **2TR IN2**
Monitor the input signal from the 2-TRACK IN DIGITAL/ANALOG 2 jacks located on the rear panel of the CS1D.

- **STEREO A**
Monitor the output signal of the STEREO A channel.

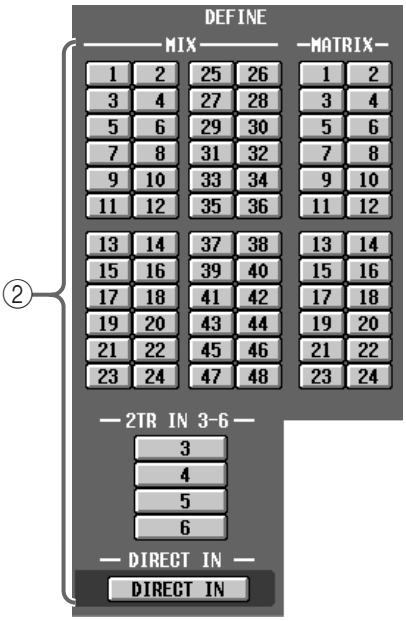
- **STEREO B**
Monitor the output signal of the STEREO B channel.

- **DEFINE**
Monitor the signal selected in the DEFINE section (②) of this screen.

Hint

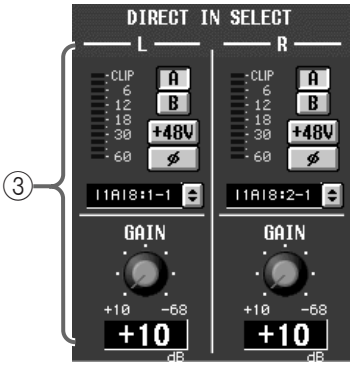
When the PM1D is in the default state, the setting of the MONITOR A SOURCE button will be ignored if even one of the [CUE] switches is on, and the cue (solo) signal will be output from the MONITOR OUT jacks A/PHONES MONITOR A jack.

However, you can make settings so that the [CUE] switch will be ignored and the source selected by the MONITOR A SOURCE switch will always be output from the MONITOR OUT jacks A. This setting is made in the CUE INTERRUPTION section (⑨) of the same screen.



② **DEFINE**
From the following choices, this selects the signal that will be monitored when "DEFINE" is selected in the MONITOR SOURCE section.

- **MIX 1–48**.....Output signal of MIX buses 1–48
- **MATRIX 1–24** ....Output signal of MATRIX buses 1–24
- **2TR IN 3–6** .....Input signal from 2-TRACK IN DIGITAL jacks 3–6 of the CS1D
- **DIRECT IN**.....The input signal from the connector selected in the DIRECT IN SELECT section (③)

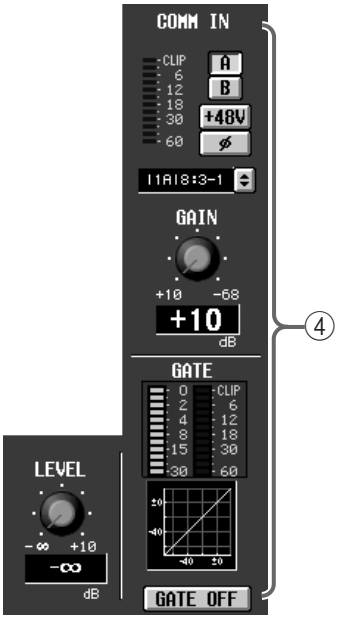


③ **DIRECT IN SELECT**
Select the two input connectors that will be monitored when "DIRECT IN" is selected as the signal for monitoring.

When you click the ⇕ button, a popup window will appear in which you can select the unit number/slot number/channel for the input jack.

The input level of the signal is shown by the level meter at the left.

If an input card with head amp is selected, this screen will allow you to switch between A/B jacks, turn phantom power on/off, switch between normal/inverted phase, and adjust the input gain



④ **COMM IN (communication in)**
Here you can make settings for the COMM IN signal, which can always be monitored via the MONITOR A output.

When a signal of a given level is input to COMM IN, the levels of the output signals of MONITOR OUT ANALOG jacks A/PHONES jack A and of the cue signal will be lowered. The amount by which the levels will be lowered at this time can be specified by the COMM IN DIMMER setting within the screen.

Subsequently if one-second elapse without a given signal level being input, the levels will return to their original value over a one-second fade-in.

The reference level that will trigger the COMM IN DIMMER will depend on the on/off state of the COMM IN signal gate.

- **If the gate is off**

The COMM IN DIMMER will operate when the input level exceeds –34 dB.

- **If the gate is on**

The COMM IN DIMMER will operate when the input level exceeds the level specified by the THRESHOLD parameter of the gate.

Hint

The COMM IN signal can always be monitored via the MONITOR A output without being affected by the setting of the MONITOR A SOURCE button. For example, this provides a convenient way to keep in touch with on-stage staff.

The COMM IN signal cannot be monitored from the MONITOR B output.

• **COMM IN**
Select the input jack that will be the source for the COMM IN signal.

When you click the button, a popup window will appear in which you can select the unit number/slot number/channel of the input jack.

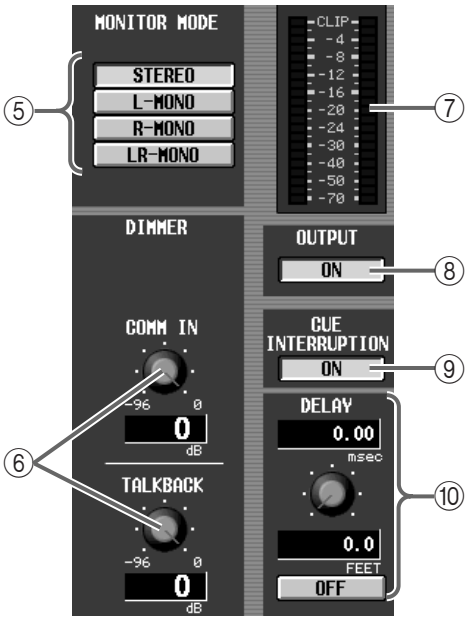
The input level of the signal is shown by the level meter at the left.

If an input card with head amp is selected, this screen will allow you to switch between A/B jacks, turn phantom power on/off, switch between normal/inverted phase, and adjust the input gain.

• **GATE**
Make settings for gating the COMM IN signal.

The GATE ON/OFF button switches the gate on/off. By clicking the mini-graph, you can access a screen for setting the parameters.

• **LEVEL**
Adjust the output level of the COMM IN signal after passing through the gate.



⑤ **MONITOR MODE**
These buttons select one of the following four monitoring methods for the MONITOR A output.

This is linked with the [L MONO] and [R MONO] switches in the MONITOR section of the CS1D top panel.

- **STEREO**.....L/R channels will be monitored in stereo.
- **L-MONO**.....Only the L channel will be monitored in monaural.
- **R-MONO**.....Only the R channel will be monitored in monaural.
- **LR-MONO**.....The L/R channels will be mixed, and monitored in monaural.

⑥ **DIMMER**
These buttons temporarily attenuate the levels of the COMM IN and the signal that was being monitored when talkback was ON.

The amount of attenuation when the button is turned on can be adjusted by the knobs located immediately below.

The range of adjustment is –96 dB – 0dB.

When COMM IN or talkback are turned on, a COMM IN or TB symbol will appear in the upper part of the screen.

⑦ **Level meters**
This is a peak level meter that shows the pre-fader level of MONITOR OUT connector A (i.e., the level before the MONITOR A [LEVEL] volume).

The level of the signal that is output from the MONITOR OUT connector will vary depending on the state of the MONITOR A [LEVEL] volume and the [ON] switch.

Normally these will indicate the level of the MONITOR A output (the source selected in the MONITOR A SOURCE section). When cue/solo is being used, these will indicate the output level of the cue/solo signal.

⑧ **OUTPUT ON/OFF**
This button is an on/off switch for the signal that is output from the MONITOR OUT A jacks.

This will not affect the output to the MONITOR A PHONES jack.

⑨ **CUE INTERRUPTION**
This button specifies whether or not the cue/solo signal will be output from the MONITOR OUT A jacks.

• **When the CUE INTERRUPTION button is on**
When cue/solo is used, the cue/solo signal will be output from the MONITOR OUT A jacks. (The monitor source selected in the MONITOR A SOURCE section will be ignored.)

• **When the CUE INTERRUPTION button is off**
The cue/solo signal will not be output from the MONITOR OUT A jacks at all. (Only the monitor source selected in the MONITOR A SOURCE section will be output at all times.)

⑩ **DELAY**
Here you can set the delay function provided for the MONITOR/CUE bus output.

Use the knob to specify a delay time (0–750 msec) and use the DELAY button to turn the delay on/off. When the DELAY button is on, the MONITOR A and cue signals will be delayed by the specified time.

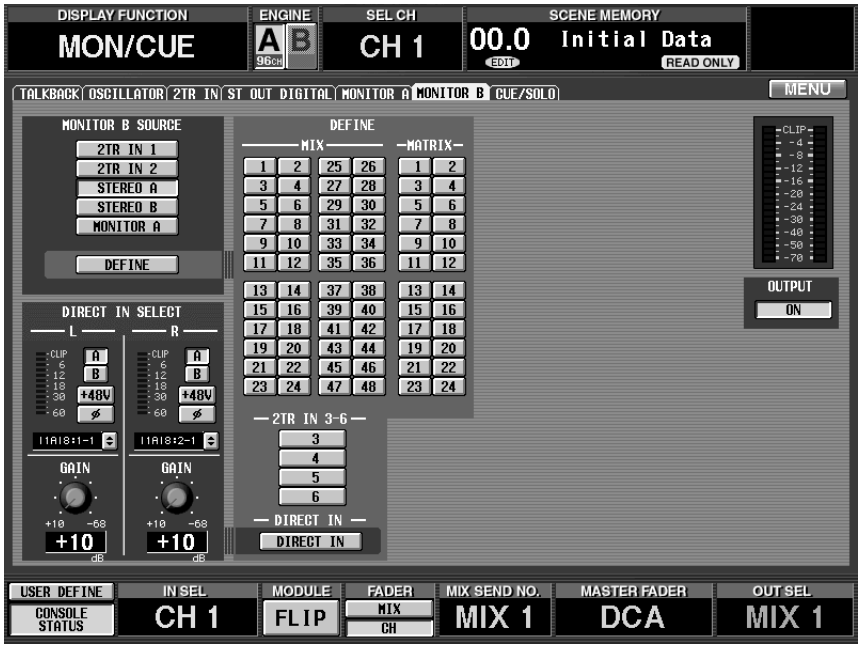
MONITOR B

[Function]

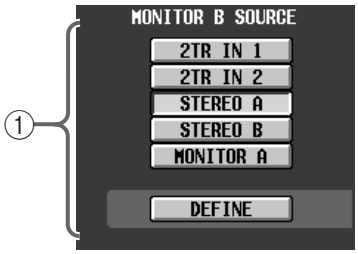
Make settings and operations for the MONITOR B output.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**MON/CUE**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **MON/CUE** button → **MONITOR B** tab



[Screen functions]



① **MONITOR B SOURCE (monitor B source)**
These buttons select the monitor source for the MONITOR B output. (Multiple selections are not possible.)

These are linked with the MONITOR B SOURCE switches located on the CS1D top panel.

Each button corresponds to the following source.

- **2TR IN1**
Monitor the input signal from the 2-TRACK IN DIGITAL/ANALOG 1 jacks located on the rear panel of the CS1D.

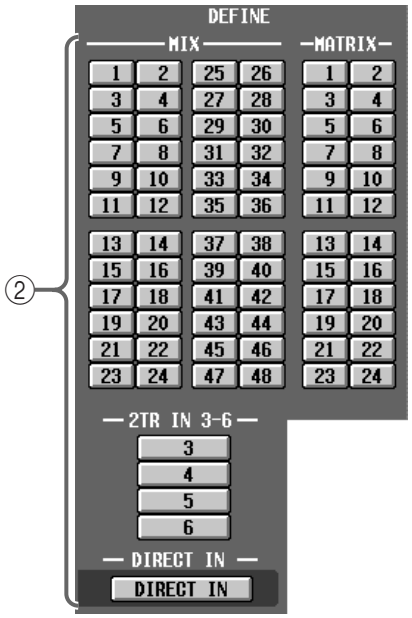
- **2TR IN2**
Monitor the input signal from the 2-TRACK IN DIGITAL/ANALOG 2 jacks located on the rear panel of the CS1D.

- **STEREO A**
Monitor the output signal of the STEREO A channel.

- **STEREO B**
Monitor the output signal of the STEREO B channel.

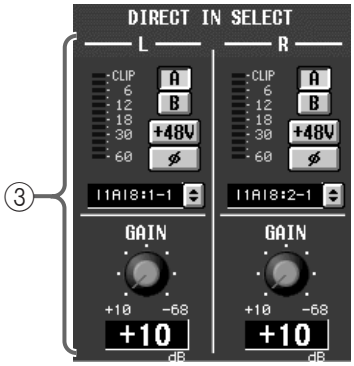
- **MONITOR A**
Monitor the same signal as the monitor source selected in the MONITOR A SOURCE section of the MONITOR A screen.

- **DEFINE**
Monitor the signal selected in the DEFINE section (②) of this screen.



② **DEFINE**
From the following choices, this selects the signal that will be monitored when "DEFINE" is selected in the MONITOR SOURCE section.

- **MIX 1–48**.....Output signal of MIX buses 1–48
- **MATRIX 1–24** ....Output signal of MATRIX buses 1–24
- **2TR IN 3–6** .....Input signal from 2-TRACK IN DIGITAL jacks 3–6 of the CS1D
- **DIRECT IN**.....The input signal from the connector selected in the DIRECT IN SELECT section (③)

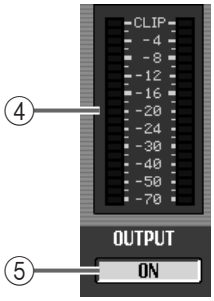


③ **DIRECT IN SELECT**
Select the two input connectors that will be monitored when "DIRECT IN" is selected as the signal for monitoring.

When you click the ⇕ button, a popup window will appear in which you can select the unit number/slot number/channel for the input jack.

The input level of the signal is shown by the level meter at the left.

If an input card with head amp is selected, this screen will allow you to switch between A/B jacks, turn phantom power on/off, switch between normal/inverted phase, and adjust the input gain.



④ **Level meters**
This is a peak level meter that shows the pre-fader level of MONITOR OUT connector B (i.e., the level before the MONITOR B [LEVEL] volume).

The level of the signal that is output from the MONITOR OUT connector will vary depending on the state of the MONITOR B [LEVEL] volume and the [ON] switch.

⑤ **ON/OFF**
This button is an on/off switch for the signal that is output from the MONITOR OUT jacks B.

This will not affect the output to the PHONES MONITOR B jack.

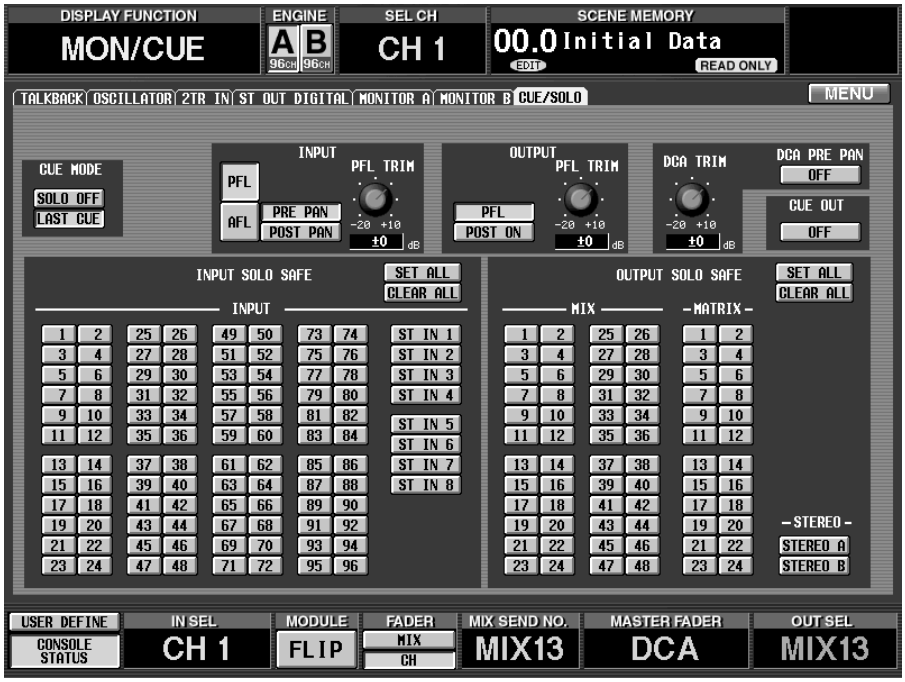
CUE/SOLO

[Function]

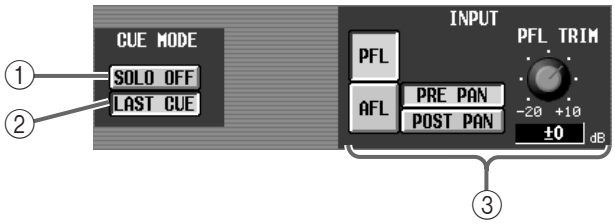
Cue/solo settings and operations.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the [**MON/CUE**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **MON/CUE** button → **CUE/SOLO** tab



[Screen functions]



① **SOLO ON/OFF**
This button selects either CUE mode or SOLO mode as the monitoring method when a [CUE] switch is used.

- **CUE mode (SOLO ON/OFF button is off)**

The signal of the channel whose [CUE] switch is pressed will be sent to the dedicated CUE bus, and can be monitored via the CUE bus from the CUE OUT jacks, MONITOR OUT jacks A, and PHONES MONITOR A jack.

By using this method, you can monitor the signals of an input or output channel without affecting the other buses.

- **SOLO mode (SOLO ON/OFF button is on)**

This is the so-called "solo function," in which the signal of only a specific channel will be sent to the MIX, MATRIX, and STEREO A/B buses.

The signal of only the channel whose [CUE] switch is pressed will be send to the MIX, MATRIX, and STEREO A/B buses, and other channels will be muted.

The signal of the channel whose [CUE] switch is pressed can also be monitored from the CUE OUT jacks, MONITOR OUT jacks A, and the PHONES MONITOR A jack.

Hint

The SOLO ON/OFF button is linked with the [SOLO] switch in the CUE section (MASTER block) of the CS1D top panel. If CUE mode is selected the [SOLO] switch LED will be dark, and if SOLO mode is selected it will blink.

Even when the SOLO ON/OFF button is on, you can exclude a specific input channel or output channel from the solo operation. This setting can be made in the SOLO SAFE section (⑦) of the CUE/SOLO screen.

② **LAST CUE ON/OFF**
This button specifies the operation when a [CUE] switch is pressed for more than one channel.

- **When LAST CUE is on**

Only the channel that was last selected by the [CUE] switch will be monitored.

- **When LAST CUE is off**

All channels for which the [CUE] switch is currently on will be mixed and monitored.

⚠ MIX CUE mode is valid only for the [CUE] switches of the input channels, the output channels, and the DCA section.

For example while the NOISE GATE KEY IN [CUE] switch of the SELECTED INPUT CHANNEL block is on, only the key-in signal of the built-in noise gate of that input channel will take priority for monitoring.

If the [CUE] switch of an output channel is pressed when the [CUE] switch of an input channel is on, cue will be defeated for the input channel, and cue will be active only for the output channel.

Hint

The LAST CUE ON/OFF button is linked with the [LAST CUE] switch in the CUE section (MASTER block) of the CS1D top panel. When CUE mode is selected the [LAST CUE] switch LED will be dark, and when SOLO mode is selected the LED will blink.

③ **INPUT**

These buttons select AFL and PFL. When AFL is selected, you can also choose between PRE PAN and POST PAN. The buttons that select AFL or PFL are linked with the [INPUT AFL] switch located in the CUE section (MASTER block) of the top panel.

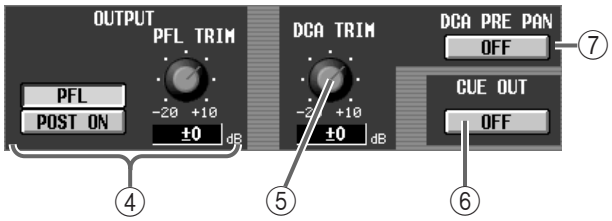
PFL button

- **PFL**.....Pre-fader

AFL button

- **PRE PAN**.....Immediately before [PAN]
- **POST PAN**.....Immediately after [PAN]

If PFL is selected, you can use the PFL TRIM knob located immediately at the right to adjust the signal level. The range is –20 dB – +10 dB.



④ **OUTPUT**

These buttons select the cue point of the output channels from the following choices.

- **PFL**.....Immediately before the fader
- **POST ON**.....Immediately after the [ON] switch

If PFL is selected, you can use the PFL TRIM knob located immediately at the right to adjust the signal level. The range is –20 dB – +10 dB.
The buttons that select PFL and POST ON are linked with the [OUTPUT PFL] switch located in the CUE section (MASTER block) of the top panel.

⑤ **DCA TRIM**

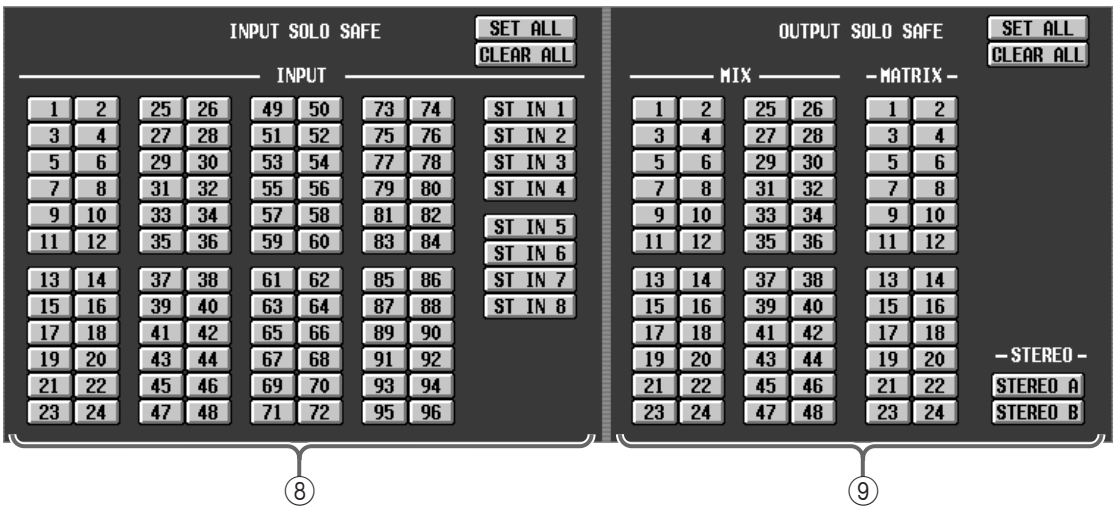
This knob adjusts the monitor level when the DCA GROUP block [CUE] switch is on.
The range is –20 dB – +10 dB.

⑥ **CUE OUT**

This is an on/off switch for the signal that is output from the CUE OUT jacks located on the rear panel of the CS1D. This does not affect MONITOR OUT jacks A/B.

⑦ **DCA PRE PAN**

Specify whether the pre-PAN signal or post-PAN signal will be monitored when you use DCA CUE. If this is on, the pre-PAN signal will be sent to the CUE bus.



⑧ **SOLO SAFE**

These buttons select the channels that will be excluded from solo operations. (You may select more than one.)

Channels for which Solo Safe is on will not be muted even in SOLO mode.

- **INPUT 1–96 {1–48}** ... Input channels 1–96 {1–48}
- **ST IN 1–8 {1–4}**.....ST IN channels 1–8 {1–4}
- **MIX 1–48**.....MIX channels 1–48
- **MATRIX 1–24**.....MATRIX channels 1–24
- **STEREO A/B**.....STEREO A/B channels

Hint

The Solo Safe setting and Cue on/off are linked for two channels that are paired.

⚠ Normally, the Solo Safe operation can be performed independently of scene memories. However if a channel changes from mono to paired as a result of recalling a scene, Solo Safe will be turned on for both channels if it had been on for either of the channels.

Output functions

OUT PATCH (output patch) functions

Assign output units to output channels/insert I/O

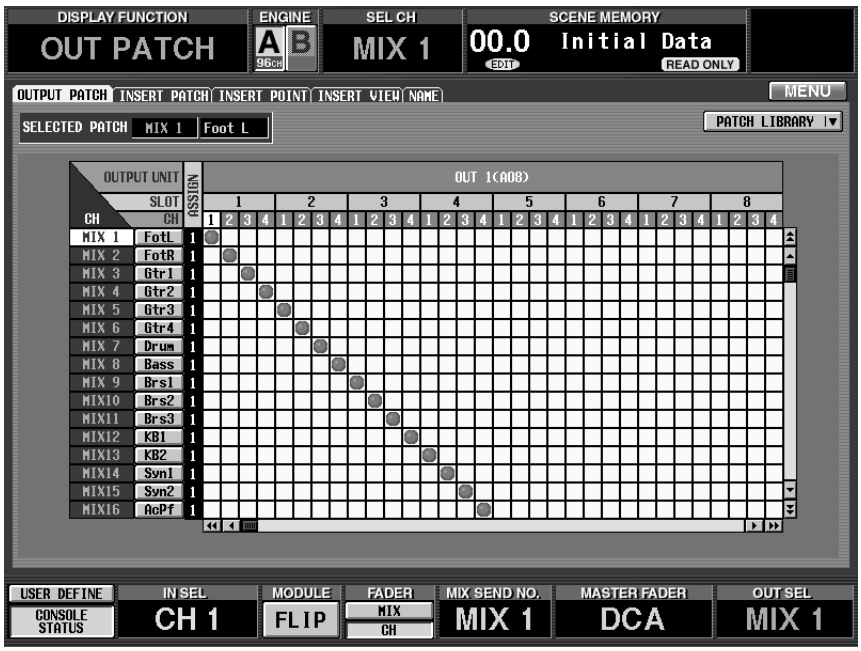
OUTPUT PATCH

[Function]

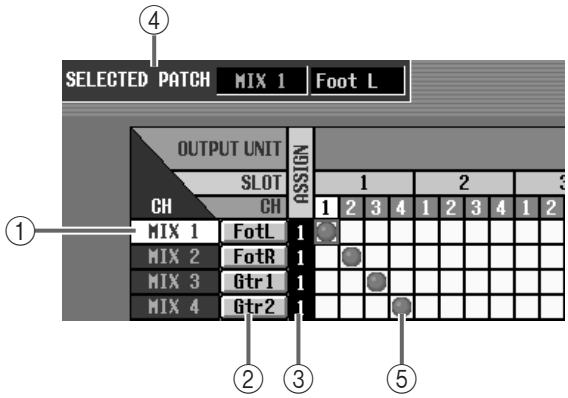
Patch the output jack of a card installed in an output unit or the input of an internal effect to the desired output channel (MIX channel, MATRIX channel, STEREO A/STEREO B channel).

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT [PATCH]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **OUTPUT PATCH** button → **OUTPUT PATCH** tab



[Screen functions]



① **CH (output channel)**
This is the number of the output channel (MIX channel, MATRIX channel, STEREO A/STEREO B channel) that will be the patch source. The number corresponding to the grid where the cursor is currently located will be highlighted.

② **Short name**
This displays the short name that has been assigned to each output channel. You can click this area and assign a short name/long name.

③ **ASSIGN**
This shows the number of output jacks that have been assigned to each output channel.

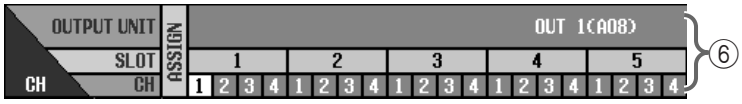
④ **SELECTED PATCH**
This shows the number/long name of the output channel corresponding to the grid where the cursor is currently located.

⑤ **Grid**
In this grid you can patch output jacks (horizontal lines) to output channels (vertical columns). Currently-patched grid locations will show a ● symbol. Move the cursor to the desired grid and press the [ENTER] switch (or click) to set/defeat a patch.

Hint

If PATCH CONFIRMATION is turned on in the UTILITY function PREFERENCE screen, a popup window will ask you for confirmation each time you attempt to change the patch settings.

⚠ You may patch a single output channel to multiple output jacks. However you may not patch multiple output channels to a single output jack.



⑥ **OUTPUT UNIT/SLOT/CH (output unit/slot/channel)**

From the top, these indicate the type and ID number of the output unit, the slot number, and the channel number of the output jack. The abbreviations displayed in the output unit column have the following meanings.

- **OUTx (DIO8)**.....DIO8 digital input/output unit (x is the unit ID number)
- **OUTx (AO8)**.....A08 analog output unit (x is the unit ID number)
- **EFF**.....Send to the internal effects 1–8

By clicking the ◀◀ ▶▶ buttons at either end of the output unit/slot rows, you can switch the display by units. By clicking the ◀ ▶ buttons you can switch the display by slots.

⑦ **PATCH LIBRARY button**

This button is used to access the PATCH LIBRARY window, where you can store/recall patch status as a library (→p.172).

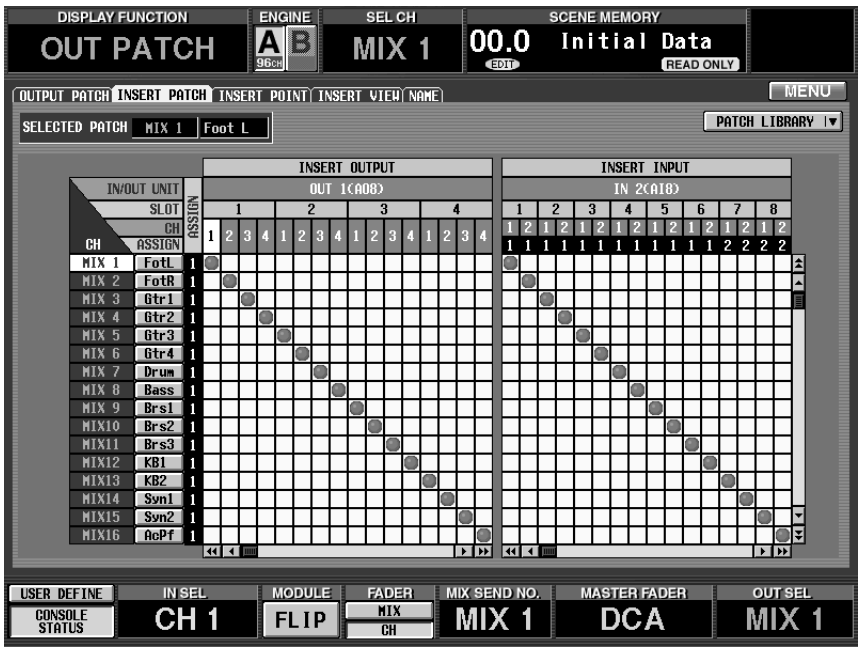
INSERT PATCH

[Function]

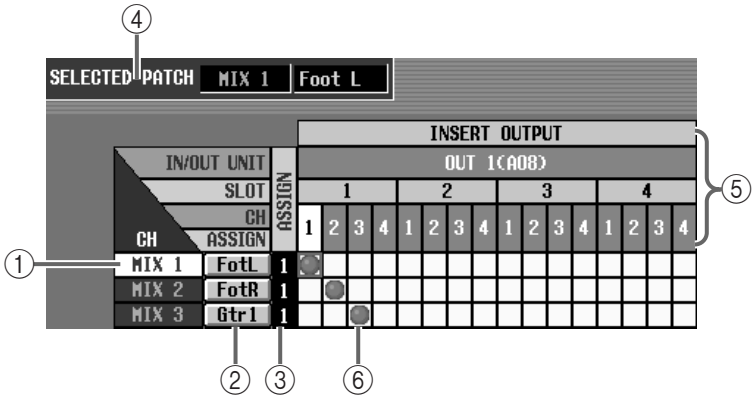
For each output channel, patch the input/output jacks where external devices such as effect processors will be inserted.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT** [**PATCH**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **OUTPUT PATCH** button → **INSERT PATCH** tab



[Screen functions]



① **CH (output channel)**
This is the number of the output channel for which insertion input/output jacks are being patched. The number corresponding to the grid where the cursor is currently located will be highlighted.

② **Short name**
This displays the short name that has been assigned to each output channel. You can click this area to access the CH NAME EDIT window and assign a short name/long name (→p.83).

③ **ASSIGN**
This shows the number of outputs assigned to each output channel for insertion output.

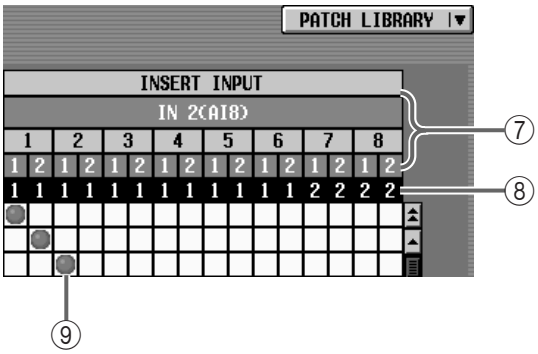
④ **SELECTED PATCH**
This shows the output number/long name for the grid location where the cursor is currently located.

⑤ **OUT UNIT/SLOT/CH (output unit/slot/channel)**
From the top, these indicate the type and number of the output unit, the slot number, and the channel number of the output jack.

By clicking the ◀◀ ▶▶ buttons at either end of the output unit/slot rows, you can switch the display by units. By clicking the ◀ ▶ buttons you can switch the display by slots.

⑥ **Grid**
This grid allows output jacks (horizontal lines) to be patched to input channels (vertical columns). Currently-patched grids are indicated by a ● symbol.

Move the cursor to the desired grid and press the [ENTER] switch (or click) to set/defeat a patch.



⑦ **IN UNIT/SLOT/CH (input unit/slot/channel)**
In order from the top, these are the type and number of the input unit, the slot number, and the input jack channel number.

By clicking the [◀◀] [▶▶] buttons at either end of the input unit/slot line, you can switch the display by units. By clicking the [◀] [▶] buttons you can switch the display by slots.

⑧ **ASSIGN**
This shows the total number of channels that are patched to each input jack.

⚠ Even if a channel is not patched within this screen, it will be counted if it is patched to the input jack in another screen. However, it will not be counted if it is patched as a key-in signal.

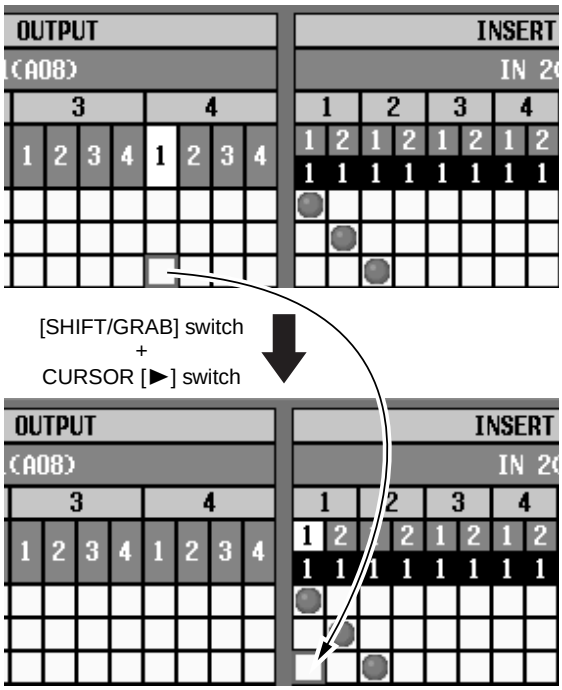
⑨ **Grid**
This grid allows insertion input jacks (horizontal lines) to be patched to input channels (vertical columns). Currently-patched grids are indicated by a ● symbol. Move the cursor to the desired grid, and press the [ENTER] switch (or click) to set/cancel the patch.

Hint

If PATCH CONFIRMATION is turned on in the UTILITY function PREFERENCE screen, a popup window will ask you for confirmation each time you attempt to change the patch settings.

If you wish to use console switches to move the cursor from the right grid (INSERT OUT) to the left grid (INSERT IN), or in the opposite direction, hold down the [SHIFT/GRAB] switch and use the CURSOR [◀]/[▶] switches.

Cursor movement using the [SHIFT/GRAB] switch and CURSOR [◀]/[▶] switches



⚠
- To enable the insert I/O point that you assigned in this screen, you must turn on the INS. button for the corresponding output channel, located in the OUT PATCH function INSERT POINT screen or in the INSERT VIEW screen. (→p.80, 81)
- Be aware that if the INS. button for an output channel is turned on when either the input or output jack is unpatched, the correct signal will no longer be output from that output channel.

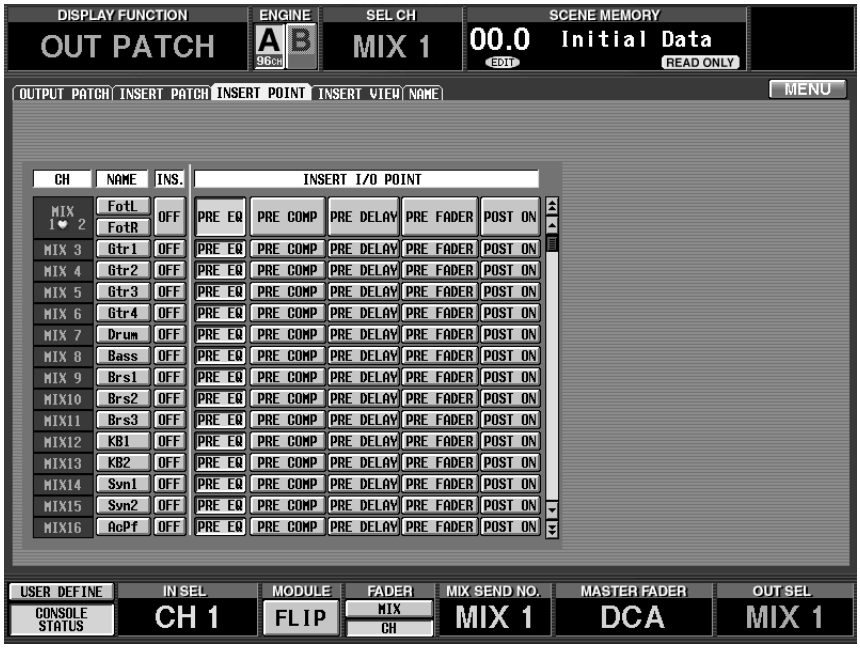
INSERT POINT

[Function]

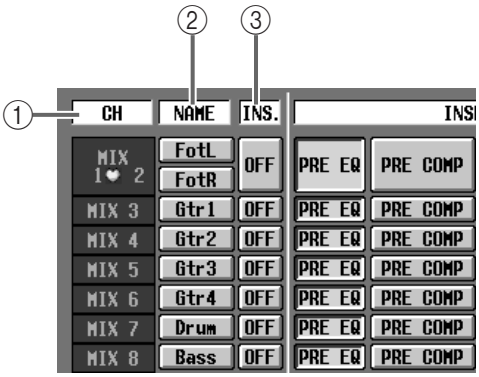
For each output channel, switch insertion on/off, and select the insert I/O point.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT [PATCH]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **OUTPUT PATCH** button → **INSERT POINT** tab



[Screen functions]

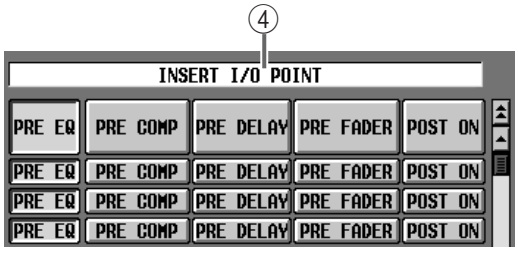


① **CH (output channel)**
This shows the number of the output channel that you are setting. For two channels that are a pair, this area will display a heart symbol, and items ③–④ will be common.

② **NAME**
The short name assigned to each output channel is displayed here. You can also click this area to assign a short name/long name (→p.83).

③ **INS. (insert on/off)**
This button switches insertion on/off for each channel.

⚠ Before turning this button on, you must assign input/output jacks to the insert out/in points in the OUT PATCH function INSERT PATCH screen. Be aware that if the INS. button for an output channel is turned on when either the input or output jack is unpatched, the correct signal will no longer be output from that output channel.



④ **INSERT I/O POINT**
For each output channel, select the insert I/O point (the location in the signal patch where the external device will be inserted) from the following choices.

- **PRE EQ** ..... Immediately before the EQ
- **PRE COMP** .....Immediately before the compressor
- **PRE DELAY** ..... Immediately before the delay
- **PRE FADER** ..... Immediately before the fader
- **POST ON** ..... Immediately after the [ON] switch

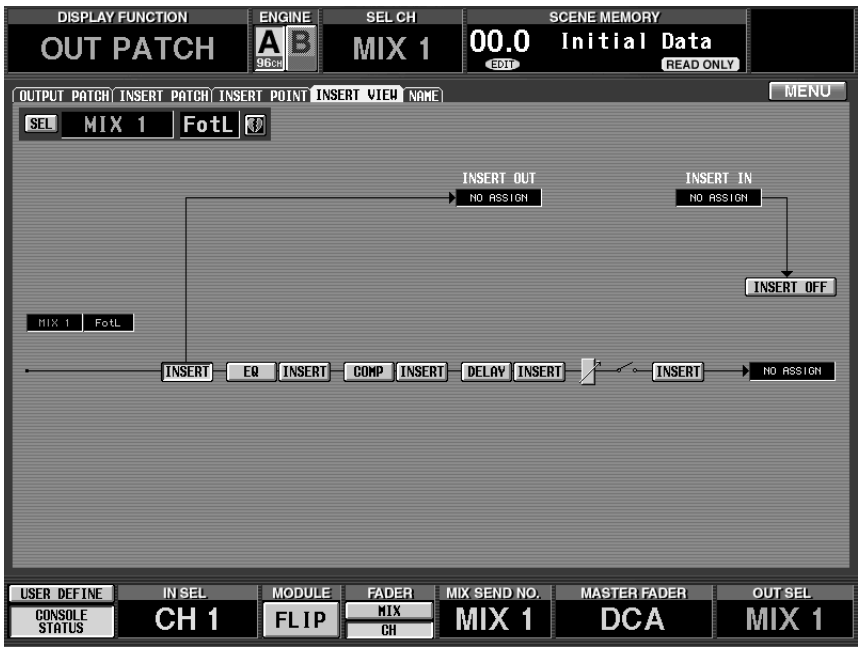
INSERT VIEW

[Function]

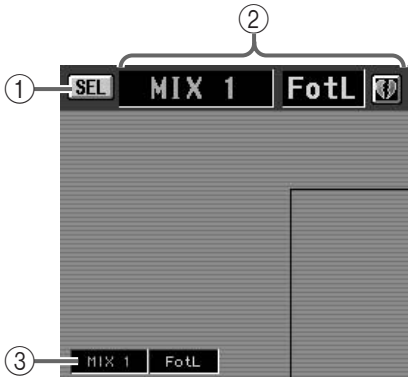
While viewing the block diagram displayed on-screen, select the insert I/O point of the desired output channel.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT** [**PATCH**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **OUTPUT PATCH** button → **INSERT VIEW** tab



[Screen functions]



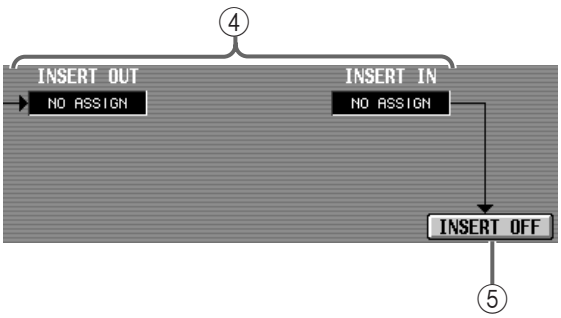
① **SEL (channel select)**
This button accesses the CH SELECT popup window, allowing you to select the output channel to which your operations will apply.

Hint

When this screen is first accessed, the output channel selected by OUTPUT [SEL] on the console will be displayed. However, if you select a different output channel for editing in this screen, the output channel selected by the OUTPUT [SEL] switch will be affected.

② **Output channel number and short name**
This shows the number, the short name, and the pairing status of the currently selected output channel. You can click the heart symbol to enable/defeat pairing.

③ **Unit, card, and channel type and number**
This displays the unit type and number, card number, and output jack channel number assigned to the currently selected output channel.



④ **Unit, card, and channel type and number**
This displays the unit type and number, card number, and input/output jack channel number assigned to the insert out/insert in of the currently selected output channel.

⑤ **INSERT ON/OFF**
This button switches insert on/off. It is linked to the INS. button of the OUT PATCH function INSERT POINT screen (→p.80).

⑥ **Block diagram**
This is a block diagram for the currently selected output channel. Each button has the following function.

- **INSERT button**

This button selects the insert I/O point. The wiring in the block diagram will change depending on the location of the INSERT button that you turn on.

- **EQ, COMP, DELAY buttons**

These buttons access windows in which the corresponding parameters can be adjusted.

Hint

After using the EQ, COMP, or DELAY buttons to access the corresponding window, you can click the OK button in the screen to return to the OUT PATCH function INSERT VIEW screen.

The above diagram shows an example of an unpaired monaural output channel. If two paired channels, or the STEREO A or STEREO B channel is selected, a two-channel block diagram will be displayed.

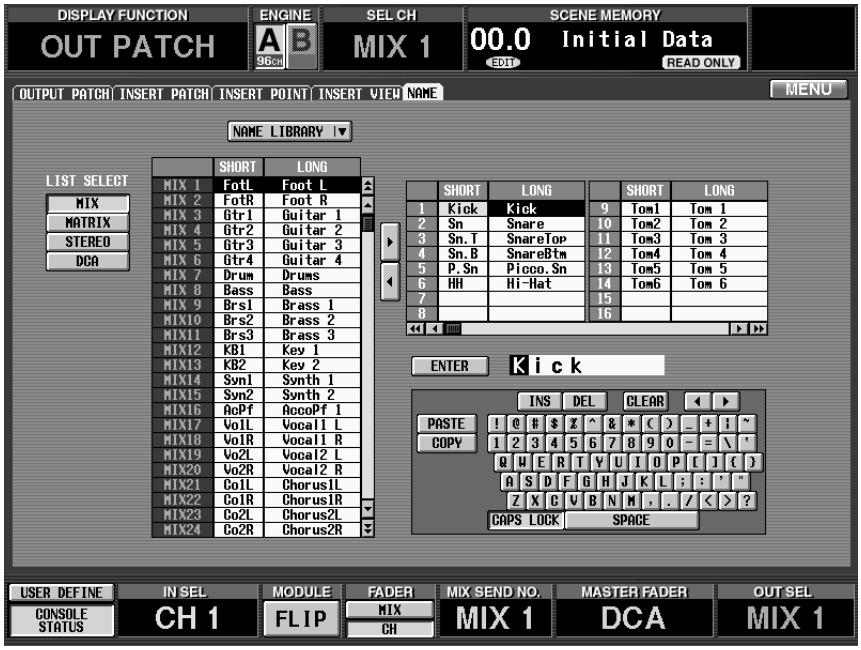
NAME

[Function]

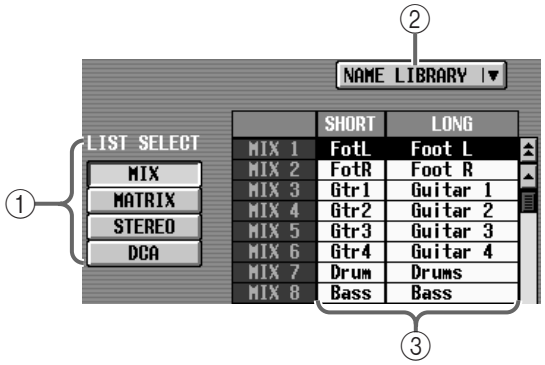
Assign a short name/long name to each MIX channel, MATRIX channel, DCA group 9–12, and STEREO A/B.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT** [**PATCH**] (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **OUTPUT PATCH** button → **NAME** tab



[Screen functions]



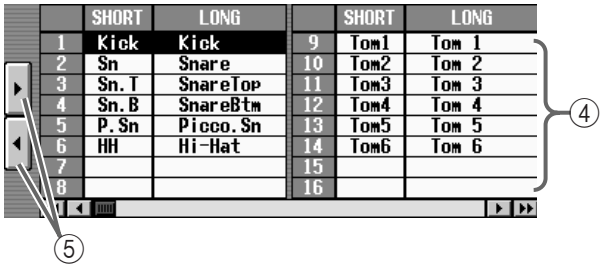
① **LIST SELECT**
These buttons select the items that will be displayed in the name list (③). Each button corresponds to the following items.

- **MIX**.....MIX channels 1–48
- **MATRIX**.....MATRIX channels 1–24
- **STEREO**.....STEREO A/B channels
- **DCA**.....DCA groups 9–12

② **NAME LIBRARY**
This button accesses the NAME LIBRARY window in which you can store and recall name lists (→p.174).

③ **Name list**
This lists the names of the item selected in ①. If you click the short name area (four characters) or long name area (eight characters) in the list, it will be displayed in light blue, and can be edited using the text box (⑥) or character palette (⑦).

⚠ If DCA groups are selected in LIST SELECT (①), only the long names are valid.



④ **Template name list**
In this list you can register frequently-used names or abbreviations such as "Kick," "SD," "Tom," and "Chor" as template names. If you click the short name area (four characters) or long name area (eight characters) in the list, it will be displayed in light blue, allowing you to edit the template itself using the text box (⑥) or character palette (⑦).

You can register 256 names, which are shared by inputs and outputs.

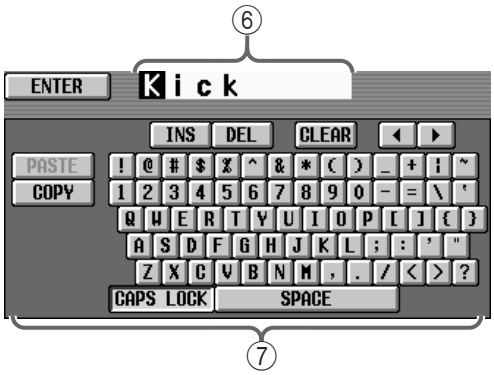
Hint

This template will maintain its previous state as long as you do not initialize all memories. To return to the factory settings, select "INITIALIZE ALL MEMORIES" when you perform memory initialization. For details on memory initialization, refer to p.194.
The contents registered in this template can be saved to a memory card as SETUP data. For details refer to p.40.

⑤ **Template copy buttons**
By clicking these buttons, you can copy both the short name and long name between the fields displayed in black or light blue in the selected name list or template list.

- **[►] button** .....copies from the name list to the template name list.
- **[◄] button** .....copies from the template name list to the name list.

⚠ When copying between the DCA group and template name list, only the long name will be copied.



⑥ **Text box**
When the name area of the name list (③) or template name list (④) is in an editable state, the name for editing will be displayed here. Use the text palette (⑦) to input characters into this box, and click the ENTER button located at the left to input the name into the edited field (light blue) of the name list (③) or template name list (④). When input is completed, the editable state will be cancelled, and the field will be displayed in black to indicate the normal selected condition.

⑦ **Character palette**
This palette allows you to input characters, numerals, and symbols into a text box. (For details on entering characters and on the function of each button, refer to "CS1D Operating Manual (Basic Operation)" →p.20.)

Hint

You can also input text from a keyboard connected to the KEYBOARD connector of the CS1D front panel.

[Procedure]

Assigning a short name/long name to an output channel or DCA group

1. **Use the four buttons of the LIST SELECT (①) section to select the type of item whose name you wish to change.**
2. **In the name list, click the short name or long name field for the channel whose name you wish to change. (Alternatively, use the [CURSOR] switches to move the cursor to the field, and press the [ENTER] switch.)**
   The selected field will be displayed in light blue to indicate that it can be edited.
3. **Use the character palette or connnected keyboard to input a name into the text box. (For the character input procedure, refer to "CS1D Operating Manual (Basic Operation)" →p.20.)**
   If the short name was selected in the name list you will be able to input four characters. If the long name was selected you will be able to input eight characters.
4. **After you have input the characters, click the ENTER button in the screen. (Alternatively, use the [CURSOR] switches to move the cursor to the ENTER button in the screen, and press the [ENTER] switch.)**
   The name will be registered in the name list.

Hint

When the cursor is on a field that is in an editable state (displayed in light blue), pressing the [ENTER] switch will have the same result as step 4.

[Procedure]

Registering a template name

1. **In the template name list, click the field in which you wish to register a name. (Alternatively, use the [CURSOR] switches to move the cursor to the desired field, and press the [ENTER] switch.)**
   The selected field will be displayed in light blue.
2. **Use the character palette or connnected keyboard to input a name into the text box. (For the character input procedure, refer to "CS1D Operating Manual (Basic Operation)" →p.20.)**
   If the short name was selected in the name list you will be able to input four characters. If the long name was selected you will be able to input eight characters.

3. **After you have input the characters, click the ENTER button in the screen. (Alternatively, use the [CURSOR] switches to move the cursor to the ENTER button in the screen, and press the [ENTER] switch.)**
   The name will be registered in the name list.

Hint

When the cursor is on a field that is in an editable state (displayed in light blue), pressing the [ENTER] switch will have the same result as step 3.

[Procedure]

Using the template name list to assign a name to a channel/DCA group

A name registered in the template name list can be input directly into the name list. This method is convenient when you wish to create a name list quickly.

1. **Use the four buttons of the LIST SELECT (①) section to select the type of item whose name you wish to change.**
2. **In the name list, move the cursor to the field whose name you wish to change, and press the [ENTER] switch. (Alternatively, use the [CURSOR] switches to move the cursor to the desired field, and press the [ENTER] switch.)**
   The selected line will turn light blue or black.
3. **In the template name list, click the name that you wish to use. (Alternatively, use the [CURSOR] switches to move the cursor to the desired field, and press the [ENTER] switch.)**
   The selected line will turn light blue or black.
4. **Click the [◄] template copy button (⑤). (Alternatively, use the [CURSOR] switches to move the cursor to the [◄] button in the screen, and press the [ENTER] switch.) When you do so, both the short name and long name will be copied from the template name list to the name list.**

Hint

A name that is already assigned to a channel or DCA group can also be copied to the template name list. In this case, click the [►] template copy button in step 4.

OUT INSERT (output insert) function

Settings for an output unit inserted into an output channel

MIX 1-24 INS / MIX 25-48 INS / MATRIX 1-24 INS / ST MAS INS/UNIT LIB

[Function]

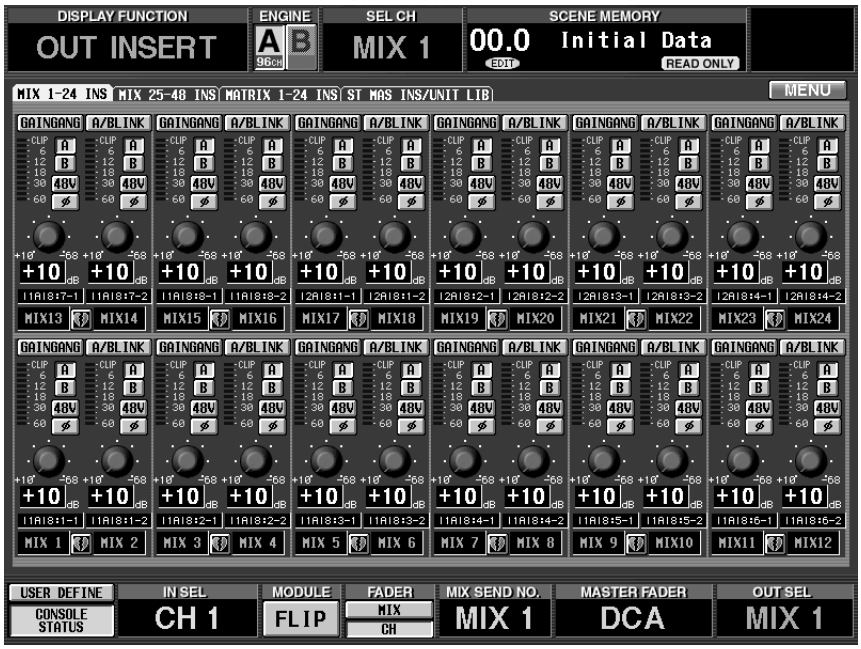
Make settings for the output unit that has been assigned to the insert out point of an output channel.

■ **Console**

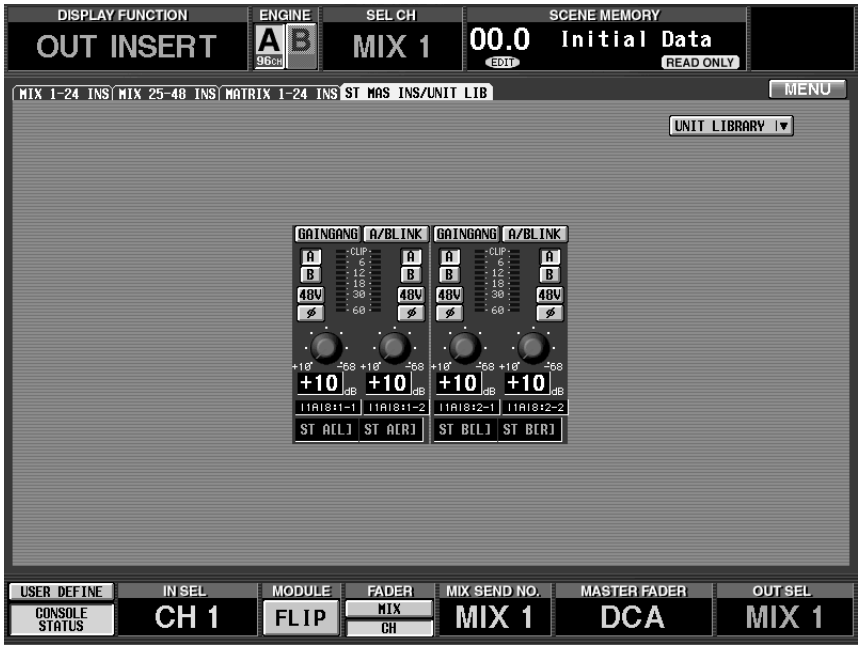
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT** [**INSERT**] switch (press repeatedly until the desired output channel appears)

■ **Display**

MENU button → **OUTPUT INSERT** button → tab for the desired output channel



When the MIX 1–24 tab is selected

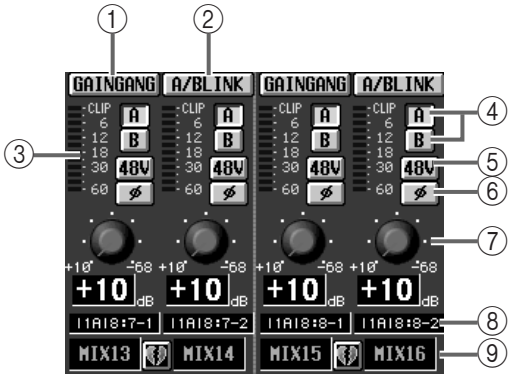


When the ST MAS INS tab is selected

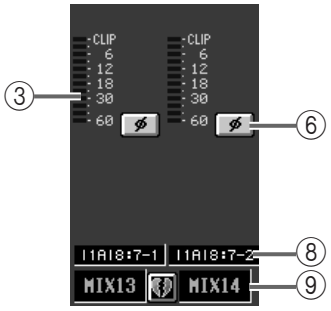
[Screen functions]

The OUT INSERT function screen displays the state of the parameter settings according to the type of unit or card that is assigned to the output channel.

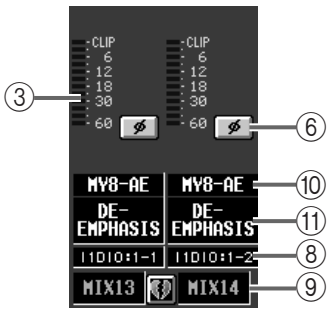
For an AD card with head amp (LMY2-ML)



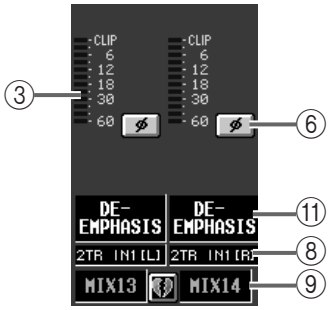
For an AD card without head amp (LMY4-AD)



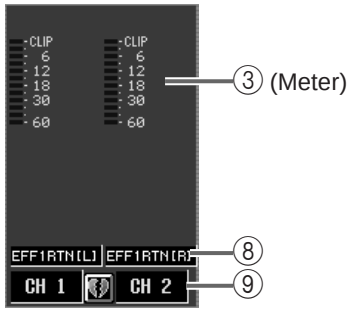
For a digital I/O card (MY card)

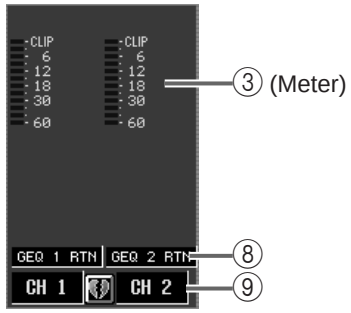


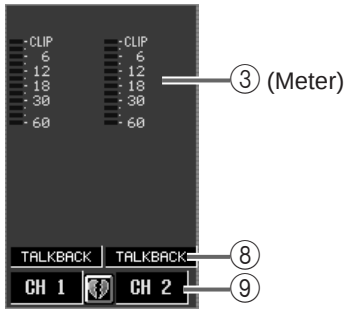
For a 2TR IN is assigned



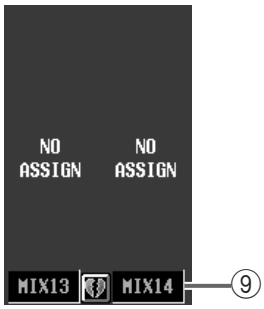
For an effect return, graphic EQ output, or talkback signal is assigned







For a channel to which nothing is assigned



① **GAIN GANG**
This button links the head amp gain setting between adjacent channels in the screen. (The offset value will be preserved.) When this button is on, rotating the GAIN knob (⑦) of one channel will cause the knob of the other channel to follow, while preserving the current level difference.

② **A/B LINK**
For adjacent channels in the screen, this button links the selection of input jack A or B on an AD card with head amp. If this button is on, switching the A/B button (④) of one channel will forcibly turn on the same button for the other channel.

If the AD card with head amp is patched to two or more channels, switching A/B on a channel for which A/B LINK is on will cause A/B to be switched in the same way for all channels to which the card is patched.

In addition, if there are any channels that are linked to these patch destination channels, they will be switched in the same way.

③ **Level meter**
This is a peak level meter showing the input level.

④ **A/B**
This button switches between input jacks A/B of the AD card with head amp.

⑤ **+48 V**
For each channel, this button switches the phantom power on/off for the AD card with head amp.

⚠ The +48V switch on the front panel of the AI8 input unit is the master phantom power switch for the entire unit. If this switch is off, phantom power cannot be used on that unit (regardless of the setting of the +48V button in the display).

⑥ **ø (phase)**
This button switches the input signal between normal and inverted phase.

⑦ **GAIN**
This knob adjusts the input sensitivity of the head amp. It covers a range of +10dB — –68 dB, and the current value is displayed in the numerical box immediately below the knob.

⑧ **Unit type/ID number/channel number**
This displays the input unit type and ID number, slot number, and input jack channel number.

⑨ **Pair setting**
This displays the channel number and the pairing status. You can click the heart symbol to select/defeat pairing.

⑩ **Digital I/O card**
If a digital I/O card is installed in the digital input/output unit, the type of digital I/O card will be shown here.

⑪ **DE-EMPHASIS**
If a signal with emphasis (emphasis = ON) is input to the corresponding port of the digital input/output unit, this area will indicate "DE-EMPHASIS."

⑫ **UNIT LIBRARY**
This button accesses the UNIT LIBRARY window in which preamp settings for all units can be stored/recalled (→p.170).

OUT EQ (output equalizer) function

Output channel EQ settings

EQ PARAMETER

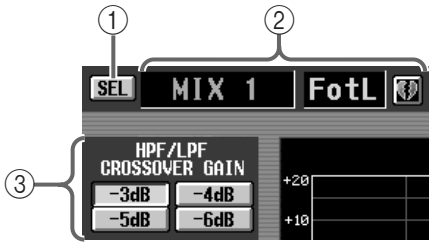
[Function]

Make 6-band EQ settings for the selected output channel.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT** [**EQ**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **OUTPUT EQ** button → **EQ PARAMETER** tab

[Screen functions]



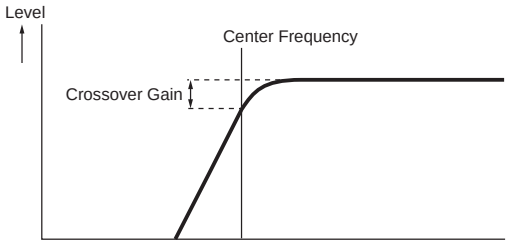
① **SEL (channel select)**
This button accesses the CH SELECT popup window, allowing you to select the output channel to which your operations will apply.

② **Output channel number and short name**
This shows the number, the short name, and the pairing status of the currently selected output channel. You can click the heart symbol to enable/defeat pairing.

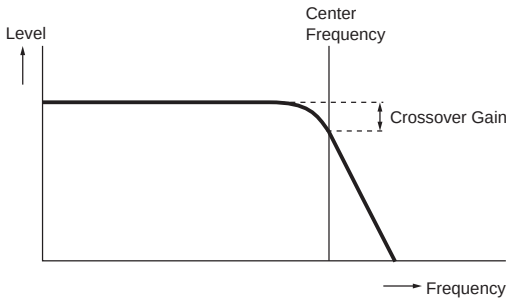
③ **HPF/LPF CROSSOVER GAIN**
Specify how much the level will be attenuated at the center frequency when the SUB LOW band is used as an HPF or when the HIGH band is used as an LPF.

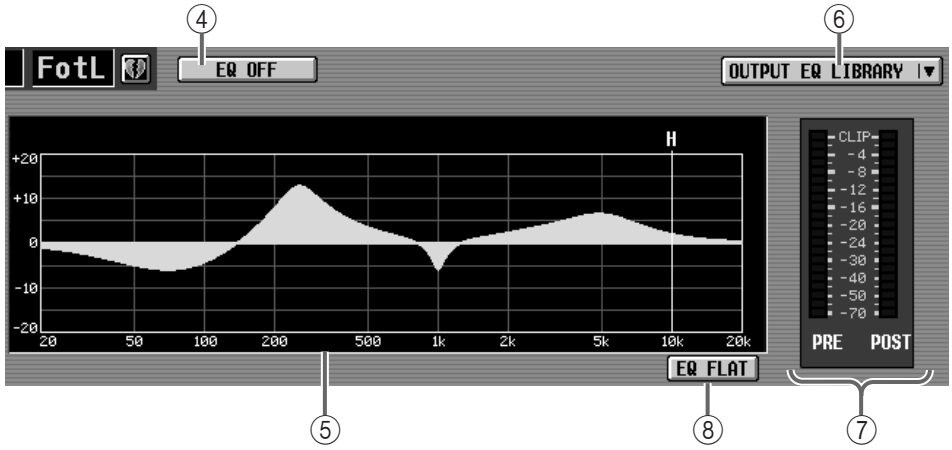
However, this parameter is valid only if the HPF/LPF SLOPE parameter is set to 12 dB. If the SLOPE parameter is set to 6 dB, the CROSSOVER parameter will be fixed at –3 dB.

- **SUB LOW**



- **HIGH band**





④ **EQ ON/OFF**
This button switches the 6-band EQ on/off.

⑤ **EQ graph**
This graph displays the settings of the various EQ parameters. The colored vertical lines indicate the Freq (center frequency) of each band. (Each line will be the same color as the markings for the knob of the corresponding band.) As you modify Q or Gain for each band, the response curve will change.

⑥ **OUTPUT EQ LIBRARY**
This button accesses the EQ LIBRARY window allowing you to store/recall EQ settings (→p.178).

⑦ **Level meters**
These meters show the peak level before the EQ and after the EQ. If the signal clips before or after the EQ, the corresponding CLIP segment will light.

⑧ **EQ FLAT**
This button resets the parameters of the 6-band EQ to the default values (±0.0 dB).

⑨ **Knobs**
For each band, these buttons adjust the Q, F (center frequency), and GAIN (amount of boost/cut).

⑩ **BYPASS**
This button bypasses an individual band of the EQ.

⑪ **(LOW shelving)**
When this button is on, the SUB-LOW EQ will function as a shelving filter. The Q knob will disappear.

⑫ **HPF**
When this button is on, the SUB-LOW EQ will function as a high pass filter. The GAIN knob will disappear, and Q will change to SLOPE.

⑬ **(HIGH shelving)**
When this button is on, the HIGH EQ will function as a shelving filter. The Q knob will disappear.

⑭ **LPF**
When this button is on, the HIGH EQ will function as a low pass filter. The GAIN knob will disappear, and Q will change to SLOPE.

MIX 1-24/MIX 25-48/MATRIX 1-24/STEREO A, B

[Function]

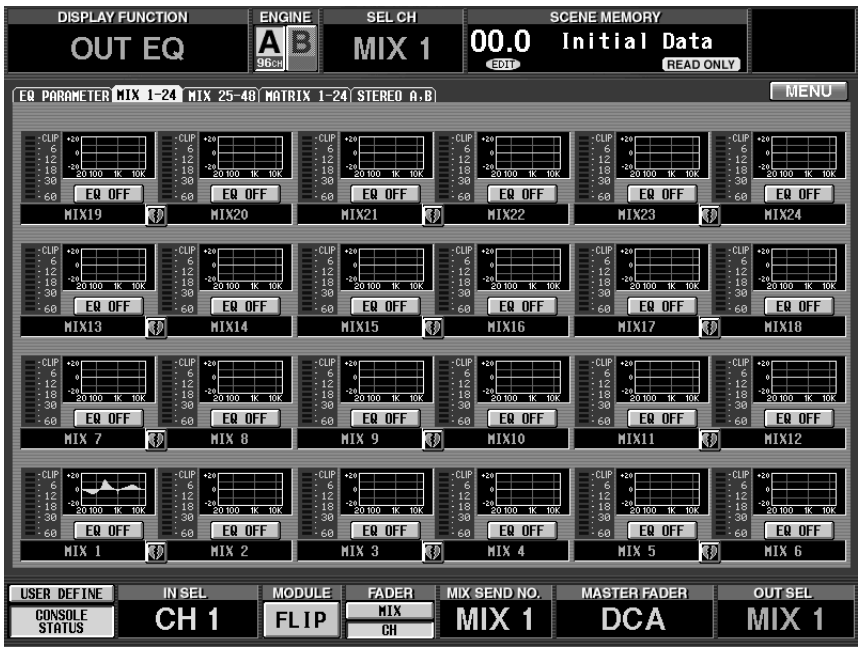
This displays a list of the EQ settings for each output channel. Here you can also copy EQ settings between output channels.

■ **Console**

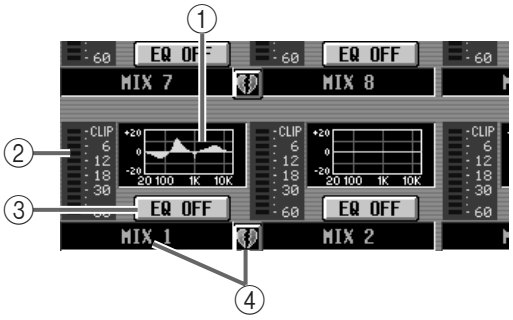
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT [EQ]** switch (press repeatedly until the desired output channel appears)

■ **Display**

MENU button → **OUTPUT EQ** button → tab for the desired output channel



[Screen functions]



① **EQ graph**

This mini-graph shows the EQ settings for each output channel.

By clicking the graph where the cursor is located, you can access the EQ PARAMETER screen for the corresponding channel. By dragging the graph area to another input channel, you can copy EQ settings.

Hint

For two paired channels, and for the STEREO A/STEREO B channels, the graph will be shared, and level meters for two channels will be displayed.

② **Meter**

This meter displays the post EQ peak levels. If the signal clips after the EQ, the corresponding CLIP segment will light.

③ **EQ ON/OFF**

This button switches the EQ on/off.

This is linked with the EQ ON/OFF button in the OUT EQ function EQ PARAMETER screen.

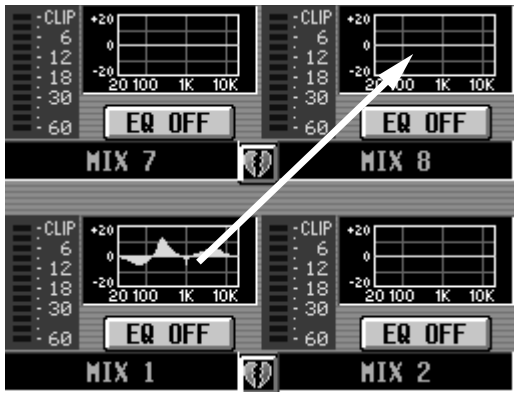
④ **Pair setting**

This shows the number and the pairing status of the output channel. You can click the heart symbol to enable/defeat pairing.

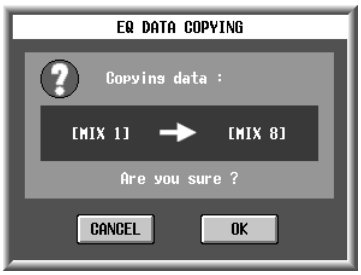
[Procedure]

Copying EQ settings to an output channel within the same tab (Example: copying from MIX1 to MIX8)

1. **Drag the mini-graph from the copy source output channel and drop it onto the copy destination output channel.**



A window will appear, asking you to confirm the copy. To execute the copy, click the OK button. To cancel, click the CANCEL button.



2. **Click the OK button, and the settings will be copied.**

Copying EQ settings to an output channel located in a different tab (Example: copying from MIX19 to MIX44)

1. **Drag the mini-graph from the copy source output channel onto the tab of the copy destination.**

⚠ Copying will not occur if you drop the mini-graph onto any screen other than the MIX 1-24, MIX 25-48, MATRIX 1-24, and STEREO A/B screens that are displayed when you press the OUTPUT [EQ] switch in the LCD FUNCTION ACCESS block of the CS1D console.

2. **The copy destination tab screen will appear.**

3. **Drag and drop the mini-graph onto the copy destination output channel.**
A window will appear, asking you to confirm the copy. To execute the copy, click the OK button. To cancel, click the CANCEL button.

4. **Click the OK button, and the settings will be copied.**

OUT COMP (output compressor) function

Compressor settings for output channels

COMP PRM (compressor parameters)

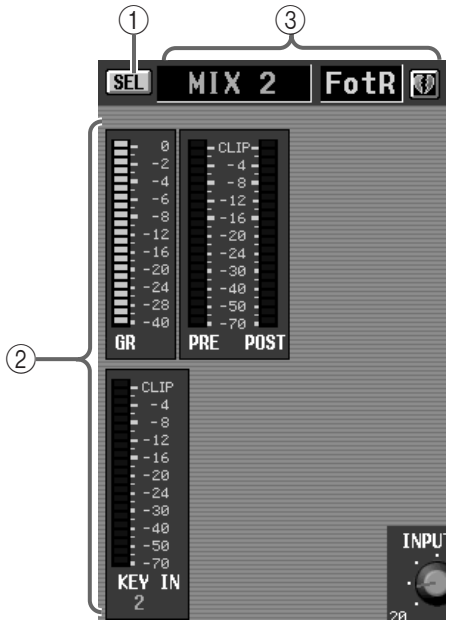
[Function]

Make compressor settings for the selected output channel.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT** [**COMP**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **OUTPUT COMP** button → **COMP PRM** tab

[Screen functions]



① **SEL (channel select)**
This button accesses the CH SELECT popup window, allowing you to select the channel to which your operations will apply.

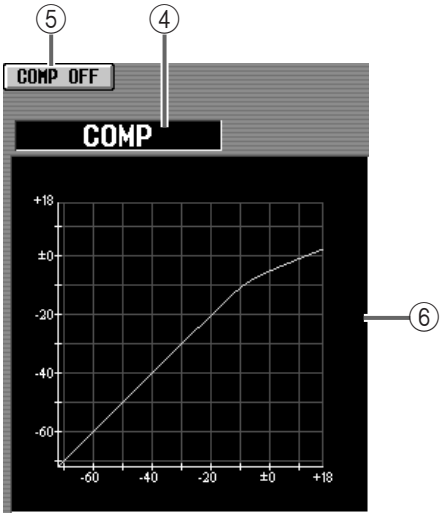
② **Level meters**
These meters show the amount of gain reduction, the peak levels before and after the compressor, and the peak level of the key-in signal (the reference signal that operates the compressor). When the signal clips, the corresponding CLIP segment will light.

Hint

In the case of two paired channels, or if either the STEREO A or STEREO B channels are selected, level meters for two channels will be displayed.

In the UTILITY function PREFERENCE screen, you can specify whether the GR meter display will be linked to the compressor on/off setting. If linking is turned on, the GR meter will be displayed only when the compressor is on, and will be hidden when the compressor is off. If linking is turned off, the GR meter will always be displayed.

③ **Output channel number and short name**
This shows the number, the short name, and the pairing status of the currently selected output channel. You can click the heart symbol to enable/defeat pairing.



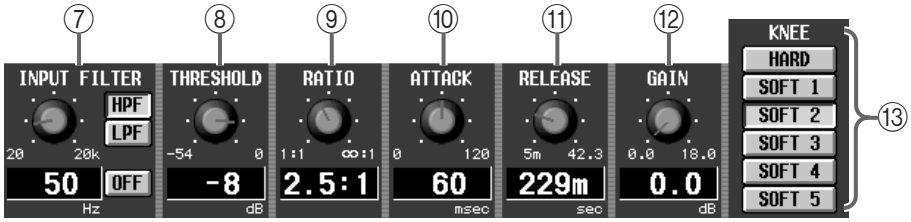
④ **Type**
This indicates the type of the currently selected compressor.

Hint

Normally, you will switch the compressor type by recalling a different type of compressor in the COMP LIBRARY window. It is not possible to change the type in this screen.

⑤ **COMP ON/OFF (compressor on/off)**
This button switches the compressor on/off.

⑥ **Graph**
This is a graph showing the settings of the various compressor parameters.

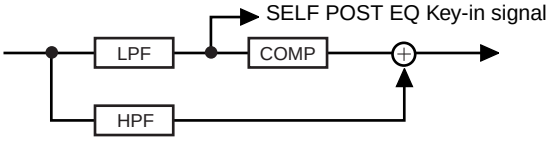


⑦ **INPUT FILTER**
These filters modify the signal that is processed by the compressor. Use the buttons located at the right to select the type of filter (HPF/LPF) and the on/off setting. Use the knob located at the left to set the cutoff frequency (common to LPF/HPF).

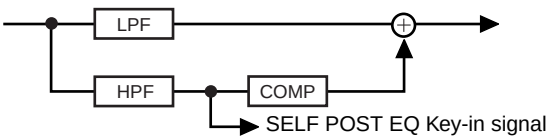
If LPF is on, the compressor will be applied to the signal that has passed through the LPF, and will then be mixed with the signal that has passed through the HPF. If HPF is on, the compressor will be applied to the signal that has passed through the HPF, and will then be mixed with the signal that has passed through the LPF.

In this case, the cutoff frequency of the LPF and HPF will be linked.

- **If COMP is on and LPF is also on**



- **If COMP is on and HPF is also on**



Hint

If you wish to use the compressor as a de-esser, select SELF POST EQ in the KEY IN SELECT section.

⑧ **THRESHOLD (threshold level)**
This sets the reference level at which the compressor will operate. When the key-in signal exceeds this level, the input signal will begin to be compressed. When the key-in signal drops below this level, compression will be defeated.

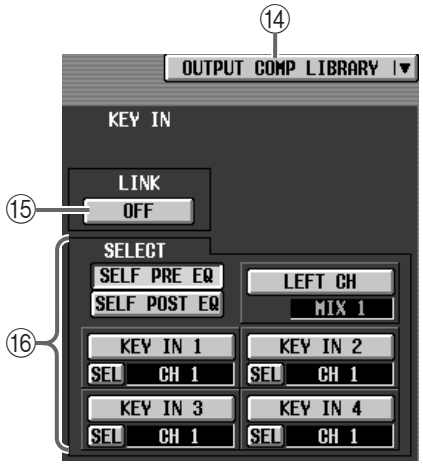
⑨ **RATIO**
Specify the ratio at which the input signal will be compressed when the key-in signal exceeds the threshold level.

⑩ **ATTACK (attack time)**
Specify the time from when the key-in signal exceeds the threshold until compression begins.

⑪ **RELEASE (release time)**
Specify the time from when the key-in signal drops below the threshold until compression is defeated.

⑫ **GAIN**
Set the output level gain.

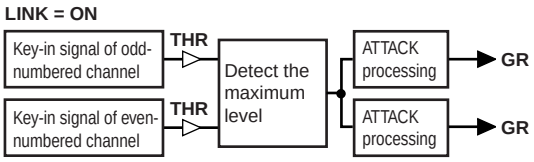
⑬ **KNEE**
This sets the sharpness of the angle at which the output level will change. A setting of HARD produces the sharpest angle, and a setting of SOFT5 produces the softest angle.



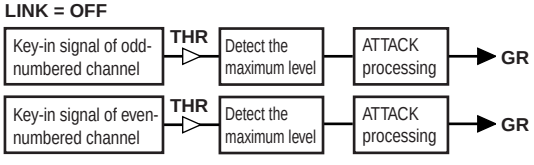
⑭ **OUTPUT COMP LIBRARY (output compressor library)**
This button accesses the COMP LIBRARY window allowing you to store/recall compressor settings (→p.184).

⑮ **LINK ON/OFF (key-in link)**
This specify whether the key-in signals will link compressor operation for adjacent odd-numbered → even-numbered channels (link=on), or whether the compressors will operate with independent key-in signals (link=off).

- **Key-in signal flow when link=on**



- **Key-in signal flow when link=off**



⚠

- Be careful not to confuse "compressor link" with "stereo pairing of output channels." Turning on compressor link simply causes the compressors to be linked by the key-in signal; the compressor parameters themselves can be set independently for each channel.
- When output channels are used as a stereo pair, compressor link will automatically be turned on, and the compressor parameter values will also be linked. However you are free to subsequently turn linking off and modify the parameter values.

⑯ **SELECT (Key-in select)**
Select the key-in signal from the following choices.

- **SELF PRE EQ**
The immediately before EQ signal of the currently selected output channel

- **SELF POST EQ**
The immediately before compressor signal of the currently selected output channel

- **LEFT CH**
The signal of the previously-numbered output channel (the same signal as the SELF POST EQ of the previous channel)

⚠ If you select LEFT CH, the post- INPUT FILTER signal of the previously-numbered channel will be the key-in signal. However, please be aware that the INPUT FILTER will not function unless COMP is on.

- **KEY IN1–KEY IN4**
Signal of the input channel selected in the respective CH SELECT menu

⚠ If MIX channel 1, MATRIX channel 1, or the STEREO A or B channel is selected, the LEFT CH button will not be displayed.
Nor will it be displayed for paired channels.

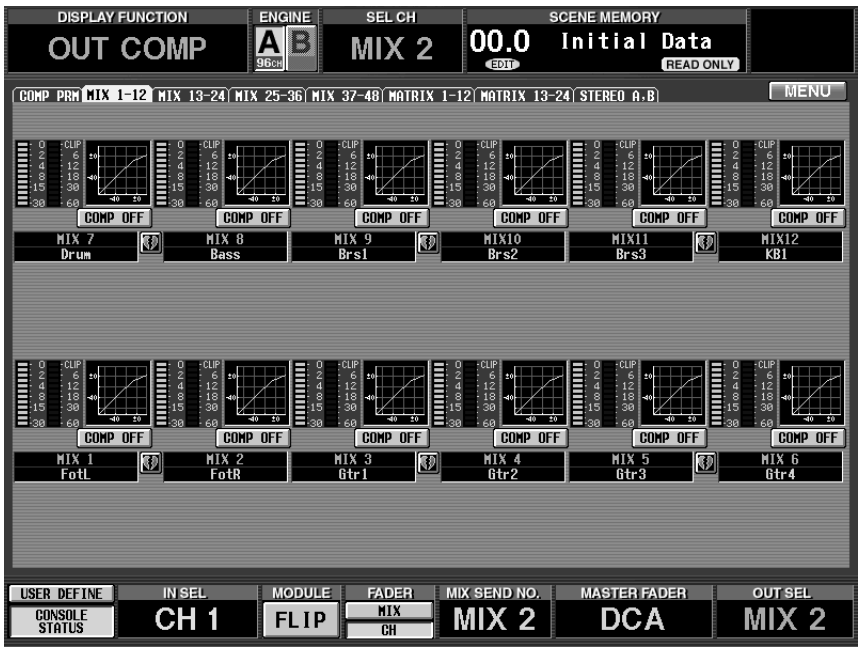
MIX 1-12 – MIX 37-48/MATRIX 1-12 – MATRIX 13-24/STEREO A, B

[Function]

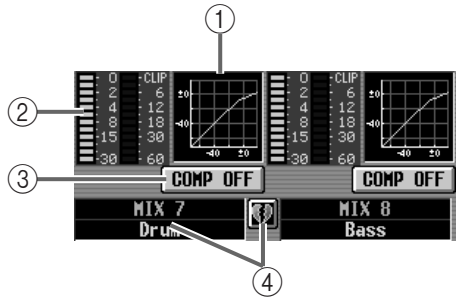
Display a list of compressor settings for each output channel. Here you can also copy compressor settings between output channels.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT** [**COMP**] switch (press repeatedly until the desired output channel appears)

■ **Display**
MENU button → **OUTPUT COMP** button → the tab for the desired output channel



[Screen functions]



① **COMP graph**
This mini-graph shows the compressor settings for each output channel. By clicking the graph where the cursor is currently located, you can access the COMP PARAMETER popup window for the corresponding channel. You can copy settings by dragging the graph to another output channel.

Hint
In the case of two paired channels or the STEREO A or STEREO B channels, the graph will be common to both channels.

② **Meter**
These meters show the gain reduction amount of the compressor, and the peak levels after passing through the compressor.

③ **COMP ON/OFF (compressor on/off)**
This button switches the compressor on/off.

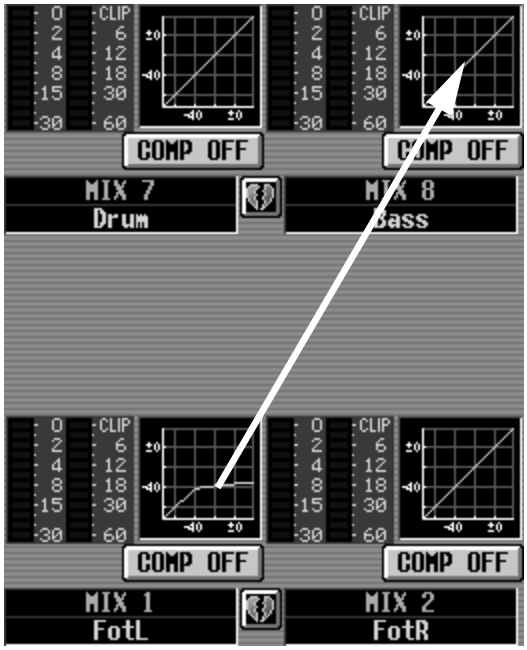
It is linked with the COMP ON/OFF button of the COMP PARAMETER popup window.

④ **Pair setting**
This displays the output channel number and its pairing status. You can also click the heart symbol to enable/defeat pairing.

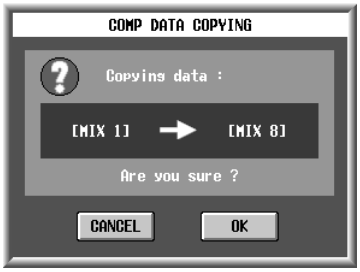
[Procedure]

Copying compressor settings to an output channel in the same tab (Example: copying from MIX1 to MIX8)

1. **Drag the mini-graph from the copy source output channel and drop it onto the copy destination output channel**



A window will appear, asking you to confirm the copy. To execute the copy, click the OK button. To cancel, click the CANCEL button.

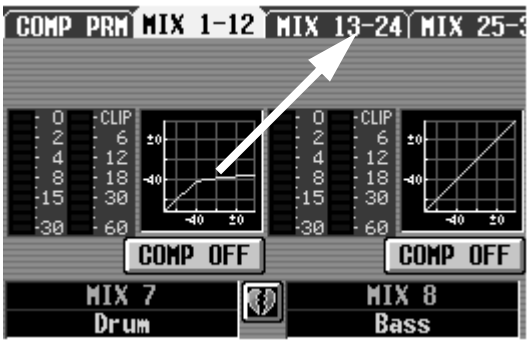


2. **Click the OK button, and the settings will be copied.**

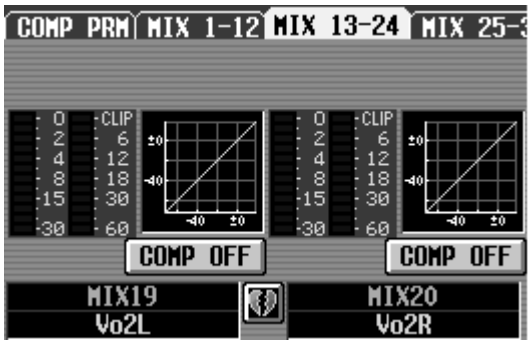
Copying compressor settings to an output channel located in a different tab (Example: copying from MIX7 to MIX20)

1. **Drag the mini-graph from the copy source output channel onto the tab of the copy destination.**

⚠ It is not possible to copy the data by dropping it on any screen other than the MIX 1-12, MIX 13-24, MIX 25-36, MIX 37-48, MATRIX 1-12, MATRIX 13-24 or STEREO A, B screens that are displayed when you press the OUTPUT [COMP] switch in the LCD FUNCTION ACCESS block of the CS1D console.

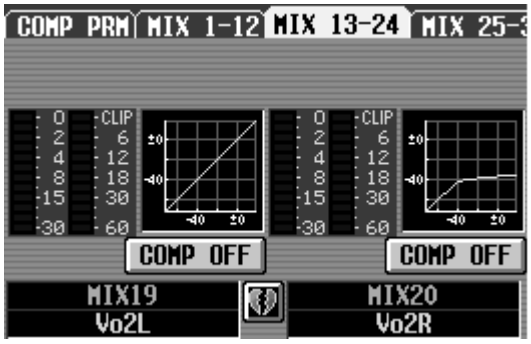


2. **The copy destination tab screen will appear.**



3. **Drag and drop the mini-graph onto the copy destination output channel.**
A window will appear, asking you to confirm the copy. To execute the copy, click the OK button. To cancel, click the CANCEL button.

4. **Click the OK button, and the settings will be copied.**



OUT DELAY (output delay) function

Set the channel-independent delay for output channels, and the global delay

MIX 1-24 /MIX 25-48/MATRIX 1-24/STEREO A, B

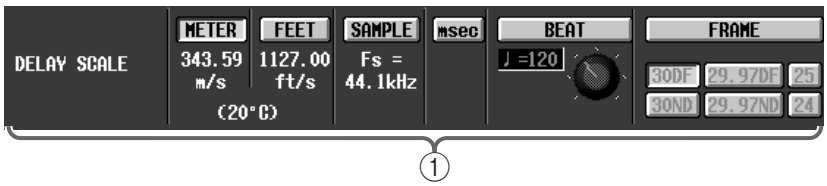
[Function]

Set the delay for each output channel.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT** [**DELAY**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **OUTPUT DELAY** button → the tab for the desired output channel

[Screen functions]



① **DELAY SCALE**
Select the delay time units from the following choices. The units you select here will be used in the numerical box located below the delay time setting knob (③).

The units you select here are linked with the IN DELAY function DELAY SCALE setting. If you change the selected units, your selection will be reflected by the delay time display in other screens.

- **METER**
The delay time will be displayed as a distance (in meters), calculated by the speed of sound (343.59 m/s in an air temperature of 20°C) × the delay time (in seconds).

- **FEET**
The delay time will be displayed as a distance (in feet), calculated by the speed of sound (1127.26 feet/s in an air temperature of 20°C) × the delay time (in seconds).

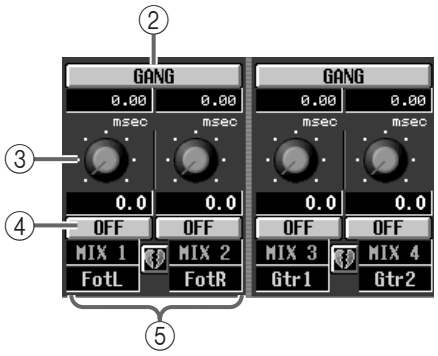
- **SAMPLE (number of samples)**
The delay time will be displayed in samples. If you change the clock rate (displayed immediately below the button) at which the PM1D system is operating, the number of samples will change accordingly.

- **msec (millisecond)**
The delay time will be displayed in millisecond units. When this button is on, the numerical boxes below and above the delay time setting knob (③) will be the same value.

• **BEAT**
Use the knob located below the numerical box to set the BPM, and the delay time will be displayed as the number of beats (quarter notes) for that tempo.

• **FRAME**
The delay time will be displayed in frame units. You can use the six buttons below the FRAME button to select the number of frames per second.

⚠ The BPM (beat per minute) button of the DELAY function is not related to the BPM button of the internal effects.



② **GANG**
This button links the DELAY parameters for adjacent odd-numbered → even-numbered output channels. This can be set independently of pairing.

If the GANG button is turned on for channels that are set to different delay times, rotating knob ③ will cause the delay times of both channels to change while preserving the difference between the two times.

③ **Knob**
This knob sets the delay time for each channel.The numerical box located below each knob shows the delay time in the units selected in ①. Operating the knobs will set the delay time in the units selected in ①. The numerical box located above each knob always shows the settings in millisecond units.

④ **DELAY ON/OFF**
This button switches the delay on/off.

⑤ **Pairing**
This shows the output channel number and pairing status. You can click the heart symbol to enable/defeat pairing.

OUT DCA/MUTE (output DCA/mute) function

Set DCA and mute group settings for the output channels

DCA ASSIGN

[Function]

Assign output channels to DCA faders 9–12 and operate the DCA faders 9–12.

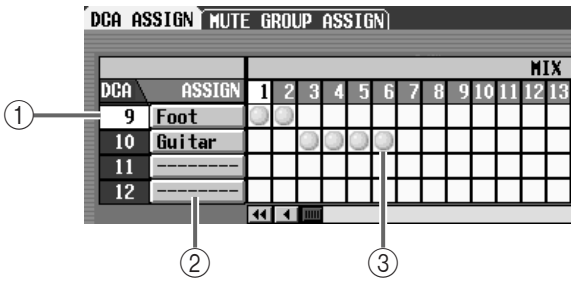
■ **Console**

In the **LCD FUNCTION ACCESS** block, press the **OUTPUT** [**DCA/MUTE**] (press repeatedly until the screen shown at the right appears)

■ **Display**

MENU button → **OUTPUT DCA/MUTE** button → **DCA ASSIGN** tab

[Screen functions]



① These are the DCA group numbers. The number corresponding to the grid where the cursor is currently located will be highlighted.

⚠ Only DCA faders 9–12 can be assigned to output channels.

② These are the eight-character names displayed in the DCA fader section. You can also click here and modify the names of the DCA faders.

③ **Grid**

In this grid you can assign output channels (horizontal lines) to DCA faders (vertical columns. Currently-patched grids will be indicated by a ● symbol. Move the cursor to the desired grid, and press the [ENTER] switch (or click) to set/cancel an assignment.

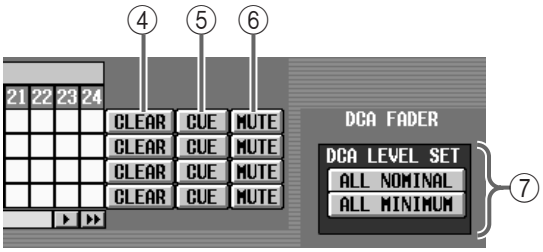
Hint

You can also use multiple DCA control by assigning a single output channel to more than one DCA fader.

⚠

- DCA faders 9–12 can be used for either input channels or output channels. However, it is not possible to assign both input and output channels to the same DCA fader. For this reason, if an input channel is already assigned to a DCA fader 9–12, it will not be possible to assign an output channel to the same DCA fader.

- When a scene is recalled, the DCA group data of Recall Safe channels may be adjusted so that Recall Safe settings are consistent within DCA groups 9–12. Also when a channel library is recalled, the data that is recalled to the channel may be adjusted so that settings are consistent for DCA groups 9–12.



④ **CLEAR**
This button clears all output channels that were assigned to DCA faders.

⑤ **CUE**
For each DCA fader, these buttons switch cue on/off. (These buttons are linked with the [CUE] switches in the DCA/GROUP block on the console.) When these buttons are on, Cue will be turned on for all channels assigned to the corresponding DCA fader.

⑥ **MUTE**
These buttons switch muting on/off for each DCA fader.

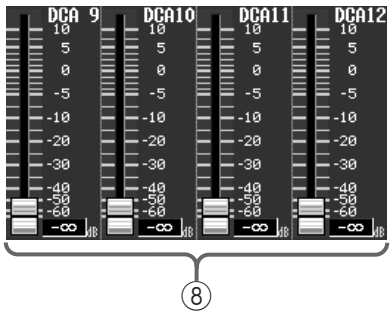
Hint

If the MUTE button is on, the corresponding output channels will be in the same state as if the DCA fader were operated to lower the output level to – ∞ dB, and no signal will be output.

⑦ **DCA LEVEL SET**
These buttons operate all DCA faders at once.

- **ALL NOMINAL**
When you click this button, any DCA 9–12 faders to which output channels are assigned (and faders to which no channel is assigned) will move to the nominal level (0 dB) position.

- **ALL MINIMUM**
When you click this button, any DCA 9–12 faders to which output channels are assigned (and faders to which no channel is assigned) will move to the – ∞ dB position.



⑧ **DCA faders 9–12**
These indicate the DCA fader levels, following the DCA faders on the console. You can also drag the on-screen faders to change the levels. (When you do so, the DCA faders on the console will follow.)

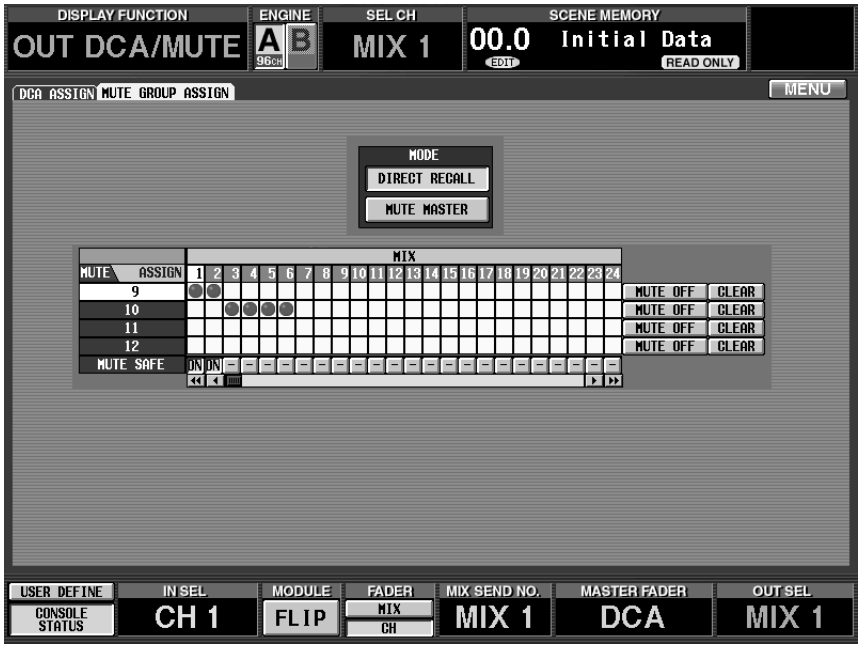
MUTE GROUP ASSIGN

[Function]

Assign output channels to mute groups 9–12.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT [DCA/MUTE]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **OUTPUT DCA/MUTE** button → **MUTE GROUP ASSIGN** tab



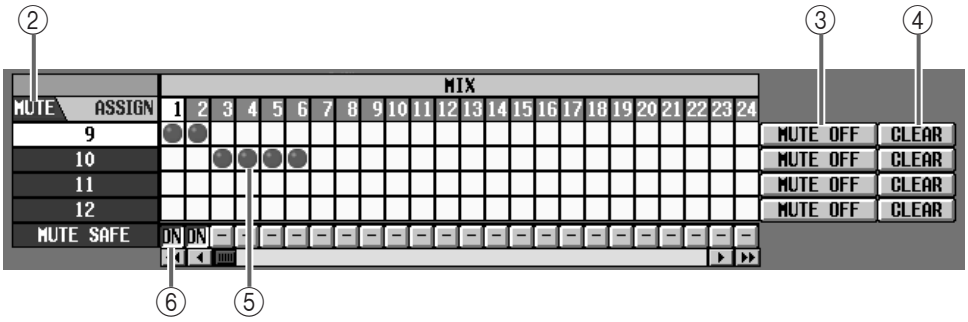
[Screen functions]

① **MODE**
From the two choices listed below, select the function of the SCENE MEMORY [1]–[12] switches located in the SCENE MEMORY block of the console.

This is linked with the MODE button located in the IN DCA/MUTE function MUTE GROUP ASSIGN screen, and also with the MODE button located in the SCENE function DIRECT RECALL screen.

- **DIRECT RECALL**
The [1]–[12] switches can be used to directly recall the scenes assigned to direct recall numbers 1–12. (For the procedure of assigning a scene to a direct recall number, →p.28.)

- **MUTE MASTER**
The [1]–[12] switches can be used to switch mute on/off for mute groups 1–12.



② **MUTE**
These are the mute group numbers. The mute group corresponding to the grid where the cursor is currently located will be highlighted.

③ **MUTE ON/OFF**
Each mute group can be switched between mute on/off in the screen using these buttons. If the MODE button (①) is set to MUTE MASTER, these buttons will be linked to the [9]–[12] switches on the console.

Hint

If mute is turned on, the output channels of that mute group will be set to the same state as if the corresponding [ON] switch of the console had been turned off, so that no signal will be output.
At this time, the LED of the [ON] switch of the console will blink.

④ **CLEAR**
This button clears all output channels that had been assigned to that mute group.

⑤ **Grid**
In this grid, output channels (horizontal rows) can be assigned to mute groups (vertical columns). Move the cursor to the desired grid, and press the [ENTER] button (or click) to set/cancel the assignment. You may assign a single output channel to multiple mute groups.

⑥ **MUTE SAFE ON/OFF**
This button temporarily defeats muting for a channel. If this button is displayed as "–", clicking it will change the display to "ON" and will exclude that output channel from the mute group. Click it once again to return to the original state.

⚠

- Normally, the Mute Safe operation can be performed independently of scene memories. However if a channel changes from mono to paired as a result of recalling a scene, Mute Safe will be turned on for both channels if it had been on for either of the channels.
- Mute groups 9–12 can be used for either input channels or output channels. However, it is not possible to assign both input and output channels to the same mute group. For this reason if an input channel is already assigned to a mute group 9–12, it is not possible to assign an output channel to the same mute group.
- When a scene is recalled, the mute group data of Recall Safe channels may be adjusted so that Recall Safe settings are consistent within mute groups 9–12. Also when a channel library is recalled, the data that is recalled to the channel may be adjusted so that settings are consistent for mute groups 9–12.

MATRIX/ST (matrix/stereo) function

Send signals from the MIX channels, STEREO A/B channels, and SUB IN to the MATRIX buses

MATRIX/ST ROUTING (matrix/stereo routing)

[Function]

Send signals from the MIX channels and STEREO A/B channels to the desired MATRIX bus.

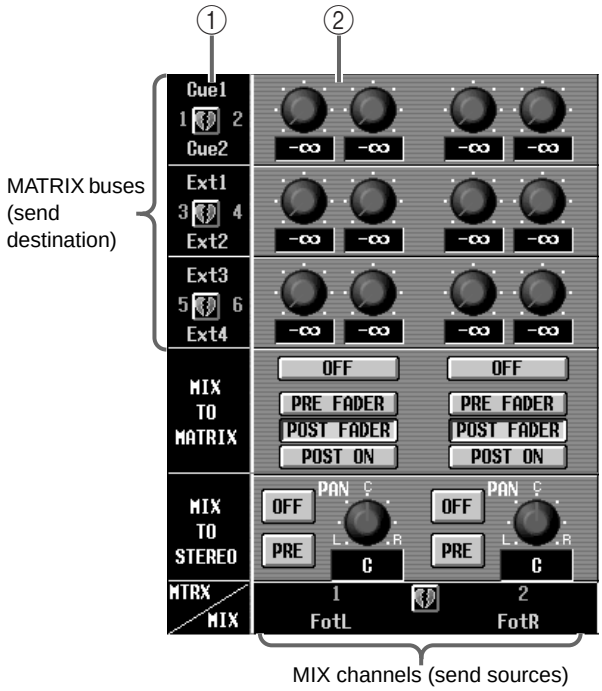
■ **Console**

IN the **LCD FUNCTION ACCESS** block, press the **OUTPUT [MATRIX/ST]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**

MENU button → **OUTPUT MATRIX/ST** button → **MATRIX/ST ROUTING** tab

[Screen functions]



① **Pairing**

Here you can set/cancel pairing of adjacent odd-numbered → even-numbered MATRIX buses.

When you click the heart symbol, a popup window will appear in which you can confirm the pairing setting/cancellation.

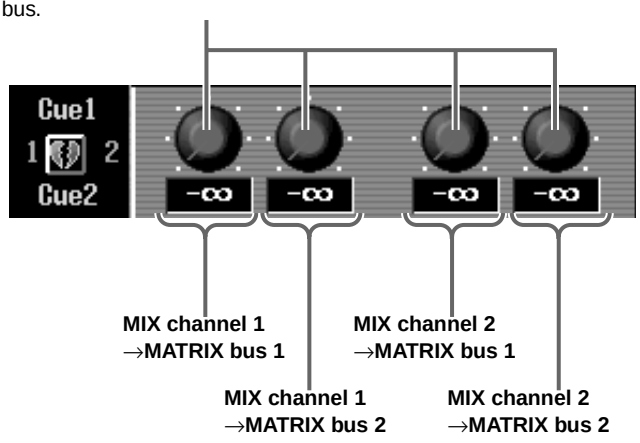
② **Send level**

Here you can adjust the send level of the signals that are sent from the MIX channels/STEREO A/B channels (vertical columns) to the MATRIX bus (horizontal row).

The knobs displayed in this area will change according to the pair settings between the send destination MATRIX buses.

When using the MATRIX buses independently

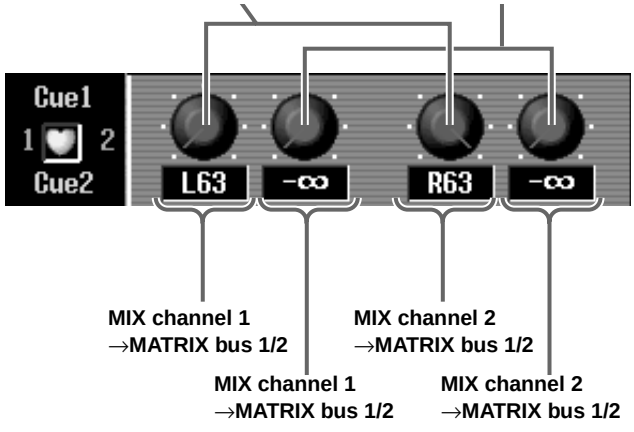
LEVEL knobs
Adjust the send level of the signals that are sent from the MIX channels/STEREO A/B channels to each MATRIX bus.

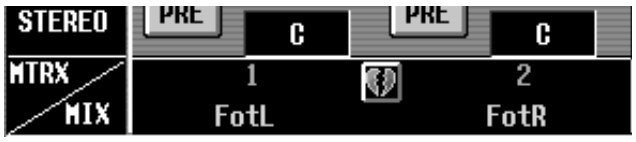


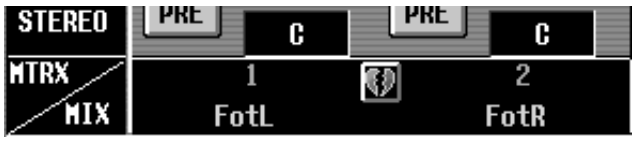
When using the MATRIX buses in pairs

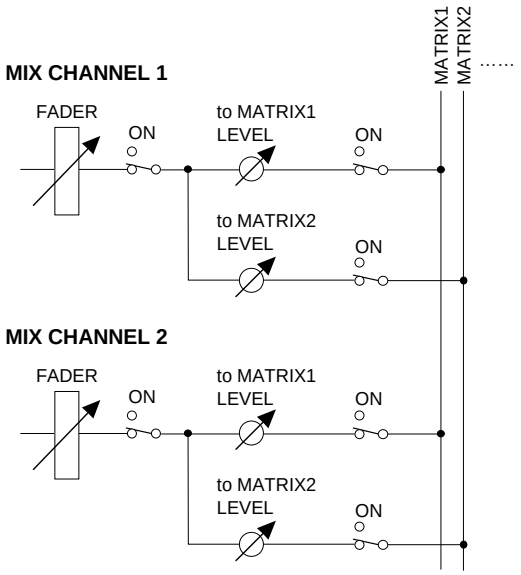
PAN knobs
Adjust the panning of the signals that are sent from the MIX channels/STEREO A/B channels to the odd-numbered and even-numbered MATRIX buses.

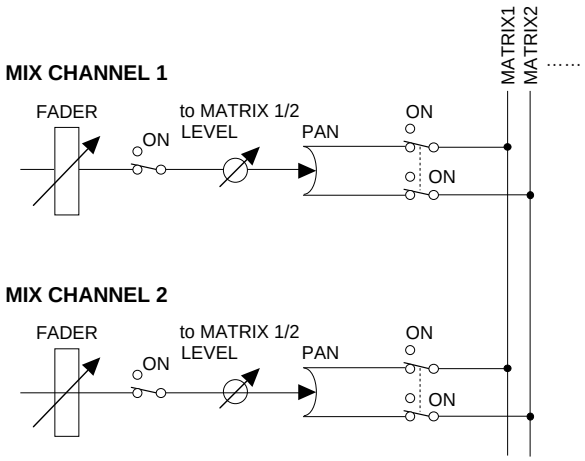
LEVEL knobs
Adjust the send level of the signals that are sent from the MIX channels/STEREO A/B channels to an odd-numbered → even-numbered pair of MATRIX buses.

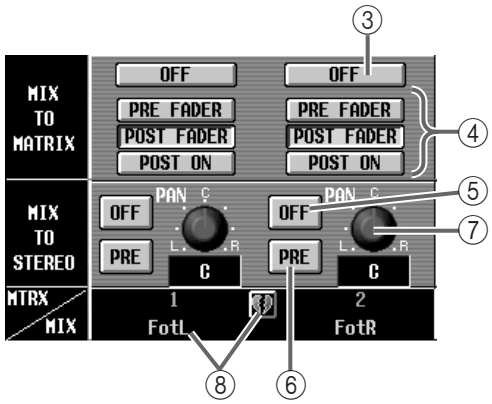












③ **MIX TO MATRIX ON/OFF (MIX → MATRIX on/off)**
This button is an on/off switch for the signal that is sent from the MIX channel/STEREO A/B to the MATRIX bus. This is linked with the [TO MATRIX] switch on the MIX OUTPUT block of the console.

When this button is off, no signal will be sent from that channel to the MATRIX bus.

④ **PRE FADER/POST FADER/POST ON**
These buttons select the location at which the signal will be sent from the MIX channel/STEREO A/B channel to the MATRIX bus.

- **When the PRE FADER button is on**
The signal from immediately before the fader will be sent.

- **When the POST FADER button is on**
The signal from immediately after the fader will be sent.

- **When the POST ON button is on**
The signal from immediately after the MIX [ON] switch/STEREO [ON] switch on the CS1D will be sent.

⚠ This parameter affects all signals that are sent from the corresponding channel to the MATRIX buses.

⑤ **ON/OFF (MIX → STEREO on/off)**
This button is an on/off switch for the signal that is sent from the MIX channel to the STEREO bus. This is linked with the [TO ST] switch on the MIX OUTPUT block of the console.

When this button is off, no signal will be sent from that channel to the STEREO bus.

⑥ **PRE/POST (pre-fader/post on)**
This button selects the location at which the signal is sent from the MIX channel to the STEREO bus.

If this is turned on (POST), the signal after the [ON] switch will be sent. If this is turned off (PRE), the pre-fader signal will be sent.

⑦ **PAN (MIX → STEREO pan)**
This knob sets the panning of the signal that is sent from the MIX channel to the STEREO bus.

If the [TO ST PAN] switch is turned on in the SELECTED OUTPUT CHANNEL block of the CS1D console, this knob will be linked with the [PAN] encoder of the SELECTED OUTPUT CHANNEL block.

Hint
If the send source is the STEREO A/B channel, parameters ⑤–⑦ will not be displayed.

⑧ **Pairing/send source channel**
This displays the number and short name of the send source MIX channel/STEREO A/B channel and its pairing status.

You can also click the heart symbol to set/defeat pairing.

MIX to MATRIX

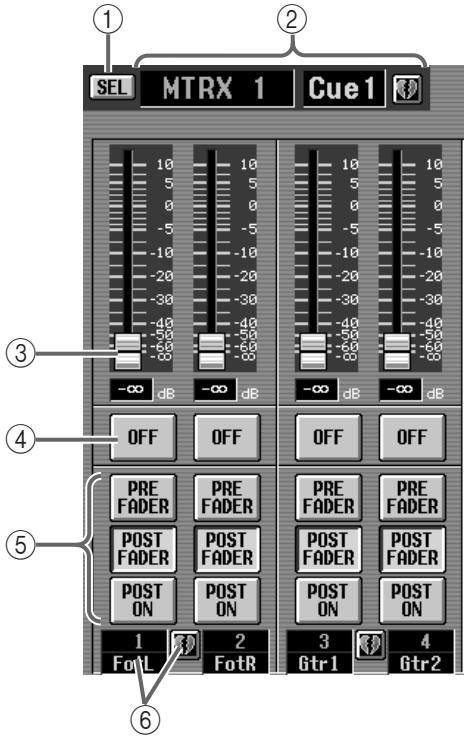
[Function]

Select a MATRIX bus, and set the level, on/off, and sent point of the signal that is sent from the MIX channel/STEREO A/B channel to that MATRIX bus.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT** [**MATRIX/ST**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **OUTPUT MATRIX/ST** button → **MIX to MATRIX** tab

[Screen functions]



① **SEL (select MATRIX bus)**
When you click this button, a popup window will appear in which you can select the send destination MATRIX bus.

② **MTRX bus number/name**
This displays the number, short name, and pairing status of the currently selected MATRIX bus.

You can click the short name area to assign a name, or click the heart symbol to set/cancel pairing.

③ **Fader**
This sets the send level of the signal that is sent from the MIX channel/STEREO A/B channel to the MATRIX bus selected in ①.

④ **ON/OFF**
This is an on/off switch for the signal that is sent from the MIX channel/STEREO A/B channel to the MATRIX bus selected in ①.

⑤ **PRE FADER/POST FADER/POST ON**
These buttons select the send point for the signal that is sent from the MIX channel/STEREO A/B channel to the MIX bus selected in ①.

- **When the PRE FADER button is on**
The signal will be sent from immediately before the fader.

- **When the POST FADER button is on**
The signal will be sent from immediately after the fader.

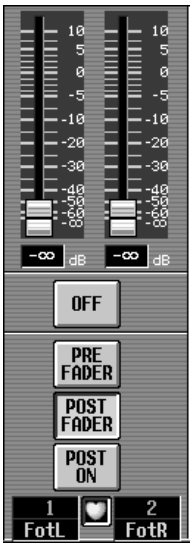
• **When the POST ON button is on**
The signal will be sent from immediately after the MIX [ON] switch or STEREO A/B [ON] switch of the CS1D.

⑥ **Pairing**
This displays the number and short name of the send source MIX channel/STEREO A/B channel and pairing status.

You can click the heart symbol to set/defeat pairing.

Hint

If the send source MIX channels are paired, the faders and buttons will be shared as shown in the following diagram.



SUB IN

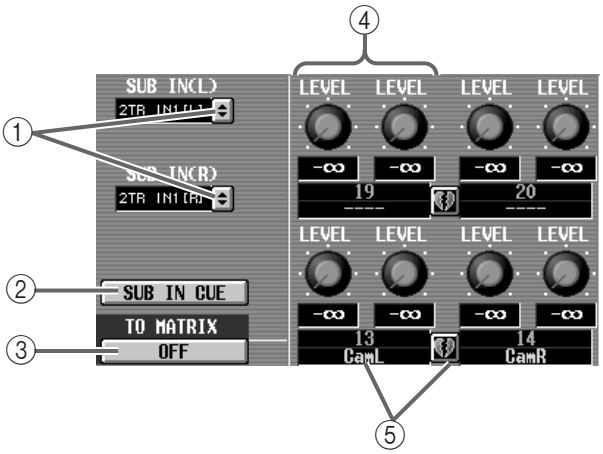
[Function]

Make settings for the SUB IN signal that is sent from the input jacks of the input unit or the input jacks of the CS1D directly to the MATRIX buses.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT** [**MATRIX/ST**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **OUTPUT**
MATRIX/ST button → **SUB IN** tab

[Screen functions]



① **SUB IN (L)/(R) SELECT**
These buttons select the signal that will be patched to the L channel/R channel of SUB IN.

When you click these buttons, a popup window will appear in which you can select the signal.

You can choose from the L channel/R channel of 2TR IN 1–6, and any input channel of an input unit (AI8, DIO8).

② **SUB IN CUE**
This button monitors the SUB IN signal that is selected in ①.

If you move to another screen when the SUB IN CUE button is on, it will automatically be turned off.

③ **TO MATRIX ON/OFF (SUB IN → MATRIX on/off)**
This button is an on/off switch for the signal that is sent from SUB IN to the MATRIX bus.

When this button is off, the SUB IN signal will not be sent to the MATRIX bus at all.

④ **Send level**
Specify the send level of the signal that is sent from SUB IN to the MATRIX bus.

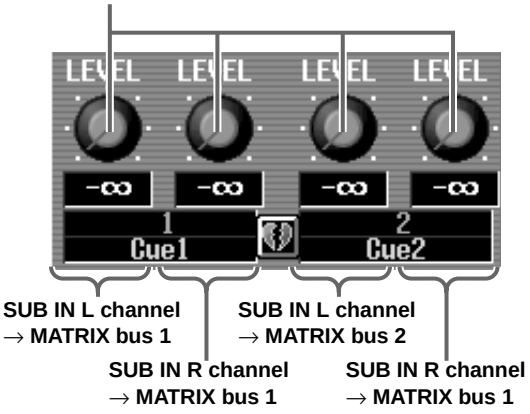
The knob that is displayed here will change according to the pairing status of the send destination MATRIX bus.

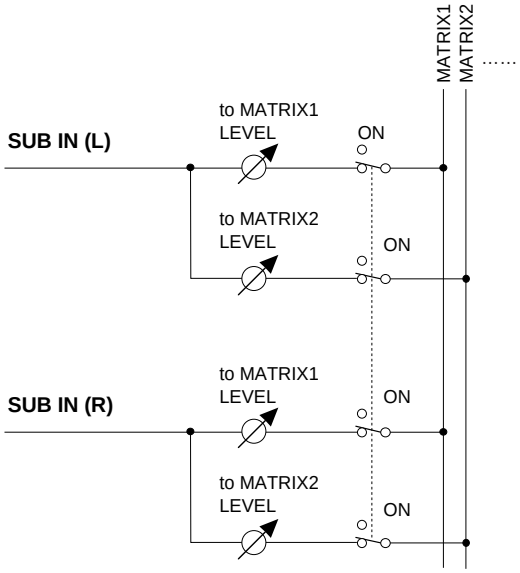
⑤ **Pairing/send destination channel**
This displays the number and short name of the send destination MATRIX bus and its pairing status.

You can also click the heart symbol to set/defeat pairing.

When using the MATRIX buses independently

LEVEL knobs
Adjust the send level of the signals that are sent from the SUB IN L/R channels to each MATRIX bus.

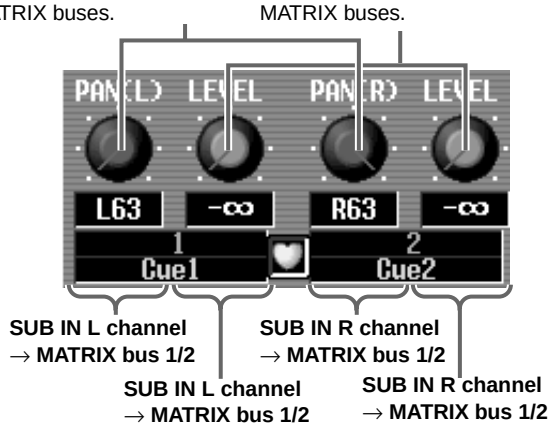


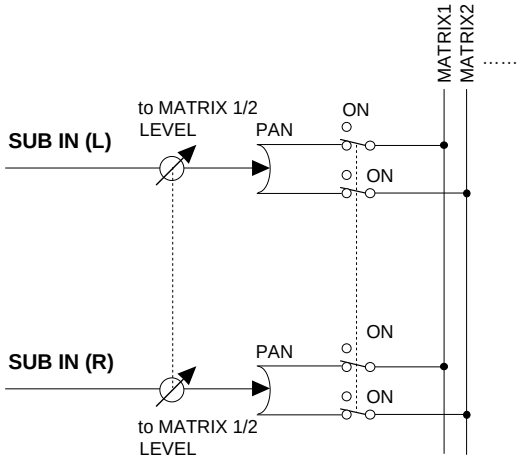


When using the MATRIX buses in pairs

PAN knobs
Adjust the panning of the signals that are sent from SUB IN to the odd-numbered and even-numbered MATRIX buses.

LEVEL knobs
Adjust the send level of the signals that are sent from the SUB IN L/R channels to an odd-numbered → even-numbered pair of MATRIX buses.





LCR

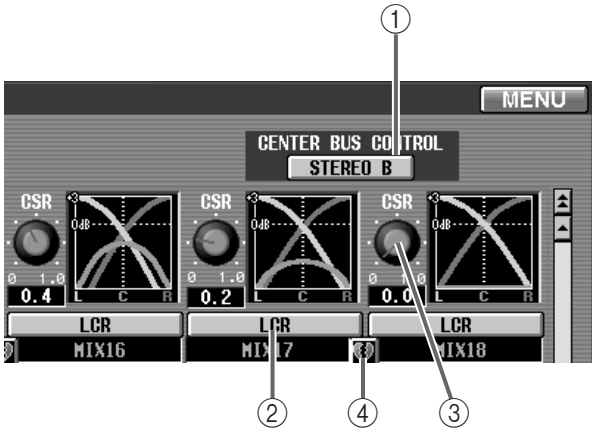
[Function]

Make settings for LCR mode to allow three-channel playback, with a CENTER channel added to the L/R channels of the STEREO bus. This function can be used only for MIX channels.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT** [**MATRIX/ST**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **OUTPUT** **MATRIX/ST** button → **LCR** tab

[Screen functions]



① **CENTER BUS CONTROL**
When this button is on, the STEREO B channel will function as the CENTER channel.

By adding the CENTER channel to the L/R channels of the STEREO A bus, you can implement three-channel playback.

⚠ When this button is off, the CENTER channel signal will no longer be sent to STEREO B, meaning that it will not be output externally. (The same LR signal as STEREO A will be sent to STEREO B.) However even when the CENTER BUS CONTROL button is off, you can operate LCR pan for channels in which LCR mode is turned on. (When you turn the button on, the LCR setting will immediately take effect.)

② **LCR (LCR mode on/off)**
For each MIX channel, turn LCR mode on/off.

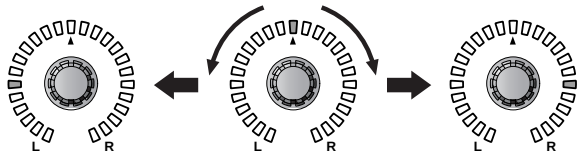
In the case of channels for which LCR mode is turned on, the [PAN/BAL] encoder can be used to simultaneously control the level of the L/R channels and the CENTER channel if the [TO ST PAN] switch (located in the SELECTED OUTPUT CHANNEL output block of the CS1D top panel) is not turned on.

Hint

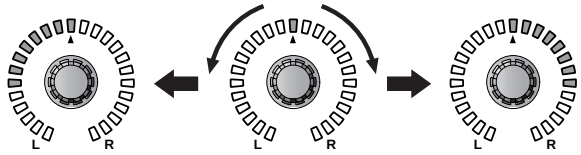
On channels for which LCR mode on, rotating the [PAN/BAL] encoder will cause the perimeter LEDs to light as follows.

LED lighting

- **When LCR=off**



- **When LCR=on**

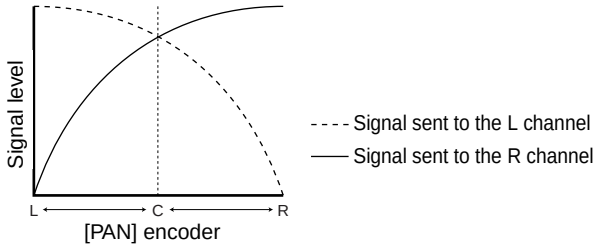


③ **CSR (center side ratio)**
Adjust the level ratio of the CENTER channel relative to the L/R channels. The range is 0.0–1.0.

If CSR is set to 0:0, rotating the PAN knob in the MIX TO STEREO section of the MATRIX/ST ROUTING screen will cause the signal levels of the L/R channels to change as shown in LCR response curve 1, below.

In this case, the MIX TO STEREO PAN will function as a conventional PAN control, and no signal will be sent to the CENTER channel.

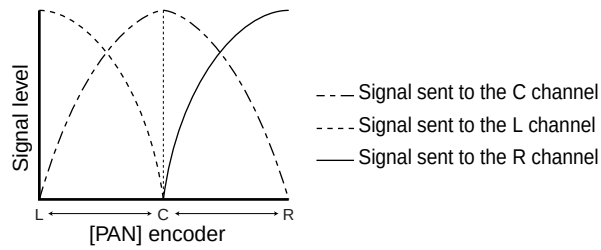
LCR response curve 1



If CSR is set to 1.0, rotating the PAN knob in the MIX TO STEREO section of the MATRIX/ST ROUTING screen will cause the signal levels sent to the L/R channels and the CENTER channel to change as shown in LCR response curve 2, below.

When the PAN knob in the MIX TO STEREO section is in the center location, the signal level of the CENTER channel will be maximum, and no signal will be sent to the L/R channels.

LCR response curve 2



④ **Pairing**
This shows the number and pairing status of the MIX channel.

You can also click the heart symbol to set/defeat pairing. Parameters ②–③ will be linked for paired channels.

Hint

The master level of the CENTER channel is controlled by the fader of the STEREO B block on the CS1D. If necessary, you can also use the internal EQ or compressor of the STEREO B channel to process the signal.

One of the output jacks patched to the STEREO B channel will be used as the output jack for the CENTER channel. (If the CENTER BUS CONTROL button is on, the same signal will be output to the L/R channels of STEREO B.)

OUT CH VIEW (output channel view) function

View output channel settings

CH VIEW (channel view)

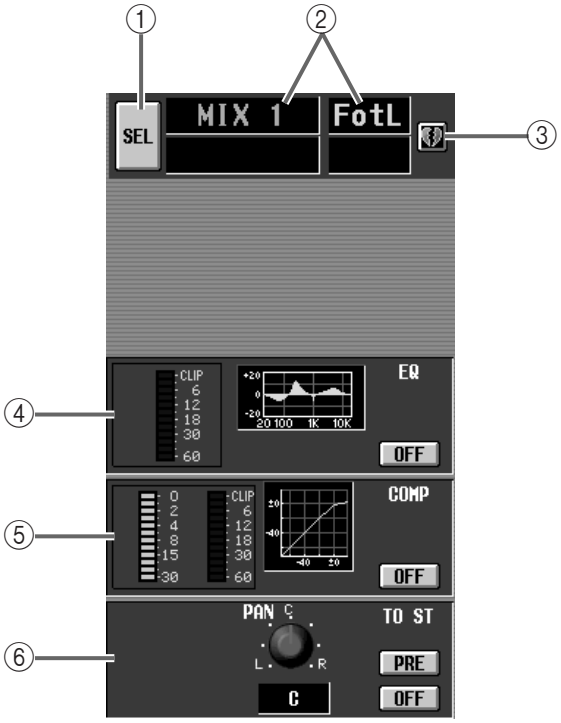
[Function]

View the settings of the currently selected MIX channel, MATRIX channel, or STEREO A/B channel. In this screen you can also modify the parameter settings, or access individual screens.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **OUTPUT** [**CH VIEW**] switch

■ **Display**
MENU button → **OUTPUT CH VIEW** button

[Screen functions]



① **SEL (channel select)**
Use this button to select the channel whose settings you wish to view.

When you click this button, the CH SELECT popup window will appear.

② **Channel number/name**
This displays the number and short name of the currently selected channel.

③ **Pairing**
This displays the pairing status of the currently selected channel.

You can also click the heart symbol to set/defeat pairing.

Hint

If a paired MIX/MATRIX channel or the STEREO A/B channel is selected, parameters for both channels will be displayed in this one screen. See the following diagram.

④ **EQ (equalizer)**
This area displays the on/off status of the internal EQ, the approximate response curve, and the peak level of the signal that has passed through the EQ.

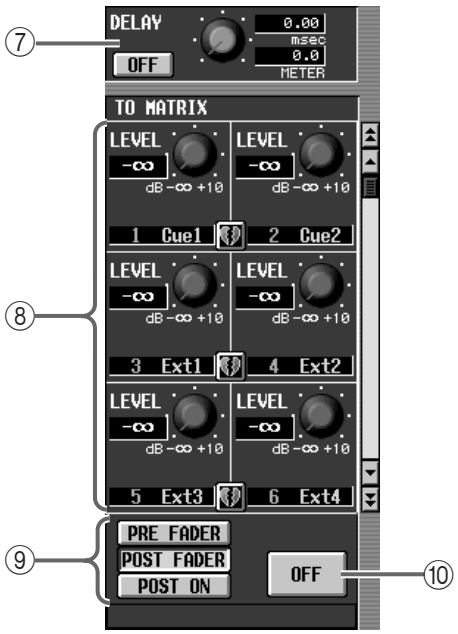
You can click the ON/OFF button to switch the EQ on/off, or click the mini-graph to access the EQ PARAMETER popup window.

⑤ **COMP (compressor)**
This area displays the on/off status of the internal compressor, the approximate response curve, the amount of gain reduction, and the peak level of the signal that has passed through the compressor.

You can click the ON/OFF button to turn the compressor on/off, or click the mini-graph to access the COMP PARAMETER popup window.

⑥ **TO ST (stereo pan)**
This area displays the status of the ON/OFF button, PRE/POST button, and PAN knob that are shown in the MIX TO STEREO section of the MATRIX/ST ROUTING screen (MATRIX/ST function).

You can also use the buttons and knob to modify the settings.



⑦ **DELAY**
This area displays the on/off status and delay time of the delay function.

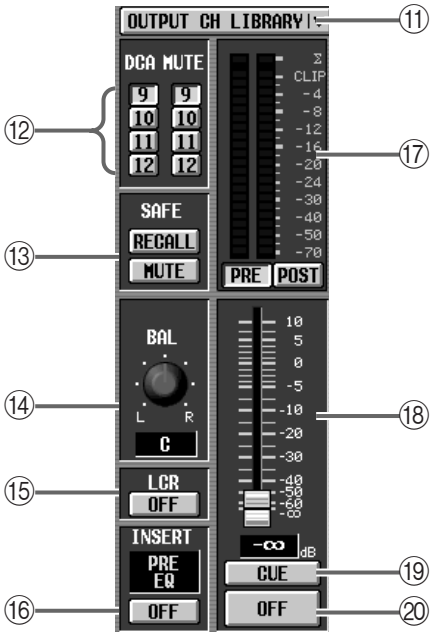
You can also use the buttons and knobs to change the setting. The upper numerical box always displays the delay time in msec units. The lower numerical box displays the delay time in the units currently selected by the IN DELAY function.

⑧ **TO MATRIX**
This area displays the send level of the signal that is sent from the currently selected channel to each MATRIX bus, and the pairing status of the destination MATRIX bus.

You can also use the buttons and knobs to modify the settings. To view MATRIX buses that are not visible in the screen, use the scroll bar located at the right.

⑨ **PRE FADER/POST FADE/POST ON**
These buttons select the send point of the signal that is sent from the currently selected channel to each MATRIX bus.

⑩ **ON/OFF**
This button is an on/off switch for the signal that is sent from the currently selected channel to each MATRIX bus.



⑪ **CH LIBRARY (channel library)**
This button accesses the OUTPUT CH LIBRARY popup window in which you can store/recall mix parameters by channel.

⑫ **DCA group/MUTE group**
This area shows the DCA groups/MUTE groups to which this channel belongs.

You can also change the settings.

⑬ **RECALL SAFE/MUTE SAFE**
This area displays the on/off status of mute safe (a state in which the channel is exempted from mute group operations) and recall safe (a state in which the channel is exempted from scene recall operations).

You can also modify these settings.

⑭ **BAL (balance)**
This knob controls the post-fader left/right balance of the STEREO A/B channel or of paired MIX channels/MATRIX channels.

⑮ **MONO (stereo B monaural on/off)**
This button will be displayed only if the STEREO B channel is selected. If this button is turned on, the STEREO B channel will be monaural. This is linked with the [MONO] switch of the CS1D.

LCR (LCR on/off)
The button for this parameter will be displayed only if a MIX channel is selected. If this button is turned on, the PAN parameter will be used as the LCR pan when the signal is sent from the MIX channel to the STEREO bus.

⑯ **INSERT**
This displays the currently selected insert I/O point (the location in the signal path at which an external device is inserted) for the channel.

You can also use the ON/OFF button to switch insertion on/off.

⑰ **Level meter**
This peak level meter indicates the output level of the channel.

The location at which the level is detected is specified in METER function.

The ∑ and CLIP meter will light if clipping occurs at a metering point, PRE EQ, POST EQ, POST COMP, or INSERT IN of the currently selected channel.

⑱ **Fader**
This fader adjust the output level of the channel. It is linked with the [LEVEL] encoder or STEREO A/B fader on the CS1D top panel.

⑲ **CUE**
This button monitors the output channel. It is linked with the MIX [CUE] switch, MATRIX [CUE] switch, or STEREO [CUE] switch on the CS1D top panel.

⑳ **ON/OFF**
This button turns the output channel on/off. It is linked with the MIX [ON] switch, MATRIX [ON] switch, or STEREO [ON] switch on the CS1D top panel.

[Procedure]

Pairing output channels

1. **Select one of the functions OUT EQ, OUT COMP, OUT DELAY, MATRIX/ST, OUT CH VIEW, or METER, and access the screen for the channel that you wish to pair.**
2. **Click the divided heart symbol for the channel that you wish to pair.**
The MIX PAIRING popup window will appear.

In this window you can select how parameter settings will be handled when the channels are paired.

- **MIX A to B (a channel number will appear in A and B)**

The parameters of MIX channel A will be copied to MIX channel B.

- **MIX B to A (a channel number will appear in A and B)**

The parameters of MIX channel B will be copied to MIX channel A.

• **RESET BOTH**
The parameters of both channels will be reset to the default settings.

⚠ The channel parameters that are copied/reset when you click one of the above buttons are limited to the parameters that are linked when paired. In addition to the channel parameters, the following settings will also be copied/reset.

- Solo/Cue on/off status
- Solo Safe on/off status
- Recall Safe on/off status
- Mute Safe on/off status

3. **To pair the channels, click the MIX A to B button, the MIX B to A button (a channel number will appear in A and B), or the RESET BOTH button. If you decide not to specify pairing, click the CANCEL button.**

Hint
You can also enable/defeat pairing by pressing the [SEL] switches of two adjacent input channels on the console.

Defeating pairing

1. **Select one of the functions OUT EQ, OUT COMP, OUT DELAY, MATRIX/ST, OUT CH VIEW, or METER, and access the screen for the channel that you wish to pair.**
2. **Click the heart symbol for the channels that you wish to un-pair.**
A popup window will appear, asking you to confirm that you wish to defeat pairing.

3. **To defeat, click the OK button. If you decide not to defeat pairing, click the CANCEL button.**

Hint
You can also enable/defeat pairing by pressing the [SEL] switches of two adjacent input channels on the console.

Input functions

IN PATCH functions

Assign input/output units to input channels/insert I/O/direct out

INPUT PATCH

[Function]

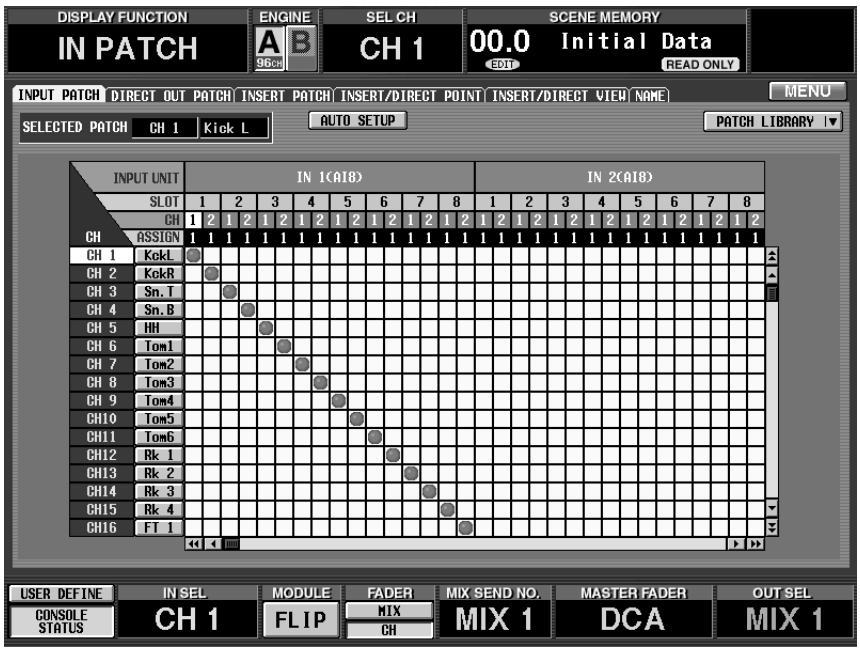
Patch the input jacks of the input units, 2TR IN jacks, effect returns, and talkback to the desired input channel (monaural/stereo).

■ **Console**

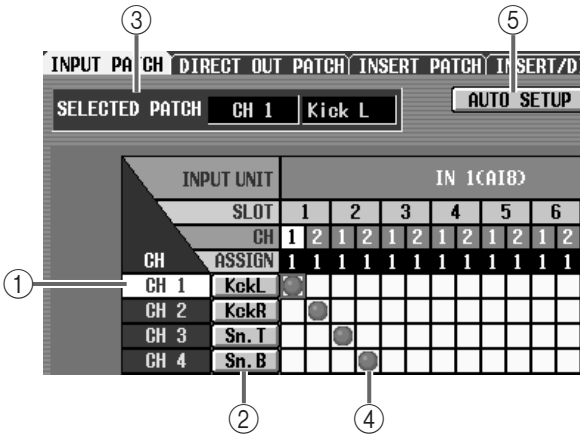
In the **LCD FUNCTION ACCESS** block, press the **INPUT [PATCH]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**

MENU button → **INPUT PATCH** button → **INPUT PATCH** tab



[Screen functions]



① **CH (input channel)**
This is the number of the patch destination input channel.

The channel number of the grid where the cursor is currently located will be highlighted.

② **Short name**
The short name assigned to each input channel is displayed here. You can also click this area to assign a short name/long name.

③ **SELECTED PATCH (currently selected patch)**
This shows the input channel number/long name for the grid location of the cursor.

④ **Grid**
This grid allows input jacks (horizontal lines) to be patched to input channels (vertical columns). Currently-patched grids are indicated by a ● symbol. Move the cursor to the desired grid, and press the [ENTER] switch (or click) to set/cancel the patch.

Hint

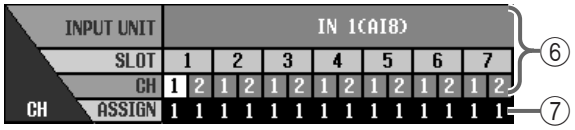
If PATCH CONFIRMATION is turned on in the UTILITY function PREFERENCE screen, a popup window will ask you for confirmation each time you attempt to change the patch settings.

⚠ You can patch a single input jack to multiple input channels, but you cannot patch multiple input jacks to a single input channel.

⑤ **AUTO SETUP button**
This button patches input channels starting from channel 1 to the currently-connected input units. At this time, the effect returns will be assigned to ST IN.

When you press the AUTO SETUP button, a popup window will appear.

If you click OK, AUTO SETUP will be executed to perform the patches automatically.



⑥ **INPUT UNIT/SLOT/CH (input unit/slot/channel)**
In order from the top, these are the type and ID number of the input unit, slot number, and input jack channel number. The abbreviations displayed in the input unit line indicate the following.

- **INx (DIO8)**.....DIO8 digital input/output unit (x is the unit ID number)
- **INx (AI8)** .....AI8 analog input unit (x is the unit ID number)
- **2TR IN** .....Input signal from one of the 2 TR IN connectors 1–6 on the rear panel of the CS1D console
- **TB**.....Talkback signal
- **EFF RTN** .....Return signal to internal effect 1–8

By clicking the ◀◀ ▶▶ buttons at either end of the input unit/slot line, you can switch the display by units. By clicking the ◀ ▶ buttons you can switch the display by slots.

⑦ **ASSIGN**
This displays the total number of channels that are patched to each input jack.

⚠ Input jacks patched in other screens will be counted even if they are not patched in this screen. However, key-in signals that are patched will not be counted.

⑧ **PATCH LIBRARY button**
This button is used to access the PATCH LIBRARY window in which you can save/load the patch status as a library (→p.172).

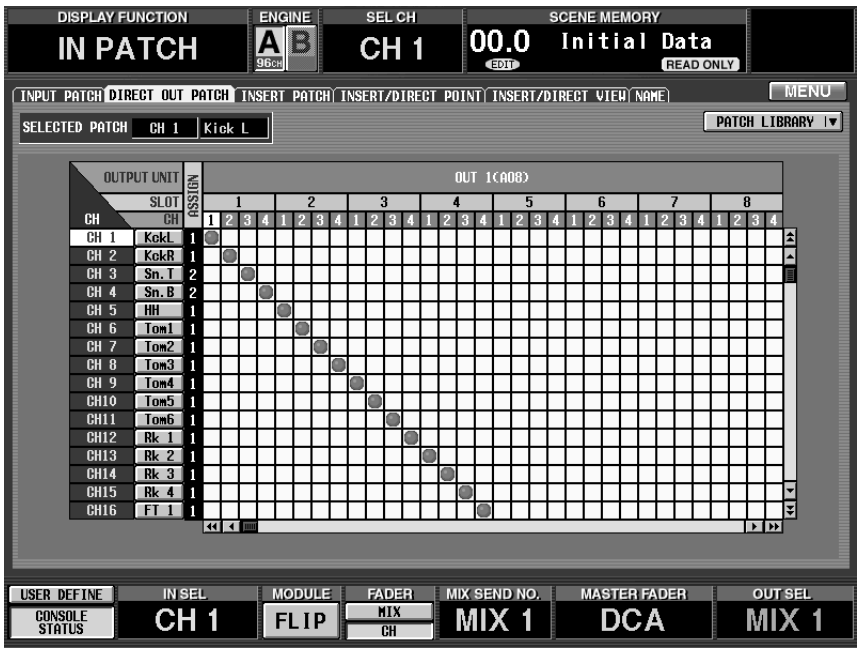
DIRECT OUT PATCH

[Function]

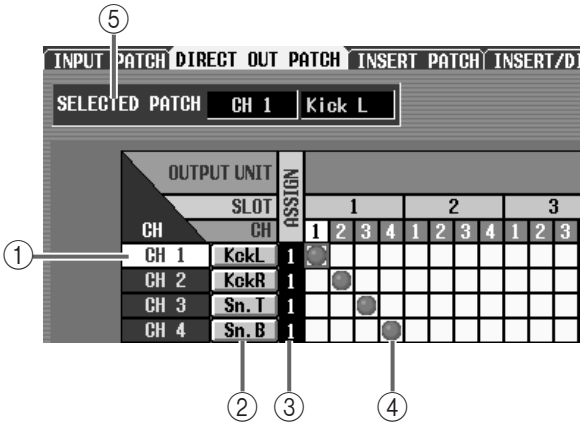
The signals input to the input channels are patched to the output jacks of a card installed in the output unit (AO8, DIO8), and output directly.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **INPUT [PATCH]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **INPUT PATCH** button → **DIRECT OUT PATCH** tab



[Screen functions]



① **CH (input channel)**
This is the number of the input channel to be patched.

② **Short name**
The short name assigned to each input channel is displayed here. You can also click this area to assign a short name/long name (→p.128).

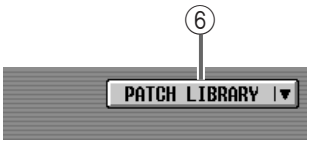
③ **ASSIGN**
This shows the number of direct outputs assigned to each input channel.

④ **Grid**
This grid allows output jacks (horizontal lines) to be patched to input channels (vertical columns). Currently-patched grids are indicated by a ● symbol. Move the cursor to the desired grid, and press the [ENTER] switch (or click) to set/cancel the patch.

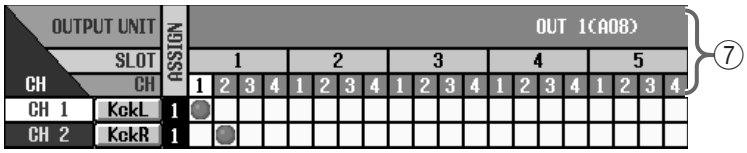
Hint
If PATCH CONFIRMATION is turned on in the UTILITY function PREFERENCE screen, a popup window will ask you for confirmation each time you attempt to change the patch settings.

⚠ You can patch a single input channel to multiple output channels, but you cannot patch multiple input channels to a single output jack.

⑤ **SELECTED PATCH (currently selected patch)**
This shows the input channel number/long name for the grid location where the cursor is currently located.



⑥ **PATCH LIBRARY button**
This button is used to access the PATCH LIBRARY window in which you can save/load the patch status as a library (→p.172).



⑦ **OUTPUT UNIT/SLOT/CH (output unit/slot/channel)**
In order from the top, these are the type and ID number of the input unit, slot number, and output jack channel number. The abbreviations displayed in the output unit line indicate the following.

- **OUTx (DIO8)**.....DIO8 digital input/output unit (x is the unit ID number)
- **OUTx (AO8)**.....AO8 analog output unit (x is the unit ID number)

By clicking the ◀◀ ▶▶ buttons at either end of the output unit/slot line, you can switch the display by units. By clicking the ◀ ▶ buttons you can switch the display by slots.

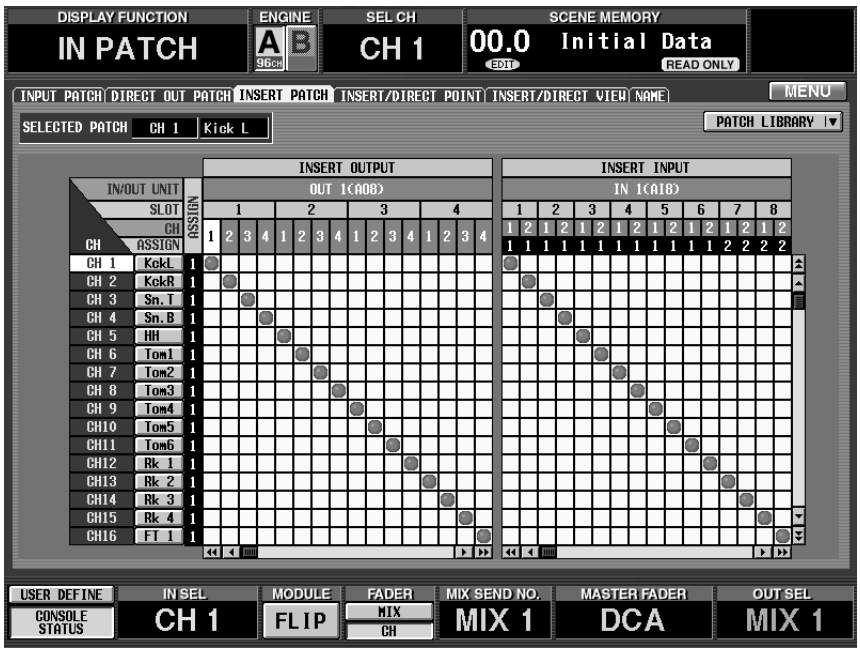
INSERT PATCH

[Function]

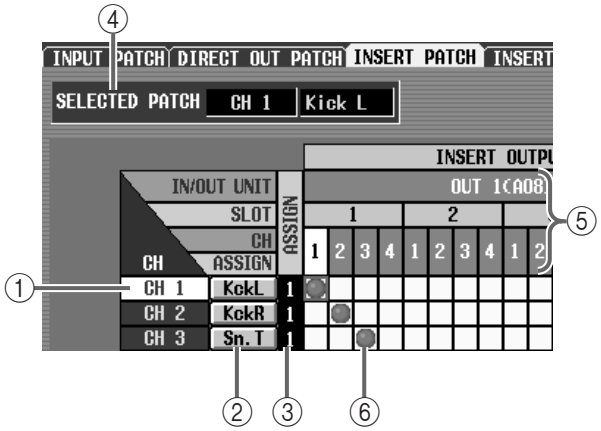
For each input channel, patch the input/output jacks used for inserting external devices such as an effect processor.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **INPUT [PATCH]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **INPUT PATCH** button → **INSERT PATCH** tab



[Screen functions]



① **CH (input channel)**
This is the number of the input channel for which the insertion input/output jacks are being patched.

The channel number of the grid where the cursor is currently located will be highlighted.

② **Short name**
The short name assigned to each input channel is displayed here. You can also click this area to assign a short name/long name (→p.128).

③ **ASSIGN**
This shows the number of outputs assigned to each input channel for insertion output.

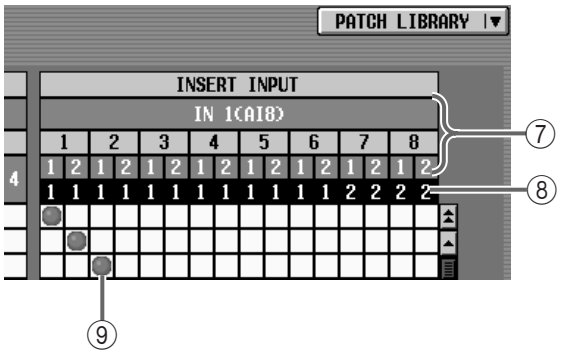
④ **SELECTED PATCH (currently selected patch)**
This shows the input channel number/long name for the grid location where the cursor is currently located.

⑤ **OUT UNIT/SLOT/CH (output unit/slot/channel)**
In order from the top, these are the type and number of the output unit, the slot number, and the output jack channel number. (For the meaning of the abbreviations displayed in the output unit line, refer to →p.121.)

By clicking the ◀◀ ▶▶ buttons at either end of the output unit/slot line, you can switch the display by units. By clicking the ◀ ▶ buttons you can switch the display by slots.

⑥ **Grid**
This grid allows output jacks (horizontal lines) to be patched to input channels (vertical columns). Currently-patched grids are indicated by a ● symbol. Move the cursor to the desired grid, and press the [ENTER] switch (or click) to set/cancel the patch.

Hint
If PATCH CONFIRMATION is turned on in the UTILITY function PREFERENCE screen, a popup window will ask you for confirmation each time you attempt to change the patch settings.



⑦ **IN UNIT/SLOT/CH (input unit/slot/channel)**
In order from the top, these are the type and number of the input unit, the slot number, and the input jack channel number. (For the meaning of the abbreviations displayed in the output unit line, refer to →p.119.)

By clicking the ◄◄ ►► buttons at either end of the input unit/slot line, you can switch the display by units. By clicking the ◄ ► buttons you can switch the display by slots.

⑧ **ASSIGN**
This displays the total number of channels that are patched to each input jack.

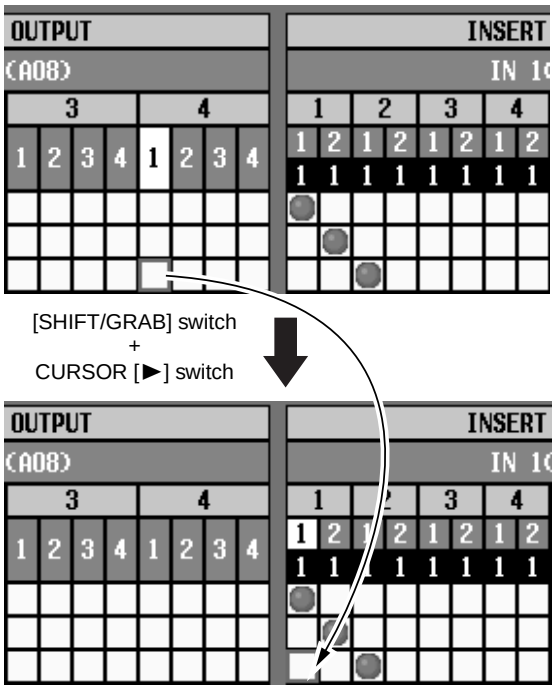
⚠ Input jacks patched in other screens will be counted even if they are not patched in this screen. However, key-in signals that are patched will not be counted.

⑨ **Grid**
This grid allows insertion input jacks (horizontal lines) to be patched to input channels (vertical columns). Currently-patched grids are indicated by a ● symbol. Move the cursor to the desired grid, and press the [ENTER] switch (or click) to set/cancel the patch.

Hint
If PATCH CONFIRMATION is turned on in the UTILITY function PREFERENCE screen, a popup window will ask you for confirmation each time you attempt to change the patch settings.

If you wish to use console switches to move the cursor from the right grid (INSERT OUT) to the left grid (INSERT IN), or in the opposite direction, hold down the [SHIFT/GRAB] switch and use the CURSOR [◄]/[►] switches.

Cursor movement using the [SHIFT/GRAB] switch and CURSOR [◄]/[►] switches



⚠

- To enable the insert I/O point that you assigned in this screen, you must turn on the INS. button for the corresponding input channel, located in the INSERT/DIRECT POINT screen or in the INSERT/DIRECT VIEW screen. (→p.124, 126)
- Be aware that if the INS. button is turned on, the appropriate signal will not be input to that input channel unless both the insert out and the insert in point are patched to a jack.

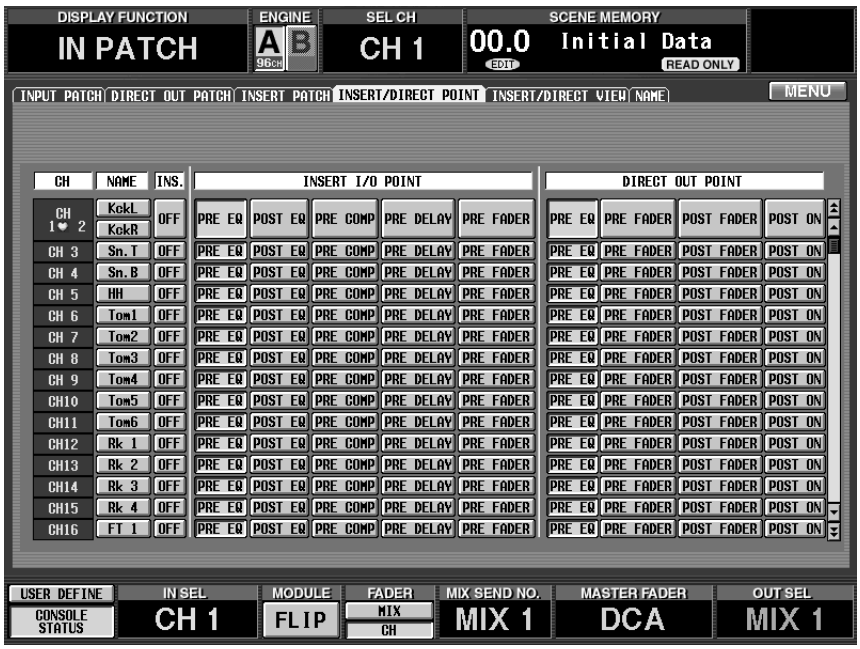
INSERT/DIRECT POINT

[Function]

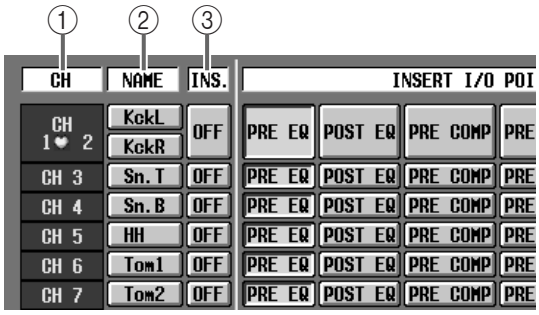
For each input channel, switch insertion on/off, and select the insertion I/O point and the direct out point.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **INPUT [PATCH]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **INPUT PATCH** button → **INSERT/DIRECT POINT** tab



[Screen functions]

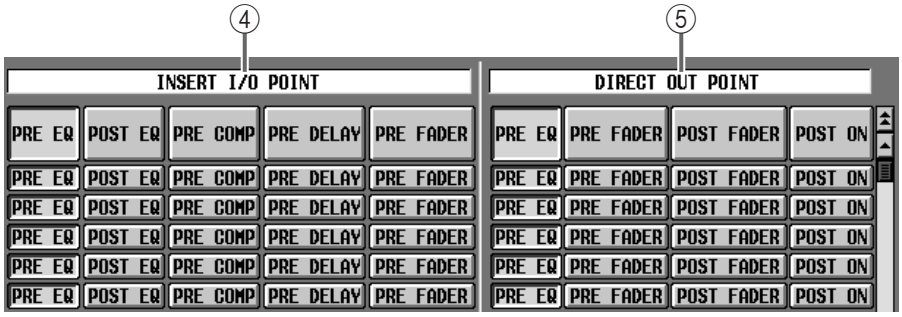


① **CH (input channel)**
This shows the number of the input channel that you are setting. For two channels that are a pair, this area will display a heart symbol, and items ②–⑤ will be common.

② **NAME**
The short name assigned to each input channel is displayed here. You can also click this area to assign a short name/long name.

③ **INS. (insert on/off)**
This button switches insertion on/off for each channel.

⚠ Before turning on this button, you must assign input/output jacks to the insert out/in points in the INSERT PATCH screen. Be aware that unless both the input and output jacks are patched, the appropriate signal will not be input to that input channel.



④ **INSERT I/O POINT**
For each input channel, select the insert I/O point (the location in the signal path at which the external device will be inserted) from the following choices.

- **PRE EQ** .....Immediately before the EQ
- **POST EQ** .....Immediately after the EQ
- **PRE COMP**.....Immediately before the compressor
- **PRE DELAY** .....Immediately before the delay
- **PRE FADER**.....Immediately before the fader

⑤ **DIRECT OUT POINT**
For each input channel, select the direct point (the location in the signal patch from which direct output will occur) from the following choices.

- **PRE EQ** .....Immediately before the EQ
- **PRE FADER**.....Immediately before the fader
- **POST FADER**.....Immediately after the fader
- **POST ON**.....Immediately after the [ON] switch

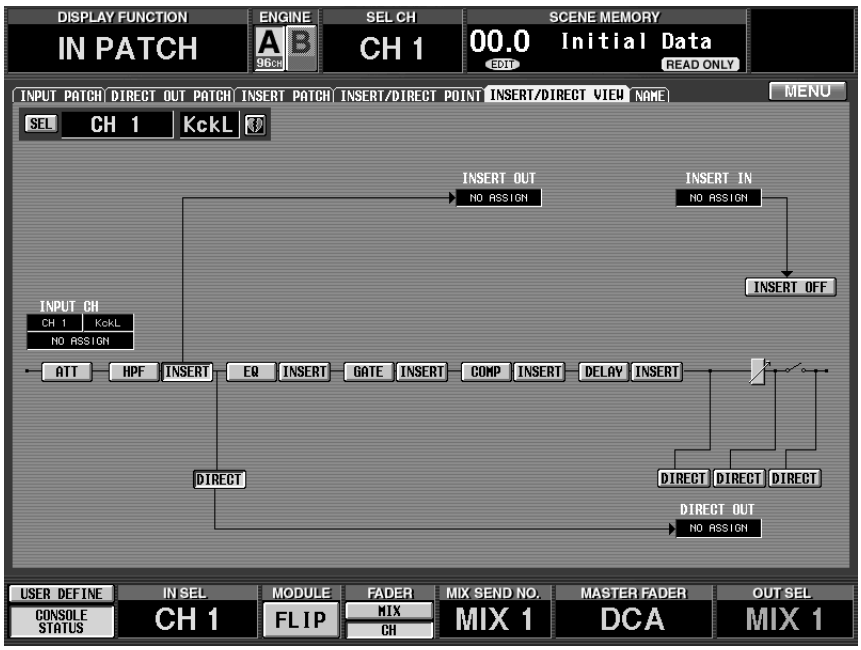
INSERT/DIRECT VIEW

[Function]

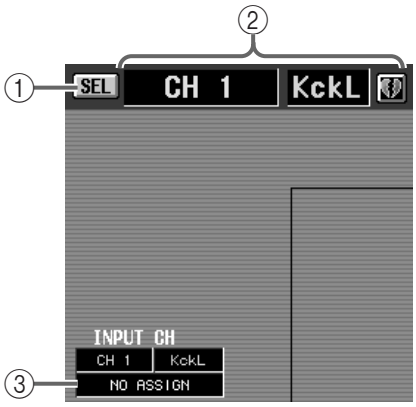
While viewing the block diagram displayed on-screen, select the insert I/O point and direct point of the desired input channel.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **INPUT** [**PATCH**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **INPUT PATCH** button → **INSERT/DIRECT VIEW** tab



[Screen functions]



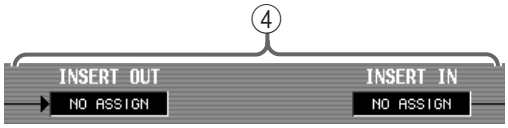
① **SEL (channel select)**
This button accesses the CH SELECT popup window, allowing you to select the input channel to which your operations will apply.

Hint

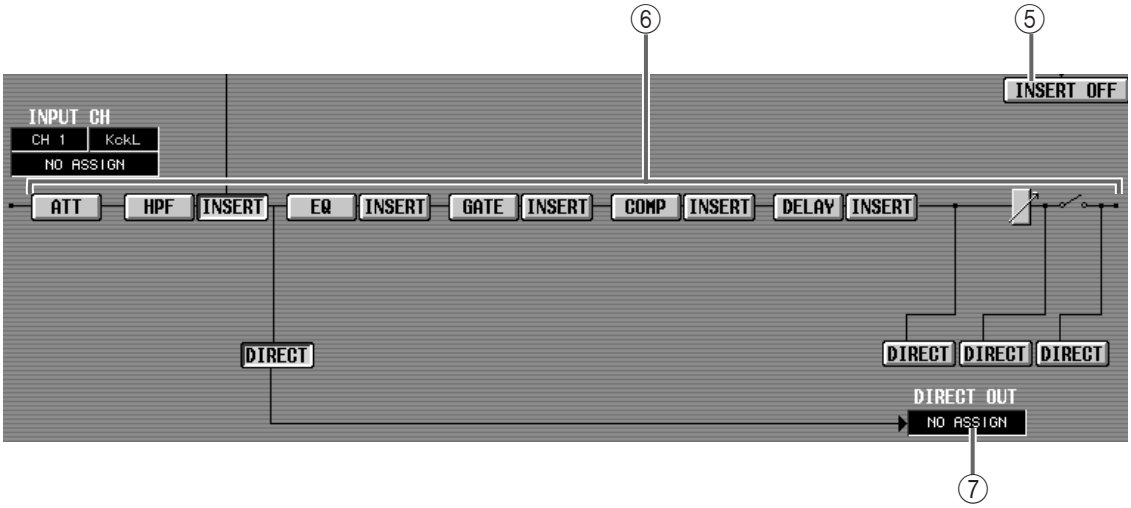
When this screen is first accessed, the input channel selected by INPUT [SEL] on the console will be displayed. If you change the applicable input channel in this screen, the console will also be affected.

② **Input channel number and short name**
This shows the number, the short name, and the pairing status of the currently selected input channel. You can click the heart symbol to enable/defeat pairing.

③ **Unit, card, channel type and number**
This displays the unit type and number, card number, and input jack channel number assigned to the currently selected input channel.



④ **Unit, card, channel type and number**
This displays the unit type and number, card number, and input/output jack channel number assigned to the insert out/insert in of the currently selected input channel.



⑤ **INSERT ON/OFF**
This button switches insertion on/off. It has the same function as the INS. button in the INSERT/DIRECT POINT screen (→p.124).

⑥ **Input channel block diagram**
This is a block diagram for the currently selected input channel. Each button has the following function.

- **INSERT button**
This button selects the insert I/O point. The wiring in the block diagram will change depending on the location of the INSERT button that you turn on.
- **DIRECT button**
This button selects the direct out point. The wiring in the block diagram will change depending on the location of the DIRECT button that you turn on.
- **ATT, HPF, EQ, GATE, COMP, DELAY buttons**
These access a window in which you can operate the corresponding parameters.

Hint

When the ATT, HPF, EQ, GATE, COMP, or DELAY buttons have been used to access the corresponding window, you can click the OK button in the screen to return to the INSERT/DIRECT VIEW screen.

The screen shot shown above is an example of a monaural input channel that has not been stereo-paired. If you have selected two stereo-paired input channels or one side of a stereo input channel, the block diagram will show two channels.

⑦ **DIRECT OUT**
This shows the unit type and number, card number, and output jack channel number that has been assigned as the direct output for the currently selected input channel.

NAME

[Function]

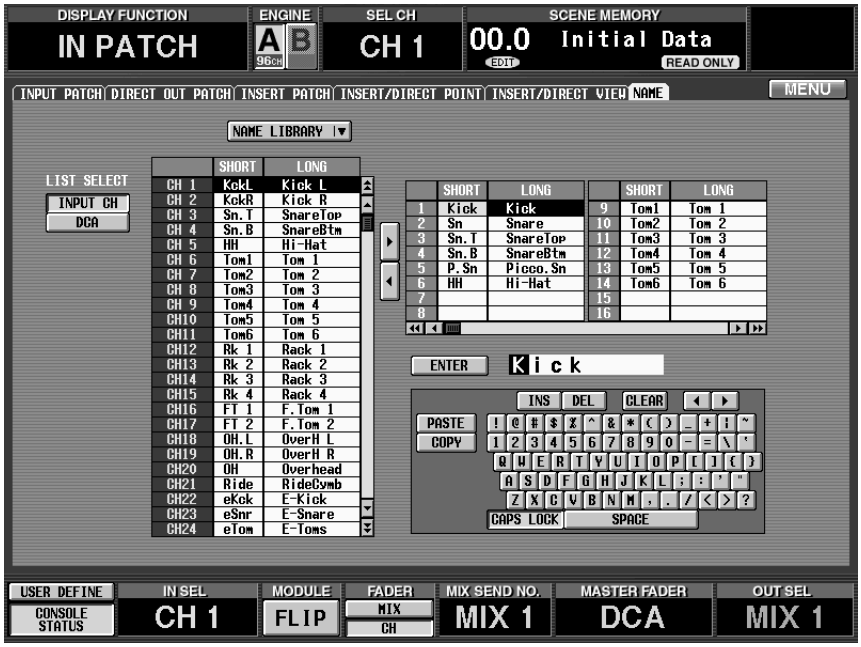
Assign a short name/long name to an input channel, or DCA.

■ **Console**

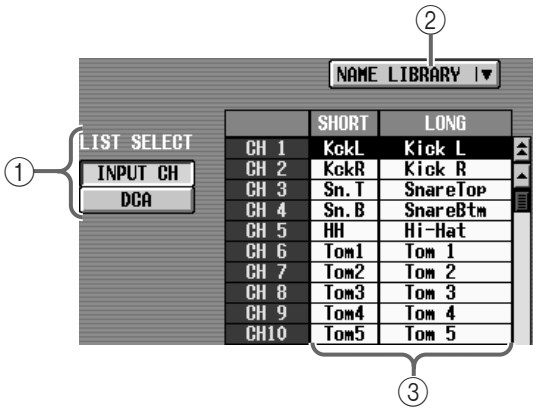
In the **LCD FUNCTION ACCESS** block, press the **INPUT [PATCH]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**

MENU button → **INPUT PATCH** button → **NAME** tab



[Screen functions]



① **LIST SELECT**

These buttons select the type of item that will be displayed in the name list (③). Each button corresponds to the following items.

- **INPUT CH** .....Input channels 1–96
  ST IN channels 1–8
- **DCA** .....DCA 1–12

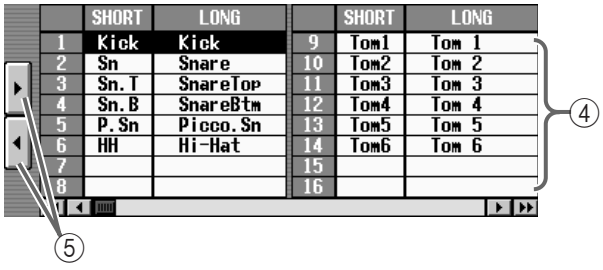
② **NAME LIBRARY**

This button accesses the NAME LIBRARY window in which you can store/recall name lists (→p.174).

③ **Name list**

This lists the names of the item selected in ①. If you click the short name area (four characters) or long name area (eight characters) in the list, it will be displayed in light blue, and can be edited using the text box (⑥) or character palette (⑦).

⚠ If DCA is selected in LIST SELECT (①), only long names are valid.



④ **Template name list**

In this list you can register frequently-used names or abbreviations such as "Kick," "SD," "Tom," and "Chor" as template names. If you click the short name area (four characters) or long name area (eight characters) in the list, it will be displayed in light blue, allowing you to edit the template itself using the text box (⑥) or character palette (⑦).

You can register 256 names, which are shared by inputs and outputs.

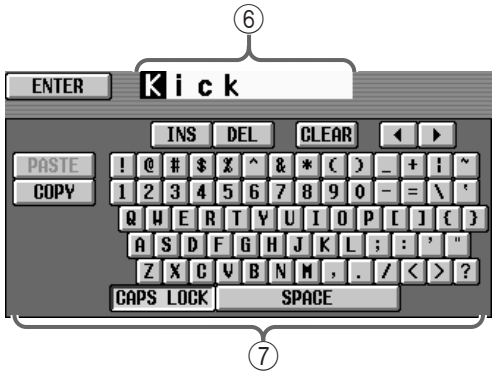
Hint

This template will maintain its previous state as long as you do not initialize all memories. To return to the factory settings, select "INITIALIZE ALL MEMORIES" when you perform memory initialization. For details on memory initialization, refer to p.194.
The contents registered in this template can be saved to a memory card as SETUP data. For details refer to p.40.

⑤ **Template copy buttons**
By clicking these buttons, you can copy both the short name and long name between the fields displayed in black or light blue in the selected name list or template list.

The [►] button copies from the name list to the template name list. The [◄] button copies from the template name list to the name list.

⚠ When copying between the DCA group and template name list, only the long name will be copied.



⑥ **Text box**
When the name area of the name list (③) or template name list (④) is in an editable state, the name for editing will be displayed here. Use the text palette (⑦) to input characters into this box, and click the ENTER button located at the left to input the name into the edited field (light blue) of the name list (③) or template name list (④). When input is completed, the editable state will be cancelled, and the field will be displayed in black to indicate the normal selected condition.

⑦ **Character palette**
This palette lets you input characters, numerals, and symbols into the text box. (For details on inputting characters and using the various buttons, refer to "CS1D Operating Manual (Basic Operation)" →p.20.)

Hint

You can also input text from a keyboard connected to the KEYBOARD connector of the CS1D front panel.

[Procedure]

Assigning a short name/long name to an input channel or DCA

1. **Use the two buttons of the LIST SELECT (①) section to select the type of item whose name you wish to change.**
2. **In the name list, click the short name or long name field for the channel whose name you wish to change. (Alternatively, use the [CURSOR] switches to move the cursor to the field, and press the [ENTER] switch.)**
   The selected field will be displayed in light blue to indicate that it can be edited.
3. **Use the character palette or connnected keyboard to input a name into the text box. (For the character input procedure, refer to "CS1D Operating Manual (Basic Operation)" →p.20.)**
   If the short name was selected in the name list you will be able to input four characters. If the long name was selected you will be able to input eight characters.
4. **After you have input the characters, click the ENTER button in the screen. (Alternatively, use the [CURSOR] switches to move the cursor to the ENTER button in the screen, and press the [ENTER] switch.)**
   The name will be registered in the name list.

Hint

When the cursor is on a field that is in an editable state (displayed in light blue), pressing the [ENTER] switch will have the same result as step 4.

[Procedure]

Registering a template name

1. **In the template name list, click the field in which you wish to register a name. (Alternatively, use the [CURSOR] switches to move the cursor to the desired field, and press the [ENTER] switch.)**
   The selected field will be displayed in light blue.
2. **Use the character palette to input a name into the text box. (For the character input procedure, refer to "CS1D Operating Manual (Basic Operation)" →p.20.)**
   If the short name was selected in the name list you will be able to input four characters. If the long name was selected you will be able to input eight characters.
3. **After you have input the characters, click the ENETR button in the screen. (Alternatively, use the [CURSOR] switches to move the cursor to the ENTER button in the screen, and press the [ENTER] switch.)**
   The name will be registered in the template name list.

Hint

When the cursor is on a field that is in an editable state (displayed in light blue), pressing the [ENTER] switch will have the same result as step 3.

[Procedure]

Using the template name list to assign a name to a channel/DCA

A name registered in the template name list can be input directly into the name list. This method is convenient when you wish to create a name list quickly.

1. **Use the two buttons of the LIST SELECT (①) section to select the type of item whose name you wish to change.**
2. **In the name list, move the cursor to the field whose name you wish to change, and press the [ENTER] switch. (Alternatively, use the [CURSOR] switches to move the cursor to the desired field, and press the [ENTER] switch.)**
   The selected line will turn light blue or black.
3. **In the template name list, click the name that you wish to use. (Alternatively, use the [CURSOR] switches to move the cursor to the desired field, and press the [ENTER] switch.)**
   The selected line will turn light blue or black.
4. **Click the [◄] template copy button (⑤). (Alternatively, use the [CURSOR] switches to move the cursor to the [◄] button in the screen, and press the [ENTER] switch.) When you do so, both the short name and long name will be copied from the template name list to the name list.**

Hint

A name that is already assigned to a channel or DCA group can also be copied to the template name list. In this case, click the [►] template copy button in step 4.

IN HA/INSERT (Input head amp/insert) functions

Settings for the head amp/phase section of the input unit

CH 1-24 – CH 73-96 / ST IN 1-8 / CH 1-24 INS – CH 73-96 INS / ST IN INS/UNIT LIB

[Function]

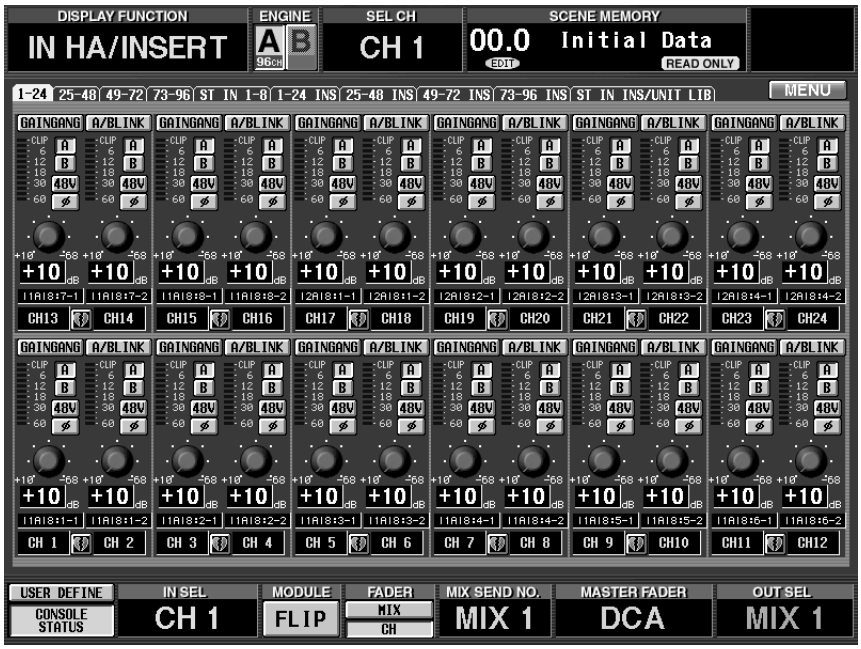
Make settings for the head amp assigned to the input channel/insert in point.

■ **Console**

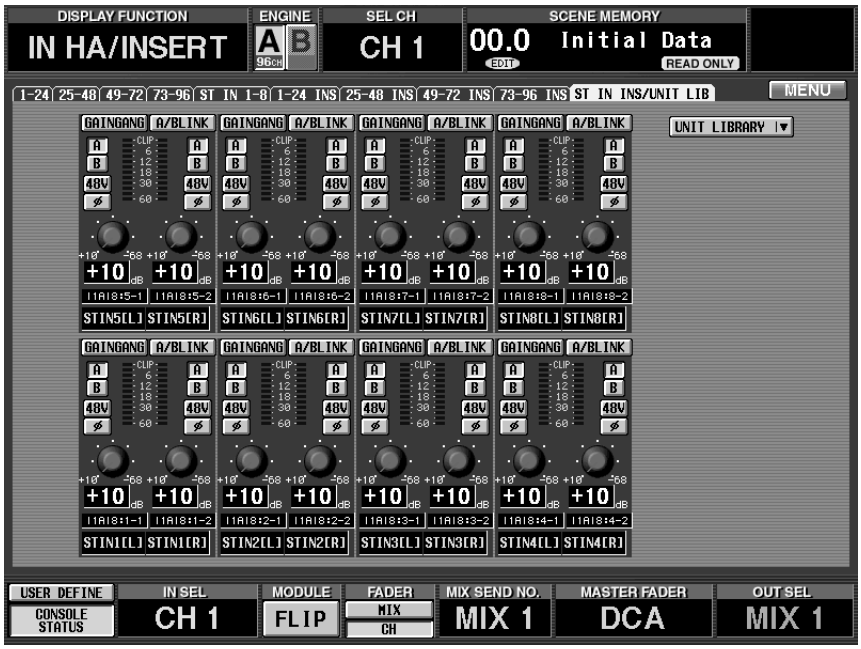
In the **LCD FUNCTION ACCESS** block, press the **INPUT [HA/INSERT]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**

MENU button → **INPUT HA/INSERT** button → The tab corresponding to the desired input channel/insert in point



When the CH 1-24 tab is selected

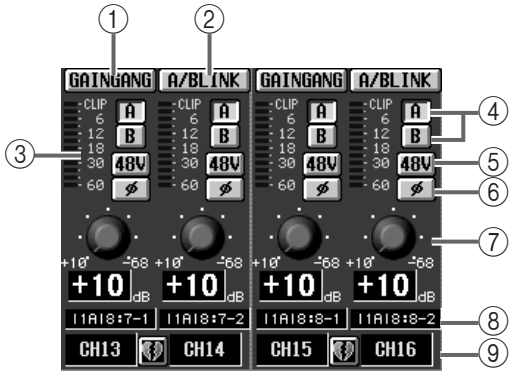


When the ST IN INS tab is selected

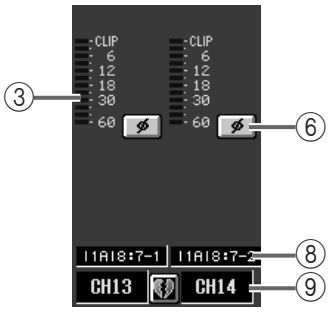
[Screen functions]

In the IN/INS screen, the state of the parameters will be displayed according to the type of unit or card that is assigned to that channel.

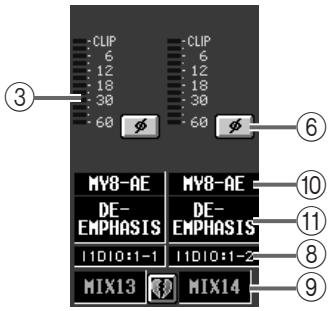
For an AD card with head amp (LMY2-ML)



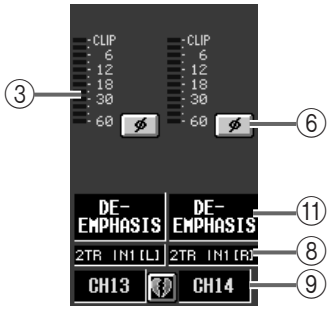
For an AD card without head amp (LMY4-AD)



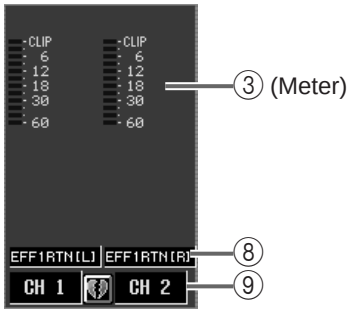
For a digital I/O card (MY card)

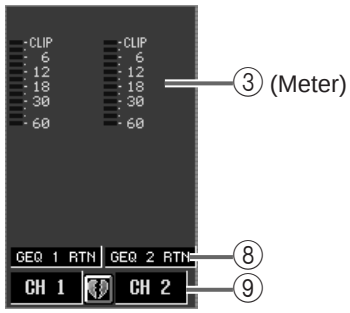


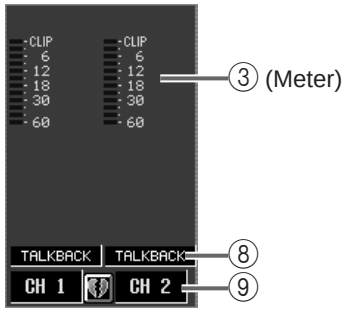
For a 2TR IN is assigned



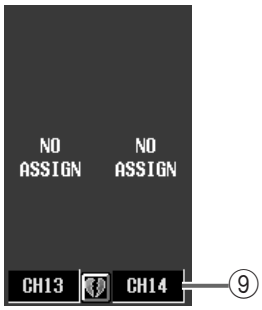
For an effect return, graphic EQ output, or talkback signal is assigned







For a channel to which nothing is assigned



① **GAIN GANG**
This button links the head amp gain setting between adjacent input channels in the screen. (The offset value will be preserved.) When this button is on, rotating the GAIN knob (⑦) of one channel will cause the knob of the other channel to follow, while preserving the current level difference.

② **A/B LINK**
For adjacent input channels on the screen, this button links the selection of input jacks A/B on an AD card with head amp. If this button is on, switching the A/B button (④) for one channel will force the same button to be selected for the other channel as well.

If an AD card with head amp is patched to multiple channels, switching the A/B setting of a channel for which A/B LINK is on will cause A/B to change in the same way for all patch destination channels.

In addition, if there are any channels that are linked to the patch destination channel, they will be switched in the same way.

③ **Level meter**
This is a peak level meter showing the input level.

④ **A/B**
This button switches between input jacks A/B of the AD card with head amp.

⑤ **+48 V**
For each channel, this button switches the phantom power on/off for the AD card with head amp.

⚠ The +48V switch on the front panel of the AI8 input unit is the master phantom power switch for the entire unit. If this switch is off, phantom power cannot be used on that unit (regardless of the setting of the +48V button in the display).

⑥ **ø (phase)**
This button switches the input signal between normal and inverted phase.

⑦ **GAIN**
This knob adjusts the input sensitivity of the head amp. It covers a range of +10dB — –68 dB, and the current value is displayed in the numerical box immediately below the knob.

⚠ The PAD will be internally switched on or off when the gain of the LMY4-MLF card (including the AI8-ML8F unit) internal head amp is adjusted between –8 dB and –7 dB. Keep in mind that noise may be generated if there is a difference between the Hot and Cold output impedance of the external device connected to the card when using phantom power.

⑧ **Unit type/ID number/channel number**
This displays the input unit type and ID number, slot number, and input jack channel number.

⑨ **Pair setting**
This displays the input channel number and the pairing status. You can click the heart symbol to select/defeat pairing.

⑩ **Digital I/O card**
If a digital I/O card is installed in the digital input/output unit, the type of digital I/O card will be shown here.

⑪ **DE-EMPHASIS**
If a signal with emphasis (emphasis = ON) is input to the corresponding port of the digital input/output unit, this area will indicate "DE-EMPHASIS."

⑫ **UNIT LIBRARY**
This button accesses the UNIT LIBRARY window in which preamp settings for all units can be stored/recalled (→p.170). This button will be displayed only when the ST IN INS tab is selected.

IN EQ (Input equalizer) functions

Input channel EQ settings

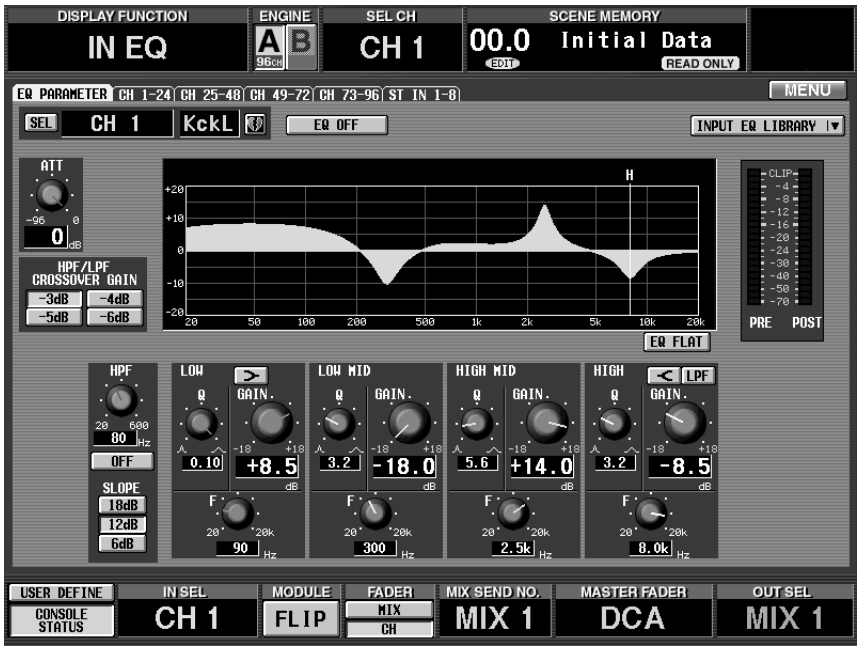
EQ PARAMETER

[Function]

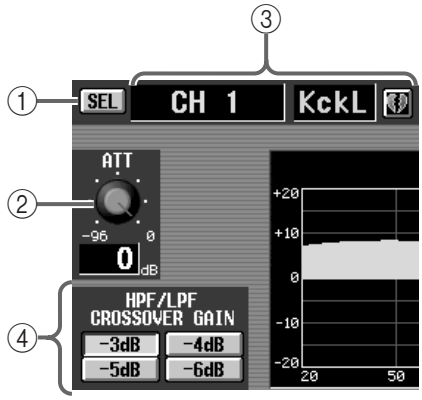
Set the attenuator, HPF, and four-band EQ for the selected input channel.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **INPUT** [**EQ**] switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **INPUT EQ** button → **EQ PARAMETER** tab



[Screen functions]



① **SEL (channel select)**
This button accesses the CH SELECT popup window, allowing you to select the input channel to which your operations will apply.

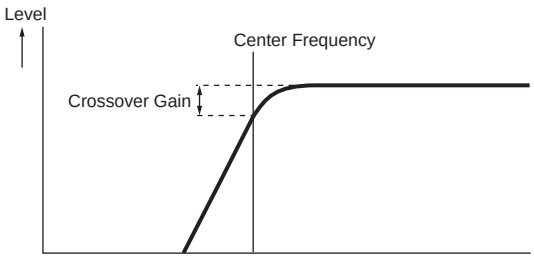
② **ATT (attenuator)**
This knob sets the amount of attenuation after AD conversion. The range is 0 dB — –96 dB, and the current value is displayed in the numerical box immediately below the knob.

③ **Input channel number and short name**
This shows the number, the short name, and the pairing status of the currently selected input channel. You can click the heart symbol to enable/defeat pairing.

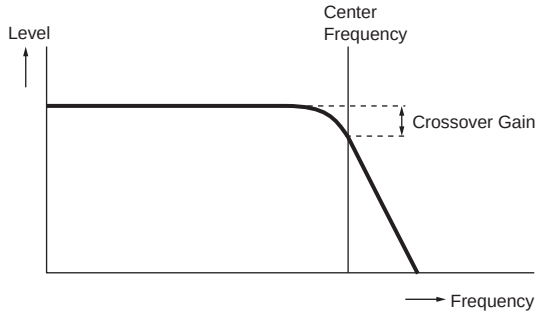
④ **HPF/LPF CROSSOVER GAIN**
When using HPF, or when using the HIGH band as LPF, this specifies how greatly the level will be attenuated at the center frequency.

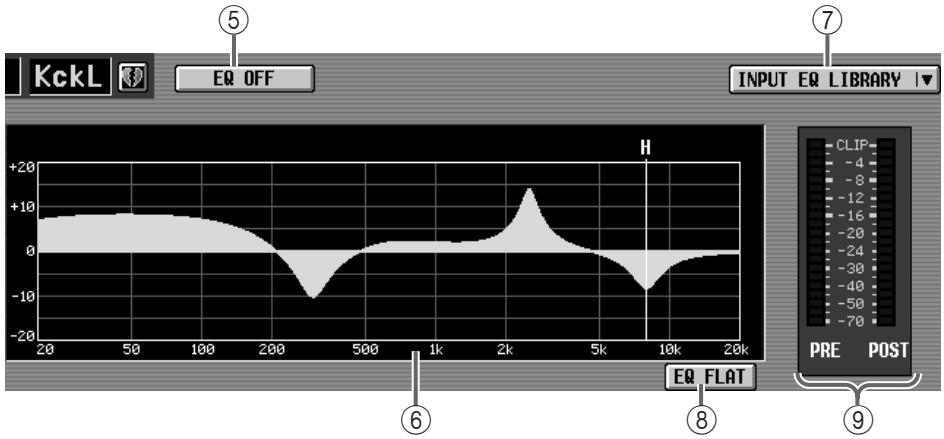
However, this parameter is valid only if the HPF/LPF SLOPE parameter is set to 12 dB or 18 dB. If the SLOPE parameter is set to 6 dB, the CROSSOVER parameter will be fixed at –3 dB.

• **HPF**



• **HIGH band**





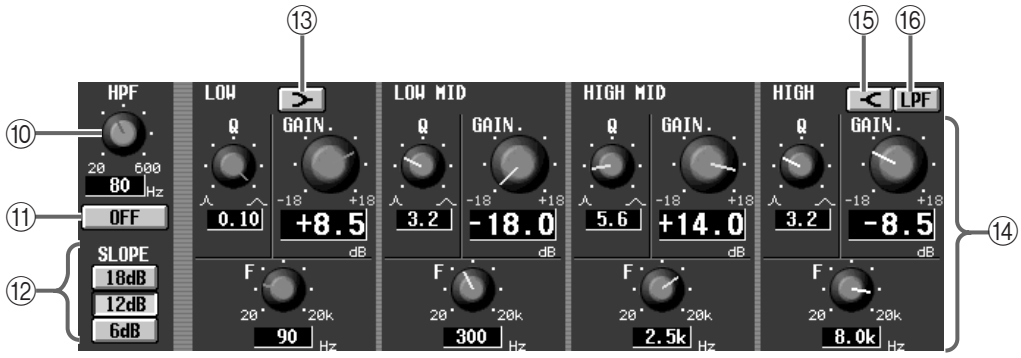
⑤ **EQ ON/OFF**
This button switches the four-band EQ on/off.

⑥ **EQ graph**
This graph displays the settings of the various EQ parameters. The colored vertical lines indicate the Freq (center frequency) of each band. (Each of these lines is the color of the markings around the knobs of the corresponding band.) As you adjust the Q or Gain of each band, the response curve will change accordingly.

⑦ **INPUT EQ LIBRARY**
This button accesses the EQ LIBRARY window, allowing you to store/recall EQ settings (→p.176).

⑧ **EQ FLAT**
This button resets the parameters of the four-band EQ to their default values (±0.0 dB).

⑨ **Level meter**
These meters display the peak levels before the EQ and after the EQ. If the signal clips before or after the EQ, the corresponding CLIP segment will light.



⑩ **HPF (high pass filter)**
This knob specifies the cutoff frequency of the high pass filter. The range is 20 Hz – 600 Hz.

⑪ **HPF ON/OFF (high pass filter on/off)**
This button switches the high pass filter on/off.

⑫ **SLOPE**
These buttons select the slope of the high pass filter from 6 dB, 12 dB, or 18 dB.

⑬  **(LOW shelving)**
If this button is on, LOW EQ will function as a shelving filter. The Q knob will disappear.

⑭ **Knobs**
For each band, these buttons adjust the Q, F (center frequency), and GAIN (amount of boost/cut).

⑮  **(HIGH shelving)**
If this button is on, HIGH EQ will function as a shelving filter. The Q knob will disappear.

⑯ **LPF**
If this button is on, HIGH EQ will function as a low pass filter. The GAIN knob will disappear, and Q will change to SLOPE.

CH 1-24 – CH 73-96/ST IN 1-8

[Function]

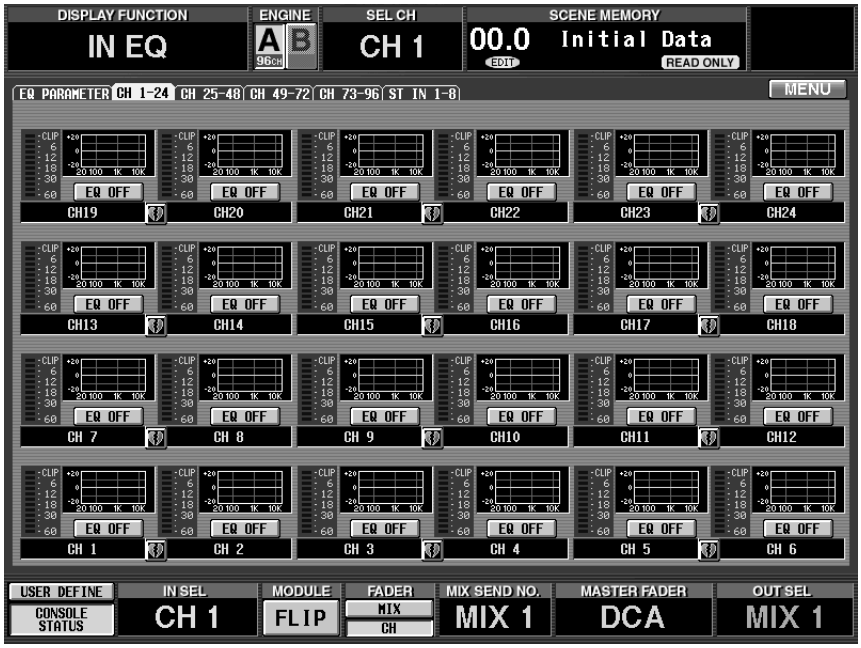
View a list of the EQ settings for each input channel. Also, copy EQ settings between input channels.

■ **Console**

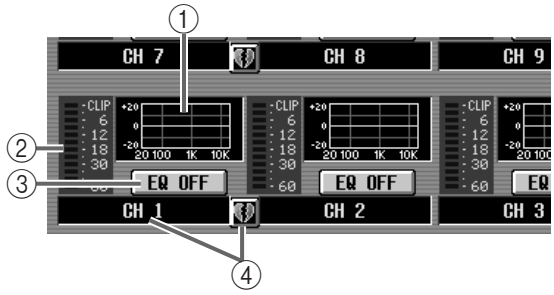
In the **LCD FUNCTION ACCESS** block, press the **INPUT [EQ]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**

MENU button → **INPUT EQ** button → The tab for the desired input channel/insert in point



[Screen functions]



① **EQ graph**
This is a mini-graph that shows the EQ settings for each input channel. By clicking the graph where the cursor is located, you can access the EQ PARAMETER screen for the corresponding channel. By dragging the graph area to another input channel, you can copy EQ settings.

Hint

For two paired channels or a stereo input channel, the graph will be shared, and level meters for the two channels will be displayed.

② **Meter**
This meter displays the post EQ peak levels. If the signal clips after the EQ, the corresponding CLIP segment will light.

③ **EQ ON/OFF**
This button switches the EQ on/off.

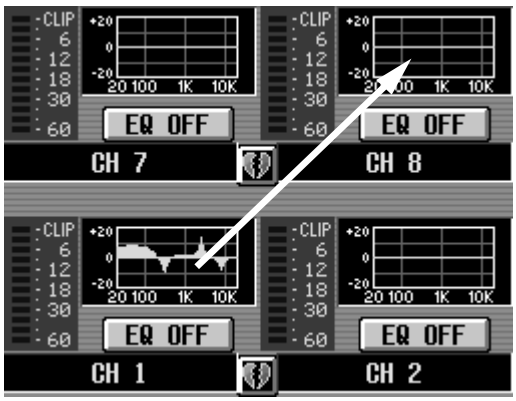
It is linked with the EQ ON/OFF button in the EQ PARAMETER screen.

④ **Pair setting**
This shows the number and the pairing status of the input channel. You can click the heart symbol to enable/defeat pairing.

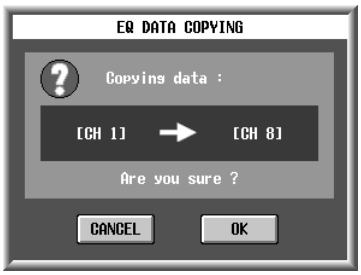
[Procedure]

Copying EQ settings to an input channel within the same tab (Example: copying from ch.1 to ch.8)

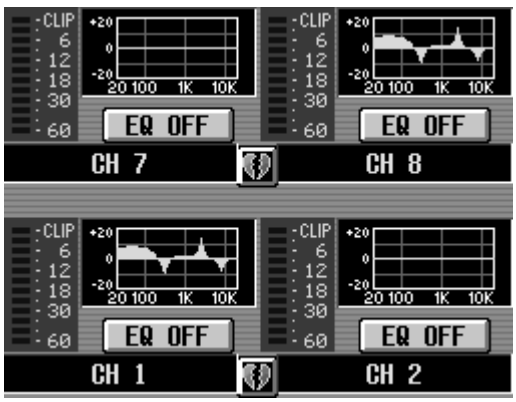
1. **Drag the mini-graph from the copy source input channel and drop it onto the copy destination input channel.**



A window will appear, asking you to confirm the copy. To execute the copy, click the OK button. To cancel, click the CANCEL button.



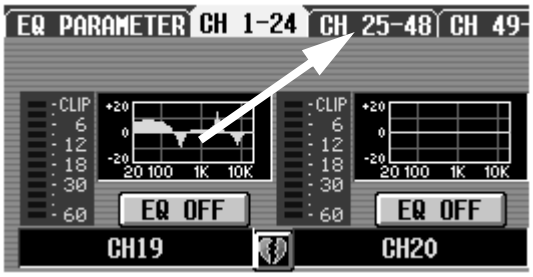
2. **Click the OK button, and the settings will be copied.**



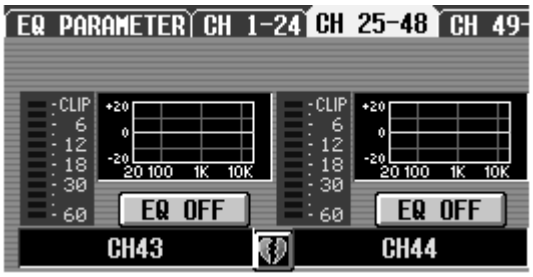
Copying EQ settings to an input channel located in a different tab (Example: copying from ch.19 to ch.44)

1. **Drag the mini-graph from the copy source input channel onto the tab of the copy destination.**

⚠ It is not possible to copy the data by dropping it on any screen other than the CH 1-24, CH 25-48, CH 49-72, CH 73-96 or ST IN 1-8 screens that are displayed when you press the INPUT [EQ] switch in the LCD FUNCTION ACCESS block of the CS1D console.

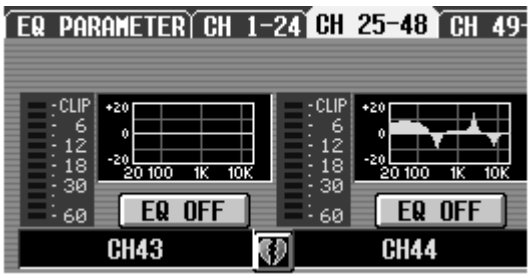


2. **The copy destination tab screen will appear.**



3. **Drag and drop the mini-graph onto the copy destination input channel.**
A window will appear, asking you to confirm the copy. To execute the copy, click the OK button. To cancel, click the CANCEL button.

4. **Click the OK button, and the settings will be copied.**



IN GATE/COMP function

Gate/comp settings for the input channel

GATE PRM (gate parameters)

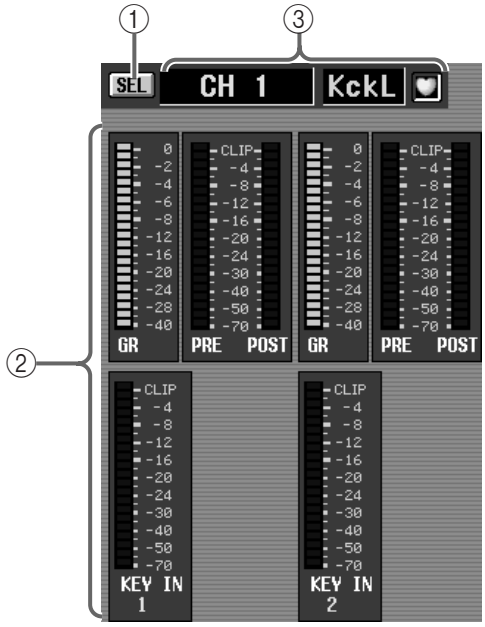
[Function]

Make gate-related settings for the selected input channel.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **INPUT [GATE/COMP]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **INPUT GATE/COMP** button → **GATE PRM** tab

[Screen functions]



① **SEL (channel select)**
This button accesses the CH SELECT popup window, allowing you to select the channel to which your operations will apply.

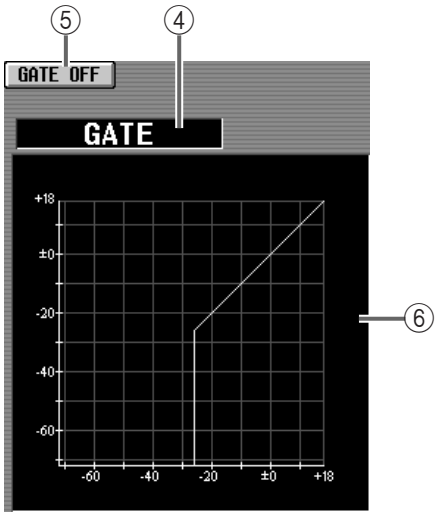
② **Level meters**
These meters show the amount of gain reduction, the peak levels before and after the gate, and the peak level of the key-in signal (the reference signal that operates the gate). When the signal clips, the corresponding CLIP segment will light.

Hint

If you have selected two paired channels or either side of a stereo input channel, level meters for both channels will be displayed.

In the UTILITY function PREFERENCE screen, you can specify whether the GR meter display will be linked to the noise gate on/off setting. If linking is turned on, the GR meter will be displayed only when the noise gate is on, and will be hidden when the noise gate is off. If linking is turned off, the GR meter will always be displayed.

③ **Input channel number and short name**
This shows the number, the short name, and the pairing status of the currently selected input channel. You can click the heart symbol to enable/defeat pairing.



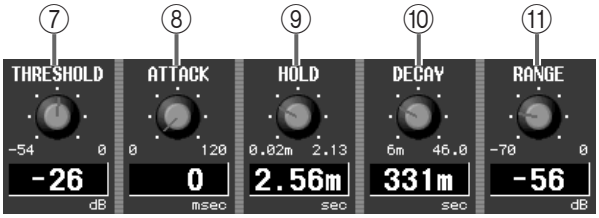
④ **Type**
This indicates the type of the currently selected gate.

Hint

Normally, you will switch the gate type by recalling a different type of gate in the GATE LIBRARY window. It is not possible to change the type in this screen.

⑤ **GATE ON/OFF**
This button switches the gate on/off.

⑥ **Graph**
This is a graph showing the settings of the various gate parameters.



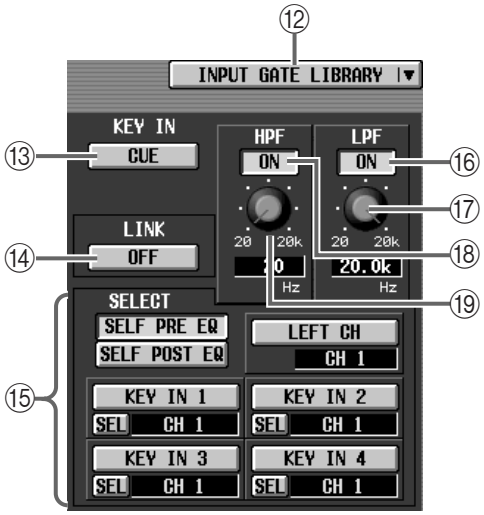
⑦ **THRESHOLD (threshold level)**
This sets the nominal level at which the gate will open or close. When the key-in signal exceeds this level, the gate will open. When the key-in signal falls below this level, the gate will close.

⑧ **ATTACK (attack time)**
This sets the time from when the key-in signal exceeds the threshold level until the gate opens.

⑨ **HOLD (hold time)**
This sets the time that the gate will remain open after the key-in signal falls below the threshold.

⑩ **DECAY (decay time)**
This sets the time from when the specified hold time has elapsed until the gate closes.

⑪ **RANGE**
This sets the amount of attenuation while the gate is closed.

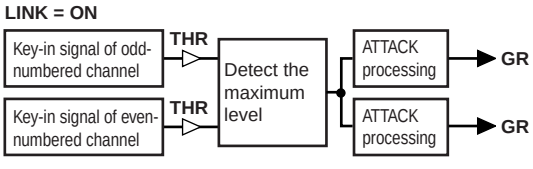


⑫ **INPUT GATE LIBRARY**
This button accesses the GATE LIBRARY window, where you can store/recall gate settings (→p.180).

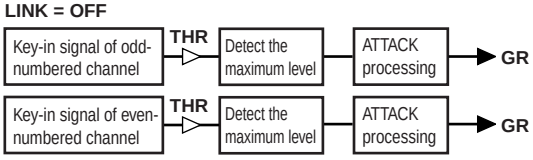
⑬ **KEY IN CUE**
This button monitors the key-in signal of the selected input channel.

⑭ **LINK ON/OFF (key-in sync)**
This specifies whether the operation of the compressor will be linked via the key-in signal for adjacent odd-numbered → even-numbered input channels (link=on) or whether they will operate using separate key-in signals (link=off).

- **Key-in signal flow when link=on**



- **Key-in signal flow when link=off**



⑮ **SELECT**
Select the key-in signal from the following choices.

- **SELF PRE EQ**
  Pre-EQ signal of the currently selected input channel
- **SELF POST EQ**
  Post-EQ signal of the currently selected input channel
- **LEFT CH**
  Post-EQ signal of the previous-numbered input channel
- **KEY IN 1–KEY IN 4**
  Signal of the input channel selected in the respective CH SELECT menu

⚠ If input channel 1 or the L channel of a ST IN channel is selected, the LEFT CH button will not be displayed.

⑯ **LPF ON/OFF (low pass filter on/off)**
This button is an on/off switch for the low pass filter of the key-in signal.

⑰ **Knob**
This knob sets the cutoff frequency of the low pass filter. The numerical box below shows the current value.

⚠ If input channel 1 or the L channel of a ST IN channel is selected, the LEFT CH button will not be displayed.

⑱ **HPF ON/OFF (high pass filter on/off)**
This button is an on/off switch for the high pass filter of the key-in signal.

⑲ **Knob**
This knob sets the cutoff frequency of the low pass filter. The numerical box below shows the current value.

Hint
The low pass filter and high pass filter do not affect the signal that is sent from the original input channel to the various buses.

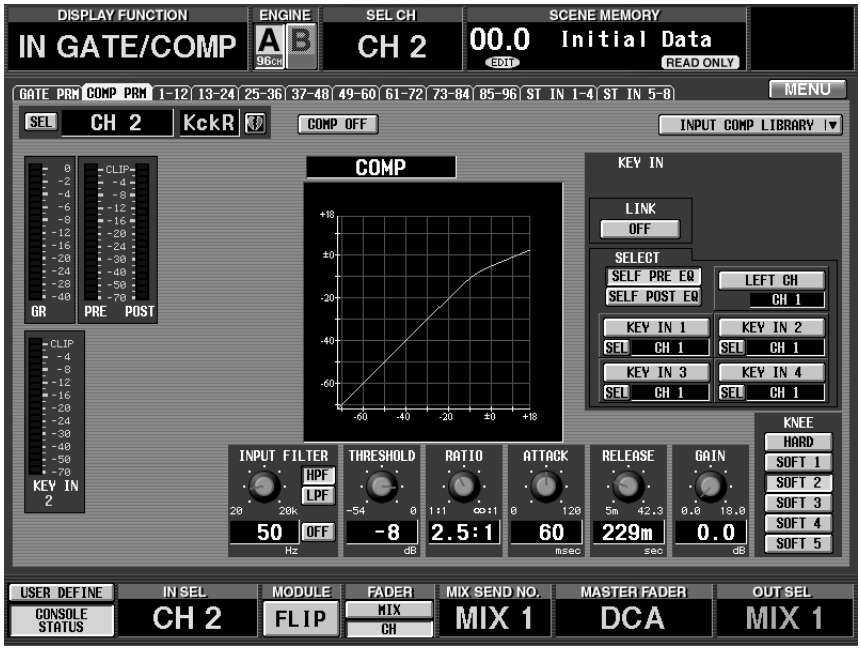
COMP PRM (compressor parameters)

[Function]

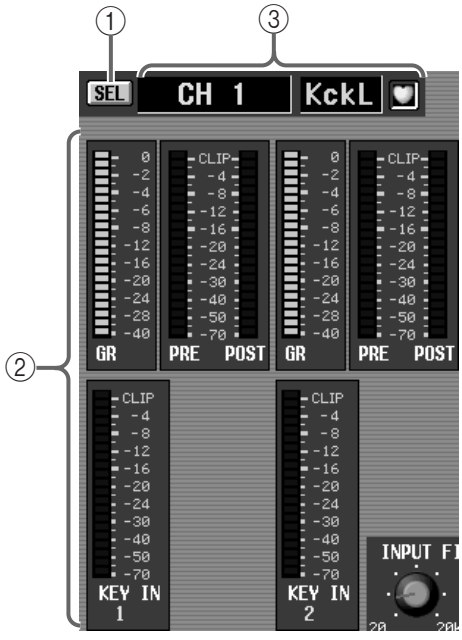
Make compressor-related settings for the selected input channel.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **INPUT [GATE/COMP]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **INPUT GATE/COMP** button → **COMP PRM** tab



[Screen functions]



① **SEL (channel select)**
This button accesses the CH SELECT popup window, allowing you to select the channel to which your operations will apply.

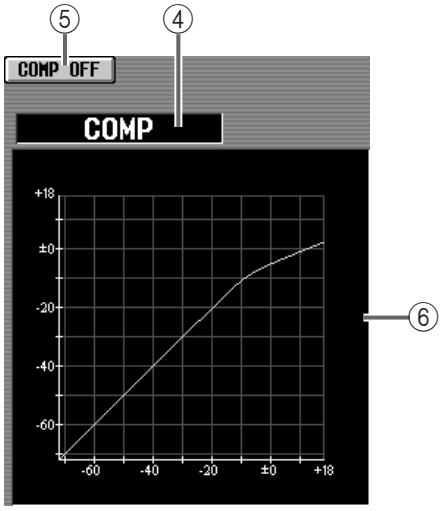
② **Level meters**
These meters show the amount of gain reduction, the peak levels before and after the compressor, and the peak level of the key-in signal (the reference signal that operates the compressor). When the signal clips, the corresponding CLIP segment will light.

Hint

If you have selected two paired channels or either side of a stereo input channel, level meters for both channels will be displayed.

In the UTILITY function PREFERENCE screen, you can specify whether the GR meter display will be linked to the compressor on/off setting. If linking is turned on, the GR meter will be displayed only when the compressor is on, and will be hidden when the compressor is off. If linking is turned off, the GR meter will always be displayed.

③ **Input channel number and short name**
This shows the number, the short name, and the pairing status of the currently selected input channel. You can click the heart symbol to enable/defeat pairing.

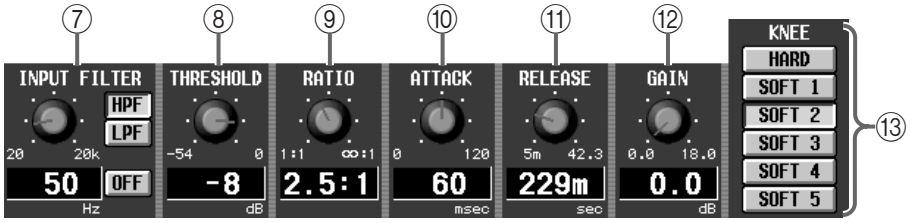


④ **Type**
This indicates the type of the currently selected compressor.

Hint
Normally, you will switch the compressor type by recalling a different type of compressor in the INPUT COMP LIBRARY window. It is not possible to change the type in this screen.

⑤ **COMP ON/OFF (compressor on/off)**
This button switches the compressor on/off.

⑥ **Graph**
This graph shows the various parameter settings of the compressor.

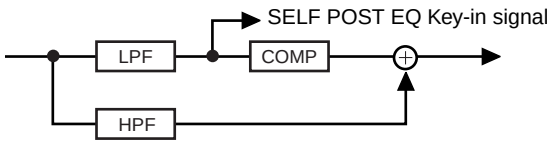


⑦ **INPUT FILTER**
These filters modify the signal that is processed by the compressor. Use the buttons located at the right to select the type of filter (HPF/LPF) and the on/off setting. Use the knob located at the left to set the cut-off frequency (common to LPF/HPF).

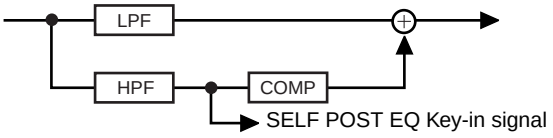
If LPF is on, the compressor will be applied to the signal that has passed through the LPF, and will then be mixed with the signal that has passed through the HPF. If HPF is on, the compressor will be applied to the signal that has passed through the HPF, and will then be mixed with the signal that has passed through the LPF.

In this case, the cutoff frequency of the LPF and HPF will be linked.

- **If COMP is on and LPF is also on**



- **If COMP is on and HPF is also on**



Hint
If you want this to function as a de-esser, use the SELECT (key-in select) setting (⑯) described on the following page to select SELF POST EQ.

⑧ **THRESHOLD (threshold level)**
This sets the nominal level at which the compressor will begin to operate. When the key-in signal exceeds this level, the input signal will start to be compressed. When the key-in signal falls below this level, compression will be defeated.

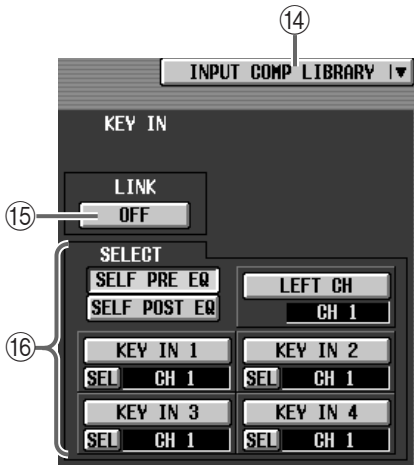
⑨ **RATIO**
This sets the ratio at which the input signal will be compressed when the key-in signal exceeds the threshold level.

⑩ **ATTACK (attack time)**
This sets the time from when the key-in signal exceeds the threshold level until compression begins.

⑪ **RELEASE (release time)**
This sets the time from when the key-in signal falls below the threshold level until compression is defeated.

⑫ **GAIN**
This sets the gain of the output level.

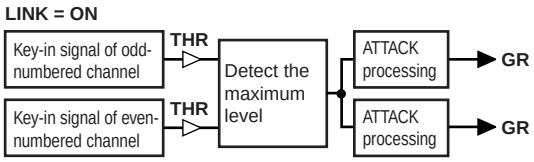
⑬ **KNEE**
This sets the sharpness of the angle at which the output level will change. A setting of HARD produces the sharpest angle, and a setting of SOFT5 produces the softest angle.



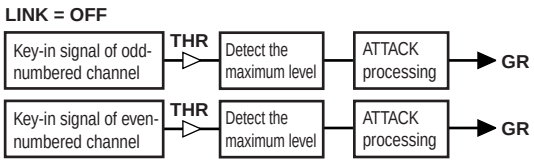
⑭ **INPUT COMP LIBRARY (Input compressor library)**
This button accesses the COMP LIBRARY window, where you can store/recall compressor settings (→p.182).

⑮ **LINK ON/OFF (key-in link)**
This specify whether the key-in signals will link compressor operation for adjacent odd-numbered → even-numbered channels (link=on), or whether the compressors will operate with independent key-in signals (link=off).

- **Key-in signal flow when link=on**



- **Key-in signal flow when link=off**



⚠

- Be careful not to confuse "compressor link" with "stereo pairing of input channels." Turning on compressor link simply causes the compressors to be linked by the key-in signal; the compressor parameters themselves can be set independently for each channel.
- When input channels are used as a stereo pair, compressor link will automatically be turned on, and the compressor parameter values will also be linked. However you are free to subsequently turn linking off and modify the parameter values.

⑯ **SELECT (Key-in select)**
Select the key-in signal from the following choices.

- **SELF PRE EQ**
Pre-EQ signal of the currently selected input channel

- **SELF POST EQ**
Pre-compressor signal of the currently selected input channel

- **LEFT CH**
The signal from the previously-numbered input channel (the same signal as the SELF POST EQ of the previous channel)

⚠ If you select LEFT CH, the post- INPUT FILTER signal of the previously-numbered channel will be the key-in signal. However, please be aware that the INPUT FILTER will not function unless COMP is on.

- **KEY IN 1–KEY IN 4**
Signal of the input channel selected in the respective CH SELECT menu

⚠ If input channel 1 or the L channel of a ST IN channel is selected, the LEFT CH button will not be displayed.
Nor will it be displayed for paired channels.

CH 1-12 – CH 85-96/ST IN 1-4 – ST IN 5-8

[Function]

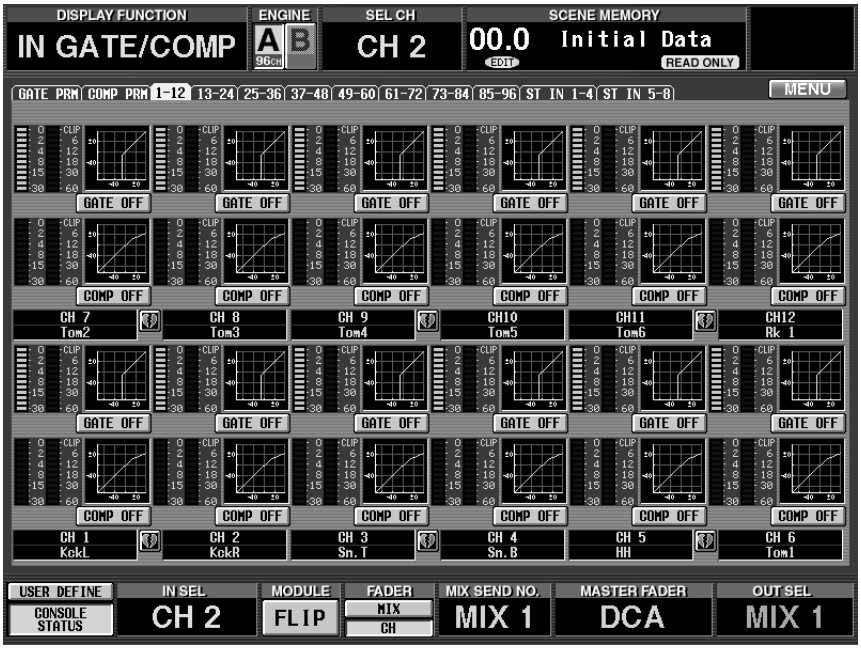
View a list of the gate/compressor settings for each input channel. Also, copy settings between input channels.

■ **Console**

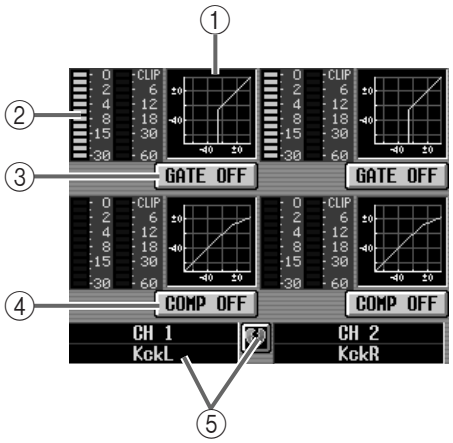
In the **LCD FUNCTION ACCESS** block, press the **INPUT [GATE/COMP]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**

MENU button → **INPUT GATE/COMP** button → The tab for the desired input channel



[Screen functions]



① **GATE graph**
This is a mini-graph that shows the gate/compressor settings for each input channel. By clicking the graph where the cursor is located, you can access the COMP PARAMETER/GATE PARAMETER popup window for the corresponding channel. By dragging the graph area to another input channel, you can copy settings.

Hint

For two paired channels or a stereo input channel, the graph will be shared by the two channels.

② **Meters**
These meters show the gain reduction amount of the gate and compressor, and the peak levels after passing through the gate/compressor.

③ **GATE ON/OFF**
This button switches the gate on/off. It is linked with the GATE ON/OFF button in the GATE PARAMETER popup window.

④ **COMP ON/OFF (compressor on/off)**
This button switches the compressor on/off.

It is linked with the COMP ON/OFF button in the COMP PARAMETER popup window.

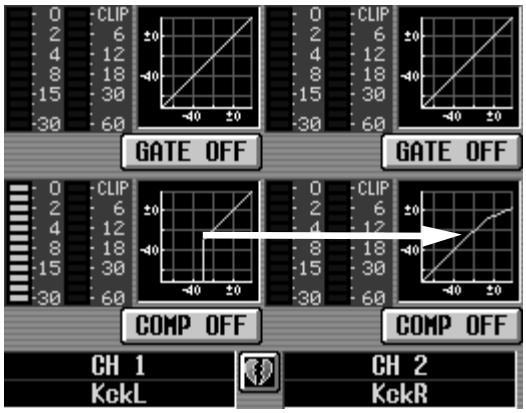
⑤ **Pair setting**
This displays the input channel number and its pairing status.

You can also click the heart symbol to enable/defeat pairing.

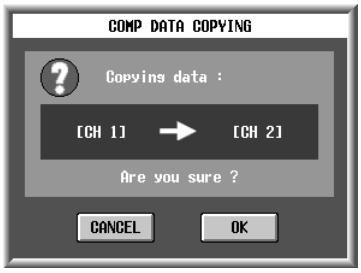
[Procedures]

Copying gates/compressors to an input channels within the same tab (Example: copying from ch.1 to ch.2)

1. **Drag the mini-graph from the copy source input channel and drop it onto the copy destination input channel.**

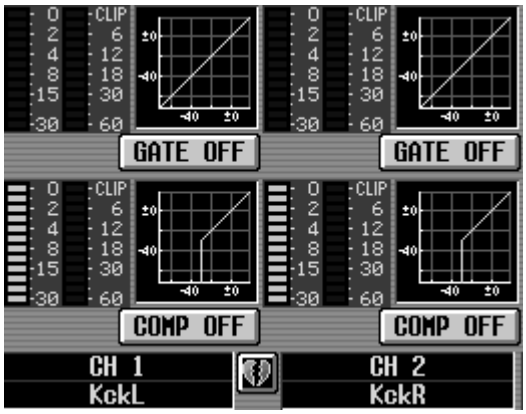


A window will appear, asking you to confirm the copy. To execute the copy, click the OK button. To cancel, click the CANCEL button.



⚠ If you attempt to drag and drop a Gate mini-graph to Compressor (or the reverse), a warning message will appear, and the operation will not be executed.

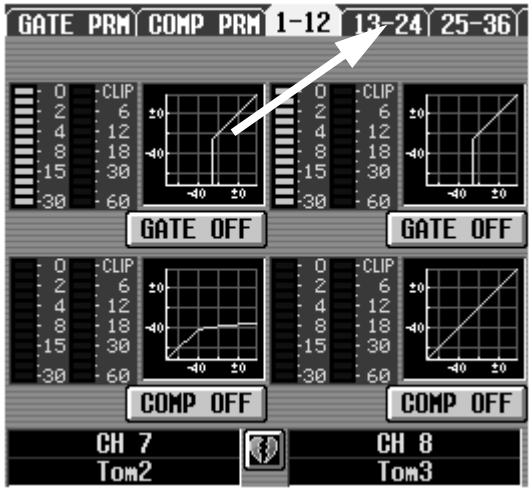
2. **Click the OK button, and the settings will be copied.**



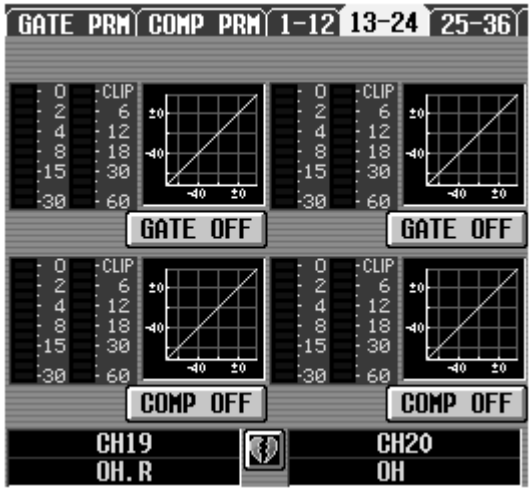
Copying gate/compressor settings to an input channel located in a different tab (Example: copying from ch.7 to ch.20)

1. **Drag the mini-graph from the copy source input channel onto the tab of the copy destination.**
The screen for the copy destination tab will appear.

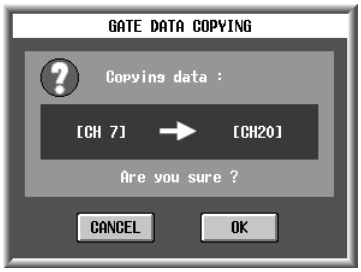
⚠ It is not possible to copy settings by dropping the mini-graph in any screen other than the 1-12, 13-24, 25-36, 37-48, 49-60, 61-72, 73-84, 85-96, ST IN 1-4, and ST IN 5-8 screens accessed by pressing the LCD FUNCTION ACCESS block INPUT [GATE/COMP] switch.



2. **The copy destination tab screen will appear.**

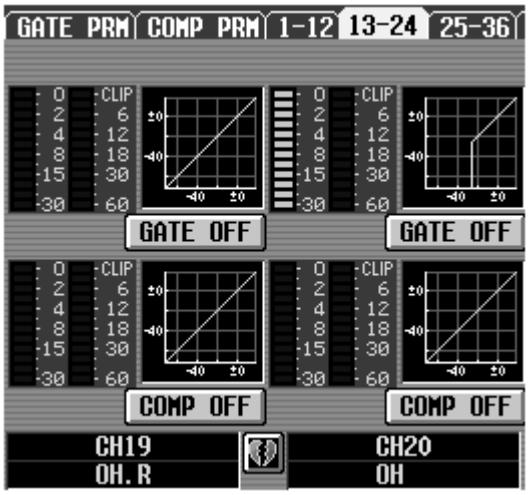


3. **Drag and drop the mini-graph onto the copy destination input channel.**
   A window will appear, asking you to confirm the copy. To execute the copy, click the OK button. To cancel, click the CANCEL button.



⚠ If you attempt to drag and drop a Gate mini-graph to Compressor (or the reverse), a warning message will appear, and the operation will not be executed.

4. **Click the OK button, and the settings will be copied.**



IN DELAY functions

Make settings for individual input channel delay

CH 1–24 – CH 72-96/ST IN 1-8

[Functions]

Make delay settings for each input channel.

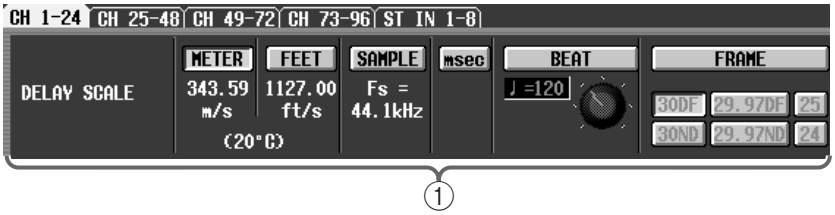
■ **Console**

In the **LCD FUNCTION ACCESS** block, press the **INPUT [DELAY]** switch (Press repeatedly until the desired input channel appears.)

■ **Display**

MENU button → **INPUT DELAY** button → The tab corresponding to the desired input channel

[Screen functions]



① **DELAY SCALE**

Select the desired unit of delay time. The unit you select here will be used in the numerical box below the delay time setting knob (③).

The units you select here are linked with the OUT DELAY function DELAY SCALE setting. If you change the selected units, your selection will be reflected by the delay time display in other screens.

- **METER**

The delay time will be displayed as a distance (in meters), calculated by the speed of sound (343.59 m/s in an air temperature of 20°C) × the delay time (in seconds).

- **FEET**

The delay time will be displayed as a distance (in feet), calculated by the speed of sound (1127.26 feet/s in an air temperature of 20°C) × the delay time (in seconds).

- **SAMPLE (number of samples)**

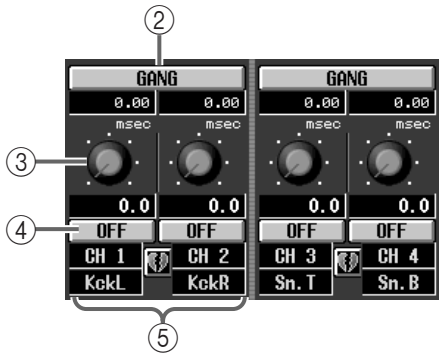
The delay time will be displayed in samples. If you change the clock rate (displayed immediately below the button) at which the PM1D system is operating, the number of samples will change accordingly.

• **msec (millisecond)**
The delay time will be displayed in millisecond units. When this button is on, the numerical boxes below and above the delay time setting knob (③) will be the same value.

• **BEAT**
Use the knob located below the numerical box to set the BPM, and the delay time will be displayed as the number of beats (quarter notes) for that tempo.

• **FRAME**
The delay time will be displayed in frame units. You can use the six buttons below the FRAME button to select the number of frames per second.

⚠ The BPM (beat per minute) button of the DELAY function is not related to the BPM button of the internal effects.



② **GANG**
This button links the DELAY parameters of two adjacent input channels in the screen. This can be set independently of pairing. If the GANG button is turned on for channels that are set to different delay times, rotating knob ③ will change the delay times of both channels while maintaining the difference in delay times.

③ **Knob**
This knobs sets the delay time for each channel. The numerical box located below each knob shows the delay time in the units selected in ①. Operating the knobs will set the delay time in the units selected in ①. The numerical box located above each knob always shows the settings in millisecond units.

④ **DELAY ON/OFF**
This button switches the delay on/off.

⑤ **Pair setting**
This displays the input channel number and its pairing status. You can also click the heart symbol to enable/defeat pairing.

IN DCA/MUTE functions

Set DCA, and mute group

DCA ASSIGN

[Functions]

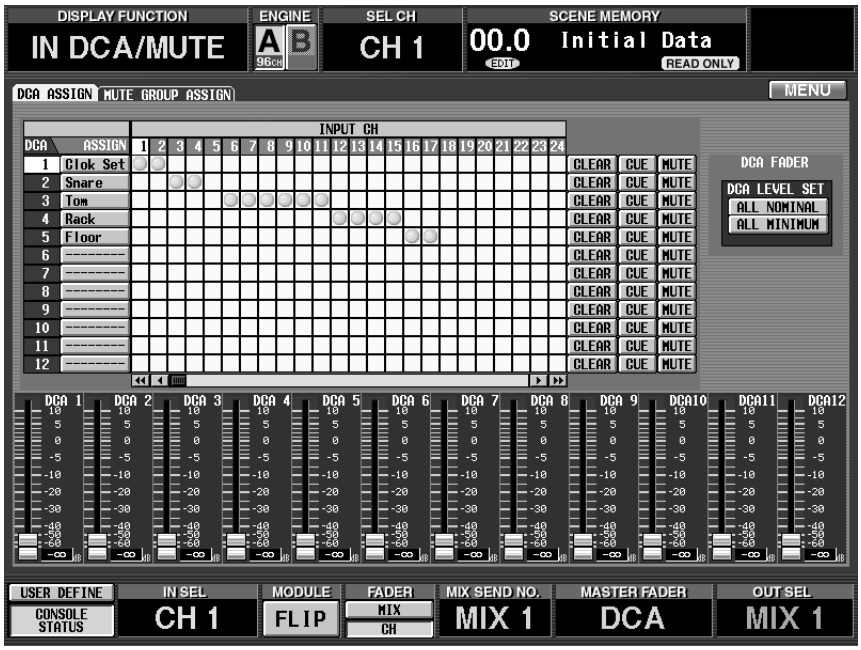
Assign input channels to DCA groups 1–12 so that they can be controlled by DCA faders 1–12.

■ **Console**

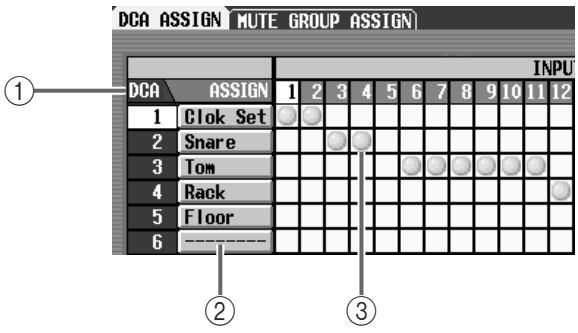
In the **LCD FUNCTION ACCESS** block, press the **INPUT [DCA/MUTE]** switch (Press repeatedly until the screen shown at the right appears.)

■ **Display**

MENU button → **INPUT DCA/MUTE** button → **DCA ASSIGN** tab



[Screen functions]



① These are the DCA group numbers. The number corresponding to the grid where the cursor is currently located will be highlighted.

② These are the eight-character names displayed in the DCA fader section. You can also click here and modify the names of the DCA faders.

③ **Grid**

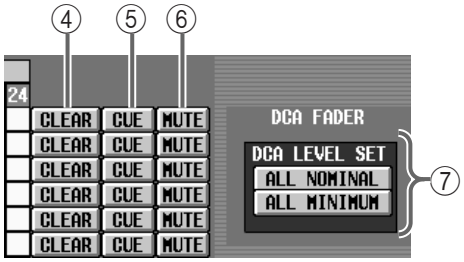
This is the grid where input channels (horizontal rows) can be assigned to DCA groups (vertical columns). Move the cursor to the desired grid location, and press the [ENTER] switch (or click) to set/cancel the assignment. To access channels that are not currently displayed, use the horizontal scroll bar.

Hint

It is possible to assign a single input channel to two or more DCA groups for multiple DCA control. For details refer to the section on basic operation.

- DCA groups 9–12 can be used for either input channels or output channels. However, it is not possible to use the same DCA fader for both inputs and outputs. For this reason, input channels cannot be assigned to a DCA group 9–12 to which an output channel has already been assigned.

- When a scene is recalled, the DCA data of Recall Safe channels may be adjusted so that the recall safe settings are consistent within DCA groups 9–12.
  Also when a channel library is recalled, the data that is recalled to the channel may be adjusted so that DCA groups 9–12 are consistent.



④ **CLEAR**
These buttons clear all input channels that have been assigned to the corresponding DCA group.

⑤ **CUE**
These buttons switch cue on/off for each DCA group. (They are linked with the [CUE] switches of the DCA/GROUP block of the console.) When these buttons are on, cue will be on for all channels assigned to the corresponding DCA group.

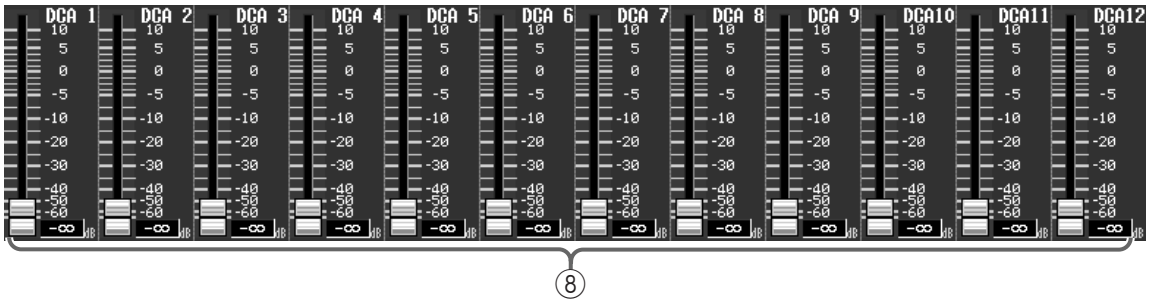
⑥ **MUTE**
These buttons switch muting on/off for each DCA group.

Hint

When a MUTE button is on, the corresponding channels will be set to the same state as when the DCA fader is operated to lower the input level to – ∞ dB, and no signal will be sent to the buses or output channels.

⑦ **DCA LEVEL SET**
These buttons set all DCA faders simultaneously.

- **ALL NOMINAL**
  When you click this button, any DCA 1–12 faders to which an input channel is assigned (and faders to which no channel is assigned) will move to nominal level (0 db) position.
- **ALL MINIMUM**
  When you click this button, any DCA 1–12 faders to which an input channel is assigned (and faders to which no channel is assigned) will move to the – ∞ position.



⑧ **DCA faders 1–12**
These indicate the DCA fader levels in accordance with the DCA groups of the console. You can also drag the on-screen faders to change the levels. (When you do so, the DCA faders of the console will move accordingly.)

MUTE GROUP ASSIGN

[Functions]

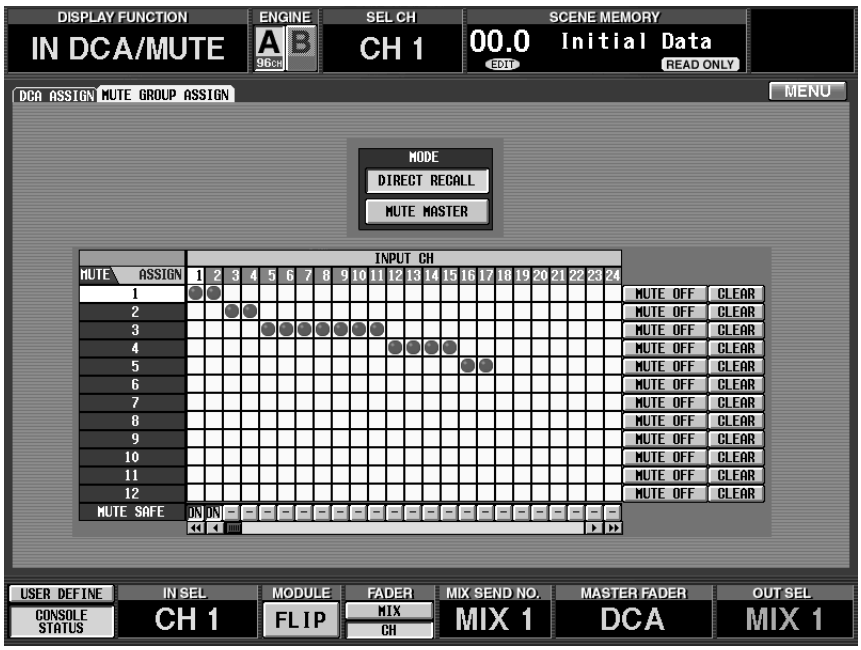
Assign input channels to mute groups 1–12.

■ **Console**

In the **LCD FUNCTION ACCESS** block, press the **INPUT [DCA/MUTE]** switch (Press repeatedly until the screen shown at the right appears.)

■ **Display**

MENU button → **INPUT DCA/MUTE** button → **MUTE GROUP ASSIGN** tab



[Screen functions]

① **MODE**

Select one of the following two choices as the function of the SCENE MEMORY [1]–[12] switches in the console's SCENE MEMORY block).

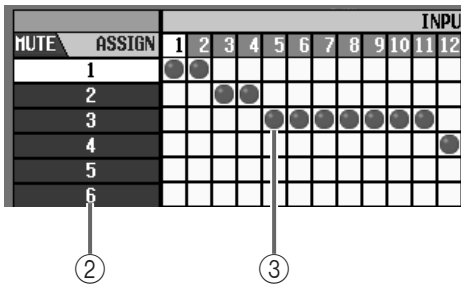
This is linked with the MODE button located in the OUT DCA/MUTE function MUTE GROUP ASSIGN screen, and also with the MODE button located in the SCENE function DIRECT RECALL screen.

- **DIRECT RECALL**

The SCENE MEMORY[1]–[12] switches can be used to directly recall the scenes assigned to direct recall numbers 1–12. (For details on assigning a scene to a direct recall number, →p.28.)

- **MUTE MASTER**

The SCENE MEMORY [1]–[12] switches can be used to switch muting on/off for mute groups 1–12.

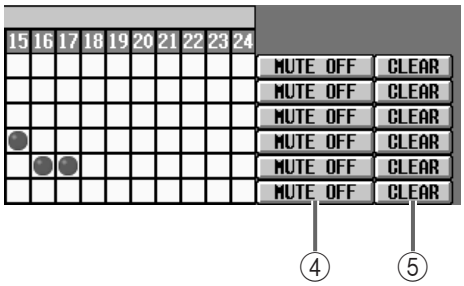


② **MUTE**

These are the mute group numbers. The mute group corresponding to the grid location of the cursor will be highlighted.

③ **Grid**

In this grid you can assign input channels (horizontal rows) to mute groups (vertical columns). Move the cursor to the desired grid location, and press the [ENTER] switch (or click) to set/cancel the assignment. It is possible to assign a single input channel to two or more mute groups. To access channels that are not currently displayed, use the horizontal scroll bar.



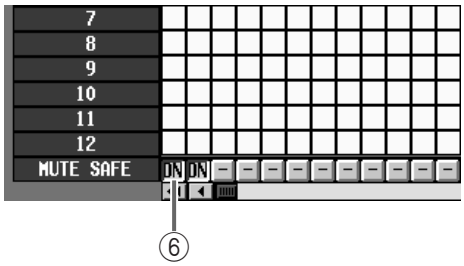
④ **MUTE ON/OFF**
These buttons allow operations in the display screen to turn muting on/off for each mute group.

If the MODE button ① is set to MUTE MASTER, these buttons will be linked with the SCENE MEMORY [1]–[12] switches of the console.

Hint

If muting is turned on, the input channels that belong to that mute group will be in the same state as if the [ON] switch of the console had been turned off. They will not sent signals to the buses or output channels.
At this time, the LED of the [ON] switch of the console will blink.

⑤ **CLEAR**
These buttons clear all input channels that were assigned to the corresponding mute group.



⑥ **MUTE SAFE ON/OFF**
This button temporarily defeats muting for a channel. If this button is displayed as "–", clicking it will change the display to "ON" and will exclude that input channel from the mute group. Click it once again to return to the original state.

⚠

- Normally, Mute Safe operations can be performed independently of scene memories. However when a scene is recalled and a channel changes from monaural to paired, this will be turned On for both paired channels if either of them had been set to Mute Safe On.
- Mute groups 9–12 can be used for either input channels or output channels. However it is not possible to mix input and output channels in the same mute group. For this reason, input channels cannot be assigned to a mute group 9–12 to which an output channel has already been assigned.
- When a scene is recalled, the mute group data of Recall Safe channels may be adjusted so that the recall safe settings are consistent within mute groups 9–12.
  Also when a channel library is recalled, the data that is recalled to the channel may be adjusted so that mute groups 9–12 are consistent.

PAN/ROUTING function

Send the signal from an input channel/ST IN channel to the desired MIX bus

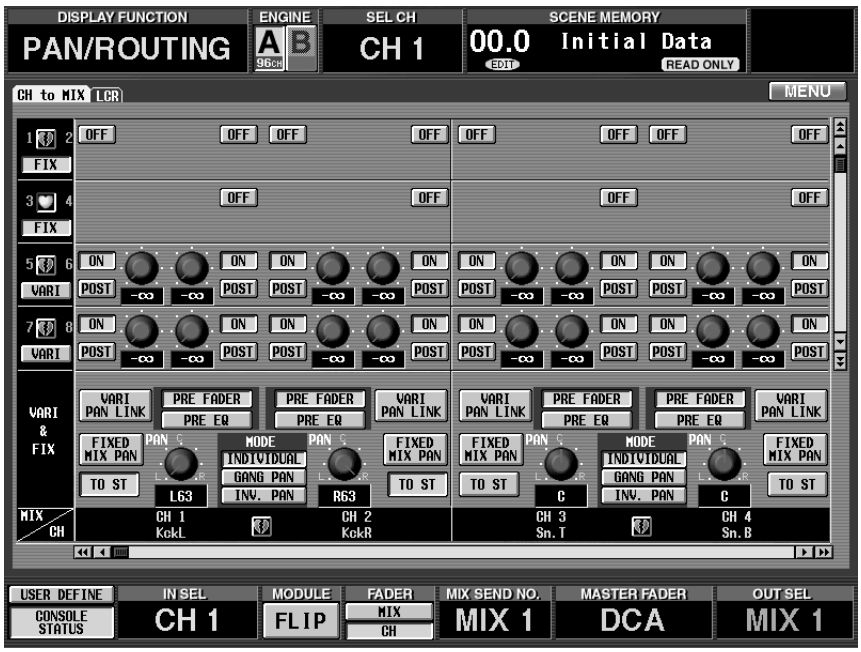
CH to MIX (channel to mix)

[Function]

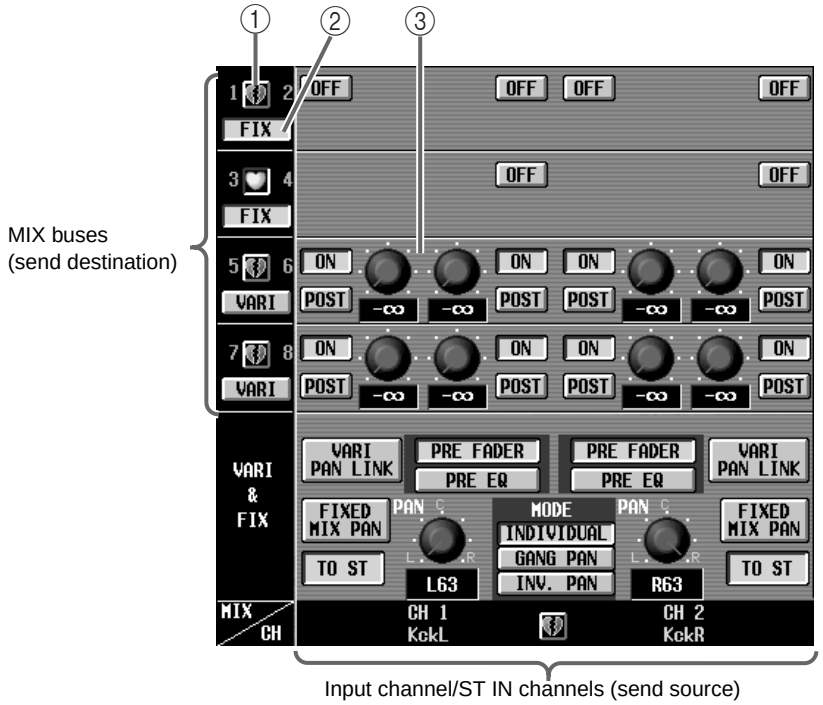
Send the signal from an input channel/ST IN channel to the desired MIX bus. In this screen you can also select the type (VARI or FIX) for each MIX bus.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **INPUT [PAN/ROUTING]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **INPUT PAN/ROUTING** button → **CH to MIX** tab



[Screen functions]



① **Pairing**
Pairing can be selected or defeated for adjacent odd-numbered → even-numbered MIX buses.

Click the heart-shaped symbol, and a popup window will appear in which you can confirm the action of selecting or defeating pairing.

② **FIX/VARI indicator**
This selects the MIX bus type for two adjacent odd-numbered → even-numbered MIX buses.

When you click the FIX/VARI button, the MIX BUS MODE SELECT popup window will appear, and you can select OK to switch between the following two types.

- **FIX**

The send level of the MIX bus will be fixed.

Select this when you use the MIX bus as a group output, or as a bus output for recording to a multi-track recorder.

- **VARI (variable)**

The send level of the MIX bus will be variable.

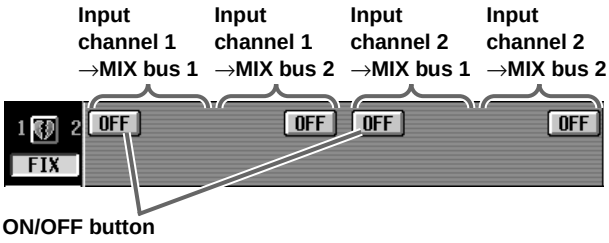
Select this when you use the MIX bus as a send to an external effect, or as a foldback output.

⚠ If Recall Safe is set for one of two adjacent odd-numbered → even-numbered MIX channels, recalling a scene may cause VARI/FIX settings to differ between the odd-numbered and even-numbered channels. If this occurs, the settings after recall will take priority.

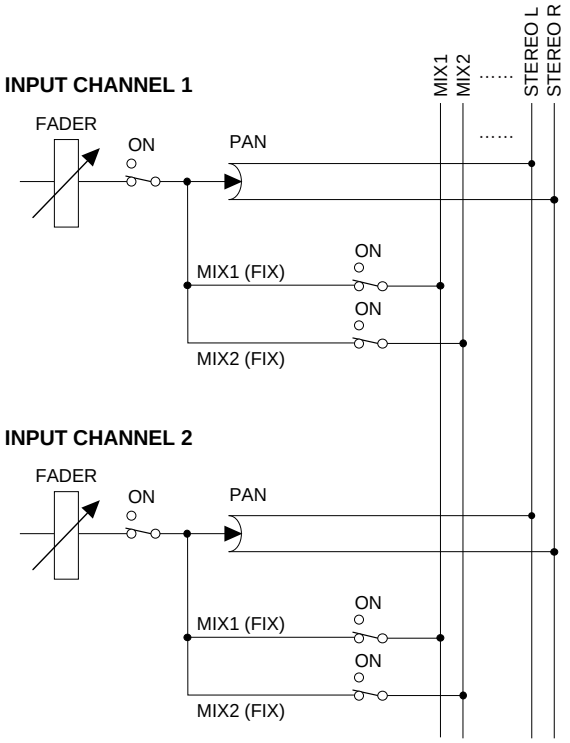
③ **Send level**
In this section, the signal that is sent from the input channel/ST IN channel (vertical column) to the MIX bus (horizontal line) can be switched on/off, and its send level can be adjusted.

The buttons and knobs displayed in this section will change depending on the type (FIX or VARI) of the destination MIX bus, and on the pairing status of the MIX buses.

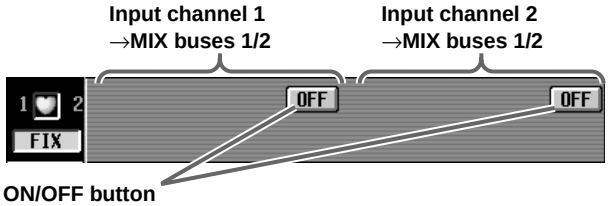
When using a FIX type MIX bus independently



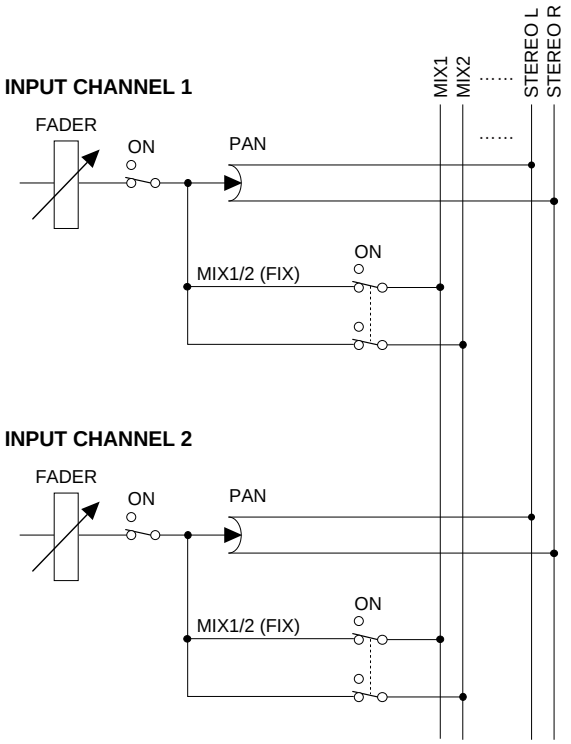
ON/OFF button
This is an on/off switch for the signal that is sent from the input channel/ST IN channel to each MIX bus.



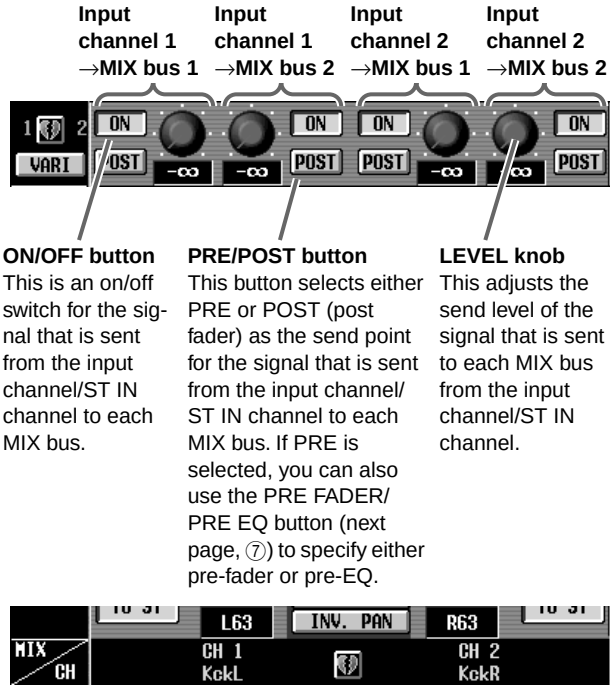
When using FIX type MIX buses in pairs



ON/OFF button
This is an on/off switch for the signal that is sent from the input channels/ST IN channel to the two adjacent odd-numbered and even-numbered MIX buses.



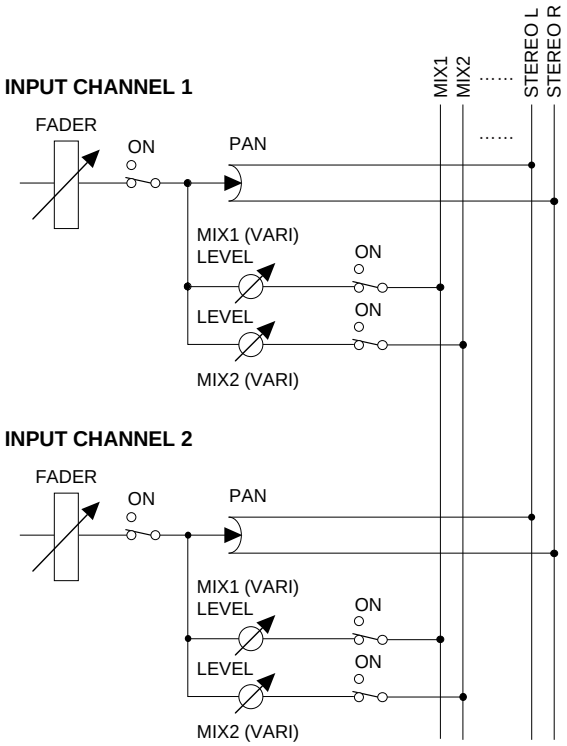
When using VARI type MIX buses independently



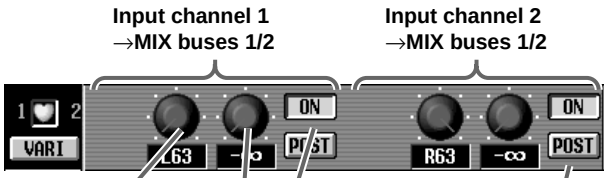
ON/OFF button
This is an on/off switch for the signal that is sent from the input channel/ST IN channel to each MIX bus.

PRE/POST button
This button selects either PRE or POST (post fader) as the send point for the signal that is sent from the input channel/ST IN channel to each MIX bus. If PRE is selected, you can also use the PRE FADER/PRE EQ button (next page, ⑦) to specify either pre-fader or pre-EQ.

LEVEL knob
This adjusts the send level of the signal that is sent to each MIX bus from the input channel/ST IN channel.



When using VARI type MIX buses in pairs

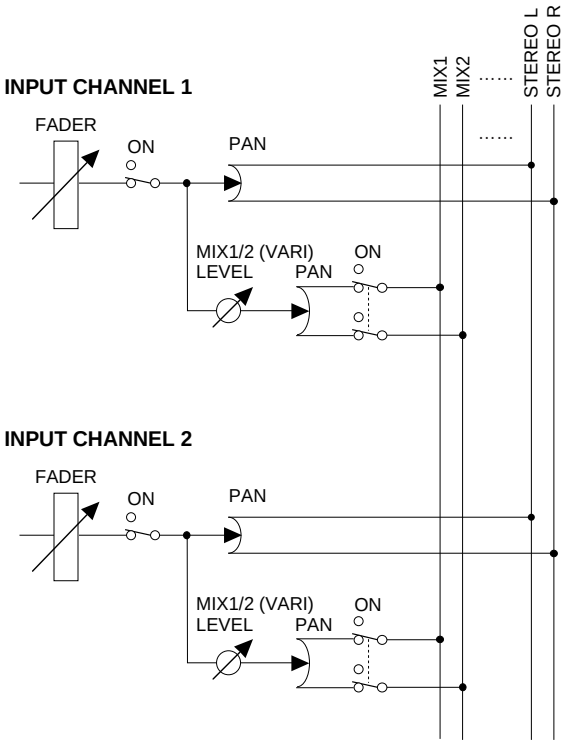


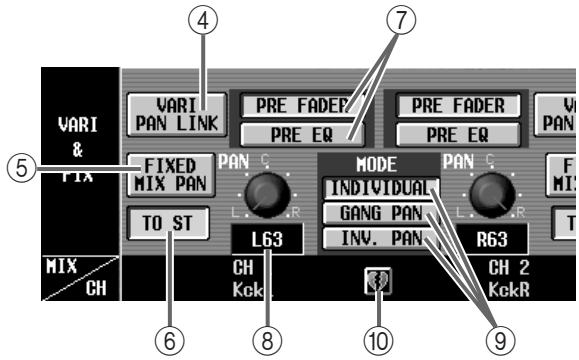
PAN knob
This adjusts the position of the signal that is sent from the input channels/ST IN channel to the odd-numbered MIX bus and even-numbered MIX bus.

ON/OFF button
This is an on/off switch for the signal that is sent from the input channels/ST IN channel to the two adjacent odd-numbered → even-numbered MIX buses.

LEVEL knob
This adjusts the send level of the signal that is sent from the input channels/ST IN channel to the two adjacent odd-numbered → even-numbered MIX buses.

PRE/POST button
This button selects either PRE or POST (post fader) as the send point for the signal that is sent from the input channels/ST IN channel to the two adjacent odd-numbered → even-numbered MIX buses. If PRE is selected, you can also use the PRE FADER/PRE EQ button (next page, ⑦) to specify either pre-fader or pre-EQ.

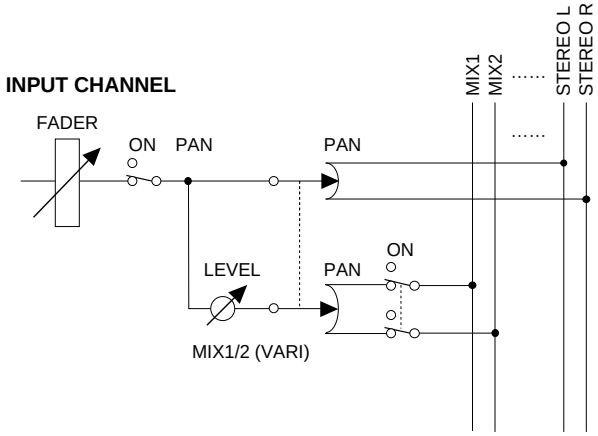




④ **VARI PAN LINK**

This button specifies whether or not the PAN knob that appears in the screen (at the location of ③ when you pair VARI type MIX buses can be set independently or will be linked with the TO ST PAN knob (⑧).

If this button is on, the two PAN knobs will be linked as follows.



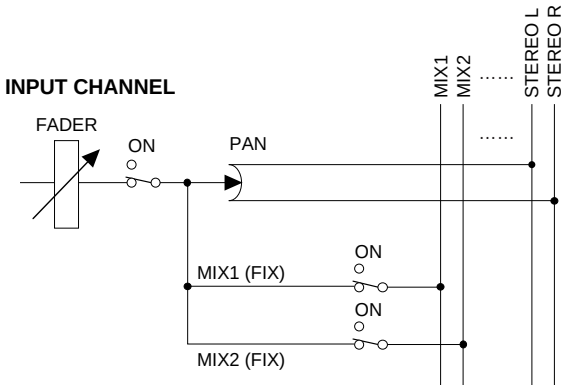
⚠ This parameter is valid for all signals sent to VARI type MIX buses from the corresponding channel.

⑤ **FIXED MIX PAN**

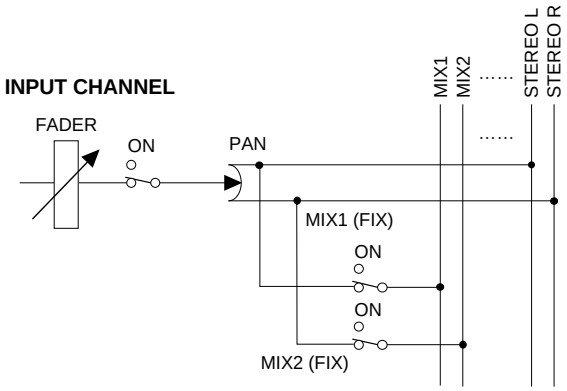
When sending the signal from the input channel/ST IN channel to a FIX type MIX bus, this button selects whether the pre-pan signal or the post-pan signal will be sent.

When this button is on, the pre-pan signal will be sent. When this button is off, the post-pan signal will be sent.

Signal flow when FIXED MIX PAN is off



Signal flow when FIXED MIX PAN is on



⚠ This parameter is valid for all signals sent to FIX type MIX buses from the corresponding channel.

⑥ **TO ST (to stereo)**

This button specifies whether or not the signal from the input channel/ST IN channel will be sent to the STEREO bus.

This is linked with the [TO ST] switch in the SELECTED INPUT CHANNEL block of the CS1D.

⑦ **PRE FADER/PRE EQ buttons**

When the PRE/POST button is set to "PRE" for a VARI type MIX bus, this button lets you specify in greater detail the location from which the signal will be output from the input channel/ST IN channel.

- **When the PRE FADER button is on**

The signal will be sent from immediately before the fader.

- **When the PRE EQ button is on**

The signal will be sent from immediately before the EQ.

⚠ This parameter is valid for all signals that are sent from the corresponding channel to a VARI type MIX bus whose PRE/POST button is set to "PRE."

⑧ **PAN**

This adjusts the position of the signal that is sent from the input channel/ST IN channel to the STEREO bus. (The current value is shown in the numerical box immediately below.)

This is linked with the INPUT [PAN] encoder in the INPUT block of the CS1D.

⑨ **PAN MODE**

This specifies whether or not pan settings will be linked between adjacent odd-numbered → even-numbered input channels (or between the left and right channels of a ST IN channel).

You can select only one of the following three buttons.

- **INDIVIDUAL**

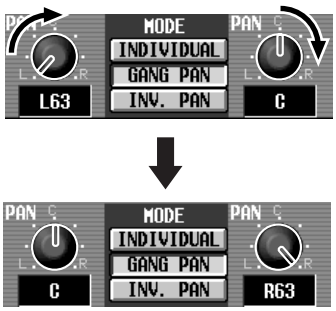
In this mode, the two pan settings are independent.

- **GANG PAN**

The two pan settings will be linked in the same direction. If this button is turned on when the two pan

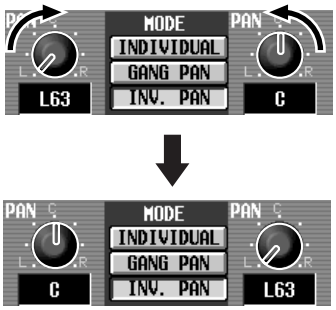
settings are at different values, pan will move in tandem while maintaining the difference in values.

This allows you to change the location while maintaining the stereo spread.



• **INV. GANG (inverted gang)**
The two pan settings will be linked in the opposite direction.

This allows you to change the stereo spread while maintaining the location.



⚠ PAN MODE is always valid even if the send source input channels are not paired.

If you select GANG PAN or INV.GANG mode when the two pan knobs are turned all the way to the left and right, the PAN knobs will have no effect.

⑩ **Pairing**
This indicates the number and pairing status of the send source input channels.

You can also click the heart symbol to set/defeat pairing.

Hint

The settings of parameters ①–⑦ are shared for input channels for which pairing is selected and for ST IN channels.

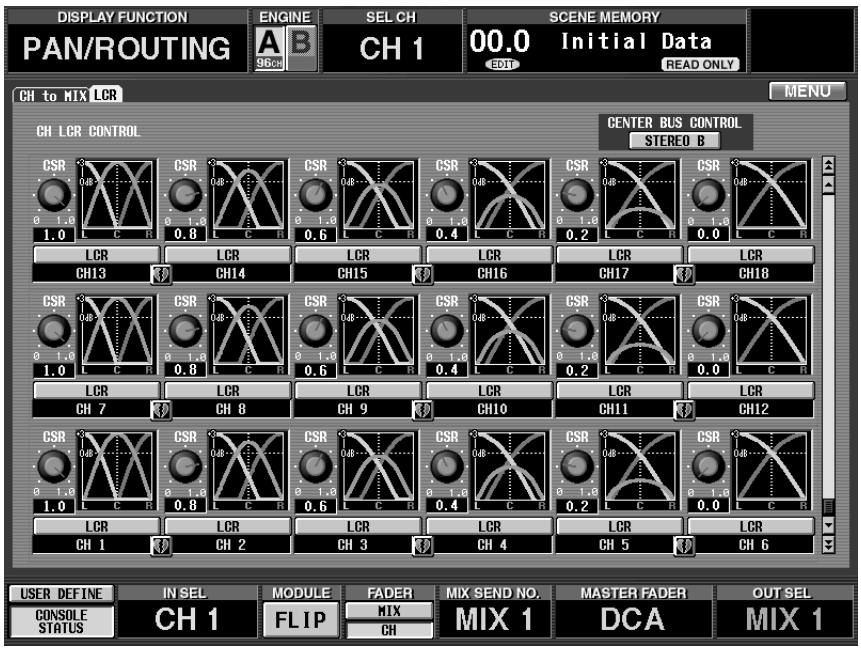
LCR

[Function]

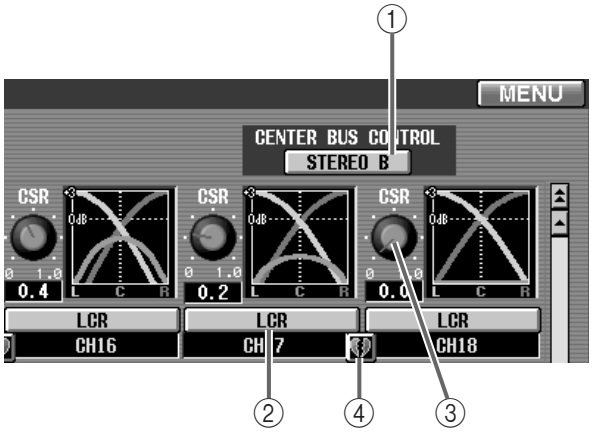
Make settings for LCR mode to allow three-channel playback, with a CENTER channel added to the L/R channels of the STEREO bus.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **INPUT [PAN/ROUTING]** switch (press repeatedly until the screen shown at the right appears)

■ **Display**
MENU button → **INPUT PAN/ROUTING** button → **LCR** tab



[Screen functions]



① **CENTER BUS CONTROL**
When this button is on, the STEREO B channel will function as the CENTER channel.

By adding the CENTER channel to the L/R channels of the STEREO A bus, you can implement three-channel playback.

⚠ When this button is off, the CENTER channel signal will no longer be sent to STEREO B, meaning that it will not be output externally. (The same LR signal as STEREO A will be sent to STEREO B.) However even when the CENTER BUS CONTROL button is off, you can operate LCR pan for channels in which LCR mode is turned on. (When you turn the button on, the LCR setting will immediately take effect.)

② **LCR (LCR mode on/off)**
For each input channel/ST IN channel, turn LCR mode on/off.

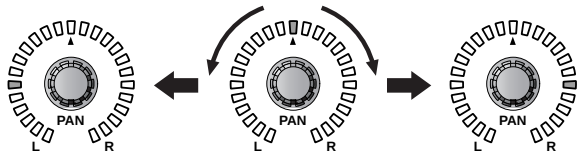
For channels whose LCR mode is on, you can use the INPUT [PAN] encoder on the CS1D top panel to simultaneously control the level of the L/R channels and the CENTER channel.

Hint

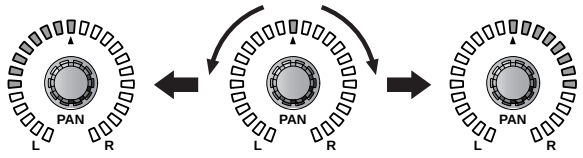
On channels for which LCR mode on, rotating the [PAN] encoder will cause the perimeter LEDs to light as follows.

LED lighting

- **When LCR=off**



- **When LCR=on**

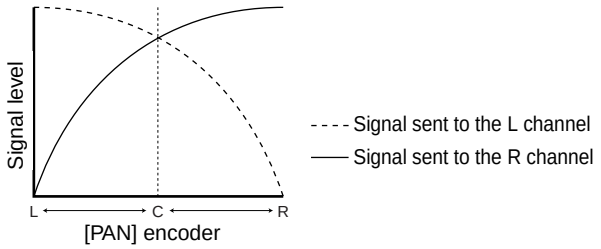


③ **CSR (center side ratio)**
Adjust the level ratio of the CENTER channel relative to the L/R channels. The range is 0.0–1.0.

If CSR is set to 0.0, rotating the [PAN] encoder will cause the signal levels of the L/R channels to change as shown in LCR response curve 1, below.

In this case, the [PAN] encoder will function as a conventional PAN control, and no signal will be sent to the CENTER channel.

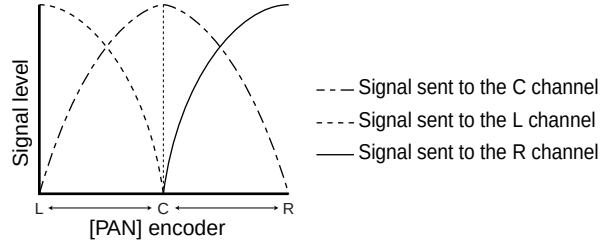
LCR response curve 1



If CSR is set to 1.0, rotating the [PAN] encoder will cause the signal levels sent to the L/R channels and the CENTER channel to change as shown in LCR response curve 2, below.

When the [PAN] encoder is in the center location, the signal level of the CENTER channel will be maximum, and no signal will be sent to the L/R channels.

LCR response curve 2



④ **Pairing**
This shows the number and pairing status of the input channel.

You can also click the heart symbol to set/defeat pairing. Parameters ②–③ will be linked for paired channels.

Hint

The master level of the CENTER channel is controlled by the fader of the STEREO B block on the CS1D. If necessary, you can also use the internal EQ or compressor of the STEREO B channel to process the signal.

One of the output jacks patched to the STEREO B channel will be used as the output jack for the CENTER channel. (If the CENTER BUS CONTROL button is on, the same signal will be output to the L/R channels of STEREO B.)

IN CH VIEW (input channel view) function

View the settings of an input channel

CH VIEW (channel view)

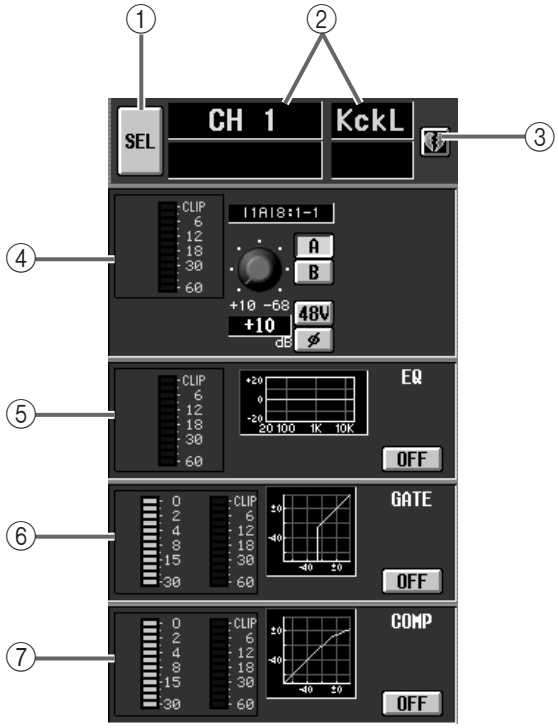
[Function]

View the settings of the currently selected input channel/ST IN channel. In this screen you can also edit the parameter settings and access individual screens.

■ **Console**
In the **LCD FUNCTION ACCESS** block, press the **INPUT** [**CH VIEW**] switch

■ **Display**
MENU button → **CH VIEW** tab

[Screen functions]



① **SEL (channel select)**
Use this button to select the channel that you wish to view and control.

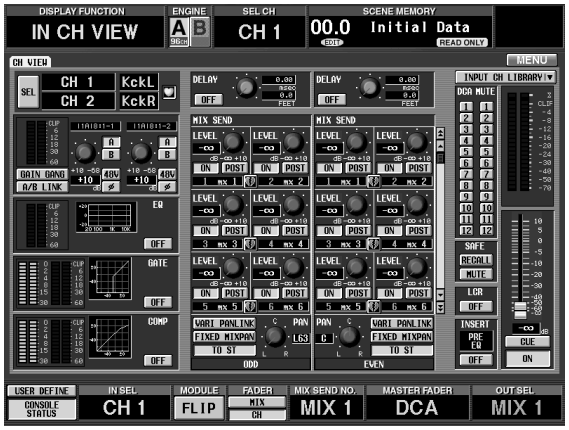
When you click this button, the CH SELECT popup window will appear.

② **Channel number/name**
This displays the number and short name of the currently selected channel.

③ **Pairing**
This displays the pairing status of the currently selected channel.

You can also click the heart symbol to set/defeat pairing.

Hint
When a paired input channel or a ST IN channel is selected, a single screen will display the parameters for both channels, as shown in the following illustration.



④ **Information for the patched unit**
This area displays information such as the type of input unit/card assigned to that channel, the input level, gain setting, input jack A/B selection, phantom power on/off, and phase switch status.

You can also use the buttons and knobs to edit the settings.

⑤ **EQ (equalizer)**
This area displays the on/off status of the internal EQ, the approximate response curve, and the peak level of the signal that has passed through the EQ.

You can click the ON/OFF button to turn the EQ on/off, or click the mini-graph to access the EQ PARAMETER popup window for the corresponding channel.

⑥ **GATE**
This area displays the on/off status of the internal gate, the approximate response curve, the amount of gain reduction, and the peak level of the signal that has passed through the gate.

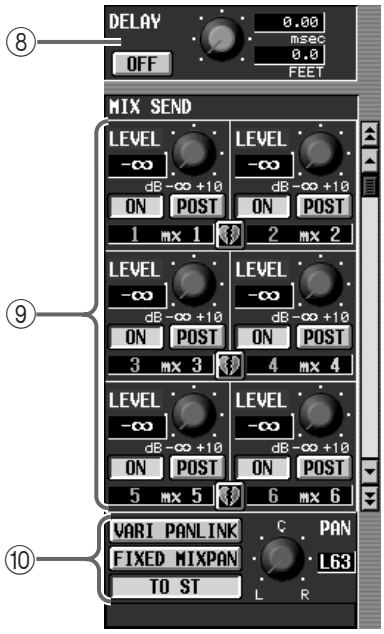
You can click the ON/OFF button to turn the gate on/off, or click the mini-graph to access the GATE PARAMETER popup window for the corresponding channel.

⑦ **COMP (compressor)**
This area displays the on/off status of the internal compressor, the approximate response curve, the amount of gain reduction, and the peak level of the signal that has passed through the compressor.

You can click the ON/OFF button to turn the compressor on/off, or click the mini-graph to access the COMP PARAMETER popup window for the corresponding channel.

Hint

In the UTILITY function PREFERENCE screen, you can specify whether the GR meter display will be linked to the compressor on/off setting. If linking is turned on, the GR meter will be displayed only when the compressor is on, and will be hidden when the compressor is off. If linking is turned off, the GR meter will always be displayed.



⑧ **DELAY**
This area displays the on/off status and delay time of the delay function.

You can also use the buttons and knobs to change the setting. The upper numerical box always displays the delay time in msec units. The lower numerical box displays the delay time in the units currently selected by the IN DELAY function.

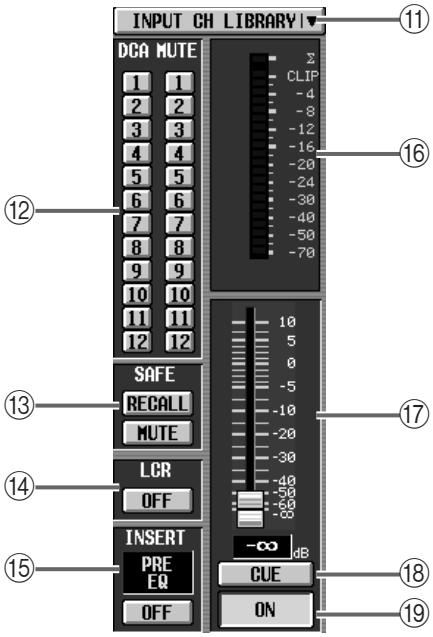
⑨ **MIX SEND**
This area displays the on/off status, send level, pre/post, and pairing status of the signal that is sent from the currently selected channel to each MIX bus.

You can use the buttons and knobs to modify the settings.

Use the scroll bar located at the right to view the MIX buses that are not currently shown in the screen.

⑩ **PAN**
This area displays the status of the VARI PAN LINK button, FIXED MIX PAN button, TO ST button, and TO ST PAN knob that are shown in the CH to MIX screen of the PAN/ROUTING function.

You can use the buttons and knob to modify the settings.



⑪ **CH LIBRARY (channel library)**
This button accesses the INPUT CHANNEL LIBRARY popup window, where you can store/recall mix parameters by channel.

⑫ **DCA groups/MUTE groups**
This area displays the DCA groups/MUTE groups to which that input channel belongs.

You can also modify these settings.

⑬ **RECALL SAFE/MUTE SAFE**
This area displays the on/off status of mute safe (a state in which the channel is exempted from mute group operations) and recall safe (a state in which the channel is exempted from scene recall operations).

You can also modify these settings.

⑭ **LCR**
This shows the on/off status of LCR mode. You can also change this setting.

⑮ **INSERT**
This shows the currently selected insert I/O point (the location in the signal route where an external device is inserted) for the channel.

You can use the ON/OFF button to switch insertion on/off.

⑯ **Meter**
This peak level meter displays the input level of the channel. The point at which the level is detected can be set by the METER function.

⑰ **Fader**
This adjusts the input level of the channel. It is linked with the [INPUT] faders on the top panel of the CS1D.

⑱ **CUE**
This button is used to monitor the input channel.

It is linked with the INPUT [CUE] switch on the top panel of the CS1D.

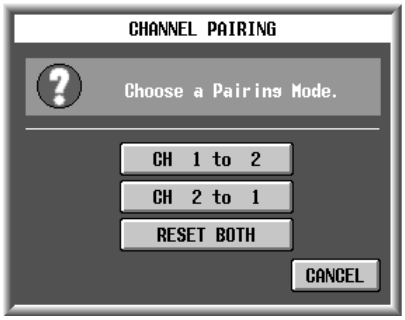
⑲ **ON/OFF**
This button switches the input channel on/off.

It is linked with the INPUT [ON] switch on the top panel of the CS1D.

[Procedure]

Pairing input channels

1. **Select one of the functions IN EQ, IN GATE/COMP, IN DELAY, IN PAN/ROUTING, or IN CH VIEW METER, and access the screen for the channel that you wish to pair.**
2. **Click the divided heart symbol for the channel that you wish to pair.**
The CHANNEL PAIRING popup window will appear.



In this window you can select how parameter settings will be handled when the channels are paired.

- **CH A to B (a channel number will appear in A and B)**

The parameters of channel A will be copied to channel B.

- **CH B to A (a channel number will appear in A and B)**

The parameters of channel B will be copied to channel A.

- **RESET BOTH**

The parameters of both channels will be reset to the default settings.

⚠ When you click one of the above buttons, only the parameters that are linked when paired will be copied or reset. The following settings will also be copied or reset in addition to the channel parameters.

- The on/off state of Solo/Cue
- The on/off state of Solo Safe
- The on/off state of Recall Safe
- The on/off state of Mute Safe

3. **To pair the channels, click the CH A to B button, the CH B to A button (a channel number will appear in A and B), or the RESET BOTH button. If you decide not to specify pairing, click the CANCEL button.**

Hint

You can also enable/defeat pairing by pressing the [SEL] switches of two adjacent input channels on the console.

Defeating pairing

1. **Select one of the functions IN EQ, IN GATE/COMP, IN DELAY, IN PAN/ROUTING, or IN CH VIEW, and access the screen for the channel that you wish to pair.**
2. **Click the heart symbol for the channels that you wish to un-pair.**
   A popup window will appear, asking you to confirm that you wish to defeat pairing.

3. **To defeat, click the OK button. If you decide not to defeat pairing, click the CANCEL button.**

Hint

You can also enable/defeat pairing by pressing the [SEL] switches of two adjacent input channels on the console.

Libraries

A library is an internal memory area where various settings of the PM1D system can be saved for later use. The PM1D system provides a variety of libraries for patch data, EQ data, compressor data, and effect data. These can be recalled from the corresponding screens.

Basic library operation

This section explains the basic procedure common to all libraries.

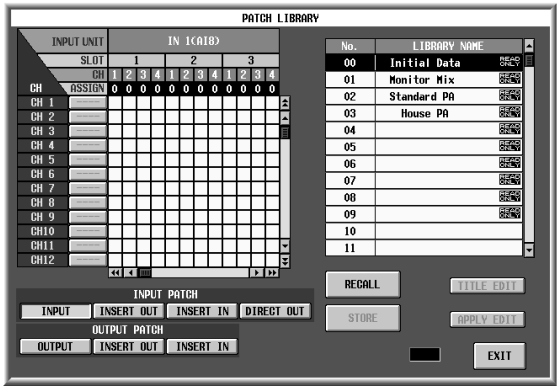
[Procedure]

Storing settings of the PM1D system in a library

Here's how to store PM1D settings in a library.

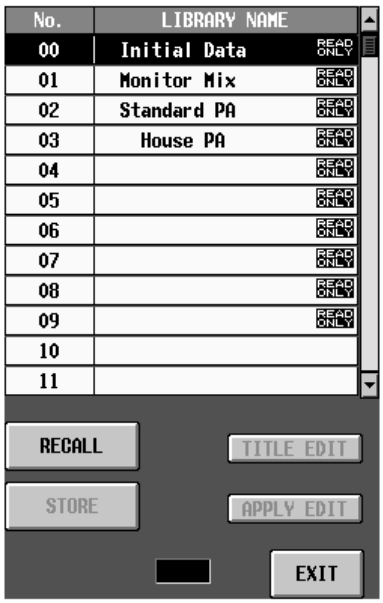
1. **Access the library popup window for the type of data you wish to store.**
   For details on how to access the popup window, refer to the explanation for each library. Depending on the type of library, you will first need to select the item (channel, effect, GEQ module, etc.) that you wish to store.

   - **An example of a library popup window**



2. **From the library list, select the store destination number, and click that line.**
   At the right side of each library popup window, there is a list called the "library list." Use this list to select the memory number for the data that will be stored or recalled. When you click the line for the desired number within the list, that line will be highlighted. This indicates that this number is selected for display/editing.

   - **An example of a library list**



⚠ Some library lists may contain data marked "READ ONLY." This is preset data written at the factory. Data cannot be overwritten onto these numbers.

3. **Click the STORE button.**
   The LIBRARY STORE popup window will appear, in which you can assign a name to the data that will be stored.

   - **An example of a LIBRARY STORE popup window**

4. **Use the text palette to name the data.**
   For details on using the text palette, refer to "CS1D Operating Manual (Basic Operation)" →P.20.

5. **Click the STORE button.**
   A window will appear, asking you to confirm.

   • **Window to confirm Store operation**

Hint

If CONFIRMATION is turned off in the UTILITY PREFERENCE screen, the confirmation message will not appear, and the Store or Recall operation will be executed immediately.

In the case of a library used to store settings of individual channels, selecting a different channel after the above popup window appears will cause the newly selected channel to be the store source.

6. **To execute the Store operation, click the OK button.**
   When the Store operation is executed, the stored data will be added to the library. You will exit the library popup window and return to the previous screen. If you click the CANCEL button instead of the OK button, the Store operation will be cancelled, and you will return to the library popup window. If you then press the EXIT button, you will exit the library popup window and return to the previous screen.

Recalling (loading) library settings into the PM1D system

Settings that were saved in a library (or read-only preset data) can be recalled into the PM1D system as follows.

1. **Access the popup window for the desired library.**
   For details on how to access the popup window, refer to the explanation for each library. Depending on the type of library, you will first need to select the item (channel, effect, GEQ module, etc.) that you wish to recall.

2. **From the library list, select the number that you wish to recall, and click that line.**
   The line you clicked will be highlighted to indicate that this number has been selected for display/editing.

Hint

Some library lists may contain data marked "READ ONLY." This is preset data written at the factory. Preset data can be recalled in the same way as the data that you yourself have stored.

3. **Click the RECALL button.**
   A window will appear, asking you to confirm the Recall operation.

   • **Recall confirmation window**

In the case of a library used to recall settings of individual channels, selecting a different channel after the above popup window appears will cause the newly selected channel to be the recall destination.

4. **To execute the Recall, click the OK button.**
   When the Recall operation is executed, the data you selected in step 2 will be loaded into the PM1D system. You will exit the library popup window and return to the previous screen. If you click the CANCEL button instead of the OK button, the Recall operation will be cancelled, and you will return to the library popup window. If you then click the EXIT button, you will exit the library popup window and return to the previous screen.

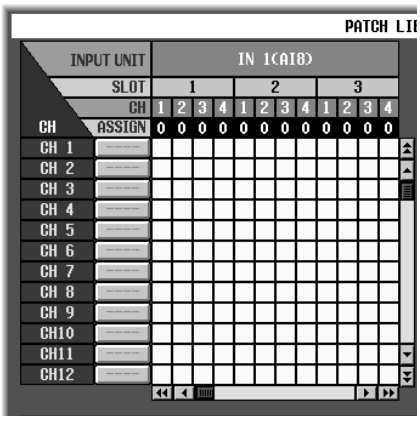
Hint

If CONFIRMATION is turned off in the UTILITY PREFERENCE screen, the confirmation message will not appear, and the Store or Recall operation will be executed immediately.

Editing library data before recalling it

Here's how you can edit library data within the library window (before recalling it into the PM1D system), and recall the edited data.

1. **Access the popup window for the desired library.**
   For details on how to access each library, refer to the page that explains the corresponding library.
2. **In the library list, click the line that contains the data you wish to edit.**
   The line you clicked will be highlighted, and the settings of that data will be displayed in the edit section. The "edit section" is the area in which you can view and edit the settings of the data that is currently selected in the library list.
   - **An example of an edit section**



3. **Use the buttons and knobs of the edit section to edit the settings.**
   The items that can be edited will depend on the type of library. For details refer to the pages that explain the corresponding library. When the data currently selected in the library list has been edited, the screen will indicate "EDIT."

⚠ In this state, the data has only been edited temporarily; the library memory has not been updated. If you wish to keep the changes you made, click the STORE button or the APPLY EDIT button to perform the Store operation.

4. **Recall the edited data.**
   When you click the RECALL button, the edited data will be recalled.

Hint

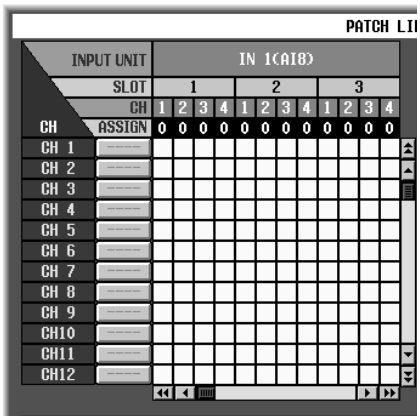
If you select an empty library in step 2, the default values of that library will be displayed in the edit section. If you modify these settings, the "EDIT" indicator will appear, and you will be able to recall the settings in the same way as any library.

⚠ The popup window will close following step 4, but the edited content is not saved in the library at this time. Execute the Store operation as necessary.

Editing library data

Data that is stored in a library can be edited within the library window (without recalling it into the PM1D system), and the edited contents can be saved in the original memory number.

1. **Access the popup window for the desired library.**
   For details on how to access the popup window, refer to the explanation for each library.
2. **From the library list, select the data that you wish to edit, and click that line.**
   The line you clicked will be highlighted, and the contents (settings) of that data will be displayed in the edit section. The "edit section" is an area where the currently-selected contents of the library list can be viewed and edited.
   - **An example of the edit section**



3. **Use the buttons or knobs of the edit section to edit the contents.**
   The items that can be edited will depend on the type of library. For details refer to the explanatory pages for each type of library. If the data currently selected in the library list has been edited, the display will indicate "EDIT."
4. **If you wish to store the edited data in the same library number, click the APPLY EDIT button.**
   The LIBRARY STORE popup window will appear, allowing you to assign a name for saving.

⚠ In some libraries, the list will contain data marked "READ ONLY." This is preset data that was written at the factory. If one of these numbers is selected, it is not possible to store the edited data into its original number. (Nor will it be possible to press the APPLY EDIT button.) If necessary, recall the data into the PM1D system before you edit it.

- **The LIBRARY STORE popup window**

5. **As necessary, use the text palette to assign a name to the data.**
6. **Click the STORE button.**
   A window will ask you to confirm the operation.
   - **Window to confirm Store operation**

7. **To execute the Store operation, click the OK button.**
   The edited data will be stored in its original number. If you click the CANCEL button instead of the OK button, the Store operation will be cancelled.

Changing only the name of the data

If desired, you can change only the name (title) of the data in the library list.

1. **Access the popup window of the desired library.**
   For details on how to access each library, refer to the explanatory pages for the corresponding library.
2. **From the library list, select the number for the data whose name you wish to change, and click that line.**
   The line you clicked will be highlighted, and the content (settings) of the data will be displayed in the edit section.
3. **Click the TITLE EDIT button.**
   The LIBRARY STORE popup window will appear, where you can assign a name to the data.
   - **LIBRARY STORE popup window**

4. **Use the text palette to assign a new name to the data.**
5. **Click the STORE button.**
   A window will ask you to confirm before storing the data.
   - **Window to confirm Store operation**

6. **To store the new title, click the OK button.**
   The new title will be stored. If you click the CANCEL button instead of the OK button, the Store operation will be cancelled.

UNIT LIBRARY

[Function]

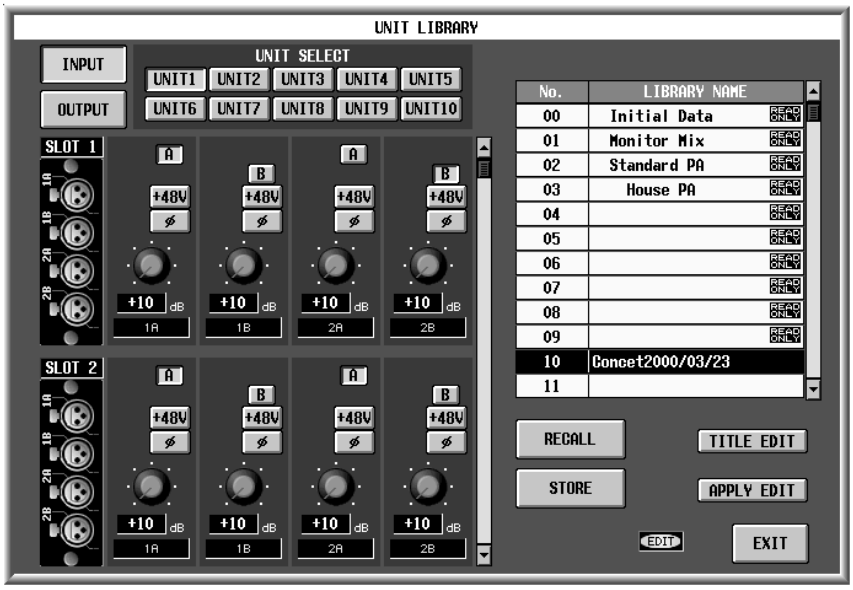
Here you can store and recall the settings (unit data) of all input/output units included in the PM1D system. Here you can also view and edit the connection state and settings of the input/output units.

■ **Display**

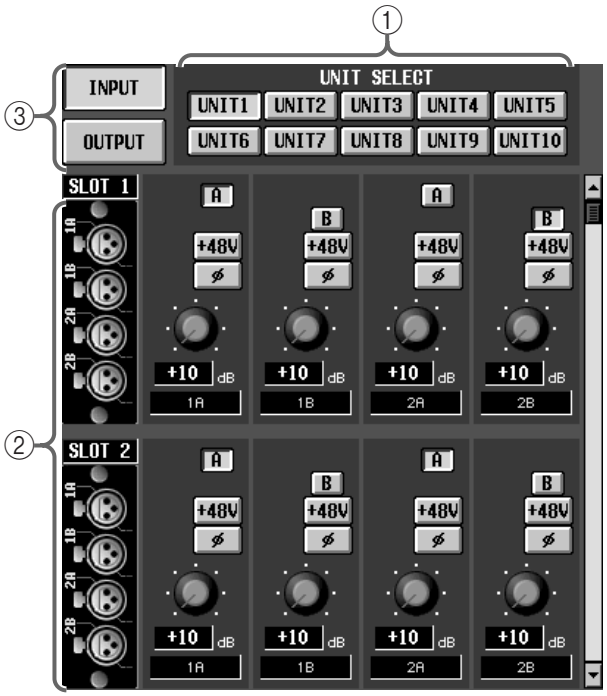
MENU button → **IN HA/INSERT** button → **ST IN INS/UNIT LIB** tab → **UNIT LIBRARY** button

MENU button → **OUT INSERT** button → **ST MAS INS/UNIT LIB** tab → **UNIT LIBRARY** button

⚠ The unit data that is saved in the Unit library contains settings for both input units and output units.



[Screen functions]



The screen shown above is for when the library is accessed from the IN HA/INSERT function.

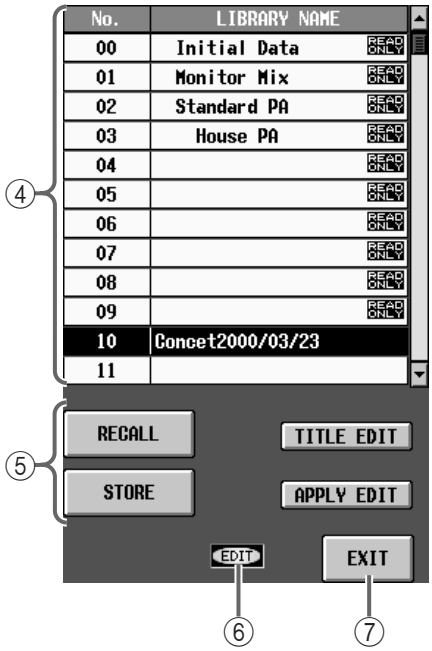
① **UNIT SELECT**
For the input unit data that is currently selected in the library list ④, these buttons select the type of input/output unit that is to be displayed/edited.

The settings of the units you select here will be displayed in the edit section ②.

② **Edit section**
This displays a list of settings for each card of the units you selected in ①. You can use the buttons and knobs to edit the settings.

Use the right scroll bars to access cards that are not currently displayed.

③ **Input/output selection**
Select whether the input unit (INPUT button) or the output unit (OUTPUT button) settings will be displayed in ②.



④ **Library list**
This shows a list of the unit data stored in memory. The highlighted line is currently selected for operations.

⑤ **STORE/RECALL buttons**
These buttons store/recall unit data.

Each button has the following function.

- **RECALL**

Load the currently selected unit data from the library list into the PM1D system.

- **STORE**

Store the input/output unit settings of the PM1D system to the number currently selected in the library list. When you click this button, the LIBRARY STORE popup window will appear, allowing you to assign a name to the input unit data.

⚠ If EVENT RECALLING is set to ENABLE in the TC EVENT screen, it is not possible to press the STORE button.

- **TITLE EDIT**

This edits the title of the unit data currently selected in the library list.

⚠ The TITLE EDIT button is valid only if data has actually been stored in the number selected in the library list. If a number with no data is selected, the button text will be gray, and the button cannot be used.

- **APPLY EDIT**

Store the edited content of the INPUT UNIT LIBRARY window back into the same library number.

Hint

The APPLY EDIT button is valid only if the data of the number selected in the library list has been edited. If un-edited data is selected, and if a number marked "READ ONLY" is selected, the button text will be gray, and the button cannot be used.

⑥ **EDIT**
If you edit the unit data selected in the library list ④, this area will indicate "EDIT."

⑦ **EXIT**
This button exits the INPUT UNIT LIBRARY window and returns to the previous screen.

⚠

- Even if you recall a unit library, the units or cards that are actually connected to the input/output jacks will take priority.
- When recalling a library that was saved while a unit was connected, if no unit is installed for the recall destination input/output jacks (for example even if a virtual unit is specified), the settings of the recall source unit will be used, and a virtual unit will be newly specified.

PATCH LIBRARY

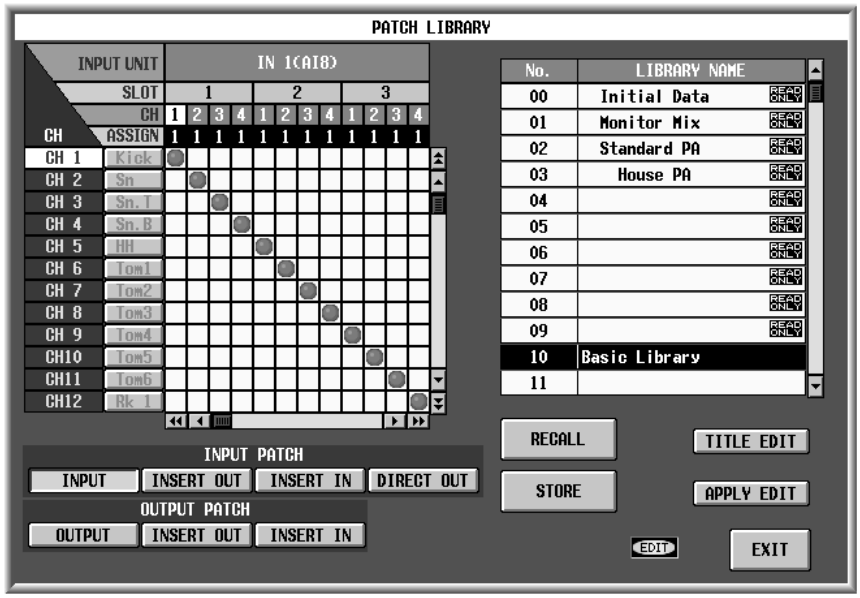
[Function]

Here you can save (store) all data for input channels, output channels, and input/output jacks patched to insert I/O (patch data). Previously stored data can also be loaded (recalled) into the PM1D system.

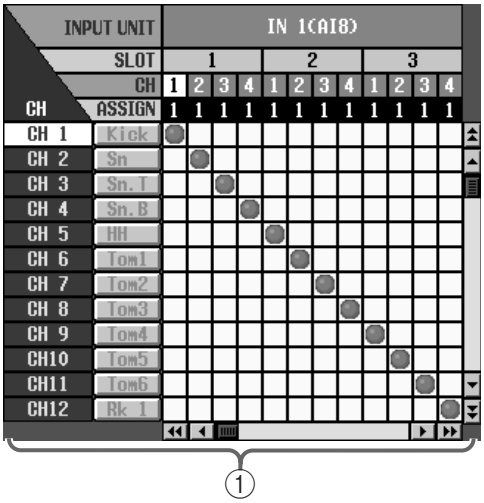
■ **Display**

MENU button → **IN PATCH** button → **IN PATCH/DIRECT OUT PATCH/INSERT PATCH** tab → **PATCH LIBRARY** button

MENU button → **OUT PATCH/INSERT PATCH** button → **PATCH LIBRARY** button



[Screen functions]

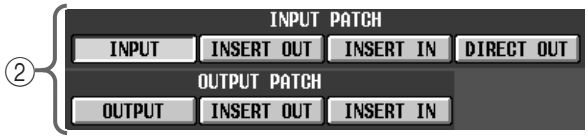


① **Edit section**

From the patch data currently selected in the library list (③), you can select specific elements and view the patching status in this section.

You can also click the grid area to edit the patch data, and store the edited data back into the library list. To view an area that is not currently shown, use the vertical and horizontal scroll bars.

⚠ The unit settings indicate the current status. If you wish to create the same state as when you saved the library data, you must also make the same unit settings.



② **INPUT PATCH/OUTPUT PATCH**

These buttons select the elements that are shown in window ①, from the following choices.

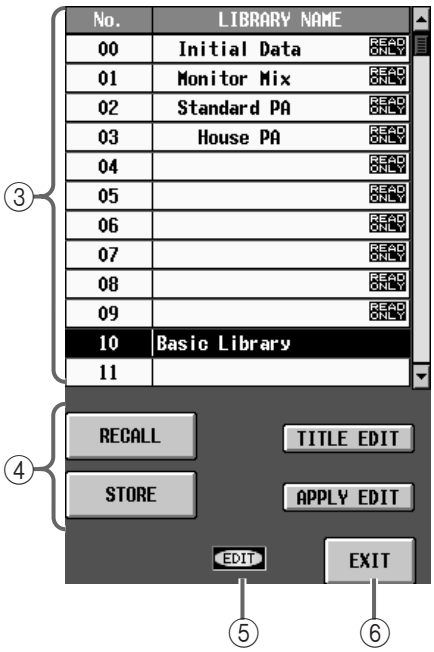
[**INPUT PATCH**]

- **INPUT**..... Input channel patch data
- **INSERT IN**..... Insert in (input channel) patch data
- **INSERT OUT**..... Insert out (input channel) patch data
- **DIRECT OUT**.... Direct out patch data

[**OUTPUT PATCH**]

- **OUTPUT** ..... Output channel patch data
- **INSERT IN**..... Insert in (output channel) patch data

• **INSERT OUT** .....Insert out (output channel) patch data



③ **Library list**
This shows the numbers and names (titles) of the patch data currently stored in the library.

The highlighted number indicates the data that is currently selected.

④ **STORE/RECALL buttons**
These buttons store/recall patch data.

Each button has the following function.

• **RECALL**
Load the currently selected patch data from the library list into the PM1D system.

⚠

- Recall will not occur if a unit is not installed, or if a unit is installed with input/output reversed.
- Similarly, recall will not occur if a card is not installed, or if a card is installed with input/output reversed.
- A patch will be recalled even if the recall source library contents differ from the type of unit or card that is installed or virtually-set for the recall destination channel.

• **STORE**
Store all patch data of the PM1D system to the number currently selected in the library list. When you click this button, the LIBRARY STORE popup window will appear, allowing you to assign a name to the patch data.

⚠ If EVENT RECALLING is set to ENABLE in the TC EVENT screen, it is not possible to press the STORE button.

• **TITLE EDIT**
This edits the title of the patch data currently selected in the library list.

⚠ The TITLE EDIT button is valid only if data has actually been stored in the number selected in the library list. If a number with no data is selected, the button text will be gray, and the button cannot be used.

• **APPLY EDIT**
Store the edited content of the PATCH LIBRARY window back into the same library number.

Hint

The APPLY EDIT button is valid only if the data of the number selected in the library list has been edited. If un-edited data is selected, and if a number marked "READ ONLY" is selected, the button text will be gray, and the button cannot be used.

⑤ **EDIT**
When you edit the patch data selected in the library list (③), this area will indicate "EDIT."

⑥ **EXIT**
This button exits the PATCH LIBRARY window and returns to the previous screen.

NAME LIBRARY

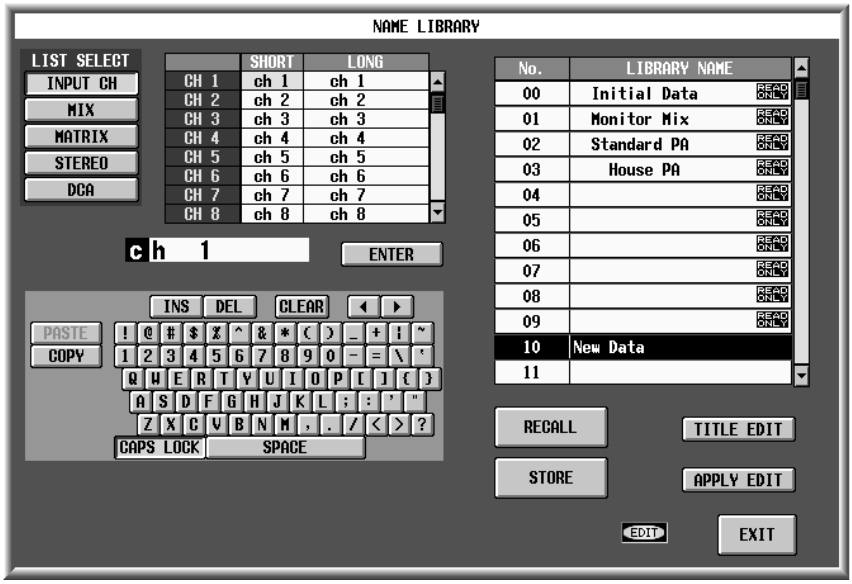
[Function]

Here you can store and recall all short names and long names (name data) assigned to input channels, output channels, and DCA groups.

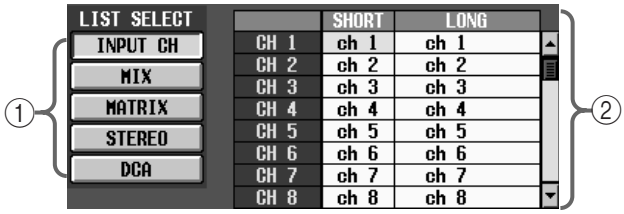
■ **Display**

MENU button → **IN PATCH** button → **NAME** tab → **NAME LIBRARY** button

MENU button → **OUT PATCH** button → **NAME** tab → **NAME LIBRARY** button



[Screen functions]



① **LIST SELECT**

For the name data that is currently selected in the library list (⑥), these buttons select the type of item that is to be displayed/edited.

The short names/long names of the type you select here will be displayed in the name list (②) located at the right.

The following types can be selected.

- **INPUT CH** .....Input channels 1–96, ST IN channels 1–8
- **MIX**.....MIX channels 1–48
- **MATRIX** .....MATRIX channels 1–24
- **STEREO**.....STEREO A/B channels
- **DCA** .....DCA groups 1–12

② **Name list**

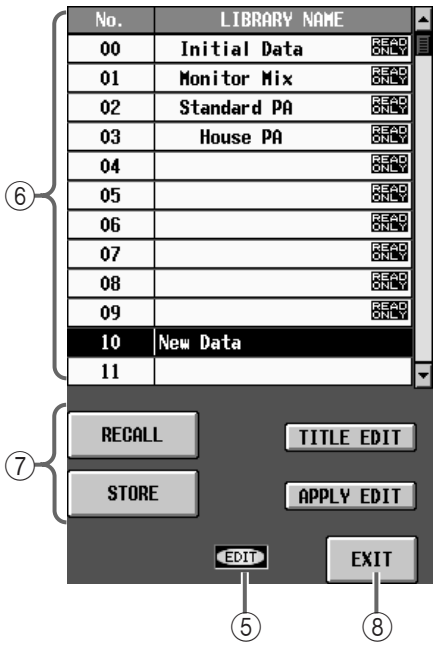
This list shows the short names/long names of the specified type from the name data currently selected in the library list (⑥).

When you click a short name or long name field, it will be displayed in light blue and can be edited.

③ **Text box**

When a name field in the name list (②) is in an editable state, the name subject to editing will be displayed here. Use the character palette (④) to input characters into this box, and click the ENTER button located at the right to input the name into the editable field (displayed in light blue) of the name list (②). When input is completed, the editable state will be defeated.

④ **Character palette**
Use this palette to input characters, numerals, and symbols into the text box. (For details on inputting text and using the various buttons, refer to "CS1D Operating Manual (Basic Operation)" →P.20.)



⑤ **EDIT**
When you edit the name data that you selected from the library list (⑥), this area will indicate "EDIT."

⑥ **Library list**
This lists the name data stored in memory.

The highlighted line indicates the data that is currently selected for operations.

⑦ **STORE/RECALL buttons**
These buttons store/recall name data.

Each button has the following function.

- **RECALL**
Load the currently selected name data from the library list into the PM1D system.

- **STORE**
Store the name data of the PM1D system to the number currently selected in the library list.

When you click this button, the LIBRARY STORE popup window will appear, allowing you to assign a name to the name data.

⚠ If EVENT RECALLING is set to ENABLE in the TC EVENT screen, it is not possible to press the STORE button.

- **TITLE EDIT**
This edits the title of the name data currently selected in the library list.

⚠ The TITLE EDIT button is valid only if data has actually been stored in the number selected in the library list. If a number with no data is selected, the button text will be gray, and the button cannot be used.

- **APPLY EDIT**
Store the edited content of the NAME LIBRARY window back into the same library number.

Hint
The APPLY EDIT button is valid only if the data of the number selected in the library list has been edited. If un-edited data is selected, and if a number marked "READ ONLY" is selected, the button text will be gray, and the button cannot be used.

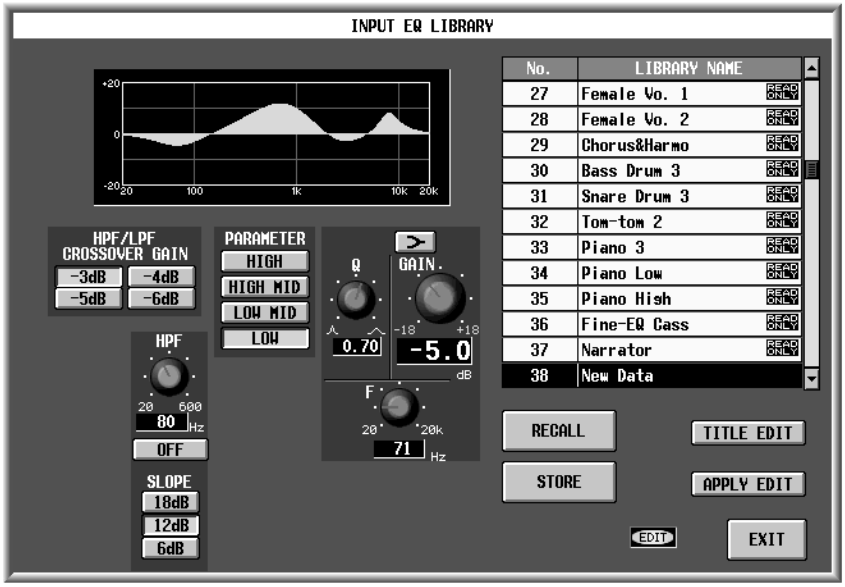
⑧ **EXIT**
This button exits the NAME LIBRARY window and returns to the previous screen.

INPUT EQ LIBRARY

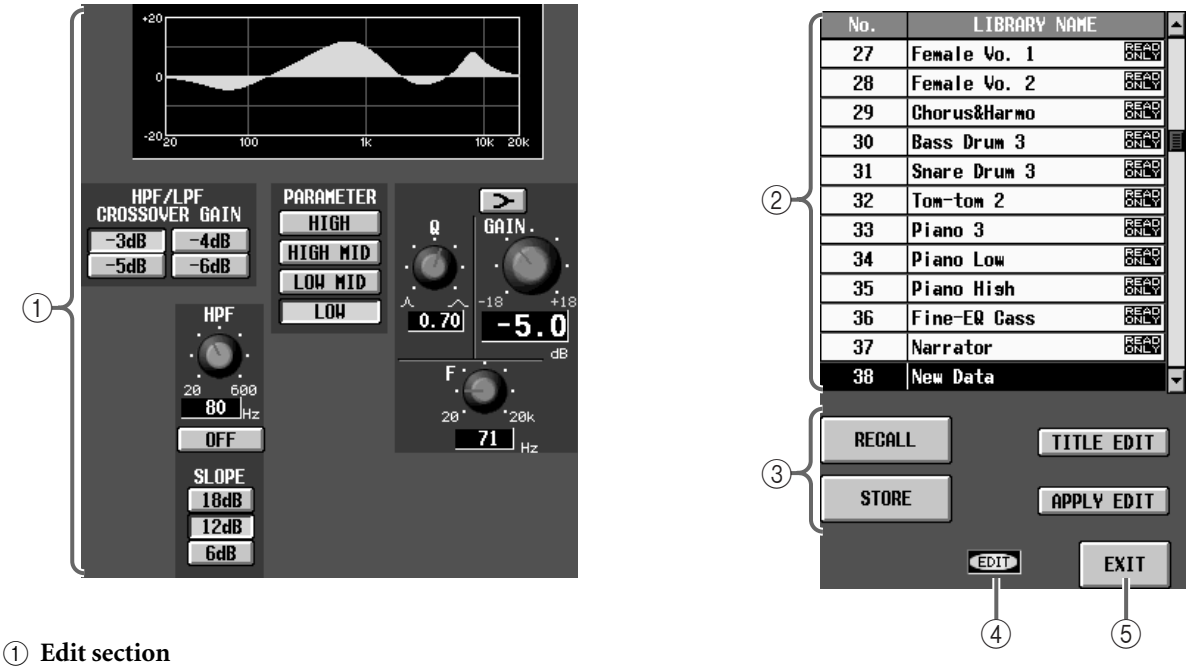
[Function]

Here you can store and recall EQ settings (input EQ data) for the currently selected input channel.

■ **Display**
MENU button → **IN EQ** button → **EQ PARAMETER** tab → **EQ LIBRARY** button



[Screen functions]



① **Edit section**
This area displays the settings of the input EQ data currently selected in the library list (②).

You can use the buttons and knobs to edit the data. Use the various PARAMETER buttons to switch the frequency band that is displayed.

② **Library list**
This shows a list of the input EQ data stored in memory. The highlighted line is currently selected for operations.

③ **STORE/RECALL buttons**
These buttons store/recall input EQ data.

Each button has the following function.

- **RECALL**
Load the currently selected input EQ data from the library list into the input channel selected in the EQ PARAMETER screen (IN GATE/COMP function).

- **STORE**
Store the input EQ data currently selected in the EQ PARAMETER screen (IN GATE/COMP function) to the number selected in the library list. When you click this button, the LIBRARY STORE popup window will appear, allowing you to assign a name to the input EQ data.

⚠ Input EQ data displayed as "READ ONLY" in the library list is read-only preset data. New EQ data cannot be overwritten onto these locations.

- **TITLE EDIT**
This edits the title of the input EQ data currently selected in the library list.

⚠ The TITLE EDIT button is valid only if data has actually been stored in the number selected in the library list. If a number with no data is selected, the button text will be gray, and the button cannot be used.

- **APPLY EDIT**
Store the edited content of the INPUT EQ LIBRARY window back into the same library number.

Hint

The APPLY EDIT button is valid only if the data of the number selected in the library list has been edited. If un-edited data is selected, and if a number marked "READ ONLY" is selected, the button text will be gray, and the button cannot be used.

④ **EDIT**
If you edit the input EQ data selected in the library list (②), this area will indicate "EDIT."

⑤ **EXIT**
This button exits the INPUT EQ LIBRARY window and returns to the previous screen.

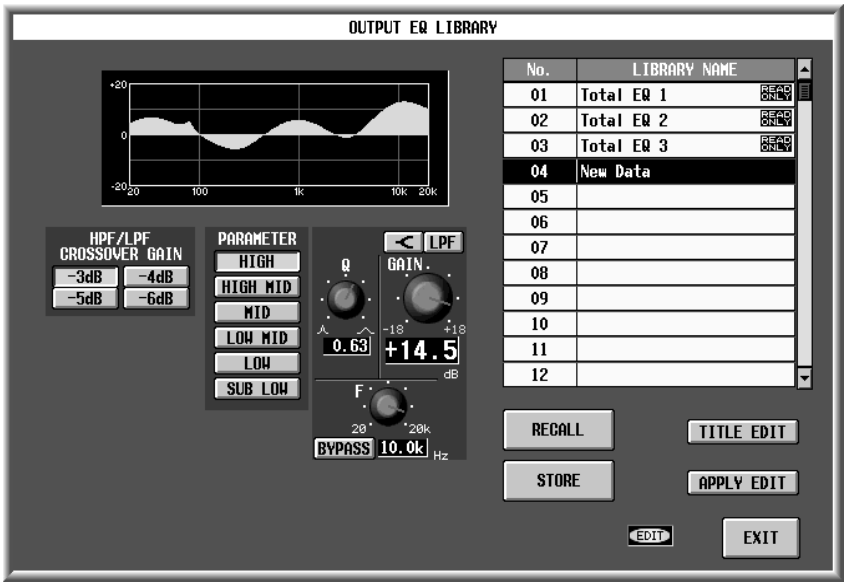
OUTPUT EQ LIBRARY

[Function]

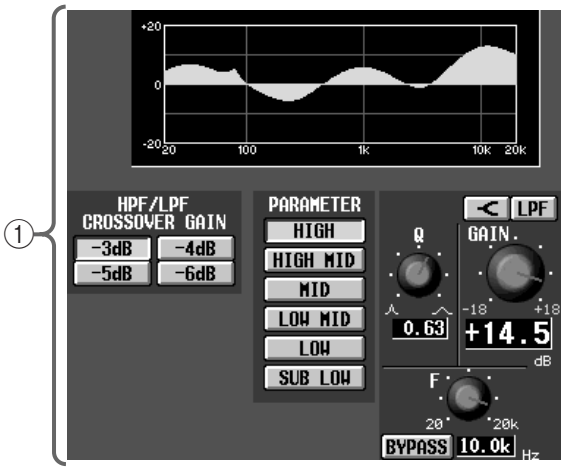
Here you can store and recall EQ settings (output EQ data) for the currently selected output channel.

■ **Display**

MENU button → **OUT EQ** button → **EQ PARAMETER** tab → **EQ LIBRARY** button

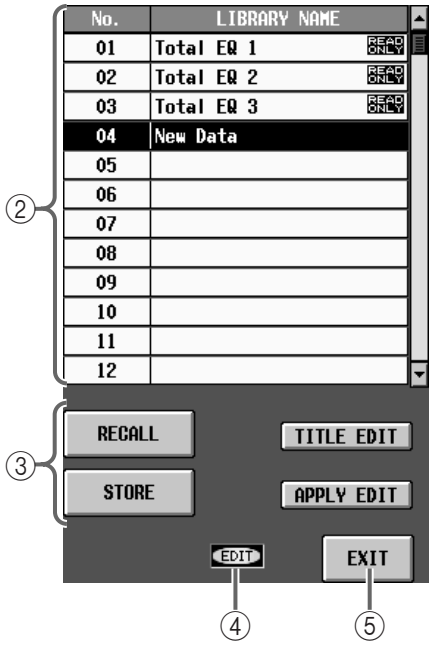


[Screen functions]



① **Edit section**

This area displays the settings of the output EQ data currently selected in the library list (②). You can use the buttons and knobs to edit the data. Use the various PARAMETER buttons to switch the frequency band that is displayed.



② **Library list**

This shows a list of the output EQ data stored in memory. The highlighted line is currently selected for operations.

③ **STORE/RECALL buttons**
These buttons store/recall output EQ data.

Each button has the following function.

- **RECALL**
Load the currently selected output EQ data from the library list into the output channel selected in the EQ PARAMETER screen.

- **STORE**
Store the output channel EQ data currently selected in the EQ PARAMETER screen to the number selected in the library list. When you click this button, the LIBRARY STORE popup window will appear, allowing you to assign a name to the output EQ data.

⚠ Output EQ data displayed as "READ ONLY" in the library list is read-only preset data. New EQ data cannot be overwritten onto these locations.

- **TITLE EDIT**
This edits the title of the output EQ data currently selected in the library list.

⚠ The TITLE EDIT button is valid only if data has actually been stored in the number selected in the library list. If a number with no data is selected, the button text will be gray, and the button cannot be used.

- **APPLY EDIT**
Store the edited content of the OUTPUT EQ LIBRARY window back into the same library number.

Hint

The APPLY EDIT button is valid only if the data of the number selected in the library list has been edited. If un-edited data is selected, and if a number marked "READ ONLY" is selected, the button text will be gray, and the button cannot be used.

④ **EDIT**
If you edit the output EQ data selected in the library list (②), this area will indicate "EDIT."

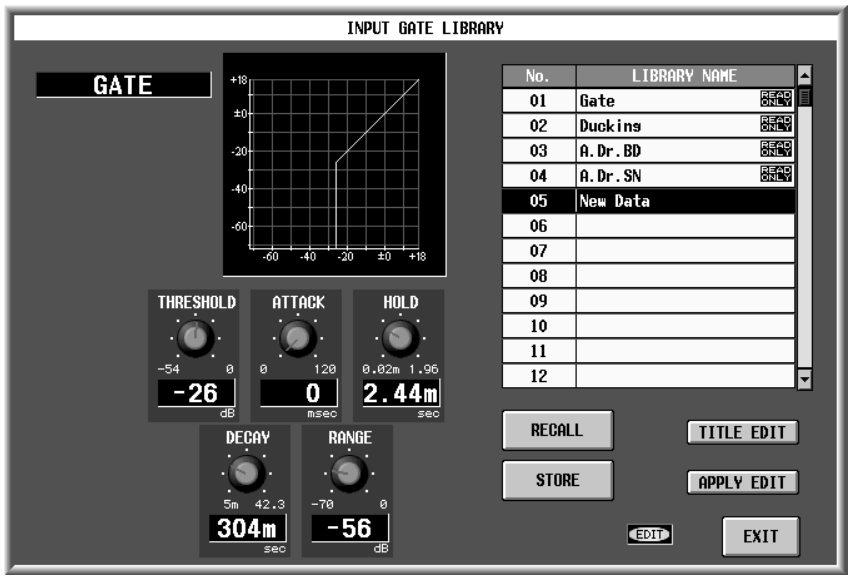
⑤ **EXIT**
This button exits the OUTPUT EQ LIBRARY window and returns to the previous screen.

INPUT GATE LIBRARY

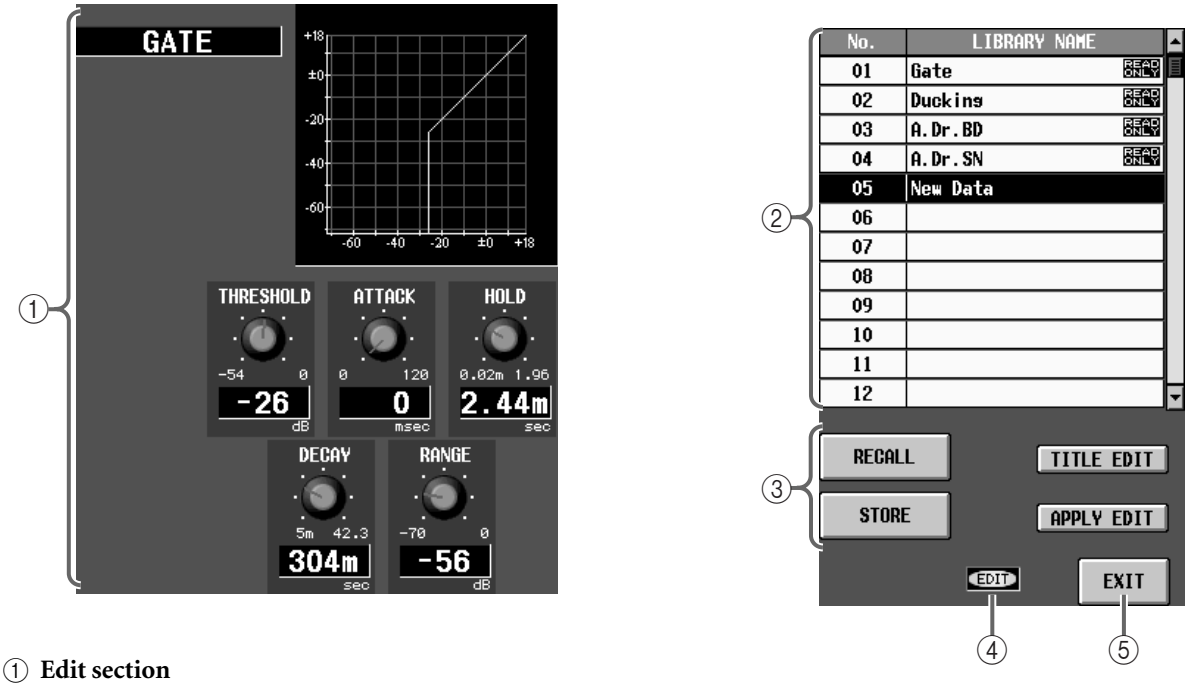
[Function]

Here you can store and recall gate settings (input gate data) for the currently selected input channel.

■ **Display**
MENU button → **IN GATE/COMP** button → **GATE PARAMETER** tab → **INPUT GATE LIBRARY** button



[Screen functions]



① **Edit section**
This area displays the settings of the input gate data currently selected in the library list (②). You can use the buttons and knobs to edit the data.

⚠ It is not possible to change the type here. If you wish to change the type, you must recall library data that uses the desired type.

② **Library list**
This shows a list of the input gate data stored in memory.

The highlighted line is currently selected for operations.

③ **STORE/RECALL buttons**
These buttons store/recall input gate data.

Each button has the following function.

- **RECALL**
Load the currently selected input gate data from the library list into the input channel selected in the GATE PARAMETER screen.

- **STORE**
Store the gate settings of the input channel currently selected in the GATE PARAMETER screen to the number selected in the library list. When you click this button, the LIBRARY STORE popup window will appear, allowing you to assign a name to the input gate data.

⚠ Input gate data displayed as "READ ONLY" in the library list is read-only preset data. New gate data cannot be overwritten onto these locations.

- **TITLE EDIT**
This edits the title of the input gate data currently selected in the library list.

⚠ The TITLE EDIT button is valid only if data has actually been stored in the number selected in the library list. If a number with no data is selected, the button text will be gray, and the button cannot be used.

- **APPLY EDIT**
Store the edited content of the INPUT gate LIBRARY window back into the same library number.

Hint

The APPLY EDIT button is valid only if the data of the number selected in the library list has been edited. If un-edited data is selected, and if a number marked "READ ONLY" is selected, the button text will be gray, and the button cannot be used.

④ **EDIT**
If you edit the input gate data selected in the library list (②), this area will indicate "EDIT."

⑤ **EXIT**
This button exits the INPUT GATE LIBRARY window and returns to the previous screen.

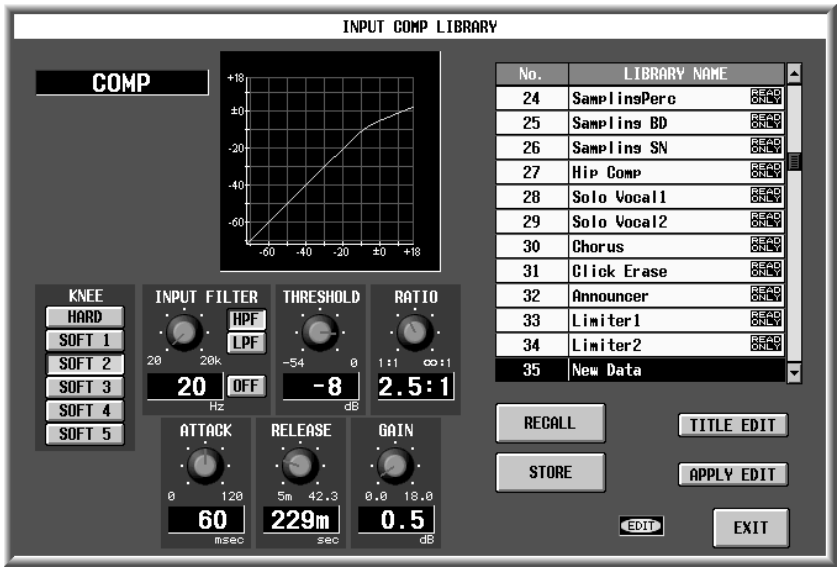
⚠ Key-in settings are not stored in the library.

INPUT COMP LIBRARY

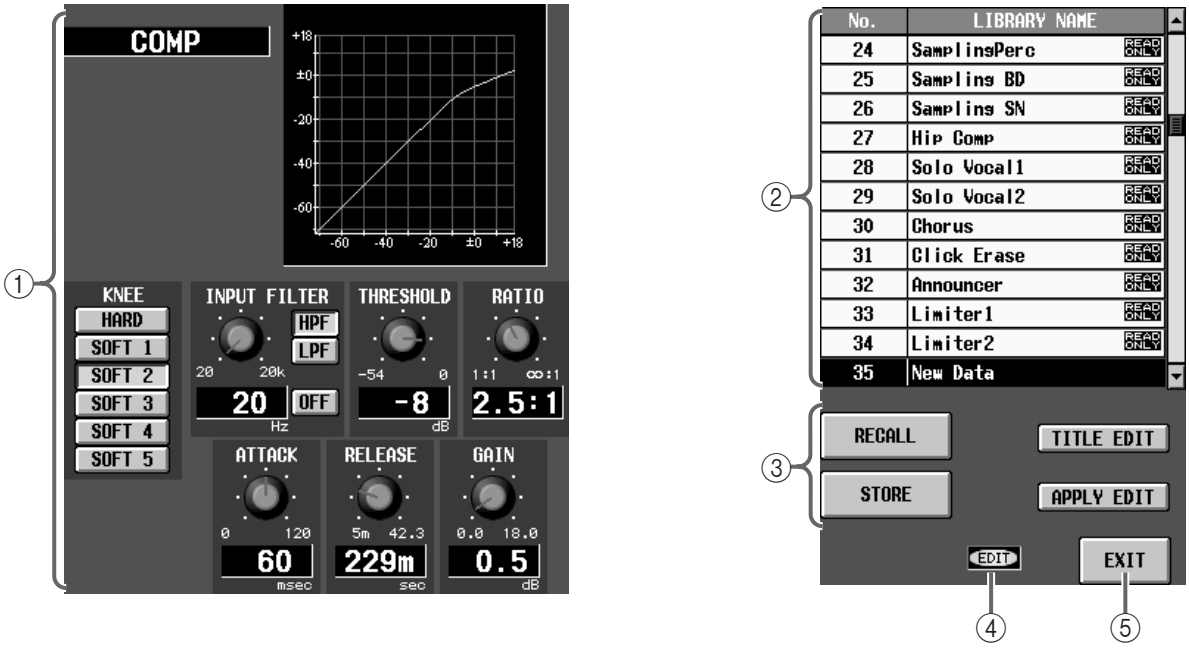
[Function]

Here you can store and recall compressor settings (input compressor data) for the currently selected input channel.

■ **Display**
MENU button → **IN GATE/COMP** button → **COMP PARAMETER** tab → **INPUT COMP LIBRARY** button



[Screen functions]



① **Edit section**
This area displays the settings of the input compressor data currently selected in the library list (②). You can use the buttons and knobs to edit the data.

⚠ It is not possible to change the type here. If you wish to change the type, you must recall library data that uses the desired type.

② **Library list**
This shows a list of the input compressor data stored in memory.

The highlighted line is currently selected for operations.

③ **STORE/RECALL buttons**
These buttons store/recall input compressor data.

Each button has the following function.

- **RECALL**

Load the currently selected input compressor data from the library list into the input channel selected in the COMP PARAMETER screen.

- **STORE**

Store the input compressor data currently selected in the COMP PARAMETER screen to the number selected in the library list. When you click this button, the LIBRARY STORE popup window will appear, allowing you to assign a name to the input compressor data.

⚠ Input compressor data displayed as "READ ONLY" in the library list is read-only preset data. New compressor data cannot be overwritten onto these locations.

- **TITLE EDIT**

This edits the title of the input compressor data currently selected in the library list.

⚠ The TITLE EDIT button is valid only if data has actually been stored in the number selected in the library list. If a number with no data is selected, the button text will be gray, and the button cannot be used.

- **APPLY EDIT**

Store the edited content of the INPUT COMP LIBRARY window back into the same library number.

Hint

The APPLY EDIT button is valid only if the data of the number selected in the library list has been edited. If un-edited data is selected, and if a number marked "READ ONLY" is selected, the button text will be gray, and the button cannot be used.

④ **EDIT**
If you edit the input compressor data selected in the library list (②), this area will indicate "EDIT."

⑤ **EXIT**
This button exits the INPUT COMP LIBRARY window and returns to the previous screen.

⚠ Key-in settings are not stored in the library.

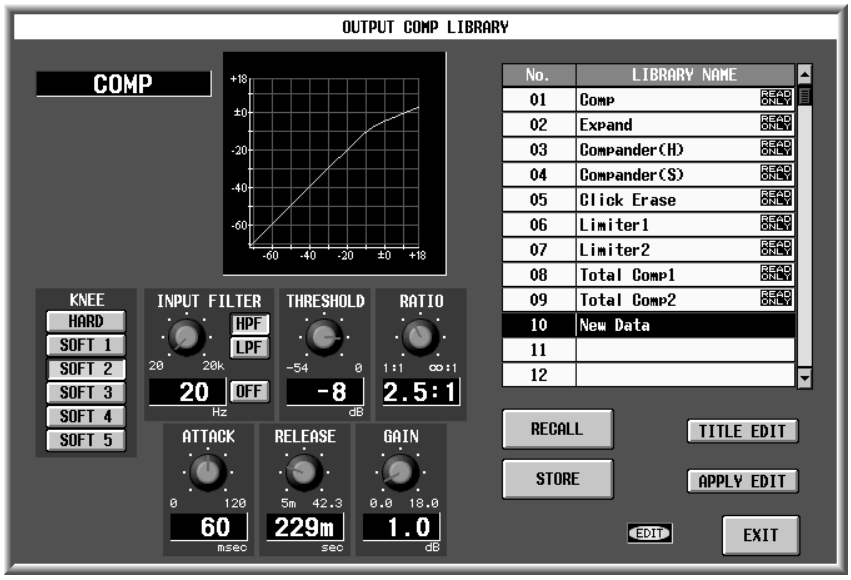
OUTPUT COMP LIBRARY

[Function]

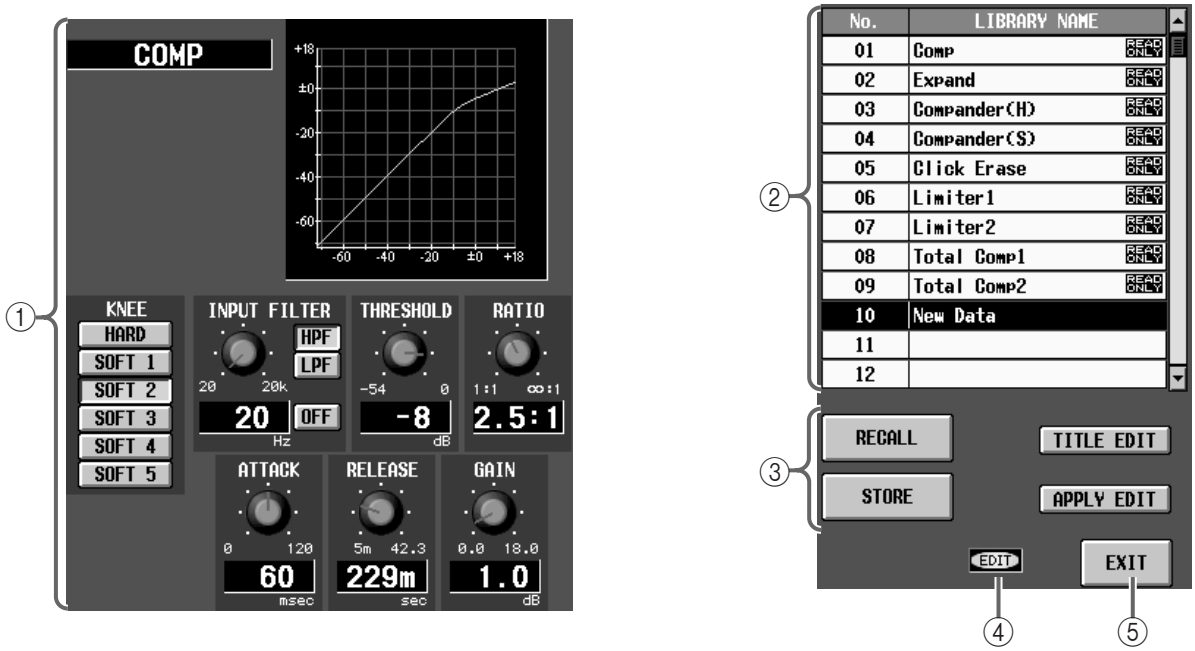
Here you can store and recall compressor settings (output compressor data) for the currently selected output channel.

■ **Display**

MENU button → **OUT COMP** button → **COMP PARAMETER** tab → **OUTPUT COMP LIBRARY** button



[Screen functions]



① **Edit section**

This area displays the settings of the output compressor data currently selected in the library list (②). You can use the buttons and knobs to edit the data.

⚠ It is not possible to change the type here. If you wish to change the type, you must recall library data that uses the desired type.

② **Library list**

This shows a list of the output compressor data stored in memory.

The highlighted line is currently selected for operations.

③ **STORE/RECALL buttons**
These buttons store/recall output compressor data.

Each button has the following function.

- **RECALL**

Load the currently selected output compressor data from the library list into the output channel selected in the COMP PARAMETER screen (OUT COMP function).

- **STORE**

Store the compressor data of the channel selected in the COMP PARAMETER screen to the number selected in the library list. When you click this button, the LIBRARY STORE popup window will appear, allowing you to assign a name to the output compressor data.

⚠ Output compressor data displayed as "READ ONLY" in the library list is read-only preset data. New compressor data cannot be overwritten onto these locations.

- **TITLE EDIT**

This edits the title of the output compressor data currently selected in the library list.

⚠ The TITLE EDIT button is valid only if data has actually been stored in the number selected in the library list. If a number with no data is selected, the button text will be gray, and the button cannot be used.

- **APPLY EDIT**

Store the edited content of the OUTPUT COMP LIBRARY window back into the same library number.

Hint

The APPLY EDIT button is valid only if the data of the number selected in the library list has been edited. If un-edited data is selected, and if a number marked "READ ONLY" is selected, the button text will be gray, and the button cannot be used.

④ **EDIT**
If you edit the output compressor data selected in the library list (②), this area will indicate "EDIT."

⑤ **EXIT**
This button exits the OUTPUT COMP LIBRARY window and returns to the previous screen.

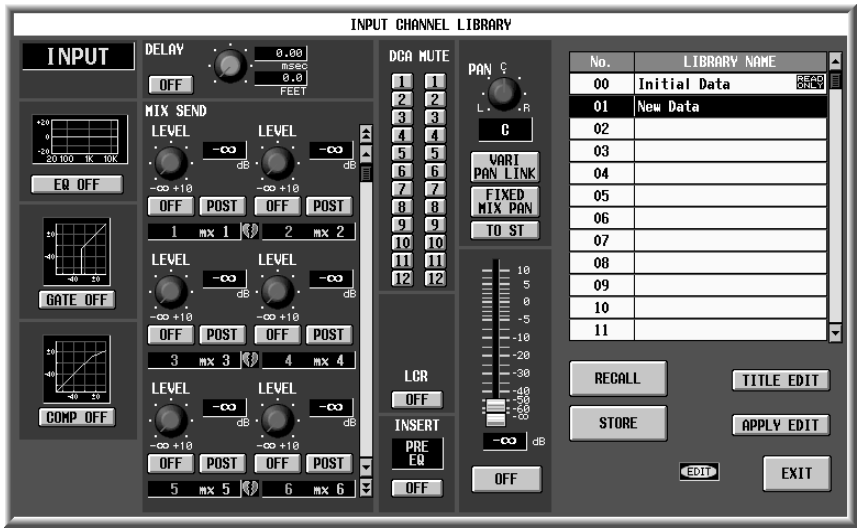
⚠ Key-in settings are not stored in the library.

INPUT CHANNEL LIBRARY

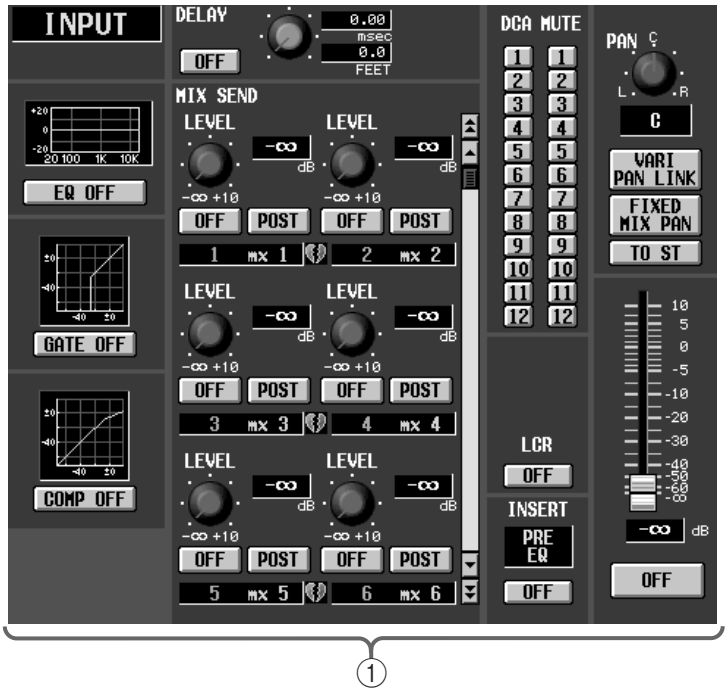
[Function]

Here you can store and recall mix parameter settings (input channel data) for the currently selected input channel.

■ **Display**
MENU button → **IN CH VIEW** button → **INPUT CH LIBRARY** button

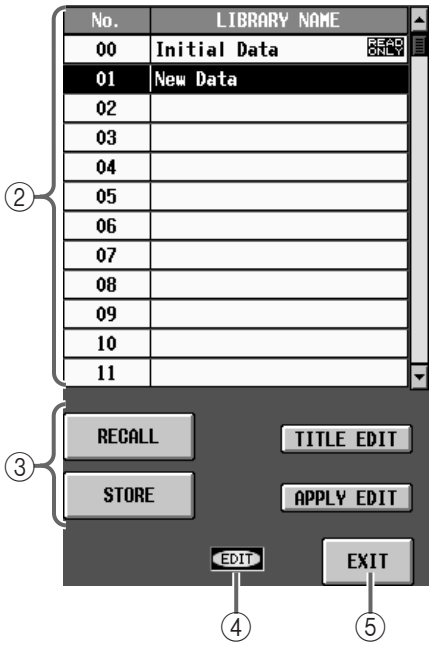


[Screen functions]



① **Edit section**
This area displays the settings of the input channel data currently selected in the library list (②). You can use the buttons and knobs to edit the data.

Hint
By clicking the EQ, GATE, or COMP mini-graphs, you can access screens for editing the corresponding parameters. After editing the parameters, click OK to return to the INPUT CHANNEL LIBRARY screen.



② **Library list**
This shows a list of the input channel data stored in memory.

The highlighted line is currently selected for operations.

③ **STORE/RECALL buttons**
These buttons store/recall input channel data.

Each button has the following function.

- **RECALL**

Load the currently selected input channel data from the library list into the input channel selected in the CH VIEW screen (IN CH VIEW function).

⚠ It is not possible to recall if the pairing state of the recall channel does not match the pairing state stored in the selected library list.
However, LIBRARY No.00 Initial Data can be recalled to either paired or unpaired channels.

- **STORE**

Store the channel settings of the input channel currently selected in the CH VIEW screen (IN CH VIEW function) to the number selected in the library list. When you click this button, the LIBRARY STORE popup window will appear, allowing you to assign a name to the input channel data.

- **TITLE EDIT**

This edits the title of the input channel data currently selected in the library list.

⚠ The TITLE EDIT button is valid only if data has actually been stored in the number selected in the library list. If a number with no data is selected, the button text will be gray, and the button cannot be used.

- **APPLY EDIT**

Store the edited content of the INPUT CHANNEL LIBRARY window back into the same library number.

Hint

The APPLY EDIT button is valid only if the data of the number selected in the library list has been edited. If a number with no data is selected, or if unedited data is selected, and if a number marked "READ ONLY" is selected, the button text will be gray, and the button cannot be used.

④ **EDIT**
If you edit the input channel data selected in the library list (②), this area will indicate "EDIT."

⑤ **EXIT**
This button exits the INPUT CHANNEL LIBRARY window and returns to the previous screen.

⚠

- Recall can be used only if the library contents and the recall destination are both monaural input channels or both paired (stereo) input channels. For other combinations, the RECALL button will be grayed, and the Recall operation cannot be performed.
- However, Initial Data can be recalled for any input channel.
- If the library contents differ from the VARI/FIX or MONO/PAIR settings of the current MIX bus, the SEND-related parameters for that MIX bus will be partially not recalled.

Hint

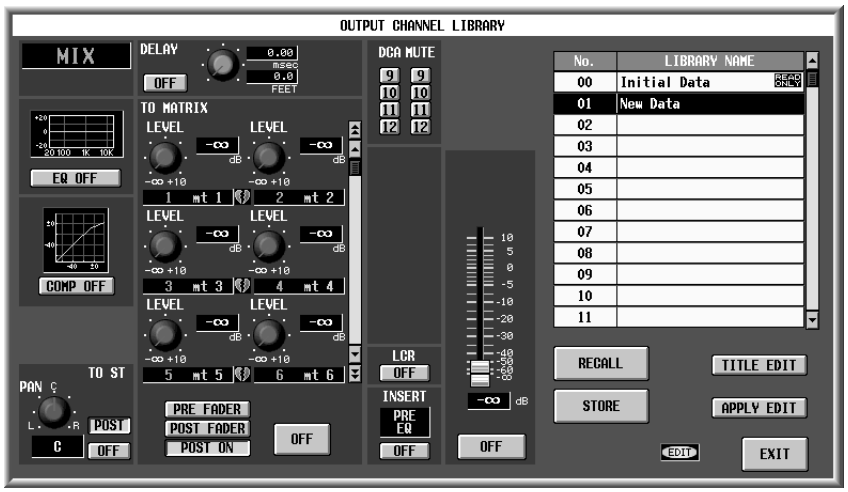
For a list of the parameters that are saved in the channel library, refer to "CS1D Reference Manual (Appendices)" section "Channel library list."

OUTPUT CHANNEL LIBRARY

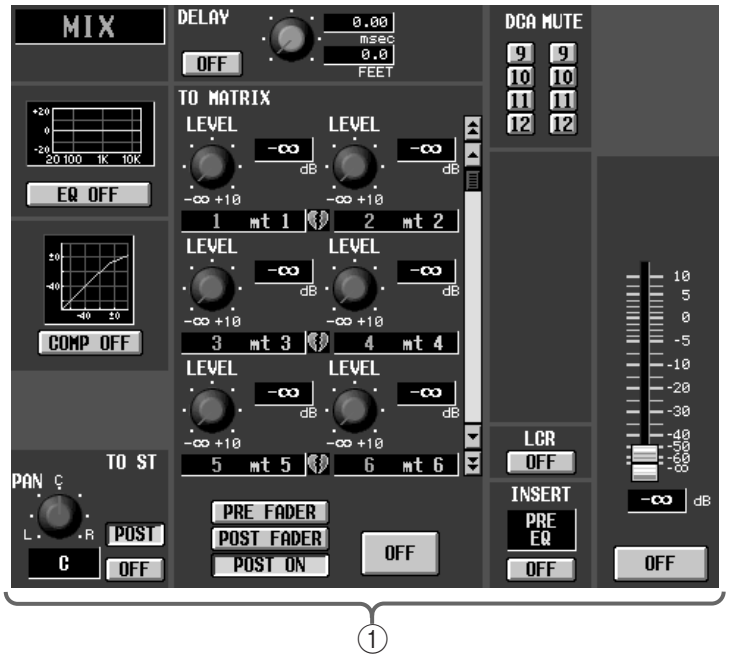
[Function]

Here you can store and recall mix parameter settings (output channel data) for the currently selected output channel.

■ **Display**
MENU button → **OUT CH VIEW** button → **OUTPUT CH LIBRARY** button



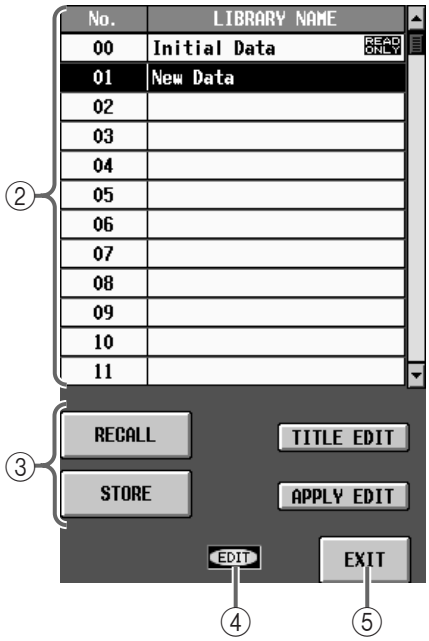
[Screen functions]



① **Edit section**
This area displays the settings of the output channel data currently selected in the library list (②). You can use the buttons and knobs to edit the data.

Hint

By clicking the EQ, GATE, or COMP mini-graphs, you can access screens for editing the corresponding parameters. After editing the parameters, click OK to return to the OUTPUT CHANNEL LIBRARY screen.



② **Library list**
This shows a list of the output channel data stored in memory.

The highlighted line is currently selected for operations.

③ **STORE/RECALL buttons**
These buttons store/recall output channel data.

Each button has the following function.

- **RECALL**
Load the currently selected output channel data from the library list into the output channel selected in the CH VIEW screen (OUT CH VIEW function).

⚠ It is not possible to recall if the pairing state of the recall channel does not match the pairing state stored in the selected library list.
However, LIBRARY No.00 Initial Data can be recalled to either paired or unpaired channels.

- **STORE**
Store the channel settings of the output channel currently selected in the CH VIEW screen to the number selected in the library list. When you click this button, the LIBRARY STORE popup window will appear, allowing you to assign a name to the output channel data.

- **TITLE EDIT**
This edits the title of the output channel data currently selected in the library list.

⚠ The TITLE EDIT button is valid only if data has actually been stored in the number selected in the library list. If a number with no data is selected, the button text will be gray, and the button cannot be used.

- **APPLY EDIT**
Store the edited content of the OUTPUT CHANNEL LIBRARY window back into the same library number.

Hint
The APPLY EDIT button is valid only if the data of the number selected in the library list has been edited. If a number with no data is selected, or if unedited data is selected, and if a number marked "READ ONLY" is selected, the button text will be gray, and the button cannot be used.

④ **EDIT**
If you edit the output channel data selected in the library list (②), this area will indicate "EDIT."

⑤ **EXIT**
This button exits the OUTPUT CHANNEL LIBRARY window and returns to the previous screen.

⚠
- Recall can be used only if the store source and the recall destination are both the same type of output channels (MIX, MATRIX, STEREO A/B) and are both monaural or both paired (stereo). For other combinations, the RECALL button will be grayed, and the Recall operation cannot be performed.
- If you recall STEREO A channel data into the STEREO B channel, the ST B MONO parameter will be OFF. In the opposite case, the ST B MONO parameter will be ignored.
- However, Initial Data can be recalled to any output channel.

Hint
For a list of the parameters that are saved in the channel library, refer to "CS1D Reference Manual (Appendices)" section "Channel library list."

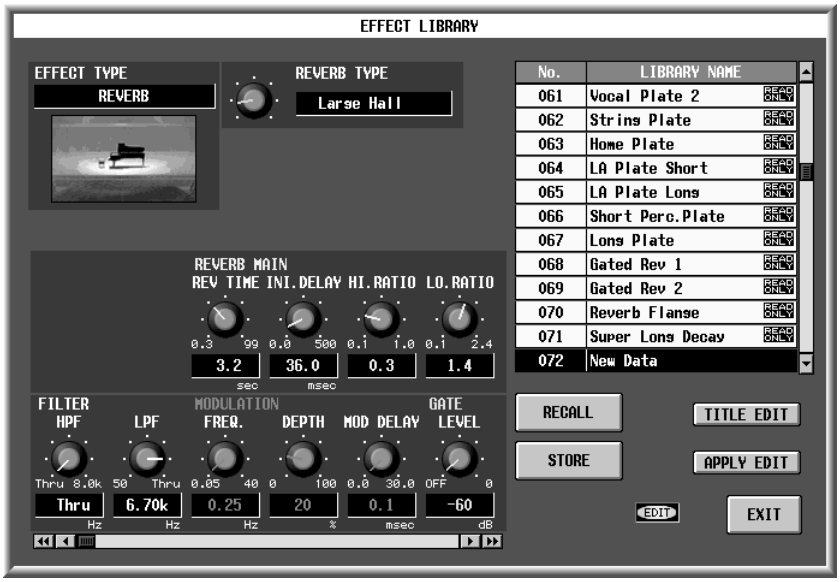
EFFECT LIBRARY

[Function]

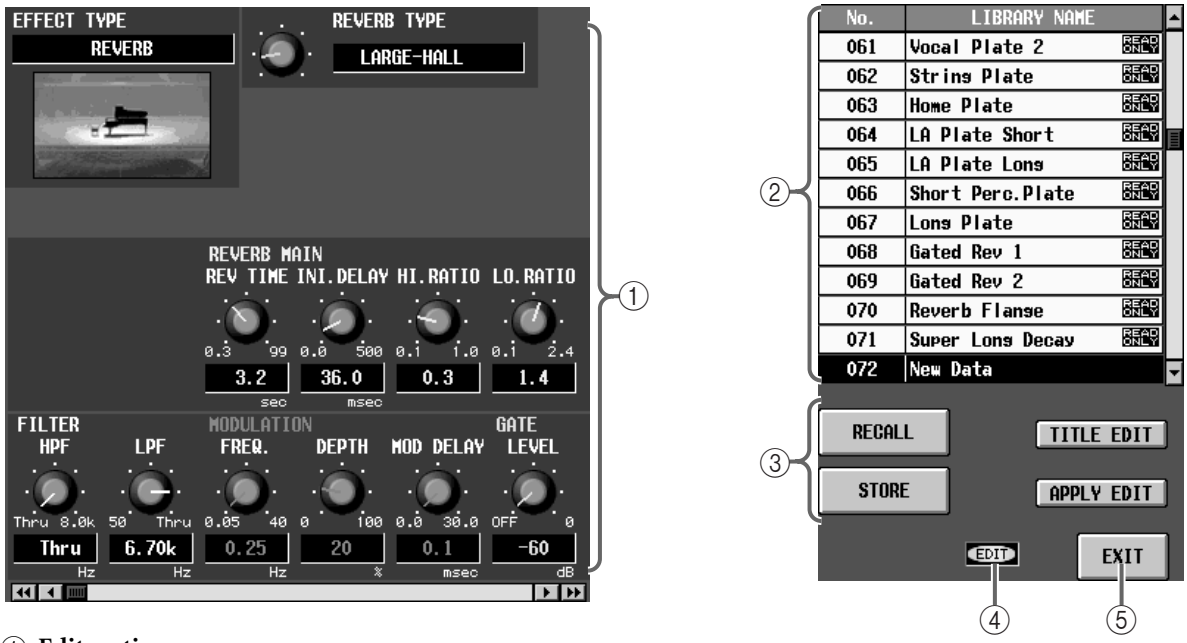
Here you can store and recall the effect settings (effect data) of the currently selected internal effect.

■ **Display**

MENU button → **EFFECT** button → **EFFECT 1 – EFFECT 8** tabs → **EFFECT LIBRARY** button



[Screen functions]



① **Edit section**

This area displays the settings of the effect data currently selected in the library list (②). You can use the buttons and knobs to edit the data.

⚠ It is not possible to change the effect type used by the effect data. If you need a specific effect type, you must first select effect data that uses that effect type.

② **Library list**

This shows a list of the effect data stored in memory.

The highlighted line is currently selected for operations.

③ **STORE/RECALL buttons**

These buttons store/recall effect data.

Each button has the following function.

- **RECALL**
Load the currently selected effect data from the library list into the internal effect selected in the EFFECT function.

- **STORE**
Store the effect data of the effect currently selected in the EFFECT function to the number selected in the library list. When you click this button, the LIBRARY STORE popup window will appear, allowing you to assign a name to the effect data.

⚠ Effect data displayed as "READ ONLY" in the library list is read-only preset data. New effect data cannot be overwritten onto these locations.

- **TITLE EDIT**
This edits the title of the effect data currently selected in the library list.

⚠ The TITLE EDIT button is valid only if data has actually been stored in the number selected in the library list. If a number with no data is selected, the button text will be gray, and the button cannot be used.

- **APPLY EDIT**
Store the edited content of the EFFECT LIBRARY window back into the same library number.

Hint

The APPLY EDIT button is valid only if the data of the number selected in the library list has been edited. If un-edited data is selected, and if a number marked "READ ONLY" is selected, the button text will be gray, and the button cannot be used.

④ **EDIT**
If you edit the effect data selected in the library list (②), this area will indicate "EDIT."

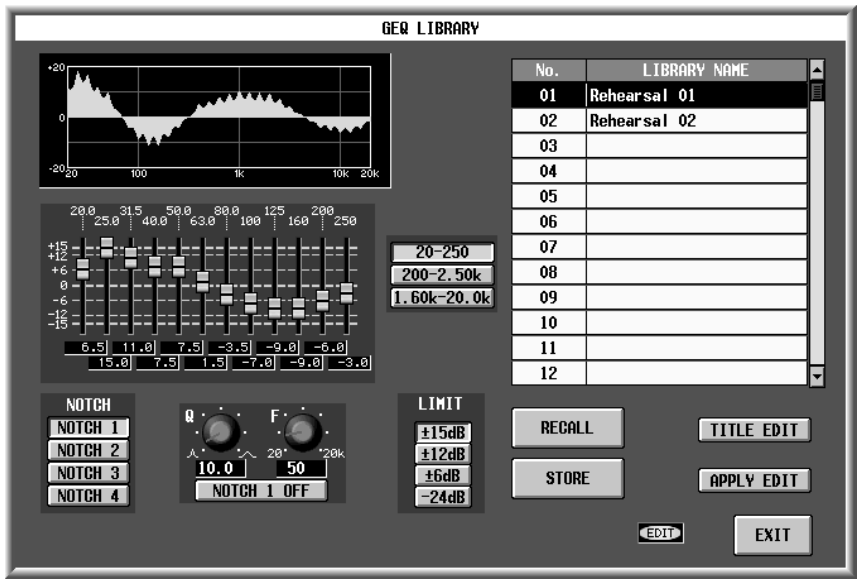
⑤ **EXIT**
This button exits the EFFECT LIBRARY window and returns to the previous screen.

GEQ LIBRARY

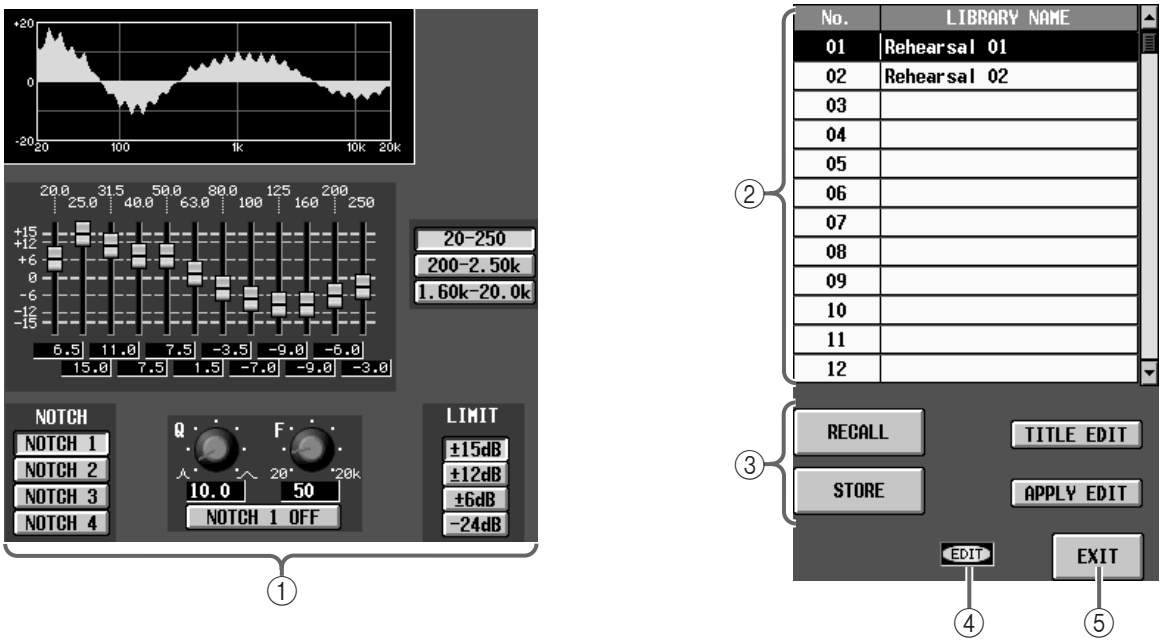
[Function]

Here you can store and recall the settings (GEQ data) of the currently selected GEQ module.

■ **Display**
MENU button → **GEQ** button → **GEQ PARAMETER** tab → **GEQ LIBRARY** button



[Screen functions]



① **Edit section**
This area displays the settings of the GEQ data currently selected in the library list (②).

You can use the buttons, knobs and sliders to edit the data.

② **Library list**
This shows a list of the GEQ data stored in memory.

The highlighted line is currently selected for operations.

③ **STORE/RECALL buttons**
These buttons store/recall GEQ data.

Each button has the following function.

- **RECALL**
Load the currently selected GEQ data from the library list into the GEQ module selected in the GEQ PARAMETER screen.

- **STORE**
Store the settings of the GEQ module currently selected in the GEQ PARAMETER screen to the number selected in the library list. When you click this button, the LIBRARY STORE popup window will appear, allowing you to assign a name to the GEQ data.

- **TITLE EDIT**
This edits the title of the GEQ data currently selected in the library list.

⚠ The TITLE EDIT button is valid only if data has actually been stored in the number selected in the library list. If a number with no data is selected, the button text will be gray, and the button cannot be used.

- **APPLY EDIT**
Store the edited content of the GEQ LIBRARY window back into the same library number.

Hint

The APPLY EDIT button is valid only if the data of the number selected in the library list has been edited. If un-edited data is selected, and if a number marked "READ ONLY" is selected, the button text will be gray, and the button cannot be used.

④ **EDIT**
If you edit the GEQ data selected in the library list (②), this area will indicate "EDIT."

⑤ **EXIT**
This button exits the GEQ LIBRARY window and returns to the previous screen.

Other

Memory initialization

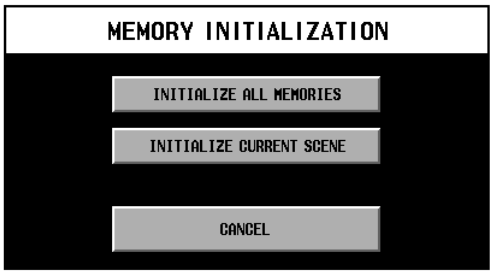
[Function]

Restore scene memories and other internal data such as libraries to their factory-set condition.

⚠ When you initialize the memory, all previously-saved data will be erased, and cannot be recovered. Please use caution. If memory contains important data, you must save it to a memory card inserted in the PC ATA STORAGE CARD slot of the CS1D before you initialize the memory.

[Procedure]

1. **Turn off the power of the PW1D power supply.**
2. **Turn on the power of the PW1D, and after the opening screen appears in the LCD display of the CS1D, repeatedly press the left/right switches located below the track pad of the data entry block until the following screen appears in the display.**



3. **Use the track pad and the left/right switches to select either "INITIALIZE ALL MEMORY" or "INITIALIZE CURRENT SCENE."**
   When you select one of these, the corresponding display shown below will appear.

"INITIALIZE ALL MEMORY": All memory will be initialized. All parameters that can be stored in memory will return to their factory-set condition.

"INITIALIZE CURRENT SCENE": The current state will be initialized. SCENE MEMORY settings or the various LIBRARY settings that have been stored will not be initialized.

The following data will be initialized.

- **CURRENT SCENE**
- **CURRENT UNIT**
- **CURRENT PATCH**
- **CURRENT NAME**
- **CURRENT SETUP**

4. **Use the left/right switches on the track pad to select OK.**
   After initialization occurs, the system will restart.

   If you wish to abort the initialization, select CANCEL.

CS1D

CONTROL SURFACE

Reference Manual (Appendices)

PM1D

DIGITAL AUDIO MIXING SYSTEM

Contents

Appendices

Preset EQ Program Parameters

• INPUT EQ LIBRARY

This is the EQ library that can be used on inputs. (All are read-only.)

#	Title	Parameter					Description
			LOW	LOW MID	HIGH MID	HIGH	
01	Bass Drum 1		PEAKING	PEAKING	PEAKING	H.SHELF	Emphasizes the low range of a bass drum and the attack created by the beater.
		G	+3.5 dB	–3.5 dB	±0.0 dB	+4.0 dB	
		F	100 Hz	265 Hz	1.06 kHz	5.30 kHz	
		Q	1.2	10.0	0.90	—	
02	Bass Drum 2		PEAKING	PEAKING	PEAKING	LPF	Creates a peak around 80Hz, producing a tight, stiff sound.
		G	+8.0 dB	–7.0 dB	+6.0 dB	—	
		F	80 Hz	400 Hz	2.50 kHz	12.5 kHz	
		Q	1.4	4.5	2.2	SLOPE: 12 dB	
03	Snare Drum 1		PEAKING	PEAKING	PEAKING	H.SHELF	Emphasizes snapping and rimshot sounds.
		G	–0.5 dB	±0.0 dB	+3.0 dB	+4.5 dB	
		F	132 Hz	1.00 kHz	3.15 kHz	5.00 kHz	
		Q	1.2	4.5	0.11	—	
04	Snare Drum 2		L.SHELF	PEAKING	PEAKING	PEAKING	Emphasizes the ranges of that classic rock snare drum sound.
		G	+1.5 dB	–8.5 dB	+2.5 dB	+4.0 dB	
		F	180 Hz	335 Hz	2.36 kHz	4.00 kHz	
		Q	—	10.0	0.70	0.10	
05	Tom-tom 1		PEAKING	PEAKING	PEAKING	PEAKING	Emphasizes the attack of tom-toms, and creates a long, “leathery” decay.
		G	+2.0 dB	–7.5 dB	+2.0 dB	+1.0 dB	
		F	212 Hz	670 Hz	4.50 kHz	6.30 kHz	
		Q	1.4	10.0	1.2	0.28	
06	Cymbal		L.SHELF	PEAKING	PEAKING	H.SHELF	Emphasizes the attack of crash cymbals, extending the “sparkling” decay.
		G	–2.0 dB	±0.0 dB	±0.0 dB	+3.0 dB	
		F	106 Hz	425 Hz	1.06 kHz	13.2 kHz	
		Q	—	8.0	0.90	—	
07	High Hat		L.SHELF	PEAKING	PEAKING	H.SHELF	A hi-hat setting that slightly emphasizes the mid to high range and reduces the low range to make the sound crisp. You can use LOW MID G (gain) to adjust the boost/cut of the attack portion.
		G	–4.0 dB	–2.5 dB	+1.0 dB	+0.5 dB	
		F	95 Hz	425 Hz	2.80 kHz	7.50 kHz	
		Q	—	0.50	1.0	—	
08	Percussion		L.SHELF	PEAKING	PEAKING	H.SHELF	Emphasizes the attack and clarifies the high-range of instruments, such as shakers, cabasas, and congas.
		G	–4.5 dB	±0.0 dB	+2.0 dB	±0.0 dB	
		F	100 Hz	400 Hz	2.80 kHz	17.0 kHz	
		Q	—	4.5	0.56	—	
09	E.Bass 1		L.SHELF	PEAKING	PEAKING	H.SHELF	Makes a tight electric bass sound by cutting very low frequencies.
		G	–7.5 dB	+4.5 dB	+2.5 dB	±0.0 dB	
		F	35.5 Hz	112 Hz	2.00 kHz	4.00 kHz	
		Q	—	5.0	4.5	—	

#	Title	Parameter					Description
			LOW	LOW MID	HIGH MID	HIGH	
10	E.Bass 2		PEAKING	PEAKING	PEAKING	H.SHELF	Unlike program 09, this program emphasizes the low range of an electric bass.
		G	+3.0 dB	±0.0 dB	+2.5 dB	+0.5 dB	
		F	112 Hz	112 Hz	2.24 kHz	4.00 kHz	
		Q	0.10	5.0	6.3	—	
11	Syn.Bass 1		PEAKING	PEAKING	PEAKING	H.SHELF	Use on a synth bass with emphasized low range.
		G	+3.5 dB	+8.5 dB	±0.0 dB	±0.0 dB	
		F	85 Hz	950 Hz	4.00 kHz	12.5 kHz	
		Q	0.10	8.0	4.5	—	
12	Syn.Bass 2		PEAKING	PEAKING	PEAKING	H.SHELF	Emphasizes the attack that is peculiar to a synth bass.
		G	+2.5 dB	±0.0 dB	+1.5 dB	±0.0 dB	
		F	125 Hz	180 Hz	1.12 kHz	12.5 kHz	
		Q	1.6	8.0	2.2	—	
13	Piano 1		L.SHELF	PEAKING	PEAKING	H.SHELF	This is used to make a piano sound brighter.
		G	–6.0 dB	±0.0 dB	+2.0 dB	+4.0 dB	
		F	95 Hz	950 Hz	3.15 kHz	7.50 kHz	
		Q	—	8.0	0.90	—	
14	Piano 2		PEAKING	PEAKING	PEAKING	H.SHELF	Used in conjunction with a compressor, this program emphasizes the attack and low range of a piano sound.
		G	+3.5 dB	–8.5 dB	+1.5 dB	+3.0 dB	
		F	224 Hz	600 Hz	3.15 kHz	5.30 kHz	
		Q	5.6	10.0	0.70	—	
15	E.G.Clean		PEAKING	PEAKING	PEAKING	H.SHELF	Use for line-recording an electric guitar or semi-acoustic guitar to get a slightly hard sound.
		G	+2.0 dB	–5.5 dB	+0.5 dB	+2.5 dB	
		F	265 Hz	400 Hz	1.32 kHz	4.50 kHz	
		Q	0.18	10.0	6.3	—	
16	E.G.Crunch 1		PEAKING	PEAKING	PEAKING	PEAKING	Adjusts the tonal quality of a slightly distorted guitar sound.
		G	+4.5 dB	±0.0 dB	+4.0 dB	+2.0 dB	
		F	140 Hz	1.00 kHz	1.90 kHz	5.60 kHz	
		Q	8.0	4.5	0.63	9.0	
17	E.G.Crunch 2		PEAKING	PEAKING	PEAKING	H.SHELF	A variation on program 16.
		G	+2.5 dB	+1.5 dB	+2.5 dB	±0.0 dB	
		F	125 Hz	450 Hz	3.35 kHz	19.0 kHz	
		Q	8.0	0.40	0.16	—	
18	E.G.Dist. 1		L.SHELF	PEAKING	PEAKING	H.SHELF	Makes a heavily distorted guitar sound clearer.
		G	+5.0 dB	±0.0 dB	+3.5 dB	±0.0 dB	
		F	355 Hz	950 Hz	3.35 kHz	12.5 kHz	
		Q	—	9.0	10.0	—	
19	E.G.Dist. 2		L.SHELF	PEAKING	PEAKING	H.SHELF	A variation on program 18.
		G	+6.0 dB	–8.5 dB	+4.5 dB	+4.0 dB	
		F	315 Hz	1.06 kHz	4.25 kHz	12.5 kHz	
		Q	—	10.0	4.0	—	
20	A.G.Stroke 1		PEAKING	PEAKING	PEAKING	H.SHELF	Emphasizes the bright tones of an acoustic guitar.
		G	–2.0 dB	±0.0 dB	+1.0 dB	+4.0 dB	
		F	106 Hz	1.00 kHz	1.90 kHz	5.30 kHz	
		Q	0.90	4.5	3.5	—	

#	Title	Parameter					Description
			LOW	LOW MID	HIGH MID	HIGH	
21	A.G.Stroke 2		L.SHELF	PEAKING	PEAKING	H.SHELF	A variation on program 20. You can also use it with a gutsy guitar sound.
		G	–3.5 dB	–2.0 dB	±0.0 dB	+2.0 dB	
		F	300 Hz	750 Hz	2.00 kHz	3.55 kHz	
		Q	—	9.0	4.5	—	
22	A.G.Arpeg. 1		L.SHELF	PEAKING	PEAKING	PEAKING	Corrects arpeggio technique of an acoustic guitar.
		G	–0.5 dB	±0.0 dB	±0.0 dB	+2.0 dB	
		F	224 Hz	1.00 kHz	4.00 kHz	6.70 kHz	
		Q	—	4.5	4.5	0.12	
23	A.G.Arpeg. 2		L.SHELF	PEAKING	PEAKING	H.SHELF	A variation on program 22.
		G	±0.0 dB	–5.5 dB	±0.0 dB	+4.0 dB	
		F	180 Hz	355 Hz	4.00 kHz	4.25 kHz	
		Q	—	7.0	4.5	—	
24	Brass Sec.		PEAKING	PEAKING	PEAKING	PEAKING	Use with trumpets, trombones, or sax. With one instrument, adjust the HIGH or HIGH MID frequency.
		G	–2.0 dB	–1.0 dB	+1.5 dB	+3.0 dB	
		F	90 Hz	850 Hz	2.12 kHz	4.50 kHz	
		Q	2.8	2.0	0.70	7.0	
25	Male Vocal 1		PEAKING	PEAKING	PEAKING	PEAKING	Use as a template for male vocal. Adjust the HIGH or HIGH MID setting according to the voice quality.
		G	–0.5 dB	±0.0 dB	+2.0 dB	+3.5 dB	
		F	190 Hz	1.00 kHz	2.00 kHz	6.70 kHz	
		Q	0.11	4.5	0.56	0.11	
26	Male Vocal 2		PEAKING	PEAKING	PEAKING	H.SHELF	A variation on program 25.
		G	+2.0 dB	–5.0 dB	–2.5 dB	+4.0 dB	
		F	170 Hz	236 Hz	2.65 kHz	6.70 kHz	
		Q	0.11	10.0	5.6	—	
27	Female Vo. 1		PEAKING	PEAKING	PEAKING	PEAKING	Use as a template for female vocal. Adjust the HIGH or HIGH MID setting according to the voice quality.
		G	–1.0 dB	+1.0 dB	+1.5 dB	+2.0 dB	
		F	118 Hz	400 Hz	2.65 kHz	6.00 kHz	
		Q	0.18	0.45	0.56	0.14	
28	Female Vo. 2		L.SHELF	PEAKING	PEAKING	H.SHELF	A variation on program 27.
		G	–7.0 dB	+1.5 dB	+1.5 dB	+2.5 dB	
		F	112 Hz	335 Hz	2.00 kHz	6.70 kHz	
		Q	—	0.16	0.20	—	
29	Chorus&Harmo		PEAKING	PEAKING	PEAKING	PEAKING	Use as a template for a chorus. It makes the entire chorus much brighter.
		G	–2.0 dB	–1.0 dB	+1.5 dB	+3.0 dB	
		F	90 Hz	850 Hz	2.12 kHz	4.50 kHz	
		Q	2.8	2.0	0.70	7.0	
30	Bass Drum 3		PEAKING	PEAKING	PEAKING	PEAKING	A variation on program 01, 02. The low and mid range is removed.
		G	+3.5 dB	–10.0 dB	+3.5 dB	±0.0 dB	
		F	118 Hz	315 Hz	4.25 kHz	20.0 kHz	
		Q	2.0	10.0	0.40	0.40	
31	Snare Drum 3		L.SHELF	PEAKING	PEAKING	PEAKING	A variation on program 03, 04. It creates a thick sound.
		G	±0.0 dB	+2.0 dB	+3.5 dB	±0.0 dB	
		F	224 Hz	560 Hz	4.25 kHz	4.00 kHz	
		Q	—	4.5	2.8	0.1	

#	Title	Parameter					Description
			LOW	LOW MID	HIGH MID	HIGH	
32	Tom-tom 2		L.SHELF	PEAKING	PEAKING	H.SHELF	A variation on program 05. Emphasizes the mid and high range.
		G	–9.0 dB	+1.5 dB	+2.0 dB	±0.0 dB	
		F	90 Hz	212 Hz	5.30 kHz	17.0 kHz	
		Q	—	4.5	1.2	—	
33	Piano 3		PEAKING	PEAKING	PEAKING	H.SHELF	A variation on program 13, 14.
		G	+4.5 dB	–13.0 dB	+4.5 dB	+2.5 dB	
		F	100 Hz	475 Hz	2.36 kHz	10.0 kHz	
		Q	8.0	10.0	9.0	—	
34	Piano Low		PEAKING	PEAKING	PEAKING	H.SHELF	Use for the low range of a piano sound recorded in stereo.
		G	–5.5 dB	+1.5 dB	+6.0 dB	±0.0 dB	
		F	190 Hz	400 Hz	6.70 kHz	12.5 kHz	
		Q	10.0	6.3	2.2	—	
35	Piano High		PEAKING	PEAKING	PEAKING	PEAKING	Use for the high range of a piano sound recorded in stereo.
		G	–5.5 dB	+1.5 dB	+5.0 dB	+3.0 dB	
		F	190 Hz	400 Hz	6.70 kHz	5.60 kHz	
		Q	10.0	6.3	2.2	0.10	
36	Fine-EQ Cass		L.SHELF	PEAKING	PEAKING	H.SHELF	Use when recording to or from cassette tape to make the sound clearer.
		G	–1.5 dB	±0.0 dB	+1.0 dB	+3.0 dB	
		F	75 Hz	1.00 kHz	4.00 kHz	12.5 kHz	
		Q	—	4.5	1.8	—	
37	Narrator		PEAKING	PEAKING	PEAKING	H.SHELF	Use when recording narration.
		G	–4.0 dB	–1.0 dB	+2.0 dB	±0.0 dB	
		F	106 Hz	710 Hz	2.50 kHz	10.0 kHz	
		Q	4.0	7.0	0.63	—	

• OUTPUT EQ LIBRARY

This is the EQ library that can be used on outputs. (All are read-only.)

#	Title		Parameter						Description
			SUB LOW	LOW	LOW MID	MID	HIGH MID	HIGH	
01	Total EQ 1		PEAKING	PEAKING	PEAKING	PEAKING	PEAKING	H.SHELF	Use on a stereo mix during mixdown. Sounds even better when used with a compressor.
		G	–0.5 dB	±0.0 dB	±0.0 dB	±0.0 dB	+3.0 dB	+6.5 dB	
		F	95 Hz	1.0 kHz	950 Hz	2.5 kHz	2.12 kHz	16.0 kHz	
		Q	7.0	1.0	2.2	1.0	5.6	—	
02	Total EQ 2		PEAKING	PEAKING	PEAKING	PEAKING	PEAKING	H.SHELF	A variation on program 01.
		G	+4.0 dB	±0.0 dB	+1.5 dB	±0.0 dB	+2.0 dB	+6.0 dB	
		F	95 Hz	1.0 kHz	750 Hz	2.5 kHz	1.80 kHz	18.0 kHz	
		Q	7.0	1.0	2.8	1.0	5.6	—	
03	Total EQ 3		L.SHELF	PEAKING	PEAKING	PEAKING	PEAKING	H.SHELF	A variation on program 01. 01–03 can also be used with stereo inputs or external effect returns.
		G	+1.5 dB	±0.0 dB	+0.5 dB	±0.0 dB	+2.0 dB	+4.0 dB	
		F	67 Hz	1.0 kHz	850 Hz	2.5 kHz	1.90 kHz	15.0 kHz	
		Q	—	1.0	0.28	1.0	0.70	—	

Preset Dynamics Program Settings

Here is a list of the built-in dynamics programs.
The values shown for the RELEASE, HOLD, and DECAY parameters are for a sampling frequency of 44.1 kHz. Be aware that for these parameters, the operating time and available range will change depending on the sampling frequency.

• INPUT GATE LIBRARY

No. **Title [Type]** **Compressor effect and parameter values**

01 Gate [GATE] Gating template preset.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
01	–26	—	–56	0m	—	—	—	—	2.56m	331m

02 Ducking [DUCKING] Ducking template preset. For example, this can be used with an announcer's voice as the key-in signal to lower the volume of background music.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
02	–19	—	–22	93m	—	—	—	—	1.20	6.32

03 A.Dr.BD [GATE] This preset adapts COMP, GATE, and COMPANDER (H) respectively to the bass drum of an acoustic drum kit.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
03	–11	—	–53	0m	—	—	—	—	1.93m	400m

04 A.Dr.SN [GATE] This adapts preset program 03 to a snare drum.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
04	–8	—	–23	1m	—	—	—	—	0.63m	238m

• INPUT COMP LIBRARY

For all libraries, the INPUT FILTER is set to HPF 20 Hz OFF.
[COMPANDER H] indicates COMPANDER HARD, and [COMPANDER S] indicates COMPANDER SOFT.

No. Title [Type] Compressor effect and parameter values

01 Comp [COMP] Compressor template preset for use on the overall mix.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
01	–8	2.5	—	60m	0.0	SOFT 2	—	250m	—	—

02 Expand [EXPANDER] Expander template preset.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
02	–23	1.7	—	1m	3.5	SOFT 2	—	70m	—	—

03 Compander(H) [COMPANDER H] Compander template presets
04 Compander(S) [COMPANDER S]

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
03	–10	3.5	—	1m	0.0	—	6	250m	—	—
04	–8	4	—	25m	0.0	—	24	180m	—	—

05 A.Dr.BD [COMP] These presets adapt COMP and COMPANDER (H) respectively for the bass
06 A.Dr.BD [COMPANDER H] drum of an acoustic drum kit.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
05	–24	3	—	9m	5.5	SOFT 2	—	58m	—	—
06	–11	3.5	—	1m	–1.5	—	7	192m	—	—

07 A.Dr.SN [COMP] These adapt preset programs 02, 05, and 06 for a snare drum.
08 A.Dr.SN [EXPANDER]
09 A.Dr.SN [COMPANDER S]

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
07	–17	2.5	—	8m	3.5	SOFT 2	—	12m	—	—
08	–23	2	—	0m	0.5	SOFT 2	—	151m	—	—
09	–8	1.7	—	11m	0.0	—	10	128m	—	—

10 A.Dr.Tom [EXPANDER] When used on acoustic drum toms, this will lower the volume except when the tom is being played, to improve separation from the snare and bass drum sounds.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
10	–20	2	—	2m	5.0	SOFT 2	—	749m	—	—

11 A.Dr.OverTop [COMPANDER S] This emphasizes the attack and "air" of the sound picked up by a mic placed above the cymbal of an acoustic drum set, and also slightly lowers the volume when the cymbal is not being played, to improve separation from the other sounds of the kit.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
11	–24	2	—	38m	–3.5	—	54	842m	—	—

12 E.B.Finger [COMP] A compressor that evens out the attack and volume of a finger-plucked electric bass.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
12	–12	2	—	15m	4.5	SOFT 2	—	470m	—	—

13 E.B.Slap [COMP] A compressor that evens out the attack and volume of a slapped electric bass.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
13	–12	1.7	—	6m	4.0	HARD	—	133m	—	—

14 Syn.Bass [COMP] A compressor that evens out the level of a synth bass and emphasizes it.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
14	–10	3.5	—	9m	3.0	HARD	—	250m	—	—

15 Piano1 [COMP]
16 Piano2 [COMP]
Piano1 makes the sound stand out slightly and brightens it. In contrast, Piano2 has a deeper threshold and evens out the overall level and sense of attack.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
15	–9	2.5	—	17m	1.0	HARD	—	238m	—	—
16	–18	3.5	—	7m	6.0	SOFT 2	—	174m	—	—

17 E.Guitar [COMP] Suitable for electric guitar backing such as chording and arpeggios. Try making various adjustments according to the tone or playing technique.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
17	–8	3.5	—	7m	2.5	SOFT 4	—	261m	—	—

18 A.Guitar [COMP] Suitable for acoustic guitar strumming or arpeggios.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
18	–10	2.5	—	5m	1.5	SOFT 2	—	238m	—	—

19 Strings1 [COMP]
20 Strings2 [COMP]
21 Strings3 [COMP]
These are compressors suitable for strings. No.20 and 21 can also be used on low-range instruments (cello, contrabass).

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
19	–11	2	—	33m	1.5	SOFT 2	—	749m	—	—
20	–12	1.5	—	93m	1.5	SOFT 4	—	1.35m	—	—
21	–17	1.5	—	76m	2.5	SOFT 2	—	186m	—	—

22 BrassSection [COMP] Suitable for sounds with a fairly rapid rise or strong sense of attack.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
22	–18	1.7	—	18m	4.0	SOFT 1	—	226mm	—	—

23 Syn.Pad [COMP] Pulls together sounds that tend to lack cohesiveness. Suitable for instruments that are pleasant to the ear but can tend to be diffuse, such as synth pads.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
23	–13	2	—	58m	2.0	SOFT 1	—	238m	—	—

24 SamplingPerc [COMPANDER S]
25 Sampling BD [COMP]
26 Sampling SN [COMP]
27 Hip Comp [COMPANDER S]

Effective when used on sampled sounds from CD-ROM etc. are used in a context of acoustic sounds, to prevent the sampled sounds from seeming to lack in power or definition. Four variations are provided: Perc, BD, SN, and for looped materials (Hip Comp).

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
24	–18	1.7	—	8m	–2.5	—	18	238m	—	—
25	–14	2	—	2m	3.5	SOFT 4	—	35m	—	—
26	–18	4	—	8m	8.0	HARD	—	354m	—	—
27	–23	20	—	15m	0.0	—	15	163m	—	—

28 Solo Vocal1 [COMP]
29 Solo Vocal2 [COMP]

Variations suitable for solo vocal sources.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
28	–20	2.5	—	31m	2.0	SOFT 1	—	342m	—	—
29	–8	2.5	—	26m	1.5	SOFT 3	—	331m	—	—

30 Chorus [COMP]

An adaptation of Vocal, suitable for choruses.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
30	–9	1.7	—	39m	2.5	SOFT 2	—	226m	—	—

31 Click Erase [EXPANDER]

Use this as a gate if the click tone that the musicians listen to is loud and you wish to eliminate it.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
31	–33	2	—	1m	2.0	SOFT 2	—	284m	—	—

32 Announcer [COMPANDER H]

This uses the voice of an announcer to lower the level of the gate, and also maintains a consistent volume for the announcer's voice.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
32	–14	2.5	—	1m	–2.5	—	18	180m	—	—

33 Limiter1 [COMPANDER S]
34 Limiter2 [COMP]

Limiter templates. 1 has a slow release, and 2 is a Peak Stop type.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
33	–9	3	—	20m	–3.0	—	90	3.90m	—	—
34	0	∞	—	0m	0.0	HARD	—	319m	—	—

• OUTPUT COMP LIBRARY

No. Title [Type] Compressor effect and parameter values

01 Comp [COMP] Compressor template preset for use on the overall mix.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
01	–8	2.5	—	60m	0.0	SOFT 2	—	250m	—	—

02 Expand [EXPANDER] Expander template preset.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
02	–23	1.7	—	1m	3.5	SOFT 2	—	70m	—	—

03 Compander(H) [COMPANDER H]
04 Compander(S) [COMPANDER S]
Compander template preset.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
03	–10	3.5	—	1m	0.0	—	6	250m	—	—
04	–8	4	—	25m	0.0	—	24	180m	—	—

05 Click Erase [EXPANDER] Use this as a gate if the click tone that the musicians listen to is loud and you wish to eliminate it.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
05	–33	2	—	1m	2.0	SOFT 2	—	284m	—	—

06 Limiter1 [COMPANDER S]
07 Limiter2 [COMP]
Limiter templates. 1 has a slow release, and 2 is a Peak Stop type.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
06	–9	3	—	20m	–3.0	—	90	3.90m	—	—
07	0	∞	—	0m	0.0	HARD	—	319m	—	—

08 Total Comp1 [COMP]
09 Total Comp2 [COMP]
These presets make the overall level consistent and improve the definition of the overall sound, and are effective when applied to the stereo out during mixdown. Interesting effects can also be obtained with various adjustments when these are used on stereo sources.

No.	THRESHOLD (dB)	RATIO (:1)	RANGE (dB)	ATTACK (s)	OUT GAIN (dB)	KNEE	WIDTH (dB)	RELEASE (s)	HOLD (s)	DECAY (s)
08	–18	3.5	—	94m	2.5	HARD	—	447m	—	—
09	–16	6	—	11m	6.0	SOFT 1	—	180m	—	—

Compressor Types

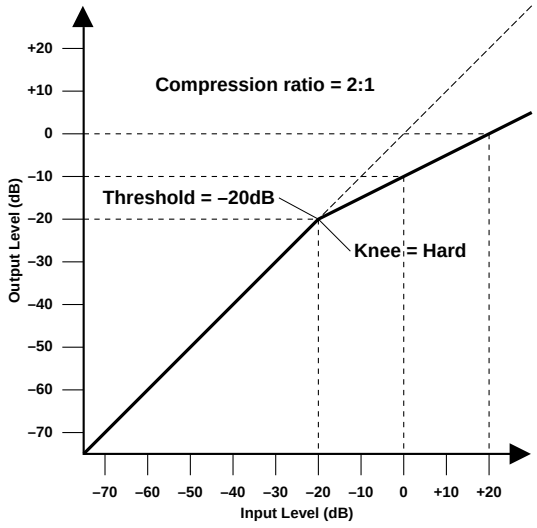
Dynamics processors are generally used to correct or control signal levels, although they can also be used creatively to shape a sound's volume envelope. The following sections explain the COMP, EXPANDER, and COMPANDER-(H/S) compressor, their parameters, and general applications.

COMP

The COMP processor is a compressor that attenuates signals above a specified threshold, providing automatic level control.

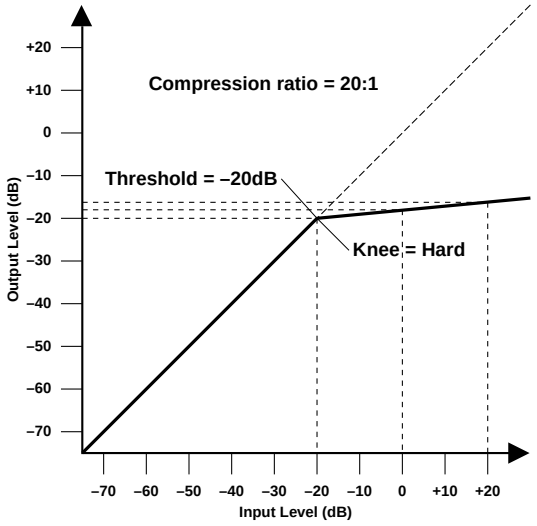
Vocalists that tend to move toward and away from the microphone while singing produce fluctuating signal levels; sometimes loud, sometimes soft. Likewise, acoustic instruments with a large dynamic range produce sound levels from pianissimo (very soft) through to fortissimo (very loud). In these situations, it is often difficult to set an average fader level that will allow a voice or instrument to be heard clearly throughout a song or piece of music. This is where the compressor comes in with automatic level control. By automatically reducing high levels, thus effectively reducing the dynamic range, the compressor makes it much easier to control signals and set appropriate fader levels. Reducing the dynamic range also means that recording levels can be set higher, therefore improving signal-to-noise performance.

[Compressor]



The COMP processor can also be used as a limiter, which is essentially a compressor with a high ratio setting. Compression ratios above 10:1 are considered to limit signals rather than compress them. When an input signal exceeds the specified threshold level, its level is automatically reduced to the threshold level. This means that the limiter's output level never actually exceeds the threshold level. Limiters are often used to prevent signals from overloading amplifiers and tape recorders. A limiter with a relatively high threshold, for example, could be used with the stereo outputs to prevent amplifier and speaker overload.

[Limiter]



Parameter	Range
THRESHOLD	–54 dB to 0 dB (1 dB steps)
OUT GAIN	±0.0 dB to +18.0 dB (0.5 dB steps)
KNEE	HARD, SOFT 1, SOFT 2, SOFT 3, SOFT 4, SOFT 5
ATTACK	0–120 ms (1 ms steps)
RELEASE	5 ms–42.3 s (fs = 48 kHz) 6 ms–46 s (fs = 44.1 kHz)
RATIO	1:1, 1.1:1, 1.3:1, 1.5:1, 1.7:1, 2:1, 2.5:1, 3:1, 3.5:1, 4:1, 5:1, 6:1, 8:1, 10:1, 20:1, ∞:1 (16 points)
INPUT FILTER HPF/LPF	HPF (high-pass filter) or LPF (low-pass filter)
INPUT FILTER ON/OFF	ON or OFF
INPUT FILTER FREQUENCY	20 Hz–20 kHz (121 steps)

THRESHOLD—This determines the level of input signal required to trigger the compressor. Signals at a level below the threshold pass through the compressor unaffected. Signals at and above the threshold level are compressed by the amount specified using the Ratio parameter. The trigger signal is sourced using the KEY IN parameter.

OUT GAIN—This sets the compressor's output signal level, and can be used to compensate for the overall level change caused by the compression process.

KNEE—This determines how compression is applied at the threshold point. When set to hard, compression at the specified ratio is applied as soon as the input signal level exceeds the specified threshold. For knee settings from 1 to 5, however, compression is applied gradually as the signal exceeds the specified threshold, creating a more natural sound. This is called soft-knee compression.

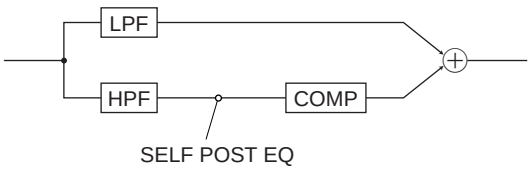
ATTACK—This determines how soon the signal is compressed once the compressor has been triggered. With a fast attack time, the signal is compressed almost immediately. With a slow attack time, however, the initial transient of a sound passes through unaffected. Attack times from 1 to 5 milliseconds are a good place to start.

RELEASE—This determines how soon the compressor returns to its normal gain once the trigger signal level drops below the threshold. If the release time is too short, the gain will recover too quickly causing level pumping (i.e., noticeable gain fluctuations). If it is set too long, the compressor may not have time to recover before the next high level signal appears, and it will be compressed incorrectly. Release times from 0.1 to 0.5 seconds are a good place to start.

RATIO—This determines the amount of compression, that is, the change in output signal level relative to change in input signal level. For a 2:1 ratio, for example, a 10 dB change in input level (above the threshold) results in a 5 dB change in output level. For a 5:1 ratio, a 10 dB change in input level (above the threshold) results in a 2 dB change in output level.

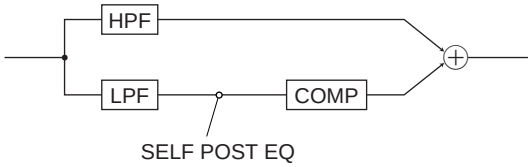
INPUT FILTER HPF/LPF—Select the filter that will be applied to the signal immediately before the compressor. When HPF (high pass filter) is on, the compressor will apply to the signal that has passed through the HPF, and the signal that has passed through the LPF will then be mixed in. Since with this setting only the high-frequency portion of the signal is compressed, the effect will function as a de-esser.

For COMP ON and HPF ON



When LPF (low pass filter) is on, the compressor will apply to the signal that has passed through the LPF, and the signal that has passed through the HPF will then be mixed in. With this setting, only the low-frequency portion of the signal is compressed.

For COMP ON and LPF ON



⚠ If you want the signal immediately after passing through the LPF or HPF to be used as the key-in signal for the internal compressor, select SELF POST EQ as the key-in signal.
When the key-in signal is set to LEFT CH (when the key-in signal is taken from the previous-numbered channel), and if COMP is turned on and LPF or HPF is also turned on for the channel that is the source of the key-in signal, then the signal after passing through the filter will be output as the key-in signal.

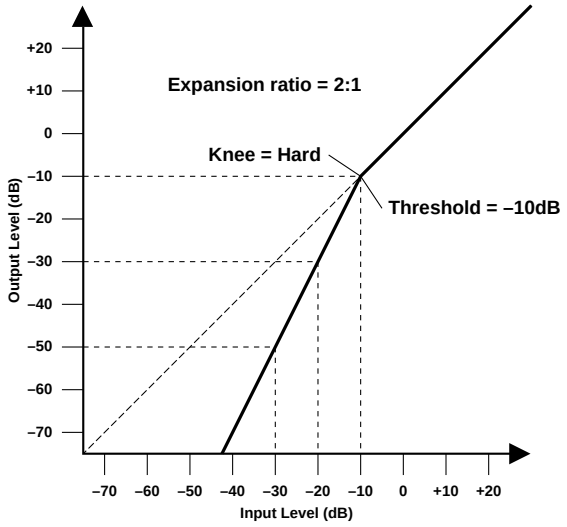
INPUT FILTER ON/OFF—This turns the input filter on/off. If off, the LPF/HPF setting will be ignored.

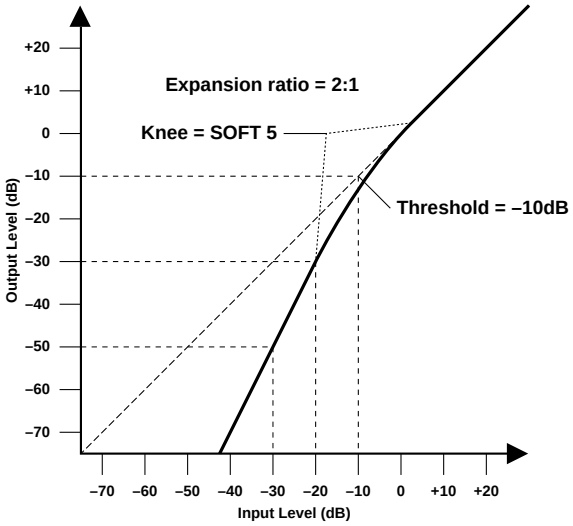
INPUT FILTER FREQUENCY—This sets the cutoff frequency of the LPF/HPF. (The LPF cutoff frequency and HPF cutoff frequency are always linked.)

EXPANDER

An expander is similar to a compressor except that it works on signals below the threshold level. By reducing signals below the threshold level, the expander attenuates low-level noise, effectively increasing the dynamic range and improving the signal-to-noise performance. An expander set to an infinite ratio (i.e., ∞:1) is essentially a gate.

The following two graphs show typical expander curves. The one on the left shows an expander with an expansion ratio of 2:1 and a hard knee setting. The one on the right shows an expander with an expansion ratio of 2:1 and a soft knee setting of 5.





Parameter	Range
THRESHOLD	–54 dB to 0 dB (1 dB steps)
OUT GAIN	±0.0 dB to +18.0 dB (0.5 dB steps)
KNEE	HARD, SOFT 1, SOFT 2, SOFT 3, SOFT 4, SOFT 5
ATTACK	0–120 ms (1 ms steps)
RELEASE	5 ms–42.3 s (fs = 48 kHz) 6 ms–46 s (fs = 44.1 kHz)
RATIO	1:1, 1.1:1, 1.3:1, 1.5:1, 1.7:1, 2:1, 2.5:1, 3:1, 3.5:1, 4:1, 5:1, 6:1, 8:1, 10:1, 20:1, ∞:1 (16 points)
INPUT FILTER HPF/LPF	HPF (high-pass filter) or LPF (low-pass filter)
INPUT FILTER ON/OFF	ON or OFF
INPUT FILTER FREQUENCY	20 Hz–20 kHz (121 steps)

THRESHOLD—This determines the level of input signal required to trigger the expander. Signals above the threshold pass through the expander unaffected. Signals at and below the threshold level are attenuated by the amount specified using the Ratio parameter. The trigger signal is sourced using the KEY IN parameter.

OUT GAIN—This sets the expander's output signal level, and can be used to compensate for the overall level change caused by the expansion process.

KNEE—This determines how expansion is applied at the threshold point. When set to hard, expansion at the specified ratio is applied as soon as the input signal level falls below the specified threshold. For knee settings from 1 to 5, however, expansion is applied gradually as the signal falls below the specified threshold, creating a more natural sound.

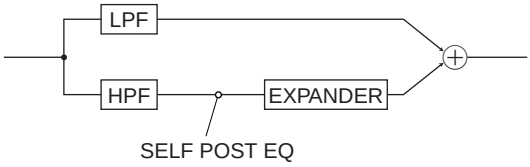
ATTACK – Specify the time over which the expander will return to the normal gain after the trigger signal exceeds the threshold. If the attack time is too short, the gain will return suddenly, causing the sound to "jump out." (The gain change will be obtrusive.) However if the attack is too long, the next signal will be input before the gain has returned, causing inappropriate expansion. When setting the attack time, it is a good idea to start with a value in the range of 1–5 milliseconds.

RELEASE – Specify the time over which the signal is expanded from when the expander is triggered. If the release time is short, the signal will be expanded almost instantly. If the release time is long, the release portion of the sound will not be expanded. When setting the release time, it is a good idea to start with a value in the range of 0.1–0.5 seconds.

RATIO—This determines the amount of expansion. That is, the change in output signal level relative to change in input signal level. For a 2:1 ratio, for example, a 5 dB change in input level (below the threshold) results in a 10 dB change in output level. For a 5:1 ratio, a 2 dB change in input level (below the threshold) results in a 10 dB change in output level.

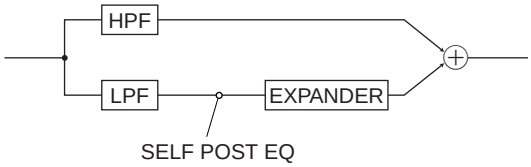
INPUT FILTER HPF/LPF—Select the filter that will be applied to the signal immediately before the expander. When HPF (high pass filter) is on, the expander will apply to the signal that has passed through the HPF, and the signal that has passed through the LPF will then be mixed in.

For COMP ON and HPF ON



When LPF (low pass filter) is on, the expander will apply to the signal that has passed through the LPF, and the signal that has passed through the HPF will then be mixed in.

For COMP ON and LPF ON



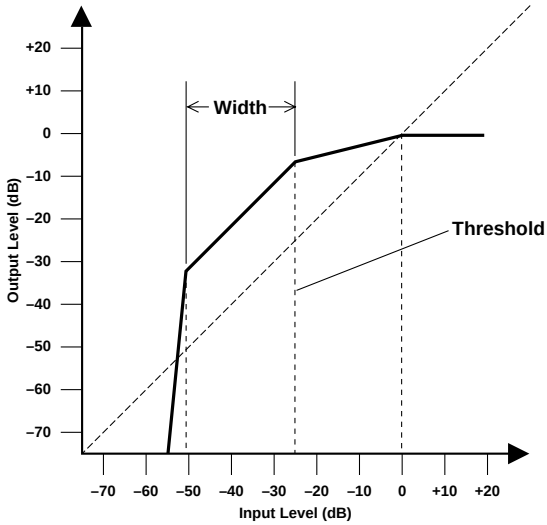
⚠ If you want the signal immediately after passing through the LPF or HPF to be used as the key-in signal for the internal compressor, select SELF POST EQ as the key-in signal.
When the key-in signal is set to LEFT CH (when the key-in signal is taken from the previous-numbered channel), and if COMP is turned on and LPF or HPF is also turned on for the channel that is the source of the key-in signal, then the signal after passing through the filter will be output as the key-in signal.

INPUT FILTER ON/OFF—This turns the input filter on/off. If off, the LPF/HPF setting will be ignored.

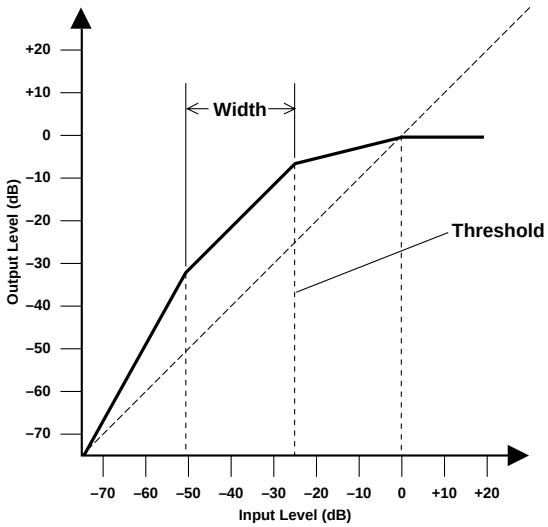
INPUT FILTER FREQUENCY—This sets the cutoff frequency of the LPF/HPF. (The LPF cutoff frequency and HPF cutoff frequency are always linked.)

COMPANDER (HARD & SOFT)

The hard (H) and soft (S) companders comprise of compressor, expander, and limiter. The limiter prevents output signals from exceeding 0 dB. The compressor compresses signals that exceed the threshold level. The expander attenuates signals below the threshold and width. The soft compander has an expansion ratio of 1.5:1, while the hard compander has an expansion ratio of 5:1. The following two graphs show typical compander curves. The one on the left shows the hard compander. The one on the right, the soft compander.



Hard Compander



Soft Compander

Parameter	Range
THRESHOLD	–54 dB to 0 dB (1 dB steps)
OUT GAIN	–18 dB to ±0.0 dB (0.5 dB steps)
WIDTH	1 dB–90 dB (1 dB steps)
ATTACK	0–120 ms (1 ms steps)
RELEASE	5 ms–42.3 s (fs = 48 kHz) 6 ms–46 s (fs = 44.1 kHz)
RATIO	1:1, 1.1:1, 1.3:1, 1.5:1, 1.7:1, 2:1, 2.5:1, 3:1, 3.5:1, 4:1, 5:1, 6:1, 8:1, 10:1, 20:1 (15 points)
INPUT FILTER HPF/LPF	HPF (high-pass filter) or LPF (low-pass filter)
INPUT FILTER ON/OFF	ON or OFF
INPUT FILTER FREQUENCY	20 Hz–20 kHz (121 steps)

THRESHOLD—This determines the input signal level at which compression and expansion are applied. Signals at a level below the sum of the threshold and width are attenuated by the expander. Signals at and above the threshold level are compressed by the amount specified using the Ratio parameter. The trigger signal is sourced using the KEY IN parameter.

OUT GAIN—This sets the compander's output signal level. It can be used to compensate for the overall level change caused by the compression and expansion processes.

WIDTH—This determines how far below the threshold level expansion is applied. The expander is essentially turned off when the width is set to 90 dB.

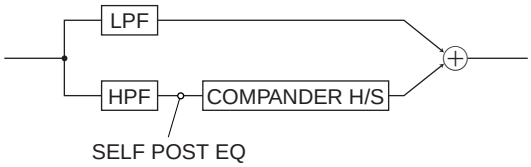
ATTACK—Specifies the time over which the signal will be compressed (starting when the compressor of the compander is triggered) or the time over which the gain will return to normal after the expander is triggered. If the attack time is fast, the signal will be compressed or return to normal nearly instantaneously. If the attack time is slow, the initial attack portion of the sound will not be compressed or return to normal. Attack times from 1 to 5 milliseconds are a good place to start.

RELEASE—Specifies the time from when the level of the trigger signal falls below the threshold until the compressor returns to the normal gain or the expander expands. If the release time is too short, the compressor gain will return suddenly, making the sound jump out (i.e., the gain will change unnaturally). However if the release is too long, the next high-level signal will be input before the compressor gain has returned, and compression may not occur appropriately. Release times from 0.1 to 0.5 seconds are a good place to start.

RATIO—This determines the amount of compression. That is, the change in output signal level relative to change in input signal level. For a 2:1 ratio, for example, a 10 dB change in input level (above the threshold) results in a 5 dB change in output level. For a 5:1 ratio, a 10 dB change in input level (above the threshold) results in a 2 dB change in output level. The expander ratios are fixed: 1.5:1 for the soft compander (S) and 5:1 for the hard compander (H).

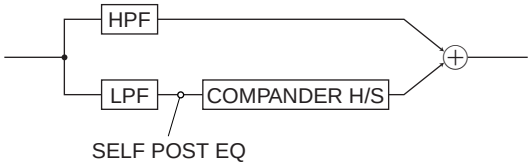
INPUT FILTER HPF/LPF—Select the filter that will be applied to the signal immediately before the expander. When HPF (high pass filter) is on, the expander will apply to the signal that has passed through the HPF, and the signal that has passed through the LPF will then be mixed in.

For COMP ON and HPF ON



When LPF (low pass filter) is on, the expander will apply to the signal that has passed through the LPF, and the signal that has passed through the HPF will then be mixed in.

For COMP ON and LPF ON



⚠ If you want the signal immediately after passing through the LPF or HPF to be used as the key-in signal for the internal compressor, select SELF POST EQ as the key-in signal.
When the key-in signal is set to LEFT CH (when the key-in signal is taken from the previous-numbered channel), and if COMP is turned on and LPF or HPF is also turned on for the channel that is the source of the key-in signal, then the signal after passing through the filter will be output as the key-in signal.

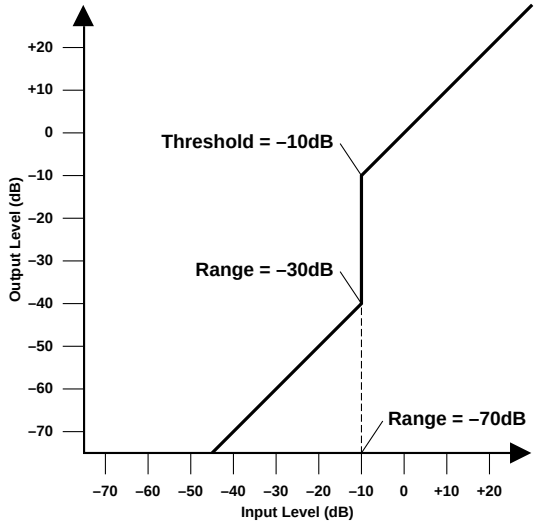
INPUT FILTER ON/OFF—This turns the input filter on/off. If off, the LPF/HPF setting will be ignored.

INPUT FILTER FREQUENCY—This sets the cutoff frequency of the LPF/HPF. (The LPF cutoff frequency and HPF cutoff frequency are always linked.)

Gate Types

GATE

A gate, or noise gate is essentially an audio switch used to mute signals below a set threshold level. It can be used to cut background noise picked up by open microphones, noise and hiss from guitar valve amps and effects pedals, and leakage between drum microphones. It also has many creative uses too. For example, gating a drum sound with a short decay time tightens up the sound. Also, patching a gate into a droning bass synth channel and then triggering it from the kick drum channel allows the bass synth through only when the kick drum is struck, adding extra "oomph" on the beat.



Parameter	Range
THRESHOLD	–54 dB to 0 dB (1 dB steps)
RANGE	–70 dB to 0 dB (1 dB steps)
HOLD	0.02 ms–1.96 s (fs = 48 kHz) 0.02 ms–2.13 s (fs = 44.1 kHz)
ATTACK	0–120 ms (1 ms steps)
DECAY	5 ms–42.3 s (fs = 48 kHz) 6 ms–46 s (fs = 44.1 kHz)

THRESHOLD—This determines the level at which the gate closes, cutting off the signal. Signals above the threshold level pass through unaffected. Signals at or below the threshold, however, cause the gate to close. The trigger signal is sourced using the KEY IN parameter.

RANGE—This determines the level to which the gate closes. Think of it as a brick holding a garden gate open so that a certain amount of signal always flows through. For a setting of –70 dB, the gate closes completely when the input signal falls below the threshold. For a setting of –30 dB, however, the gate half closes. For a setting of 0 dB, the gate has no effect. When signals are gated abruptly, the sudden disappearance can sometimes sound odd. This parameter causes the gate to reduce the signal level rather than cut it completely.

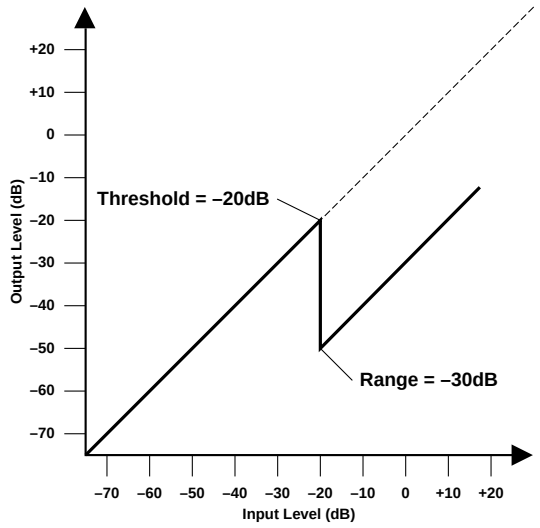
HOLD—This determines how long the gate stays open once the trigger signal has fallen below the threshold level.

ATTACK—This determines how fast the gate opens when the signal exceeds the threshold level. Slow attack times can be used to remove the initial transient edge of percussive sounds. Too slow an attack time makes some sounds appear backwards.

DECAY—This determines how fast the gate closes once the hold time has expired. A longer decay time produces a more natural gating effect, allowing the natural decay of an instrument to pass through. With a maximum decay time of between 42 and 46 seconds, you could even use this for fade-outs.

DUCKING

Ducking is commonly used for voice-over applications in which the background music level is reduced automatically when an announcer speaks. Ducking is achieved by triggering a compressor with a different sound source. For example, a ducker is patched into the background music channel, and the KEY IN signal is sourced from the announcer's microphone channel. When the announcer's microphone level exceeds the specified threshold, the background music level is reduced automatically, allowing the announcer to be heard clearly. The same technique can also be used for vocals in a mix. For example, ducking backing sounds such as rhythm guitar and synth pad during vocal phrases allows the vocals to be heard more clearly. This can also be used to bring solo instruments up in a mix.



Parameter	Range
THRESHOLD	–54 dB to 0 dB (1 dB steps)
RANGE	–70 dB to 0 dB (1 dB steps)
HOLD	0.02 ms–1.96 s (fs = 48 kHz) 0.02 ms–2.13 s (fs = 44.1 kHz)
ATTACK	0–120 ms (1 ms steps)
DECAY	5 ms–42.3 s (fs = 48 kHz) 6 ms–46 s (fs = 44.1 kHz)

THRESHOLD—This determines the level of trigger signal (KEY IN) required to activate ducking. Trigger signal levels below the threshold do not activate ducking. Trigger signals at and above the threshold level, however, activate ducking, and the signal level is reduced to a level set by the Range parameter. The trigger signal is sourced using the KEY IN parameter.

RANGE—This determines the level to which the signal is ducked. For a setting of –70 dB, the signal is virtually cutoff. For a setting of –30 dB, however, the signal is ducked by 30 dB. For a setting of 0 dB, the ducker has no effect.

HOLD— This determines how long ducking remains active once the trigger signal has fallen below the threshold level.

ATTACK—This determines how soon the signal is ducked once the ducker has been triggered. With a fast attack time, the signal is ducked almost immediately. With a slow attack time, however, ducking appears to fade the signal. Too fast an attack time may sound abrupt.

DECAY—This determines how soon the ducker returns to its normal gain once the trigger signal level drops below the threshold.

Preset Effects Programs

This is a list of the effect programs built into the CS1D. Basic effect programs 01–29 are standard programs for each effect type. Advanced reverb programs 31–71 are variations of reverb-type effects, and can be used immediately in a variety of situations.

• Basic effect programs

Reverb-type Effects

#	Title	Type	Description
01	Reverb	REVERB	Reverb simulating a large space such as a concert hall.
02	Early Ref.	EARLY REF.	An effect which isolates only the early reflection (ER.) component from reverberation. A flashier effect than reverb is produced.
03	Gate Reverb	GATE REVERB	A type of ER. designed for use as gated reverb.
04	Reverse Gate	REVERSE GATE	A reverse-playback type ER.

Delays

#	Title	Type	Description
05	Delay LCR	DELAY LCR	Three-tap delay (L, C, R).
06	Echo	ECHO	Stereo delay with additional parameters for more detailed control. The signal can be fed back from left to right, and right to left.

Modulation-type Effects

#	Title	Type	Description
07	Chorus	CHORUS	Three-phase stereo chorus.
08	Flange	FLANGE	The well-known flanging effect.
09	Symphonic	SYMPHONIC	A Yamaha proprietary effect that produces a richer and more complex modulation than chorus.
10	Phaser	PHASER	Stereo phaser with 2-16 stages of phase shift.
11	Auto Pan	AUTO PAN	An effect which cyclically moves the sound between left and right.
12	Tremolo	TREMOLO	An effect which cyclically varies the sound volume.
13	HQ.Pitch	HQ.PITCH	Only one note is pitch-shifted, but a stable effect is produced.
14	Dual Pitch	DUAL PITCH	Stereo pitch shift with left and right pitches set independently.

Combined Effects

#	Title	Type	Description
15	Rev+Chorus	REV+CHORUS	Reverb and chorus in parallel
16	Rev->Chorus	REV->CHORUS	Reverb and chorus in series
17	Rev+Flange	REV+FLANGE	Reverb and flanger in parallel
18	Rev->Flange	REV->FLANGE	Reverb and flanger in series
19	Rev+Sympho.	REV+SYMPHONIC	Reverb and symphonic in parallel
20	Rev->Sympho.	REV->SYMPHONIC	Reverb and symphonic in series
21	Rev->Pan	REV->PAN	Reverb and auto-pan in parallel
22	Delay+ER.	DELAY+ER.	Delay and early reflections in parallel
23	Delay->ER.	DELAY->ER.	Delay and early reflections in series
24	Delay+Rev	DELAY+REV	Delay and reverb in parallel
25	Delay->Rev	DELAY->REV	Delay and reverb in series

Guitar Effects

#	Title	Type	Description
26	Amp Simulate	AMP SIMULATE	Guitar Amp Simulator

Dynamic Effects

#	Title	Type	Description
27	Dyna.Filter	DYNA.FILTER	Dynamically controlled filter.
28	Dyna.Flange	DYNA.FLANGE	Dynamically controlled flanger.
29	Dyna.Phaser	DYNA.PHASER	Dynamically controlled phase shifter.

• Advanced reverb programs

Reverb Effects

#	Title	Type	Description
31	Large Hall 1	Reverb	The ProR3's standard hall-type reverb. Simulates a large hall with good acoustics, and is suitable for any instrument.
32	Large Hall 2	Reverb	
33	New Hall	Reverb	A program with a slight delay between the sparse early reflections and the rich reverberation.
34	Wide Hall	Reverb	A program simulating a spacious and uncolored hall.
35	Breathless Hall	Reverb	A bit of character. Bright, strong, and somewhat long reverb.
36	Medium Hall 1	Reverb	A standard medium-sized hall reverb.
37	Medium Hall 2	Reverb	
38	Wonder Hall	Reverb	Reverb with a lighter feel than the large hall type. Try it with percussion.
39	Bright Hall	Reverb	A bright medium sized hall.
40	Small Hall 1	Reverb	An idealized small hall with a small stage.
41	Small Hall 2	Reverb	An even smaller hall.
42	Pool	Reverb	Small hall program with many early reflections.
43	Open Hall	Reverb	Small hall with open space. For vocals.
44	Large Room 1	Reverb	Simulation of a large room with hard walls. A thick and somewhat idiosyncratic sound. Try it on percussion.
45	Large Room 2	Reverb	Compared to Large Room 1, a room with more naturalness and transparency.
46	Mood Room	Reverb	Large room with slightly darker tone.
47	Soft Room	Reverb	Large room with mellow tone.
48	Medium Room 1	Reverb	Simulates a medium sized studio with good acoustics. Apply to a 2-channel source for "live in the studio."
49	Medium Room 2	Reverb	Simulates a somewhat live recording studio with wood walls.
50	Dark Room	Reverb	A studio slightly smaller than Medium Room 2, with a natural acoustics.
51	Quick Room	Reverb	A dry-sounding studio with wood and metal walls. For brass or percussion.
52	Bright Studio	Reverb	The small room programs are extremely short reverbs created with hip-hop in mind. These are meant to be applied in small amounts, so that the sound appears either dry or to have the natural acoustics of a studio. They are especially effective on sequenced instruments, synth brass, and on instruments recorded in a dead studio.
53	Droid Short	Reverb	Simulates an early and extremely expensive digital reverb unit.
54	Droid Long	Reverb	

55	Coliseum	Reverb	Long reverb of a wide space, simulating a coliseum.
56	Opera	Reverb	Fairly long reverb with a 52 ms delay between the early reflections and the reverb.
57	Train Station	Reverb	Try this when you need echoing footsteps in a late-night train station.
58	Beauty Plate	Reverb	Sub-reverb settings have been boosted. Try it on an electric piano.
59	Arena Plate	Reverb	Simulates a gigantic arena like the Budokan in Tokyo.
60	Vocal Plate 1	Reverb	Try it on vocals. Especially nice for ballads.
61	Vocal Plate 2	Reverb	Reverb with a darker feel than Vocal Plate 1.
62	String Plate	Reverb	Try it on strings for an even more beautiful sound.
63	Home Plate	Reverb	Metal plate reverb from the good old days.
64	LA Plate Short	Reverb	Simulations of the bright and crisp plate reverb preferred in studios on the US west coast.
65	LA Plate Long	Reverb	
66	Short Perc.Plate	Reverb	Short and bright percussion plate. Set the IniDelay parameter according to the tempo.
67	Long Plate	Reverb	Longer plate reverb. Try it on organ pads etc.
68	Gated Rev 1	Reverb	These are standard combinations of reverb + noise gate. Compared to the gated programs consisting only of E.Ref, more detailed settings are required to fit them to your song, but this also means that you have more control.
69	Gated Rev 2	Reverb	
70	Reverb Flange	Reverb	Rather flashy reverb with a flanger applied.
71	Super Long Decay	Reverb	An effect like an extremely long tunnel.

Effects Parameters

These are the parameters used to edit each effect.

• REVERB

[Type: STEREO]

Parameter	Range	Description
REVERB TYPE	Small Hall, Large Hall, Vocal Plate, Perc.Plate, Spring, Echo Room, Strings, Snare, Reverb Flange	Reverb type
REV TIME	0.3 - 99 [s]	Reverb time
INI.DELAY	0.0 - 500.0 [ms]	Initial delay before reverb begins
HI.RATIO	0.1 - 1.0	Reverb time for high-frequency portion
LO.RATIO	0.1 - 2.4	Reverb time for low-frequency portion
DIFFUSION	0 - 10	Reverb diffusion (left–right reverb spread)
DENSITY	0 - 100 [%]	Reverb density
FREQ.	0.05 - 40.00 [Hz]	Modulation frequency
DEPTH	0 - 100 [%]	Modulation depth
MOD DELAY	0.0 - 30.0 [ms]	Delay time applied to modulation
ER. DELAY	0.0 - 100.0 [ms]	Delay between early reflections and reverb
ER. BALANCE	0 - 100 [%]	Balance of early reflections and reverb (0%= ER., 100%= reverb)
GATE LEVEL	OFF, –60 - 0 [dB]	Level at which gate kicks in
ATTACK	0 - 120 [ms]	Gate opening speed
HOLD	0.02ms - 1.96s(@fs=48kHz), 0.02ms - 2.13s(@fs=44.1kHz)	Gate open time
DECAY	5.0ms - 42.3s(@fs=48kHz), 6.0ms - 46.0s(@fs=44.1kHz)	Gate closing speed
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

• EARLY REF.

[Type: STEREO]

Parameter	Range	Description
ER. TYPE	Small Hall, Large Hall, Random, Reverse, Plate, Spring	Type of early reflection (ER.) simulation
ROOM SIZE	0.1 - 20.0	Reflection spacing
LIVENESS	0 - 10	Early reflections decay characteristics (0= dead, 10= live)
INI.DELAY	0.0 - 500.0 [ms]	Initial delay before reverb begins
DIFFUSION	0 - 10	Reverb diffusion (left-right reverb spread)
DENSITY	0 - 100 [%]	Reverb density
ER. NUM.	1 - 34	Number of early reflections
FB.DELAY	0.0 - 1000.0 [ms]	Feedback delay time
FB.LEVEL	–99 - +99 [%]	Feedback gain
HI.RATIO	0.1 - 1.0	High-frequency feedback ratio
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
SPACE MOD	0 - 10	Modulation depth
BALANCE WAT	0 - 100 [%]	Wet/dry balance

• GATE REVERB, REVERSE GATE [Type: STEREO]

Parameter	Range	Description
ER. TYPE	Type-A, Type-B	Type of early reflection (ER.) simulation
ROOM SIZE	0.1 - 20.0	Reflection spacing
LIVENESS	0 - 10	Early reflections decay characteristics (0= dead, 10= live)
INI.DELAY	0.0 - 500.0 [ms]	Initial delay before reverb begins
DIFFUSION	0 - 10	Reverb diffusion (left-right reverb spread)
DENSITY	0 - 100 [%]	Reverb density
ER. NUM.	1 - 34	Number of early reflections
FB.DELAY	0.0 - 1000.0 [ms]	Feedback delay time
FB.LEVEL	–99 - +99 [%]	Feedback gain
HI.RATIO	0.1 - 1.0	High-frequency feedback ratio
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
SPACE MOD	0 - 10	Modulation depth
BALANCE WAT	0 - 100 [%]	Wet/dry balance

• DELAY LCR [Type: MIX]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the delay time
DELAY L	0.0 - 5460.0 [ms]	Left channel delay time
NOTE L	*1	Used in conjunction with TEMPO to determine delay time
LEVEL L	–100 - +100 [%]	Left channel level
DELAY C	0.0 - 5460.0 [ms]	Center channel delay time
NOTE C	*1	Used in conjunction with TEMPO to determine delay time
LEVEL C	–100 - +100 [%]	Center channel level
DELAY R	0.0 - 5460.0 [ms]	Right channel delay time
NOTE R	*1	Used in conjunction with TEMPO to determine delay time
LEVEL R	–100 - +100 [%]	Right channel level
FB.DELAY	0.0 - 5460.0 [ms]	Feedback delay time
NOTE FB.	*1	Used in conjunction with TEMPO to determine delay time
FB.LEVEL	–99 - +99 [%]	Feedback gain
HI.RATIO	0.1 - 1.0	High-frequency feedback ratio
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 —— 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥𝅮 𝅘𝅥𝅮. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

- Delay Time is calculated from the [TEMPO] and [NOTE].

• ECHO

[Type: STEREO]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the delay time
DELAY L	0.0 - 2730.0	Left channel delay time
NOTE L	*1	Used in conjunction with TEMPO to determine delay time
FB.LEVEL L	–99 - +99 [%]	Left channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
DELAY R	0.0 - 2730.0	Right channel delay time
NOTE R	*1	Used in conjunction with TEMPO to determine delay time
FB.LEVEL R	–99 - +99 [%]	Right channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
FB.DELAY L	0.0 - 2730.0	Left channel feedback delay time
NOTE FB.L	*1	Used in conjunction with TEMPO to determine delay time
L->R FB.LEVEL	–99 - +99 [%]	Left to right channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
FB.DELAY R	0.0 - 2730.0	Right channel feedback delay time
NOTE FB.R	*1	Used in conjunction with TEMPO to determine delay time
R->L FB.LEVEL	–99 - +99 [%]	Right to left channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
HI.RATIO	0.1 - 1.0	High-frequency feedback ratio
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 —— 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

- Delay Time is calculated from the [TEMPO] and [NOTE].

• CHORUS

[Type: STEREO]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the modulation speed
FREQ.	0.05 - 40.00 [Hz]	Modulation speed
NOTE	*1	Used in conjunction with TEMPO to determine modulation speed
PM DEPTH	0 - 100 [%]	Pitch modulation depth
AM DEPTH	0 - 100 [%]	Amplitude modulation depth
MOD DELAY	0.0 - 500.0 [ms]	Delay time applied to modulation
WAVE	Sine, Tri	Modulation waveform
LOW SHEL. F	Thru, 21 - 8.0k [Hz]	Low-range shelving filter frequency
LOW SHEL. G	–12.0 - +12.0 [dB]	Low-range shelving filter gain
PEQ F	100 - 8.0k [Hz]	Parametric EQ cutoff frequency
PEQ G	–12.0 - +12.0 [dB]	Parametric EQ gain
PEQ Q	10.0 - 0.1	Parametric EQ Q
HIGH SHEL. F	50 - 16.0k, Thru [Hz]	High-range shelving filter frequency
HIGH SHEL. G	–12.0 - +12.0 [dB]	High-range shelving filter gain
BALANCE WAT	0 - 100 [%]	Wet/dry balance

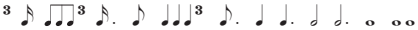
*1 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

- FREQ. is calculated from the [TEMPO] and [NOTE].

• FLANGE

[Type: STEREO]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the modulation speed
FREQ.	0.05 - 40.00 [Hz]	Modulation speed
NOTE	*1	Used in conjunction with TEMPO to determine modulation speed
DEPTH	0 - 100 [%]	Modulation depth
MOD DELAY	0.0 - 500.0 [ms]	Delay time applied to modulation
FB.LEVEL	–99 - +99 [%]	Feedback gain
HI.RATIO	0.1 - 1.0	High-frequency feedback ratio
WAVE	Sine, Tri	Modulation waveform
LOW SHEL. F	Thru, 21 - 8.0k [Hz]	Low-range shelving filter frequency
LOW SHEL. G	–12.0 - +12.0 [dB]	Low-range shelving filter gain
PEQ F	100 - 8.0k [Hz]	Parametric EQ cutoff frequency
PEQ G	–12.0 - +12.0 [dB]	Parametric EQ gain
PEQ Q	10.0 - 0.1	Parametric EQ Q
HIGH SHEL. F	50 - 16.0k, Thru [Hz]	High-range shelving filter frequency
HIGH SHEL. G	–12.0 - +12.0 [dB]	High-range shelving filter gain
BALANCE WAT	0 - 100 [%]	Wet/dry balance

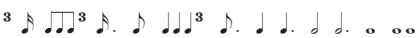
*1 

- FREQ. is calculated from the [TEMPO] and [NOTE].

• SYMPHONIC

[Type: STEREO]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the modulation speed
FREQ.	0.05 - 40.00 [Hz]	Modulation speed
NOTE	*1	Used in conjunction with TEMPO to determine modulation speed
DEPTH	0 - 100 [%]	Modulation depth
MOD DELAY	0.0 - 500.0 [ms]	Delay time applied to modulation
WAVE	Sine, Tri	Modulation waveform
LOW SHEL. F	Thru, 21 - 8.0k [Hz]	Low-range shelving filter frequency
LOW SHEL. G	–12.0 - +12.0 [dB]	Low-range shelving filter gain
PEQ F	100 - 8.0k [Hz]	Parametric EQ cutoff frequency
PEQ G	–12.0 - +12.0 [dB]	Parametric EQ gain
PEQ Q	10.0 - 0.1	Parametric EQ Q
HIGH SHEL. F	50 - 16.0k, Thru [Hz]	High-range shelving filter frequency
HIGH SHEL. G	–12.0 - +12.0 [dB]	High-range shelving filter gain
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 

- FREQ. is calculated from the [TEMPO] and [NOTE].

• PHASER

[Type: STEREO]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the modulation speed
FREQ.	0.05 - 40.00 [Hz]	Modulation speed
NOTE	*1	Used in conjunction with TEMPO to determine modulation speed
DEPTH	0 - 100 [%]	Modulation depth
FB.LEVEL	–99 - +99 [%]	Feedback gain
HI.RATIO	0.1 - 1.0	High-frequency feedback ratio
OFFSET	0 - 100	Lowest phase-shifted frequency offset
STAGE	2, 4, 6, 8, 10, 12, 14, 16	Number of phase shift stages
LOW SHEL. F	Thru, 21 - 8.0k [Hz]	Low-range shelving filter frequency
LOW SHEL. G	–12.0 - +12.0 [dB]	Low-range shelving filter gain
PEQ F	100 - 8.0k [Hz]	Parametric EQ cutoff frequency
PEQ G	–12.0 - +12.0 [dB]	Parametric EQ gain
PEQ Q	10.0 - 0.1	Parametric EQ Q
HIGH SHEL. F	50 - 16.0k, Thru [Hz]	High-range shelving filter frequency
HIGH SHEL. G	–12.0 - +12.0 [dB]	High-range shelving filter gain
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅮. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

- FREQ. is calculated from the [TEMPO] and [NOTE].

• AUTO PAN

[Type: STEREO]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the modulation speed
FREQ.	0.05 - 40.00 [Hz]	Modulation speed
NOTE	*1	Used in conjunction with TEMPO to determine modulation speed
DEPTH	0 - 100 [%]	Modulation depth
DIRECTION	L<->R, L->R, L<-R, Turn L, Turn R	Panning direction
WAVE	Sine, Tri, Square	Modulation waveform
LOW SHEL. F	Thru, 21 - 8.0k [Hz]	Low-range shelving filter frequency
LOW SHEL. G	–12.0 - +12.0 [dB]	Low-range shelving filter gain
PEQ F	100 - 8.0k [Hz]	Parametric EQ cutoff frequency
PEQ G	–12.0 - +12.0 [dB]	Parametric EQ gain
PEQ Q	10.0 - 0.1	Parametric EQ Q
HIGH SHEL. F	50 - 16.0k, Thru [Hz]	High-range shelving filter frequency
HIGH SHEL. G	–12.0 - +12.0 [dB]	High-range shelving filter gain
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅮. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

- FREQ. is calculated from the [TEMPO] and [NOTE].

• TREMOLO

[Type: STEREO]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the modulation speed
FREQ.	0.05 - 40.00 [Hz]	Modulation speed
NOTE	*1	Used in conjunction with TEMPO to determine modulation speed
DEPTH	0 - 100 [%]	Modulation depth
WAVE	Sine, Tri, Square	Modulation waveform
LOW SHEL. F	Thru, 21 - 8.0k [Hz]	Low-range shelving filter frequency
LOW SHEL. G	-12.0 - +12.0 [dB]	Low-range shelving filter gain
PEQ F	100 - 8.0k [Hz]	Parametric EQ cutoff frequency
PEQ G	-12.0 - +12.0 [dB]	Parametric EQ gain
PEQ Q	10.0 - 0.1	Parametric EQ Q
HIGH SHEL. F	50 - 16.0k, Thru [Hz]	High-range shelving filter frequency
HIGH SHEL. G	-12.0 - +12.0 [dB]	High-range shelving filter gain
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

- FREQ. is calculated from the [TEMPO] and [NOTE].

• HQ. PITCH

[Type: MIX]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the delay time
PITCH	–12 - +12	Pitch shift
FINE	–50 - +50 [ct]	Pitch shift fine
MODE	1 - 10	Pitch shift precision
DELAY	0.0 - 1000.0 [ms]	Delay time
NOTE	*1	Used in conjunction with TEMPO to determine delay time
FB.LEVEL	–99 - +99 [%]	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 —— 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

- Delay Time is calculated from the [TEMPO] and [NOTE].

• DUAL PITCH [Type: STEREO]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the delay time
PITCH L	–24 - +24	Left channel pitch shift
FINE L	–50 - +50 [ct]	Left channel pitch shift fine
LEVEL L	–100 - +100 [%]	Left channel level (plus values for normal phase, minus values for reverse phase)
PITCH R	–24 - +24	Right channel pitch shift
FINE R	–50 - +50 [ct]	Right channel pitch shift fine
LEVEL R	–100 - +100 [%]	Right channel level (plus values for normal phase, minus values for reverse phase)
DELAY L	0.0 - 1000.0 [ms]	Left channel delay time
NOTE L	*1	Used in conjunction with TEMPO to determine delay time
FB.LEVEL L	–99 - +99 [%]	Left channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
DELAY R	0.0 - 1000.0 [ms]	Right channel delay time
NOTE R	*1	Used in conjunction with TEMPO to determine delay time
FB.LEVEL R	–99 - +99 [%]	Right channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
HI.RATIO	0.1 - 1.0	High-frequency feedback ratio
MODE	1 - 10	Pitch shift precision
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 —— 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅰𝅘𝅥𝅰𝅘𝅥𝅰³ 𝅘𝅥𝅯. 𝅘𝅥𝅰 𝅘𝅥𝅰. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

- Delay Time is calculated from the [TEMPO] and [NOTE].

• REV + CHORUS [Type: MIX]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the modulation speed
REVERB TYPE	Small Hall, Large Hall, Vocal Plate, Perc.Plate, Spring, Echo Room, Strings, Snare, Reverb Flange	Reverb type
REV TIME	0.3 - 99 [s]	Reverb time
INI.DELAY	0.0 - 500.0 [ms]	Initial delay before reverb begins
HI.RATIO	0.1 - 1.0	Reverb time for high-frequency portion
DENSITY	0 - 100 [%]	Reverb density
FREQ.	0.05 - 40.00 [Hz]	Modulation speed
NOTE		Used in conjunction with TEMPO to determine modulation speed
DEPTH	0 - 100 [%]	Modulation depth
MOD DELAY	0.0 - 500.0 [ms]	Modulation delay time
WAVE	Sine, Tri	Modulation waveform
CHO:REV BAL.	0 - 100 [%]	Reverb and chorus balance (0%= chorus, 100%= reverb)
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

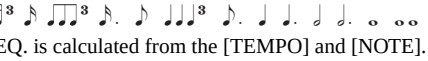
*1 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅰𝅘𝅥𝅰𝅘𝅥𝅰³ 𝅘𝅥𝅯. 𝅘𝅥𝅰 𝅘𝅥𝅰. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

- FREQ. is calculated from the [TEMPO] and [NOTE].

• REV → CHORUS

[Type: MIX]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the modulation speed
REVERB TYPE	Small Hall, Large Hall, Vocal Plate, Perc.Plate, Spring, Echo Room, Strings, Snare, Reverb Flange	Reverb type
REV TIME	0.3 - 99 [s]	Reverb time
INI.DELAY	0.0 - 500.0 [ms]	Initial delay before reverb begins
HI.RATIO	0.1 - 1.0	Reverb time for high-frequency portion
DENSITY	0 - 100 [%]	Reverb density
FREQ.	0.05 - 40.00 [Hz]	Modulation speed
NOTE	*1	Used in conjunction with TEMPO to determine modulation speed
DEPTH	0 - 100 [%]	Modulation depth
MOD DELAY	0.0 - 500.0 [ms]	Modulation delay time
WAVE	Sine, Tri	Modulation waveform
CHO-REV BAL.	0 - 100 [%]	Reverb and chorused reverb balance (0%= chorused reverb, 100%= reverb)
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

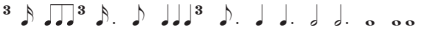
*1 

- FREQ. is calculated from the [TEMPO] and [NOTE].

• REV + FLANGE

[Type: MIX]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the modulation speed
REVERB TYPE	Small Hall, Large Hall, Vocal Plate, Perc.Plate, Spring, Echo Room, Strings, Snare, Reverb Flange	Reverb type
REV TIME	0.3 - 99 [s]	Reverb time
INI.DELAY	0.0 - 500.0 [ms]	Initial delay before reverb begins
HI.RATIO	0.1 - 1.0	Reverb time for high-frequency portion
DENSITY	0 - 100 [%]	Reverb density
FREQ.	0.05 - 40.00 [Hz]	Modulation speed
NOTE	*1	Used in conjunction with TEMPO to determine modulation speed
DEPTH	0 - 100 [%]	Modulation depth
MOD DELAY	0.0 - 500.0 [ms]	Delay time applied to modulation
FB.LEVEL	–99 - +99 [%]	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
WAVE	Sine, Tri	Modulation waveform
FLG:REV BAL.	0 - 100 [%]	Reverb and flange balance (0%= flange, 100%= reverb)
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 

- FREQ. is calculated from the [TEMPO] and [NOTE].

• REV → FLANGE [Type: MIX]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the modulation speed
REVERB TYPE	Small Hall, Large Hall, Vocal Plate, Perc.Plate, Spring, Echo Room, Strings, Snare, Reverb Flange	Reverb type
REV TIME	0.3 - 99 [s]	Reverb time
INI.DELAY	0.0 - 500.0 [ms]	Initial delay before reverb begins
HI.RATIO	0.1 - 1.0	Reverb time for high-frequency portion
DENSITY	0 - 100 [%]	Reverb density
FREQ.	0.05 - 40.00 [Hz]	Modulation speed
NOTE	*1	Used in conjunction with TEMPO to determine modulation speed
DEPTH	0 - 100 [%]	Modulation depth
MOD DELAY	0.0 - 500.0 [ms]	Delay time applied to modulation
FB.LEVEL	–99 - +99 [%]	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
WAVE	Sine, Tri	Modulation waveform
FLG-REV BAL.	0 - 100 [%]	Reverb and flanged reverb balance (0%= flanged reverb, 100%= reverb)
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 

- FREQ. is calculated from the [TEMPO] and [NOTE].

• REV + SYMPHONIC [Type: MIX]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the modulation speed
REVERB TYPE	Small Hall, Large Hall, Vocal Plate, Perc.Plate, Spring, Echo Room, Strings, Snare, Reverb Flange	Reverb type
REV TIME	0.3 - 99 [s]	Reverb time
INI.DELAY	0.0 - 500.0 [ms]	Initial delay before reverb begins
HI.RATIO	0.1 - 1.0	Reverb time for high-frequency portion
DENSITY	0 - 100 [%]	Reverb density
FREQ.	0.05 - 40.00 [Hz]	Modulation speed
NOTE	*1	Used in conjunction with TEMPO to determine modulation speed
DEPTH	0 - 100 [%]	Modulation depth
MOD DELAY	0.0 - 500.0 [ms]	Delay time applied to modulation
WAVE	Sine, Tri	Modulation waveform
SYM:REV BAL.	0 - 100 [%]	Reverb and symphonic balance (0%= symphonic, 100%= reverb)
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 

- FREQ. is calculated from the [TEMPO] and [NOTE].

• REV → SYMPHONIC [Type: MIX]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the modulation speed
REVERB TYPE	Small Hall, Large Hall, Vocal Plate, Perc.Plate, Spring, Echo Room, Strings, Snare, Reverb Flange	Reverb type
REV TIME	0.3 - 99 [s]	Reverb time
INI.DELAY	0.0 - 500.0 [ms]	Initial delay before reverb begins
HI.RATIO	0.1 - 1.0	Reverb time for high-frequency portion
DENSITY	0 - 100 [%]	Reverb density
FREQ.	0.05 - 40.00 [Hz]	Modulation speed
NOTE	*1	Used in conjunction with TEMPO to determine modulation speed
DEPTH	0 - 100 [%]	Modulation depth
MOD DELAY	0.0 - 500.0 [ms]	Delay time applied to modulation
WAVE	Sine, Tri	Modulation waveform
SYM-REV BAL.	0 - 100 [%]	Reverb and symphonic reverb balance (0%= symphonic reverb, 100%= reverb)
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥𝅮 𝅘𝅥𝅮. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝

- FREQ. is calculated from the [TEMPO] and [NOTE].

• REV → PAN [Type: MIX]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the modulation speed
REVERB TYPE	Small Hall, Large Hall, Vocal Plate, Perc.Plate, Spring, Echo Room, Strings, Snare, Reverb Flange	Reverb type
REV TIME	0.3 - 99 [s]	Reverb time
INI.DELAY	0.0 - 500.0 [ms]	Initial delay before reverb begins
HI.RATIO	0.1 - 1.0	Reverb time for high-frequency portion
DENSITY	0 - 100 [%]	Reverb density
FREQ.	0.05 - 40.00 [Hz]	Modulation speed
NOTE	*1	Used in conjunction with TEMPO to determine modulation speed
DEPTH	0 - 100 [%]	Modulation depth
DIRECTION	L<->R, L-->R, L<--R, Turn L, Turn R	Panning direction
WAVE	Sine, Tri, Square	Modulation waveform
PAN-REV BAL.	0 - 100 [%]	Reverb and panned reverb balance (0%= panned reverb, 100%= reverb)
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥𝅮 𝅘𝅥𝅮. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝

- FREQ. is calculated from the [TEMPO] and [NOTE].

• DELAY + ER.

[Type: MIX]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the delay time
DELAY L	0.0 - 4000.0	Left channel delay time
NOTE L	*1	Used in conjunction with TEMPO to determine delay time
DELAY R	0.0 - 4000.0	Right channel delay time
NOTE R	*1	Used in conjunction with TEMPO to determine delay time
FB.LEVEL	–99 - +99 [%]	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
FB.DELAY	0.0 - 4000.0	Feedback delay time
NOTE FB.	*1	Used in conjunction with TEMPO to determine delay time
HI.RATIO	0.1 - 1.0	High-frequency feedback ratio
ER.:DELAY BAL.	0 - 100 [%]	Delay and early reflections balance (0%= early reflections, 100%= delay)
ER. TYPE	Small Hall, Large Hall, Random, Reverse, Plate, Spring	Type of early reflection simulation
ROOM SIZE	0.1 - 20.0	Reflection spacing
LIVENESS	0 - 10	Early reflections decay characteristics (0= dead, 10= live)
INI.DELAY	0.0 - 500.0 [ms]	Initial delay before reverb begins
DENSITY	0 - 100 [%]	Reverb density
ER. NUM.	1 - 34	Number of early reflections
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 —— 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥𝅮 𝅘𝅥𝅮. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

- Delay Time is calculated from the [TEMPO] and [NOTE].

• DELAY → ER.

[Type: MIX]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the delay time
DELAY L	0.0 - 4000.0	Left channel delay time
NOTE L	*1	Used in conjunction with TEMPO to determine delay time
DELAY R	0.0 - 4000.0	Right channel delay time
NOTE R	*1	Used in conjunction with TEMPO to determine delay time
FB.LEVEL	–99 - +99 [%]	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
FB.DELAY	0.0 - 4000.0	Feedback delay time
NOTE FB.	*1	Used in conjunction with TEMPO to determine delay time
HI.RATIO	0.1 - 1.0	High-frequency feedback ratio
ER.-DELAY BAL.	0 - 100 [%]	Delay and early reflected delay balance (0% = early reflected delay, 100% = delay)
ER. TYPE	Small Hall, Large Hall, Random, Reverse, Plate, Spring	Type of early reflection simulation
ROOM SIZE	0.1 - 20.0	Reflection spacing
LIVENESS	0 - 10	Early reflections decay characteristics (0= dead, 10= live)
INI.DELAY	0.0 - 500.0 [ms]	Initial delay before reverb begins
DENSITY	0 - 100 [%]	Reverb density
ER. NUM.	1 - 34	Number of early reflections
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 —— 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥𝅮 𝅘𝅥𝅮. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

- Delay Time is calculated from the [TEMPO] and [NOTE].

• DELAY + REV

[Type: MIX]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the delay time
DELAY L	0.0 - 4000.0	Left channel delay time
NOTE L	*1	Used in conjunction with TEMPO to determine delay time
DELAY R	0.0 - 4000.0	Right channel delay time
NOTE R	*1	Used in conjunction with TEMPO to determine delay time
FB.LEVEL	–99 - +99 [%]	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
FB.DELAY	0.0 - 4000.0	Feedback delay time
NOTE FB.	*1	Used in conjunction with TEMPO to determine delay time
DELAY HIGH	0.1 - 1.0	High-frequency feedback ratio
REV:DELAY BAL.	0 - 100 [%]	Delay and reverb balance (0%= reverb, 100%= delay)
REVERB TYPE	Small Hall, Large Hall, Vocal Plate, Perc.Plate, Spring, Echo Room, Strings, Snare, Reverb Flange	Reverb type
REV TIME	0.3 - 99 [s]	Reverb time
INI.DELAY	0.0 - 500.0 [ms]	Initial delay before reverb begins
HI.RATIO	0.1 - 1.0	Reverb time for high-frequency portion
DENSITY	0 - 100 [%]	Reverb density
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 —— 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥𝅮 𝅘𝅥𝅮. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

- Delay Time is calculated from the [TEMPO] and [NOTE].

• DELAY → REV

[Type: MIX]

Parameter	Range	Description
TEMPO	20 - 300	Tempo (BPM) value that is the basis for calculating the delay time
DELAY L	0.0 - 4000.0	Left channel delay time
NOTE L	*1	Used in conjunction with TEMPO to determine delay time
DELAY R	0.0 - 4000.0	Right channel delay time
NOTE R	*1	Used in conjunction with TEMPO to determine delay time
FB.LEVEL	–99 - +99 [%]	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
FB.DELAY	0.0 - 4000.0	Feedback delay time
NOTE FB.	*1	Used in conjunction with TEMPO to determine delay time
DELAY HIGH	0.1 - 1.0	High-frequency feedback ratio
REV-DELAY BAL.	0 - 100 [%]	Delay and delayed reverb balance (0% = delayed reverb, 100% = delay)
REVERB TYPE	Small Hall, Large Hall, Vocal Plate, Perc.Plate, Spring, Echo Room, Strings, Snare, Reverb Flange	Reverb type
REV TIME	0.3 - 99 [s]	Reverb time
INI.DELAY	0.0 - 500.0 [ms]	Initial delay before reverb begins
HI.RATIO	0.1 - 1.0	Reverb time for high-frequency portion
DENSITY	0 - 100 [%]	Reverb density
HPF	Thru, 21 - 8.0k [Hz]	High-pass filter cutoff frequency
LPF	50 - 16.0k, Thru [Hz]	Low-pass filter cutoff frequency
BALANCE WAT	0 - 100 [%]	Wet/dry balance

*1 —— 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥𝅮 𝅘𝅥𝅮. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

- Delay Time is calculated from the [TEMPO] and [NOTE].

• AMP SIMULATE [Type: MIX]

Parameter	Range	Description
AMP TYPE	STK-M1, STK-M2, THRASH, MIDBST, CMB-PG, CMB-VR, CMB-DX, CMB-TW, MINI	Guitar amp simulation type
DST TYPE	DST1, DST2, OVD1, OVD2, CRUNCH	Distortion type (DST= distortion, OVD= overdrive)
NOISE GATE	0 - 20	Noise reduction
DRIVE	0 - 100	Distortion drive
MASTER	0 - 100	Master volume
CAB	0 - 100 [%]	Speaker cabinet simulation depth
BASS	0 - 100	Bass tone control
MIDDLE	0 - 100	Middle tone control
TREBLE	0 - 100	High tone control
EQ F	100 - 8.0k [Hz]	Parametric equalizer frequency
EQ G	–12.0 - +12.0 [dB]	Parametric equalizer gain
EQ Q	10.0 - 0.10	Parametric equalizer bandwidth
BALANCE WAT	0 - 100 [%]	Wet/dry balance

• DYNA. FILTER [Type: STEREO]

Parameter	Range	Description
SENSE	0 - 100	Sensitivity
FILTER TYPE	LPF, HPF, BPF	Filter type
OFFSET	0 - 100	Filter frequency offset
RESONANCE	0 - 20	Filter resonance
LEVEL	0 - 100	Output level
DIRECTION	UP, DOWN	Upward or downward frequency change
DECAY	5.0ms - 42.3s(@fs=48kHz), 6.0ms - 46.0s(@fs=44.1kHz)	Filter frequency change decay speed
BALANCE WAT	0 - 100 [%]	Wet/dry balance

• DYNA. FLANGE [Type: STEREO]

Parameter	Range	Description
SENSE	0 - 100	Sensitivity
FB.LEVEL	–99 - +99 [%]	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
HI.RATIO	0.1 - 1.0	High-frequency feedback ratio
OFFSET	0 - 100	Delay time offset
DIRECTION	UP, DOWN	Upward or downward frequency change
DECAY	5.0ms - 42.3s(@fs=48kHz), 6.0ms - 46.0s(@fs=44.1kHz)	Decay speed
LOW SHEL. F	Thru, 21 - 8.0k [Hz]	Low-range shelving filter frequency
LOW SHEL. G	–12.0 - +12.0 [dB]	Low-range shelving filter gain
PEQ F	100 - 8.0k [Hz]	Parametric EQ cutoff frequency
PEQ G	–12.0 - +12.0 [dB]	Parametric EQ gain
PEQ Q	10.0 - 0.10	Parametric EQ Q
HIGH SHEL. F	50 - 16.0k, Thru [Hz]	High-range shelving filter frequency
HIGH SHEL. G	–12.0 - +12.0 [dB]	High-range shelving filter gain
BALANCE WAT	0 - 100 [%]	Wet/dry balance

• DYNA. PHASER [Type: STEREO]

Parameter	Range	Description
SENSE	0 - 100	Sensitivity
FB.LEVEL	–99 - +99 [%]	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
HI.RATIO	0.1 - 1.0	High-frequency feedback ratio
OFFSET	0 - 100	Lowest phase-shifted frequency offset
DIRECTION	UP, DOWN	Upward or downward frequency change
STAGE	2, 4, 8, 10, 12, 14, 16	Number of phase shift stages
DECAY	5.0ms - 42.3s(@fs=48kHz), 6.0ms - 46.0s(@fs=44.1kHz)	Decay speed
LOW SHEL. F	Thru, 21 - 8.0k [Hz]	Low-range shelving filter frequency
LOW SHEL. G	–12.0 - +12.0 [dB]	Low-range shelving filter gain
PEQ F	100 - 8.0k [Hz]	Parametric EQ cutoff frequency
PEQ G	–12.0 - +12.0 [dB]	Parametric EQ gain
PEQ Q	10.0 - 0.10	Parametric EQ Q
HIGH SHEL. F	50 - 16.0k, Thru [Hz]	High-range shelving filter frequency
HIGH SHEL. G	–12.0 - +12.0 [dB]	High-range shelving filter gain
BALANCE WAT	0 - 100 [%]	Wet/dry balance

Scene Memory/Effect Library to Program Change Table

Initial Bank/Ch# 1

Program Change#	Scene/ Effect	Initial#
001	Scene	01.0
002	Scene	01.1
003	Scene	01.2
004	Scene	01.3
005	Scene	01.4
006	Scene	01.5
007	Scene	01.6
008	Scene	01.7
009	Scene	01.8
010	Scene	01.9
011	Scene	02.0
012	Scene	02.1
013	Scene	02.2
014	Scene	02.3
015	Scene	02.4
016	Scene	02.5
017	Scene	02.6
018	Scene	02.7
019	Scene	02.8
020	Scene	02.9
021	Scene	03.0
022	Scene	03.1
023	Scene	03.2
024	Scene	03.3
025	Scene	03.4
026	Scene	03.5
027	Scene	03.6
028	Scene	03.7
029	Scene	03.8
030	Scene	03.9
031	Scene	04.0
032	Scene	04.1

Program Change#	Scene/ Effect	Initial#
033	Scene	04.2
034	Scene	04.3
035	Scene	04.4
036	Scene	04.5
037	Scene	04.6
038	Scene	04.7
039	Scene	04.8
040	Scene	04.9
041	Scene	05.0
042	Scene	05.1
043	Scene	05.2
044	Scene	05.3
045	Scene	05.4
046	Scene	05.5
047	Scene	05.6
048	Scene	05.7
049	Scene	05.8
050	Scene	05.9
051	Scene	06.0
052	Scene	06.1
053	Scene	06.2
054	Scene	06.3
055	Scene	06.4
056	Scene	06.5
057	Scene	06.6
058	Scene	06.7
059	Scene	06.8
060	Scene	06.9
061	Scene	07.0
062	Scene	07.1
063	Scene	07.2
064	Scene	07.3

Program Change#	Scene/ Effect	Initial#
065	Scene	07.4
066	Scene	07.5
067	Scene	07.6
068	Scene	07.7
069	Scene	07.8
070	Scene	07.9
071	Scene	08.0
072	Scene	08.1
073	Scene	08.2
074	Scene	08.3
075	Scene	08.4
076	Scene	08.5
077	Scene	08.6
078	Scene	08.7
079	Scene	08.8
080	Scene	08.9
081	Scene	09.0
082	Scene	09.1
083	Scene	09.2
084	Scene	09.3
085	Scene	09.4
086	Scene	09.5
087	Scene	09.6
088	Scene	09.7
089	Scene	09.8
090	Scene	09.9
091	Scene	10.0
092	Scene	10.1
093	Scene	10.2
094	Scene	10.3
095	Scene	10.4
096	Scene	10.5

Program Change#	Scene/ Effect	Initial#
097	Scene	10.6
098	Scene	10.7
099	Scene	10.8
100	Scene	10.9
101	Scene	11.0
102	Scene	11.1
103	Scene	11.2
104	Scene	11.3
105	Scene	11.4
106	Scene	11.5
107	Scene	11.6
108	Scene	11.7
109	Scene	11.8
110	Scene	11.9
111	Scene	12.0
112	Scene	12.1
113	Scene	12.2
114	Scene	12.3
115	Scene	12.4
116	Scene	12.5
117	Scene	12.6
118	Scene	12.7
119	Scene	12.8
120	Scene	12.9
121	Scene	13.0
122	Scene	13.1
123	Scene	13.2
124	Scene	13.3
125	Scene	13.4
126	Scene	13.5
127	Scene	13.6
128	Scene	13.7

Initial Bank/Ch# 2

Program Change#	Scene/ Effect	Initial#
001	Scene	13.8
002	Scene	13.9
003	Scene	14.0
004	Scene	14.1
005	Scene	14.2
006	Scene	14.3
007	Scene	14.4
008	Scene	14.5
009	Scene	14.6
010	Scene	14.7
011	Scene	14.8
012	Scene	14.9
013	Scene	15.0
014	Scene	15.1
015	Scene	15.2
016	Scene	15.3
017	Scene	15.4
018	Scene	15.5
019	Scene	15.6
020	Scene	15.7
021	Scene	15.8
022	Scene	15.9
023	Scene	16.0
024	Scene	16.1
025	Scene	16.2
026	Scene	16.3
027	Scene	16.4
028	Scene	16.5
029	Scene	16.6
030	Scene	16.7
031	Scene	16.8
032	Scene	16.9

Program Change#	Scene/ Effect	Initial#
033	Scene	17.0
034	Scene	17.1
035	Scene	17.2
036	Scene	17.3
037	Scene	17.4
038	Scene	17.5
039	Scene	17.6
040	Scene	17.7
041	Scene	17.8
042	Scene	17.9
043	Scene	18.0
044	Scene	18.1
045	Scene	18.2
046	Scene	18.3
047	Scene	18.4
048	Scene	18.5
049	Scene	18.6
050	Scene	18.7
051	Scene	18.8
052	Scene	18.9
053	Scene	19.0
054	Scene	19.1
055	Scene	19.2
056	Scene	19.3
057	Scene	19.4
058	Scene	19.5
059	Scene	19.6
060	Scene	19.7
061	Scene	19.8
062	Scene	19.9
063	Scene	20.0
064	Scene	20.1

Program Change#	Scene/ Effect	Initial#
065	Scene	20.2
066	Scene	20.3
067	Scene	20.4
068	Scene	20.5
069	Scene	20.6
070	Scene	20.7
071	Scene	20.8
072	Scene	20.9
073	Scene	21.0
074	Scene	21.1
075	Scene	21.2
076	Scene	21.3
077	Scene	21.4
078	Scene	21.5
079	Scene	21.6
080	Scene	21.7
081	Scene	21.8
082	Scene	21.9
083	Scene	22.0
084	Scene	22.1
085	Scene	22.2
086	Scene	22.3
087	Scene	22.4
088	Scene	22.5
089	Scene	22.6
090	Scene	22.7
091	Scene	22.8
092	Scene	22.9
093	Scene	23.0
094	Scene	23.1
095	Scene	23.2
096	Scene	23.3

Program Change#	Scene/ Effect	Initial#
097	Scene	23.4
098	Scene	23.5
099	Scene	23.6
100	Scene	23.7
101	Scene	23.8
102	Scene	23.9
103	Scene	24.0
104	Scene	24.1
105	Scene	24.2
106	Scene	24.3
107	Scene	24.4
108	Scene	24.5
109	Scene	24.6
110	Scene	24.7
111	Scene	24.8
112	Scene	24.9
113	Scene	25.0
114	Scene	25.1
115	Scene	25.2
116	Scene	25.3
117	Scene	25.4
118	Scene	25.5
119	Scene	25.6
120	Scene	25.7
121	Scene	25.8
122	Scene	25.9
123	Scene	26.0
124	Scene	26.1
125	Scene	26.2
126	Scene	26.3
127	Scene	26.4
128	Scene	26.5

Initial Bank/Ch# 3

Program Change#	Scene/ Effect	Initial#
001	Scene	26.6
002	Scene	26.7
003	Scene	26.8
004	Scene	26.9
005	Scene	27.0
006	Scene	27.1
007	Scene	27.2
008	Scene	27.3
009	Scene	27.4
010	Scene	27.5
011	Scene	27.6
012	Scene	27.7
013	Scene	27.8
014	Scene	27.9
015	Scene	28.0
016	Scene	28.1
017	Scene	28.2
018	Scene	28.3
019	Scene	28.4
020	Scene	28.5
021	Scene	28.6
022	Scene	28.7
023	Scene	28.8
024	Scene	28.9
025	Scene	29.0
026	Scene	29.1
027	Scene	29.2
028	Scene	29.3
029	Scene	29.4
030	Scene	29.5
031	Scene	29.6
032	Scene	29.7
033	Scene	29.8
034	Scene	29.9
035	Scene	30.0
036	Scene	30.1
037	Scene	30.2
038	Scene	30.3
039	Scene	30.4
040	Scene	30.5
041	Scene	30.6
042	Scene	30.7
043	Scene	30.8
044	Scene	30.9
045	Scene	31.0
046	Scene	31.1
047	Scene	31.2
048	Scene	31.3
049	Scene	31.4
050	Scene	31.5
051	Scene	31.6
052	Scene	31.7
053	Scene	31.8
054	Scene	31.9
055	Scene	32.0
056	Scene	32.1
057	Scene	32.2
058	Scene	32.3
059	Scene	32.4
060	Scene	32.5
061	Scene	32.6
062	Scene	32.7
063	Scene	32.8
064	Scene	32.9
065	Scene	33.0
066	Scene	33.1
067	Scene	33.2
068	Scene	33.3
069	Scene	33.4
070	Scene	33.5
071	Scene	33.6
072	Scene	33.7
073	Scene	33.8
074	Scene	33.9
075	Scene	34.0
076	Scene	34.1
077	Scene	34.2
078	Scene	34.3
079	Scene	34.4
080	Scene	34.5
081	Scene	34.6
082	Scene	34.7
083	Scene	34.8
084	Scene	34.9
085	Scene	35.0
086	Scene	35.1
087	Scene	35.2
088	Scene	35.3
089	Scene	35.4
090	Scene	35.5
091	Scene	35.6
092	Scene	35.7
093	Scene	35.8
094	Scene	35.9
095	Scene	36.0
096	Scene	36.1
097	Scene	36.2
098	Scene	36.3
099	Scene	36.4
100	Scene	36.5
101	Scene	36.6
102	Scene	36.7
103	Scene	36.8
104	Scene	36.9
105	Scene	37.0
106	Scene	37.1
107	Scene	37.2
108	Scene	37.3
109	Scene	37.4
110	Scene	37.5
111	Scene	37.6
112	Scene	37.7
113	Scene	37.8
114	Scene	37.9
115	Scene	38.0
116	Scene	38.1
117	Scene	38.2
118	Scene	38.3
119	Scene	38.4
120	Scene	38.5
121	Scene	38.6
122	Scene	38.7
123	Scene	38.8
124	Scene	38.9
125	Scene	39.0
126	Scene	39.1
127	Scene	39.2
128	Scene	39.3

Initial Bank/Ch# 4

Program Change#	Scene/ Effect	Initial#
001	Scene	39.4
002	Scene	39.5
003	Scene	39.6
004	Scene	39.7
005	Scene	39.8
006	Scene	39.9
007	Scene	40.0
008	Scene	40.1
009	Scene	40.2
010	Scene	40.3
011	Scene	40.4
012	Scene	40.5
013	Scene	40.6
014	Scene	40.7
015	Scene	40.8
016	Scene	40.9
017	Scene	41.0
018	Scene	41.1
019	Scene	41.2
020	Scene	41.3
021	Scene	41.4
022	Scene	41.5
023	Scene	41.6
024	Scene	41.7
025	Scene	41.8
026	Scene	41.9
027	Scene	42.0
028	Scene	42.1
029	Scene	42.2
030	Scene	42.3
031	Scene	42.4
032	Scene	42.5
033	Scene	42.6
034	Scene	42.7
035	Scene	42.8
036	Scene	42.9
037	Scene	43.0
038	Scene	43.1
039	Scene	43.2
040	Scene	43.3
041	Scene	43.4
042	Scene	43.5
043	Scene	43.6
044	Scene	43.7
045	Scene	43.8
046	Scene	43.9
047	Scene	44.0
048	Scene	44.1
049	Scene	44.2
050	Scene	44.3
051	Scene	44.4
052	Scene	44.5
053	Scene	44.6
054	Scene	44.7
055	Scene	44.8
056	Scene	44.9
057	Scene	45.0
058	Scene	45.1
059	Scene	45.2
060	Scene	45.3
061	Scene	45.4
062	Scene	45.5
063	Scene	45.6
064	Scene	45.7
065	Scene	45.8
066	Scene	45.9
067	Scene	46.0
068	Scene	46.1
069	Scene	46.2
070	Scene	46.3
071	Scene	46.4
072	Scene	46.5
073	Scene	46.6
074	Scene	46.7
075	Scene	46.8
076	Scene	46.9
077	Scene	47.0
078	Scene	47.1
079	Scene	47.2
080	Scene	47.3
081	Scene	47.4
082	Scene	47.5
083	Scene	47.6
084	Scene	47.7
085	Scene	47.8
086	Scene	47.9
087	Scene	48.0
088	Scene	48.1
089	Scene	48.2
090	Scene	48.3
091	Scene	48.4
092	Scene	48.5
093	Scene	48.6
094	Scene	48.7
095	Scene	48.8
096	Scene	48.9
097	Scene	49.0
098	Scene	49.1
099	Scene	49.2
100	Scene	49.3
101	Scene	49.4
102	Scene	49.5
103	Scene	49.6
104	Scene	49.7
105	Scene	49.8
106	Scene	49.9
107	Scene	50.0
108	Scene	50.1
109	Scene	50.2
110	Scene	50.3
111	Scene	50.4
112	Scene	50.5
113	Scene	50.6
114	Scene	50.7
115	Scene	50.8
116	Scene	50.9
117	Scene	51.0
118	Scene	51.1
119	Scene	51.2
120	Scene	51.3
121	Scene	51.4
122	Scene	51.5
123	Scene	51.6
124	Scene	51.7
125	Scene	51.8
126	Scene	51.9
127	Scene	52.0
128	Scene	52.1

Initial Bank/Ch# 5

Program Change#	Scene/ Effect	Initial#
001	Scene	52.2
002	Scene	52.3
003	Scene	52.4
004	Scene	52.5
005	Scene	52.6
006	Scene	52.7
007	Scene	52.8
008	Scene	52.9
009	Scene	53.0
010	Scene	53.1
011	Scene	53.2
012	Scene	53.3
013	Scene	53.4
014	Scene	53.5
015	Scene	53.6
016	Scene	53.7
017	Scene	53.8
018	Scene	53.9
019	Scene	54.0
020	Scene	54.1
021	Scene	54.2
022	Scene	54.3
023	Scene	54.4
024	Scene	54.5
025	Scene	54.6
026	Scene	54.7
027	Scene	54.8
028	Scene	54.9
029	Scene	55.0
030	Scene	55.1
031	Scene	55.2
032	Scene	55.3

Program Change#	Scene/ Effect	Initial#
033	Scene	55.4
034	Scene	55.5
035	Scene	55.6
036	Scene	55.7
037	Scene	55.8
038	Scene	55.9
039	Scene	56.0
040	Scene	56.1
041	Scene	56.2
042	Scene	56.3
043	Scene	56.4
044	Scene	56.5
045	Scene	56.6
046	Scene	56.7
047	Scene	56.8
048	Scene	56.9
049	Scene	57.0
050	Scene	57.1
051	Scene	57.2
052	Scene	57.3
053	Scene	57.4
054	Scene	57.5
055	Scene	57.6
056	Scene	57.7
057	Scene	57.8
058	Scene	57.9
059	Scene	58.0
060	Scene	58.1
061	Scene	58.2
062	Scene	58.3
063	Scene	58.4
064	Scene	58.5

Program Change#	Scene/ Effect	Initial#
065	Scene	58.6
066	Scene	58.7
067	Scene	58.8
068	Scene	58.9
069	Scene	59.0
070	Scene	59.1
071	Scene	59.2
072	Scene	59.3
073	Scene	59.4
074	Scene	59.5
075	Scene	59.6
076	Scene	59.7
077	Scene	59.8
078	Scene	59.9
079	Scene	60.0
080	Scene	60.1
081	Scene	60.2
082	Scene	60.3
083	Scene	60.4
084	Scene	60.5
085	Scene	60.6
086	Scene	60.7
087	Scene	60.8
088	Scene	60.9
089	Scene	61.0
090	Scene	61.1
091	Scene	61.2
092	Scene	61.3
093	Scene	61.4
094	Scene	61.5
095	Scene	61.6
096	Scene	61.7

Program Change#	Scene/ Effect	Initial#
097	Scene	61.8
098	Scene	61.9
099	Scene	62.0
100	Scene	62.1
101	Scene	62.2
102	Scene	62.3
103	Scene	62.4
104	Scene	62.5
105	Scene	62.6
106	Scene	62.7
107	Scene	62.8
108	Scene	62.9
109	Scene	63.0
110	Scene	63.1
111	Scene	63.2
112	Scene	63.3
113	Scene	63.4
114	Scene	63.5
115	Scene	63.6
116	Scene	63.7
117	Scene	63.8
118	Scene	63.9
119	Scene	64.0
120	Scene	64.1
121	Scene	64.2
122	Scene	64.3
123	Scene	64.4
124	Scene	64.5
125	Scene	64.6
126	Scene	64.7
127	Scene	64.8
128	Scene	64.9

Initial Bank/Ch# 6

Program Change#	Scene/ Effect	Initial#
001	Scene	65.0
002	Scene	65.1
003	Scene	65.2
004	Scene	65.3
005	Scene	65.4
006	Scene	65.5
007	Scene	65.6
008	Scene	65.7
009	Scene	65.8
010	Scene	65.9
011	Scene	66.0
012	Scene	66.1
013	Scene	66.2
014	Scene	66.3
015	Scene	66.4
016	Scene	66.5
017	Scene	66.6
018	Scene	66.7
019	Scene	66.8
020	Scene	66.9
021	Scene	67.0
022	Scene	67.1
023	Scene	67.2
024	Scene	67.3
025	Scene	67.4
026	Scene	67.5
027	Scene	67.6
028	Scene	67.7
029	Scene	67.8
030	Scene	67.9
031	Scene	68.0
032	Scene	68.1

Program Change#	Scene/ Effect	Initial#
033	Scene	68.2
034	Scene	68.3
035	Scene	68.4
036	Scene	68.5
037	Scene	68.6
038	Scene	68.7
039	Scene	68.8
040	Scene	68.9
041	Scene	69.0
042	Scene	69.1
043	Scene	69.2
044	Scene	69.3
045	Scene	69.4
046	Scene	69.5
047	Scene	69.6
048	Scene	69.7
049	Scene	69.8
050	Scene	69.9
051	Scene	70.0
052	Scene	70.1
053	Scene	70.2
054	Scene	70.3
055	Scene	70.4
056	Scene	70.5
057	Scene	70.6
058	Scene	70.7
059	Scene	70.8
060	Scene	70.9
061	Scene	71.0
062	Scene	71.1
063	Scene	71.2
064	Scene	71.3

Program Change#	Scene/ Effect	Initial#
065	Scene	71.4
066	Scene	71.5
067	Scene	71.6
068	Scene	71.7
069	Scene	71.8
070	Scene	71.9
071	Scene	72.0
072	Scene	72.1
073	Scene	72.2
074	Scene	72.3
075	Scene	72.4
076	Scene	72.5
077	Scene	72.6
078	Scene	72.7
079	Scene	72.8
080	Scene	72.9
081	Scene	73.0
082	Scene	73.1
083	Scene	73.2
084	Scene	73.3
085	Scene	73.4
086	Scene	73.5
087	Scene	73.6
088	Scene	73.7
089	Scene	73.8
090	Scene	73.9
091	Scene	74.0
092	Scene	74.1
093	Scene	74.2
094	Scene	74.3
095	Scene	74.4
096	Scene	74.5

Program Change#	Scene/ Effect	Initial#
097	Scene	74.6
098	Scene	74.7
099	Scene	74.8
100	Scene	74.9
101	Scene	75.0
102	Scene	75.1
103	Scene	75.2
104	Scene	75.3
105	Scene	75.4
106	Scene	75.5
107	Scene	75.6
108	Scene	75.7
109	Scene	75.8
110	Scene	75.9
111	Scene	76.0
112	Scene	76.1
113	Scene	76.2
114	Scene	76.3
115	Scene	76.4
116	Scene	76.5
117	Scene	76.6
118	Scene	76.7
119	Scene	76.8
120	Scene	76.9
121	Scene	77.0
122	Scene	77.1
123	Scene	77.2
124	Scene	77.3
125	Scene	77.4
126	Scene	77.5
127	Scene	77.6
128	Scene	77.7

Initial Bank/Ch# 7

Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#
001	Scene	77.8	033	Scene	81.0	065	Scene	84.2	097	Scene	87.4
002	Scene	77.9	034	Scene	81.1	066	Scene	84.3	098	Scene	87.5
003	Scene	78.0	035	Scene	81.2	067	Scene	84.4	099	Scene	87.6
004	Scene	78.1	036	Scene	81.3	068	Scene	84.5	100	Scene	87.7
005	Scene	78.2	037	Scene	81.4	069	Scene	84.6	101	Scene	87.8
006	Scene	78.3	038	Scene	81.5	070	Scene	84.7	102	Scene	87.9
007	Scene	78.4	039	Scene	81.6	071	Scene	84.8	103	Scene	88.0
008	Scene	78.5	040	Scene	81.7	072	Scene	84.9	104	Scene	88.1
009	Scene	78.6	041	Scene	81.8	073	Scene	85.0	105	Scene	88.2
010	Scene	78.7	042	Scene	81.9	074	Scene	85.1	106	Scene	88.3
011	Scene	78.8	043	Scene	82.0	075	Scene	85.2	107	Scene	88.4
012	Scene	78.9	044	Scene	82.1	076	Scene	85.3	108	Scene	88.5
013	Scene	79.0	045	Scene	82.2	077	Scene	85.4	109	Scene	88.6
014	Scene	79.1	046	Scene	82.3	078	Scene	85.5	110	Scene	88.7
015	Scene	79.2	047	Scene	82.4	079	Scene	85.6	111	Scene	88.8
016	Scene	79.3	048	Scene	82.5	080	Scene	85.7	112	Scene	88.9
017	Scene	79.4	049	Scene	82.6	081	Scene	85.8	113	Scene	89.0
018	Scene	79.5	050	Scene	82.7	082	Scene	85.9	114	Scene	89.1
019	Scene	79.6	051	Scene	82.8	083	Scene	86.0	115	Scene	89.2
020	Scene	79.7	052	Scene	82.9	084	Scene	86.1	116	Scene	89.3
021	Scene	79.8	053	Scene	83.0	085	Scene	86.2	117	Scene	89.4
022	Scene	79.9	054	Scene	83.1	086	Scene	86.3	118	Scene	89.5
023	Scene	80.0	055	Scene	83.2	087	Scene	86.4	119	Scene	89.6
024	Scene	80.1	056	Scene	83.3	088	Scene	86.5	120	Scene	89.7
025	Scene	80.2	057	Scene	83.4	089	Scene	86.6	121	Scene	89.8
026	Scene	80.3	058	Scene	83.5	090	Scene	86.7	122	Scene	89.9
027	Scene	80.4	059	Scene	83.6	091	Scene	86.8	123	Scene	90.0
028	Scene	80.5	060	Scene	83.7	092	Scene	86.9	124	Scene	90.1
029	Scene	80.6	061	Scene	83.8	093	Scene	87.0	125	Scene	90.2
030	Scene	80.7	062	Scene	83.9	094	Scene	87.1	126	Scene	90.3
031	Scene	80.8	063	Scene	84.0	095	Scene	87.2	127	Scene	90.4
032	Scene	80.9	064	Scene	84.1	096	Scene	87.3	128	Scene	90.5

Initial Bank/Ch# 8

Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#
001	Scene	90.6	033	Scene	93.8	065	Scene	97.0	097	Scene	00.2
002	Scene	90.7	034	Scene	93.9	066	Scene	97.1	098	Scene	00.3
003	Scene	90.8	035	Scene	94.0	067	Scene	97.2	099	Scene	00.4
004	Scene	90.9	036	Scene	94.1	068	Scene	97.3	100	Scene	00.5
005	Scene	91.0	037	Scene	94.2	069	Scene	97.4	101	Scene	00.6
006	Scene	91.1	038	Scene	94.3	070	Scene	97.5	102	Scene	00.7
007	Scene	91.2	039	Scene	94.4	071	Scene	97.6	103	Scene	00.8
008	Scene	91.3	040	Scene	94.5	072	Scene	97.7	104	Scene	00.9
009	Scene	91.4	041	Scene	94.6	073	Scene	97.8	105	Scene	—
010	Scene	91.5	042	Scene	94.7	074	Scene	97.9	106	Scene	—
011	Scene	91.6	043	Scene	94.8	075	Scene	98.0	107	Scene	—
012	Scene	91.7	044	Scene	94.9	076	Scene	98.1	108	Scene	—
013	Scene	91.8	045	Scene	95.0	077	Scene	98.2	109	Scene	—
014	Scene	91.9	046	Scene	95.1	078	Scene	98.3	110	Scene	—
015	Scene	92.0	047	Scene	95.2	079	Scene	98.4	111	Scene	—
016	Scene	92.1	048	Scene	95.3	080	Scene	98.5	112	Scene	—
017	Scene	92.2	049	Scene	95.4	081	Scene	98.6	113	Scene	—
018	Scene	92.3	050	Scene	95.5	082	Scene	98.7	114	Scene	—
019	Scene	92.4	051	Scene	95.6	083	Scene	98.8	115	Scene	—
020	Scene	92.5	052	Scene	95.7	084	Scene	98.9	116	Scene	—
021	Scene	92.6	053	Scene	95.8	085	Scene	99.0	117	Scene	—
022	Scene	92.7	054	Scene	95.9	086	Scene	99.1	118	Scene	—
023	Scene	92.8	055	Scene	96.0	087	Scene	99.2	119	Scene	—
024	Scene	92.9	056	Scene	96.1	088	Scene	99.3	120	Scene	—
025	Scene	93.0	057	Scene	96.2	089	Scene	99.4	121	Scene	—
026	Scene	93.1	058	Scene	96.3	090	Scene	99.5	122	Scene	—
027	Scene	93.2	059	Scene	96.4	091	Scene	99.6	123	Scene	—
028	Scene	93.3	060	Scene	96.5	092	Scene	99.7	124	Scene	—
029	Scene	93.4	061	Scene	96.6	093	Scene	99.8	125	Scene	—
030	Scene	93.5	062	Scene	96.7	094	Scene	99.9	126	Scene	—
031	Scene	93.6	063	Scene	96.8	095	Scene	00.0	127	Scene	—
032	Scene	93.7	064	Scene	96.9	096	Scene	00.1	128	Scene	—

Initial Bank/Ch# 9

Program Change#	Scene/ Effect	Initial#
001	Effect1	072
002	Effect1	073
003	Effect1	074
004	Effect1	075
005	Effect1	076
006	Effect1	077
007	Effect1	078
008	Effect1	079
009	Effect1	080
010	Effect1	081
011	Effect1	082
012	Effect1	083
013	Effect1	084
014	Effect1	085
015	Effect1	086
016	Effect1	087
017	Effect1	088
018	Effect1	089
019	Effect1	090
020	Effect1	091
021	Effect1	092
022	Effect1	093
023	Effect1	094
024	Effect1	095
025	Effect1	096
026	Effect1	097
027	Effect1	098
028	Effect1	099
029	Effect1	100
030	Effect1	101
031	Effect1	102
032	Effect1	103
033	Effect1	104
034	Effect1	105
035	Effect1	106
036	Effect1	107
037	Effect1	108
038	Effect1	109
039	Effect1	110
040	Effect1	111
041	Effect1	112
042	Effect1	113
043	Effect1	114
044	Effect1	115
045	Effect1	116
046	Effect1	117
047	Effect1	118
048	Effect1	119
049	Effect1	120
050	Effect1	121
051	Effect1	122
052	Effect1	123
053	Effect1	124
054	Effect1	125
055	Effect1	126
056	Effect1	127
057	Effect1	128
058	Effect1	129
059	Effect1	130
060	Effect1	131
061	Effect1	132
062	Effect1	133
063	Effect1	134
064	Effect1	135
065	Effect1	136
066	Effect1	137
067	Effect1	138
068	Effect1	139
069	Effect1	140
070	Effect1	141
071	Effect1	142
072	Effect1	143
073	Effect1	144
074	Effect1	145
075	Effect1	146
076	Effect1	147
077	Effect1	148
078	Effect1	149
079	Effect1	150
080	Effect1	151
081	Effect1	152
082	Effect1	153
083	Effect1	154
084	Effect1	155
085	Effect1	156
086	Effect1	157
087	Effect1	158
088	Effect1	159
089	Effect1	160
090	Effect1	161
091	Effect1	162
092	Effect1	163
093	Effect1	164
094	Effect1	165
095	Effect1	166
096	Effect1	167
097	Effect1	168
098	Effect1	169
099	Effect1	170
100	Effect1	171
101	Effect1	172
102	Effect1	173
103	Effect1	174
104	Effect1	175
105	Effect1	176
106	Effect1	177
107	Effect1	178
108	Effect1	179
109	Effect1	180
110	Effect1	181
111	Effect1	182
112	Effect1	183
113	Effect1	184
114	Effect1	185
115	Effect1	186
116	Effect1	187
117	Effect1	188
118	Effect1	189
119	Effect1	190
120	Effect1	191
121	Effect1	192
122	Effect1	193
123	Effect1	194
124	Effect1	195
125	Effect1	196
126	Effect1	197
127	Effect1	198
128	Effect1	199

Initial Bank/Ch# 10

Program Change#	Scene/ Effect	Initial#
001	Effect2	072
002	Effect2	073
003	Effect2	074
004	Effect2	075
005	Effect2	076
006	Effect2	077
007	Effect2	078
008	Effect2	079
009	Effect2	080
010	Effect2	081
011	Effect2	082
012	Effect2	083
013	Effect2	084
014	Effect2	085
015	Effect2	086
016	Effect2	087
017	Effect2	088
018	Effect2	089
019	Effect2	090
020	Effect2	091
021	Effect2	092
022	Effect2	093
023	Effect2	094
024	Effect2	095
025	Effect2	096
026	Effect2	097
027	Effect2	098
028	Effect2	099
029	Effect2	100
030	Effect2	101
031	Effect2	102
032	Effect2	103
033	Effect2	104
034	Effect2	105
035	Effect2	106
036	Effect2	107
037	Effect2	108
038	Effect2	109
039	Effect2	110
040	Effect2	111
041	Effect2	112
042	Effect2	113
043	Effect2	114
044	Effect2	115
045	Effect2	116
046	Effect2	117
047	Effect2	118
048	Effect2	119
049	Effect2	120
050	Effect2	121
051	Effect2	122
052	Effect2	123
053	Effect2	124
054	Effect2	125
055	Effect2	126
056	Effect2	127
057	Effect2	128
058	Effect2	129
059	Effect2	130
060	Effect2	131
061	Effect2	132
062	Effect2	133
063	Effect2	134
064	Effect2	135
065	Effect2	136
066	Effect2	137
067	Effect2	138
068	Effect2	139
069	Effect2	140
070	Effect2	141
071	Effect2	142
072	Effect2	143
073	Effect2	144
074	Effect2	145
075	Effect2	146
076	Effect2	147
077	Effect2	148
078	Effect2	149
079	Effect2	150
080	Effect2	151
081	Effect2	152
082	Effect2	153
083	Effect2	154
084	Effect2	155
085	Effect2	156
086	Effect2	157
087	Effect2	158
088	Effect2	159
089	Effect2	160
090	Effect2	161
091	Effect2	162
092	Effect2	163
093	Effect2	164
094	Effect2	165
095	Effect2	166
096	Effect2	167
097	Effect2	168
098	Effect2	169
099	Effect2	170
100	Effect2	171
101	Effect2	172
102	Effect2	173
103	Effect2	174
104	Effect2	175
105	Effect2	176
106	Effect2	177
107	Effect2	178
108	Effect2	179
109	Effect2	180
110	Effect2	181
111	Effect2	182
112	Effect2	183
113	Effect2	184
114	Effect2	185
115	Effect2	186
116	Effect2	187
117	Effect2	188
118	Effect2	189
119	Effect2	190
120	Effect2	191
121	Effect2	192
122	Effect2	193
123	Effect2	194
124	Effect2	195
125	Effect2	196
126	Effect2	197
127	Effect2	198
128	Effect2	199

Initial Bank/Ch# 11

Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#
001	Effect3	072	033	Effect3	104	065	Effect3	136	097	Effect3	168
002	Effect3	073	034	Effect3	105	066	Effect3	137	098	Effect3	169
003	Effect3	074	035	Effect3	106	067	Effect3	138	099	Effect3	170
004	Effect3	075	036	Effect3	107	068	Effect3	139	100	Effect3	171
005	Effect3	076	037	Effect3	108	069	Effect3	140	101	Effect3	172
006	Effect3	077	038	Effect3	109	070	Effect3	141	102	Effect3	173
007	Effect3	078	039	Effect3	110	071	Effect3	142	103	Effect3	174
008	Effect3	079	040	Effect3	111	072	Effect3	143	104	Effect3	175
009	Effect3	080	041	Effect3	112	073	Effect3	144	105	Effect3	176
010	Effect3	081	042	Effect3	113	074	Effect3	145	106	Effect3	177
011	Effect3	082	043	Effect3	114	075	Effect3	146	107	Effect3	178
012	Effect3	083	044	Effect3	115	076	Effect3	147	108	Effect3	179
013	Effect3	084	045	Effect3	116	077	Effect3	148	109	Effect3	180
014	Effect3	085	046	Effect3	117	078	Effect3	149	110	Effect3	181
015	Effect3	086	047	Effect3	118	079	Effect3	150	111	Effect3	182
016	Effect3	087	048	Effect3	119	080	Effect3	151	112	Effect3	183
017	Effect3	088	049	Effect3	120	081	Effect3	152	113	Effect3	184
018	Effect3	089	050	Effect3	121	082	Effect3	153	114	Effect3	185
019	Effect3	090	051	Effect3	122	083	Effect3	154	115	Effect3	186
020	Effect3	091	052	Effect3	123	084	Effect3	155	116	Effect3	187
021	Effect3	092	053	Effect3	124	085	Effect3	156	117	Effect3	188
022	Effect3	093	054	Effect3	125	086	Effect3	157	118	Effect3	189
023	Effect3	094	055	Effect3	126	087	Effect3	158	119	Effect3	190
024	Effect3	095	056	Effect3	127	088	Effect3	159	120	Effect3	191
025	Effect3	096	057	Effect3	128	089	Effect3	160	121	Effect3	192
026	Effect3	097	058	Effect3	129	090	Effect3	161	122	Effect3	193
027	Effect3	098	059	Effect3	130	091	Effect3	162	123	Effect3	194
028	Effect3	099	060	Effect3	131	092	Effect3	163	124	Effect3	195
029	Effect3	100	061	Effect3	132	093	Effect3	164	125	Effect3	196
030	Effect3	101	062	Effect3	133	094	Effect3	165	126	Effect3	197
031	Effect3	102	063	Effect3	134	095	Effect3	166	127	Effect3	198
032	Effect3	103	064	Effect3	135	096	Effect3	167	128	Effect3	199

Initial Bank/Ch# 12

Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#
001	Effect4	072	033	Effect4	104	065	Effect4	136	097	Effect4	168
002	Effect4	073	034	Effect4	105	066	Effect4	137	098	Effect4	169
003	Effect4	074	035	Effect4	106	067	Effect4	138	099	Effect4	170
004	Effect4	075	036	Effect4	107	068	Effect4	139	100	Effect4	171
005	Effect4	076	037	Effect4	108	069	Effect4	140	101	Effect4	172
006	Effect4	077	038	Effect4	109	070	Effect4	141	102	Effect4	173
007	Effect4	078	039	Effect4	110	071	Effect4	142	103	Effect4	174
008	Effect4	079	040	Effect4	111	072	Effect4	143	104	Effect4	175
009	Effect4	080	041	Effect4	112	073	Effect4	144	105	Effect4	176
010	Effect4	081	042	Effect4	113	074	Effect4	145	106	Effect4	177
011	Effect4	082	043	Effect4	114	075	Effect4	146	107	Effect4	178
012	Effect4	083	044	Effect4	115	076	Effect4	147	108	Effect4	179
013	Effect4	084	045	Effect4	116	077	Effect4	148	109	Effect4	180
014	Effect4	085	046	Effect4	117	078	Effect4	149	110	Effect4	181
015	Effect4	086	047	Effect4	118	079	Effect4	150	111	Effect4	182
016	Effect4	087	048	Effect4	119	080	Effect4	151	112	Effect4	183
017	Effect4	088	049	Effect4	120	081	Effect4	152	113	Effect4	184
018	Effect4	089	050	Effect4	121	082	Effect4	153	114	Effect4	185
019	Effect4	090	051	Effect4	122	083	Effect4	154	115	Effect4	186
020	Effect4	091	052	Effect4	123	084	Effect4	155	116	Effect4	187
021	Effect4	092	053	Effect4	124	085	Effect4	156	117	Effect4	188
022	Effect4	093	054	Effect4	125	086	Effect4	157	118	Effect4	189
023	Effect4	094	055	Effect4	126	087	Effect4	158	119	Effect4	190
024	Effect4	095	056	Effect4	127	088	Effect4	159	120	Effect4	191
025	Effect4	096	057	Effect4	128	089	Effect4	160	121	Effect4	192
026	Effect4	097	058	Effect4	129	090	Effect4	161	122	Effect4	193
027	Effect4	098	059	Effect4	130	091	Effect4	162	123	Effect4	194
028	Effect4	099	060	Effect4	131	092	Effect4	163	124	Effect4	195
029	Effect4	100	061	Effect4	132	093	Effect4	164	125	Effect4	196
030	Effect4	101	062	Effect4	133	094	Effect4	165	126	Effect4	197
031	Effect4	102	063	Effect4	134	095	Effect4	166	127	Effect4	198
032	Effect4	103	064	Effect4	135	096	Effect4	167	128	Effect4	199

Initial Bank/Ch# 13

Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#
001	Effect5	072	033	Effect5	104	065	Effect5	136	097	Effect5	168
002	Effect5	073	034	Effect5	105	066	Effect5	137	098	Effect5	169
003	Effect5	074	035	Effect5	106	067	Effect5	138	099	Effect5	170
004	Effect5	075	036	Effect5	107	068	Effect5	139	100	Effect5	171
005	Effect5	076	037	Effect5	108	069	Effect5	140	101	Effect5	172
006	Effect5	077	038	Effect5	109	070	Effect5	141	102	Effect5	173
007	Effect5	078	039	Effect5	110	071	Effect5	142	103	Effect5	174
008	Effect5	079	040	Effect5	111	072	Effect5	143	104	Effect5	175
009	Effect5	080	041	Effect5	112	073	Effect5	144	105	Effect5	176
010	Effect5	081	042	Effect5	113	074	Effect5	145	106	Effect5	177
011	Effect5	082	043	Effect5	114	075	Effect5	146	107	Effect5	178
012	Effect5	083	044	Effect5	115	076	Effect5	147	108	Effect5	179
013	Effect5	084	045	Effect5	116	077	Effect5	148	109	Effect5	180
014	Effect5	085	046	Effect5	117	078	Effect5	149	110	Effect5	181
015	Effect5	086	047	Effect5	118	079	Effect5	150	111	Effect5	182
016	Effect5	087	048	Effect5	119	080	Effect5	151	112	Effect5	183
017	Effect5	088	049	Effect5	120	081	Effect5	152	113	Effect5	184
018	Effect5	089	050	Effect5	121	082	Effect5	153	114	Effect5	185
019	Effect5	090	051	Effect5	122	083	Effect5	154	115	Effect5	186
020	Effect5	091	052	Effect5	123	084	Effect5	155	116	Effect5	187
021	Effect5	092	053	Effect5	124	085	Effect5	156	117	Effect5	188
022	Effect5	093	054	Effect5	125	086	Effect5	157	118	Effect5	189
023	Effect5	094	055	Effect5	126	087	Effect5	158	119	Effect5	190
024	Effect5	095	056	Effect5	127	088	Effect5	159	120	Effect5	191
025	Effect5	096	057	Effect5	128	089	Effect5	160	121	Effect5	192
026	Effect5	097	058	Effect5	129	090	Effect5	161	122	Effect5	193
027	Effect5	098	059	Effect5	130	091	Effect5	162	123	Effect5	194
028	Effect5	099	060	Effect5	131	092	Effect5	163	124	Effect5	195
029	Effect5	100	061	Effect5	132	093	Effect5	164	125	Effect5	196
030	Effect5	101	062	Effect5	133	094	Effect5	165	126	Effect5	197
031	Effect5	102	063	Effect5	134	095	Effect5	166	127	Effect5	198
032	Effect5	103	064	Effect5	135	096	Effect5	167	128	Effect5	199

Initial Bank/Ch# 14

Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#
001	Effect6	072	033	Effect6	104	065	Effect6	136	097	Effect6	168
002	Effect6	073	034	Effect6	105	066	Effect6	137	098	Effect6	169
003	Effect6	074	035	Effect6	106	067	Effect6	138	099	Effect6	170
004	Effect6	075	036	Effect6	107	068	Effect6	139	100	Effect6	171
005	Effect6	076	037	Effect6	108	069	Effect6	140	101	Effect6	172
006	Effect6	077	038	Effect6	109	070	Effect6	141	102	Effect6	173
007	Effect6	078	039	Effect6	110	071	Effect6	142	103	Effect6	174
008	Effect6	079	040	Effect6	111	072	Effect6	143	104	Effect6	175
009	Effect6	080	041	Effect6	112	073	Effect6	144	105	Effect6	176
010	Effect6	081	042	Effect6	113	074	Effect6	145	106	Effect6	177
011	Effect6	082	043	Effect6	114	075	Effect6	146	107	Effect6	178
012	Effect6	083	044	Effect6	115	076	Effect6	147	108	Effect6	179
013	Effect6	084	045	Effect6	116	077	Effect6	148	109	Effect6	180
014	Effect6	085	046	Effect6	117	078	Effect6	149	110	Effect6	181
015	Effect6	086	047	Effect6	118	079	Effect6	150	111	Effect6	182
016	Effect6	087	048	Effect6	119	080	Effect6	151	112	Effect6	183
017	Effect6	088	049	Effect6	120	081	Effect6	152	113	Effect6	184
018	Effect6	089	050	Effect6	121	082	Effect6	153	114	Effect6	185
019	Effect6	090	051	Effect6	122	083	Effect6	154	115	Effect6	186
020	Effect6	091	052	Effect6	123	084	Effect6	155	116	Effect6	187
021	Effect6	092	053	Effect6	124	085	Effect6	156	117	Effect6	188
022	Effect6	093	054	Effect6	125	086	Effect6	157	118	Effect6	189
023	Effect6	094	055	Effect6	126	087	Effect6	158	119	Effect6	190
024	Effect6	095	056	Effect6	127	088	Effect6	159	120	Effect6	191
025	Effect6	096	057	Effect6	128	089	Effect6	160	121	Effect6	192
026	Effect6	097	058	Effect6	129	090	Effect6	161	122	Effect6	193
027	Effect6	098	059	Effect6	130	091	Effect6	162	123	Effect6	194
028	Effect6	099	060	Effect6	131	092	Effect6	163	124	Effect6	195
029	Effect6	100	061	Effect6	132	093	Effect6	164	125	Effect6	196
030	Effect6	101	062	Effect6	133	094	Effect6	165	126	Effect6	197
031	Effect6	102	063	Effect6	134	095	Effect6	166	127	Effect6	198
032	Effect6	103	064	Effect6	135	096	Effect6	167	128	Effect6	199

Initial Bank/Ch# 15

Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#
001	Effect7	072	033	Effect7	104	065	Effect7	136	097	Effect7	168
002	Effect7	073	034	Effect7	105	066	Effect7	137	098	Effect7	169
003	Effect7	074	035	Effect7	106	067	Effect7	138	099	Effect7	170
004	Effect7	075	036	Effect7	107	068	Effect7	139	100	Effect7	171
005	Effect7	076	037	Effect7	108	069	Effect7	140	101	Effect7	172
006	Effect7	077	038	Effect7	109	070	Effect7	141	102	Effect7	173
007	Effect7	078	039	Effect7	110	071	Effect7	142	103	Effect7	174
008	Effect7	079	040	Effect7	111	072	Effect7	143	104	Effect7	175
009	Effect7	080	041	Effect7	112	073	Effect7	144	105	Effect7	176
010	Effect7	081	042	Effect7	113	074	Effect7	145	106	Effect7	177
011	Effect7	082	043	Effect7	114	075	Effect7	146	107	Effect7	178
012	Effect7	083	044	Effect7	115	076	Effect7	147	108	Effect7	179
013	Effect7	084	045	Effect7	116	077	Effect7	148	109	Effect7	180
014	Effect7	085	046	Effect7	117	078	Effect7	149	110	Effect7	181
015	Effect7	086	047	Effect7	118	079	Effect7	150	111	Effect7	182
016	Effect7	087	048	Effect7	119	080	Effect7	151	112	Effect7	183
017	Effect7	088	049	Effect7	120	081	Effect7	152	113	Effect7	184
018	Effect7	089	050	Effect7	121	082	Effect7	153	114	Effect7	185
019	Effect7	090	051	Effect7	122	083	Effect7	154	115	Effect7	186
020	Effect7	091	052	Effect7	123	084	Effect7	155	116	Effect7	187
021	Effect7	092	053	Effect7	124	085	Effect7	156	117	Effect7	188
022	Effect7	093	054	Effect7	125	086	Effect7	157	118	Effect7	189
023	Effect7	094	055	Effect7	126	087	Effect7	158	119	Effect7	190
024	Effect7	095	056	Effect7	127	088	Effect7	159	120	Effect7	191
025	Effect7	096	057	Effect7	128	089	Effect7	160	121	Effect7	192
026	Effect7	097	058	Effect7	129	090	Effect7	161	122	Effect7	193
027	Effect7	098	059	Effect7	130	091	Effect7	162	123	Effect7	194
028	Effect7	099	060	Effect7	131	092	Effect7	163	124	Effect7	195
029	Effect7	100	061	Effect7	132	093	Effect7	164	125	Effect7	196
030	Effect7	101	062	Effect7	133	094	Effect7	165	126	Effect7	197
031	Effect7	102	063	Effect7	134	095	Effect7	166	127	Effect7	198
032	Effect7	103	064	Effect7	135	096	Effect7	167	128	Effect7	199

Initial Bank/Ch# 16

Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#	Program Change#	Scene/ Effect	Initial#
001	Effect8	072	033	Effect8	104	065	Effect8	136	097	Effect8	168
002	Effect8	073	034	Effect8	105	066	Effect8	137	098	Effect8	169
003	Effect8	074	035	Effect8	106	067	Effect8	138	099	Effect8	170
004	Effect8	075	036	Effect8	107	068	Effect8	139	100	Effect8	171
005	Effect8	076	037	Effect8	108	069	Effect8	140	101	Effect8	172
006	Effect8	077	038	Effect8	109	070	Effect8	141	102	Effect8	173
007	Effect8	078	039	Effect8	110	071	Effect8	142	103	Effect8	174
008	Effect8	079	040	Effect8	111	072	Effect8	143	104	Effect8	175
009	Effect8	080	041	Effect8	112	073	Effect8	144	105	Effect8	176
010	Effect8	081	042	Effect8	113	074	Effect8	145	106	Effect8	177
011	Effect8	082	043	Effect8	114	075	Effect8	146	107	Effect8	178
012	Effect8	083	044	Effect8	115	076	Effect8	147	108	Effect8	179
013	Effect8	084	045	Effect8	116	077	Effect8	148	109	Effect8	180
014	Effect8	085	046	Effect8	117	078	Effect8	149	110	Effect8	181
015	Effect8	086	047	Effect8	118	079	Effect8	150	111	Effect8	182
016	Effect8	087	048	Effect8	119	080	Effect8	151	112	Effect8	183
017	Effect8	088	049	Effect8	120	081	Effect8	152	113	Effect8	184
018	Effect8	089	050	Effect8	121	082	Effect8	153	114	Effect8	185
019	Effect8	090	051	Effect8	122	083	Effect8	154	115	Effect8	186
020	Effect8	091	052	Effect8	123	084	Effect8	155	116	Effect8	187
021	Effect8	092	053	Effect8	124	085	Effect8	156	117	Effect8	188
022	Effect8	093	054	Effect8	125	086	Effect8	157	118	Effect8	189
023	Effect8	094	055	Effect8	126	087	Effect8	158	119	Effect8	190
024	Effect8	095	056	Effect8	127	088	Effect8	159	120	Effect8	191
025	Effect8	096	057	Effect8	128	089	Effect8	160	121	Effect8	192
026	Effect8	097	058	Effect8	129	090	Effect8	161	122	Effect8	193
027	Effect8	098	059	Effect8	130	091	Effect8	162	123	Effect8	194
028	Effect8	099	060	Effect8	131	092	Effect8	163	124	Effect8	195
029	Effect8	100	061	Effect8	132	093	Effect8	164	125	Effect8	196
030	Effect8	101	062	Effect8	133	094	Effect8	165	126	Effect8	197
031	Effect8	102	063	Effect8	134	095	Effect8	166	127	Effect8	198
032	Effect8	103	064	Effect8	135	096	Effect8	167	128	Effect8	199

Initial Bank/Ch# __

Program Change#	Scene/ Effect	User#
001		
002		
003		
004		
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041		
042		
043		

Program Change#	Scene/ Effect	User#
044		
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052		
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081		
082		
083		
084		
085		
086		

Program Change#	Scene/ Effect	User#
087		
088		
089		
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127		
128		

Channel library list

This table shows the parameters that are saved in the input channel, MIX channel, MATRIX channel, and STEREO A/B channel libraries.

INPUT/ST IN	MIX	MATRIX	STEREO A/B
INPUT CH No.	MIX CH No.	MATRIX CH No.	STEREO CH No.
Input HA Gain Link			
Input HA A/B Link			
Input Insert In HA Gain Gang	Mix Insert In HA Gain Gang	Matrix Insert In HA Gain Gang	Stereo Master Insert In HA Gain Gang
Input Insert In HA A/B Link	Mix Insert In HA A/B Link	Matrix Insert In HA A/B Link	Stereo Master Insert In HA A/B Link
Input GATE Link On/Off			
Input COMP Link On/Off	Mix Comp Link On/Off	Matrix Comp Link On/Off	Stereo Master COMP Link
Input Delay Gang	Mix Delay Gang	Matrix Delay Gang	Stereo Master Delay Gang
Input Mix send Pre Point			
Input Mix send 1-48 Pre/Post			
	Mix Matrix Assign Post Point		Stereo Matrix Assign Post Point
	Mix Matrix Assign Pre/Post		Stereo Matrix Assign Pre/Post
	Mix Stereo Assign Point		
Input Direct Out Point			
Input Insert Point	Mix Insert Point	Matrix Insert Point	Stereo Insert Point
Mix 1-48 Type			
	Mix Type		
Input Pair On/Off			
	Mix Pair On/Off		
		Matrix Pair On/Off	
Mix 1-48 Pair On/Off			
	Matrix 1-24 Pair On/Off		Matrix 1-24 Pair On/Off
Input Pan Mode			
Input On/Off	Mix On/Off	Matrix On/Off	Stereo On/Off
			Stereo B Mono
			Center Bus Control
Input Stereo Assign On/Off	Mix Stereo Assign On/Off		
Input Mix send 1-48 On/Off			
Input Level	Mix Master Level(Balance)	Matrix Master Level(Balance)	Stereo Master Level
Input to Mix 1-48 send Level(PAN:ODD)			
Input to Mix 1-48 send Level(PAN:EVEN)			
Input to Stereo Pan(ODD)	Mix to Stereo Pan(ODD)		
Input to Stereo Pan(EVEN)	Mix to Stereo Pan(EVEN)		
			Stereo Balance
Input Center Side Ratio	Mix Center Side Ratio		
Input LCR On/Off	Mix LCR On/Off		
Input Fade Time On/Off	Mix Fade Time On/Off	Matrix Fade Time On/Off	Stereo Fade Time On/Off
Input Vari Pan Link On/Off			
Input Direct Out Assign On/Off			
Input Insert In Assign On/Off	Mix Insert In On/Off	Matrix Insert In On/Off	Stereo Insert In On/Off
	Mix Matrix Assign On/Off		Stereo Matrix Assign On/Off
Input Fixed Mix Pan On/Off			
Input Delay On/Off	Mix Delay On/Off	Matrix Delay On/Off	Stereo Delay On/Off
Input HPF On/Off			
Input EQ On/Off	Mix EQ On/Off	Matrix EQ On/Off	Stereo EQ On/Off
Input GATE On/Off			
Input COMP On/Off	Mix Comp On/Off	Matrix Comp On/Off	Stereo Comp On/Off
Input DCA Group 1-12 On/Off	Mix DCA Group 9-12 On/Off		
Input Mute Group 1-12 On/Off	Mix Mute Group 9-12 On/Off	Matrix Mute Group 9-12 On/Off	Stereo Master Mute Group 9-12 On/Off
	Mix to Matrix 1-24 send Level(PAN:ODD)		Stereo to Matrix 1-24 send Level(PAN:ODD)
	Mix to Matrix 1-24 send Level(PAN:EVEN)		Stereo to Matrix 1-24 send Level(PAN:EVEN)
Input Attenuator			
Input High EQ Q	Mix High EQ Q	Matrix High EQ Q	Stereo High EQ Q
Input High EQ Freq	Mix High EQ Freq	Matrix High EQ Freq	Stereo High EQ Freq
Input High EQ Gain	Mix High EQ Gain	Matrix High EQ Gain	Stereo High EQ Gain
Input High EQ Type	Mix High EQ Type	Matrix High EQ Type	Stereo High EQ Type
Input High Mid EQ Q	Mix High-Mid EQ Q	Matrix High-Mid EQ Q	Stereo High-Mid EQ Q
Input High Mid EQ Freq	Mix High-Mid EQ Freq	Matrix High-Mid EQ Freq	Stereo High-Mid EQ Freq
Input High Mid EQ Gain	Mix High-Mid EQ Gain	Matrix High-Mid EQ Gain	Stereo High-Mid EQ Gain
Input High Mid EQ Type	Mix High-Mid EQ Type	Matrix High-Mid EQ Type	Stereo High-Mid EQ Type
Input Low Mid EQ Q	Mix Mid EQ Q	Matrix Mid EQ Q	Stereo Mid EQ Q
Input Low Mid EQ Freq	Mix Mid EQ Freq	Matrix Mid EQ Freq	Stereo Mid EQ Freq
Input Low Mid EQ Gain	Mix Mid EQ Gain	Matrix Mid EQ Gain	Stereo Mid EQ Gain
Input Low Mid EQ Type	Mix Mid EQ Type	Matrix Mid EQ Type	Stereo Mid EQ Type
Input Low EQ Q	Mix Low-Mid EQ Q	Matrix Low-Mid EQ Q	Stereo Low-Mid EQ Q
Input Low EQ Freq	Mix Low-Mid EQ Freq	Matrix Low-Mid EQ Freq	Stereo Low-Mid EQ Freq
Input Low EQ Gain	Mix Low-Mid EQ Gain	Matrix Low-Mid EQ Gain	Stereo Low-Mid EQ Gain
Input Low EQ Type	Mix Low-Mid EQ Type	Matrix Low-Mid EQ Type	Stereo Low-Mid EQ Type
	Mix Low EQ Q	Matrix Low EQ Q	Stereo Low EQ Q
	Mix Low EQ Freq	Matrix Low EQ Freq	Stereo Low EQ Freq
	Mix Low EQ Gain	Matrix Low EQ Gain	Stereo Low EQ Gain
	Mix Low EQ Type	Matrix Low EQ Type	Stereo Low EQ Type
	Mix Sub-Low EQ Q	Matrix Sub-Low EQ Q	Stereo Sub-Low EQ Q
	Mix Sub-Low EQ Freq	Matrix Sub-Low EQ Freq	Stereo Sub-Low EQ Freq
	Mix Sub-Low EQ Gain	Matrix Sub-Low EQ Gain	Stereo Sub-Low EQ Gain

INPUT/ST IN	MIX	MATRIX	STEREO A/B
	Mix Sub-Low EQ Type	Matrix Sub-Low EQ Type	Stereo Sub-Low EQ Type
Input HPF SLOPE			
Input HPF Freq			
Input GATE KEY IN SELECT			
Input GATE TYPE			
Input GATE HPF Freq.			
Input GATE LPF Freq.			
Input GATE Range			
Input GATE Threshold			
Input GATE Attack			
Input GATE Decay			
Input GATE Hold			
Input COMP KEY IN SELECT	Mix COMP KEY IN SELECT	Matrix COMP KEY IN SELECT	Stereo COMP KEY IN SELECT
Input COMP TYPE	Mix COMP KEY TYPE	Matrix COMP KEY TYPE	Stereo COMP KEY TYPE
Input COMP INPUT FILTER Freq	Mix COMP INPUT FILTER Freq	Matrix COMP INPUT FILTER Freq	Stereo COMP INPUT FILTER Freq
Input COMP Knee/Width	Mix COMP Knee/Width	Matrix COMP Knee/Width	Stereo COMP Knee/Width
Input COMP OutGain	Mix COMP OutGain	Matrix COMP OutGain	Stereo COMP OutGain
Input COMP Threshold	Mix COMP Threshold	Matrix COMP Threshold	Stereo COMP Threshold
Input COMP Attack	Mix COMP Attack	Matrix COMP Attack	Stereo COMP Attack
Input COMP Release	Mix COMP Release	Matrix COMP Release	Stereo COMP Release
Input COMP Ratio	Mix COMP Ratio	Matrix COMP Ratio	Stereo COMP Ratio
Input Delay Value(ODD)	Mix Delay Value(ODD)	Matrix Delay Value(ODD)	Stereo Delay Value(ODD)
Input Delay Value(EVEN)	Mix Delay Value(EVEN)	Matrix Delay Value(EVEN)	Stereo Delay Value(EVEN)

* Shaded parameters are recalled only to paired (stereo) channels.

Parameters copied when pairing

This table shows the parameters that are copied when input channels, MIX channels, or MATRIX channels are paired.

INPUT	MIX	MATRIX
Input GATE Link On/Off (*1)		
Input COMP Link On/Off (*1)	Mix Comp Link On/Off (*1)	Matrix Comp Link On/Off (*1)
Input Mix send Pre Point		
Input Mix send 1-48 Pre/Post		
	Mix Matrix Assign Post Point	
	Mix Matrix Assign Pre/Post	
	Mix Stereo Assign Point	
Input Direct Out Point		
Input Insert Point	Mix Insert Point	Matrix Insert Point
Input On/Off	Mix On/Off	Matrix On/Off
Input Stereo Assign On/Off	Mix Stereo Assign On/Off	
Input Mix send 1-48 On/Off		
Input Level	Mix master Level	Matrix master Level
Input to Mix 1-48 send Level	All Input to Odd Mix send Level	
Center Side Ratio	Center Side Ratio	
Input to Stereo Pan (*2)	Mix to Stereo Pan (*2)	
Input LCR On/Off	Mix LCR On/Off	
Input Fade Time On/Off	Mix Fade Time On/Off	Matrix Fade Time On/Off
Input Vari Pan Link On/Off		
Input Direct Out Assign On/Off		
Input Insert In Assign On/Off	Mix Insert In On/Off	Matrix Insert In On/Off
	Mix Matrix Assign On/Off	
Input Fixed Mix Pan On/Off		
Input Delay On/Off	Mix Delay On/Off	Matrix Delay On/Off
Input HPF On/Off		
Input EQ On/Off	Mix EQ On/Off	Matrix EQ On/Off
Input GATE On/Off		
Input COMP On/Off	Mix Comp On/Off	Matrix Comp On/Off
Input DCA Group 1-12 On/Off	Mix DCA Group 9-12 On/Off	
Input Mute Group 1-12 On/Off	Mix Mute Group 9-12 On/Off	Matrix Mute Group 9-12 On/Off
	Mix to Matrix 1-24 send Level	All Mix to Odd Matrix send Level
		SUB IN to Odd Matrix send Level
Input Attenuator	Mix Attenuator	Matrix Attenuator
Input High EQ Q	Mix High EQ Q	Matrix High EQ Q
Input High EQ Freq	Mix High EQ Freq	Matrix High EQ Freq
Input High EQ Gain	Mix High EQ Gain	Matrix High EQ Gain
Input High EQ Type	Mix High EQ Type	Matrix High EQ Type
Input High Mid EQ Q	Mix High-Mid EQ Q	Matrix High-Mid EQ Q
Input High Mid EQ Freq	Mix High-Mid EQ Freq	Matrix High-Mid EQ Freq
Input High Mid EQ Gain	Mix High-Mid EQ Gain	Matrix High-Mid EQ Gain
Input High Mid EQ Type	Mix High-Mid EQ Type	Matrix High-Mid EQ Type
Input Low Mid EQ Q	Mix Mid EQ Q	Matrix Mid EQ Q
Input Low Mid EQ Freq	Mix Mid EQ Freq	Matrix Mid EQ Freq
Input Low Mid EQ Gain	Mix Mid EQ Gain	Matrix Mid EQ Gain
Input Low Mid EQ Type	Mix Mid EQ Type	Matrix Mid EQ Type
Input Low EQ Q	Mix Low-Mid EQ Q	Matrix Low-Mid EQ Q
Input Low EQ Freq	Mix Low-Mid EQ Freq	Matrix Low-Mid EQ Freq
Input Low EQ Gain	Mix Low-Mid EQ Gain	Matrix Low-Mid EQ Gain

* When paired, the odd channel is BALANCE

INPUT	MIX	MATRIX
Input Low EQ Type	Mix Low-Mid EQ Type	Matrix Low-Mid EQ Type
	Mix Low EQ Q	Matrix Low EQ Q
	Mix Low EQ Freq	Matrix Low EQ Freq
	Mix Low EQ Gain	Matrix Low EQ Gain
	Mix Low EQ Type	Matrix Low EQ Type
	Mix Sub-Low EQ Q	Matrix Sub-Low EQ Q
	Mix Sub-Low EQ Freq	Matrix Sub-Low EQ Freq
	Mix Sub-Low EQ Gain	Matrix Sub-Low EQ Gain
	Mix Sub-Low EQ Type	Matrix Sub-Low EQ Type
Input HPF SLOPE		
Input HPF Freq		
Input GATE Key In/Type		
Input GATE HPF Freq.		
Input GATE LPF Freq.		
Input GATE Range		
Input GATE Threshold		
Input GATE Attack		
Input GATE Decay		
Input GATE Hold		
Input COMP Key In/Type	Mix COMP Key In/Type	Matrix COMP Key In/Type
Input COMP INPUT Freq	Mix COMP INPUT Freq	Matrix COMP INPUT Freq
Input COMP Knee/Width	Mix COMP Knee/Width	Matrix COMP Knee/Width
Input COMP OutGain	Mix COMP OutGain	Matrix COMP OutGain
Input COMP Threshold	Mix COMP Threshold	Matrix COMP Threshold
Input COMP Attack	Mix COMP Attack	Matrix COMP Attack
Input COMP Release	Mix COMP Release	Matrix COMP Release
Input COMP Ratio	Mix COMP Ratio	Matrix COMP Ratio
Input Delay Value (*2)	Mix Delay Value (*2)	Matrix Delay Value (*2)
RECALL SAFE	RECALL SAFE	RECALL SAFE
MUTE SAFE	MUTE SAFE	MUTE SAFE
SOLO SAFE	SOLO SAFE	SOLO SAFE
CUE/SOLO Select	CUE/SOLO Select	CUE/SOLO Select

* Shaded parameters are not simply copied; the operation of Send Level and Pan etc. will change depending on whether the source and destination are monaural or paired.

*1. This parameter is always on when paired.

*2. This parameter will change only if RESET BOTH is selected.

MIDI Data Format

1. TRANSMIT/RECEIVE DATA

1.1 CHANNEL MESSAGE

1.1.1 CONTROL CHANGE (Bn)

<<Reception>>

In SINGLE CH mode when BANK is ON, these messages will be received on the matching [Rx CH] from the MIDI IN for which BANK SELECT reception is specified. These messages will determine the bank of the next-received program change.

<<Transmission>>

In SINGLE CH mode when BANK is ON, a Bank Select message will be transmitted from the selected MIDI OUT according to the [Tx CH] setting when a scene memory or effect library is recalled.

```
STATUS          1011nnnn Bn     Control Change
                00000000 00     Bank Select MSB
                0vvvvvvv vv     MSB Value
                00100000 20     Bank Select LSB
                0vvvvvvv vv     LSB Value
```

1.1.2 PROGRAM CHANGE (Cn)

<<Reception>>

These messages will be received on the matching [Rx CH] from the MIDI IN specified for reception. However if [OMNI] is ON, they will be received regardless of the channel.
If [Program Change ECHO] is ON, these messages will be echoed.
According to the [Program change table] settings, these messages will recall scene memories or effect libraries.

<<Transmission>>

When a scene or effect library is recalled, these messages will be transmitted on the [Tx CH] according to the settings of the [Program change table] if [Program Change TX] is ON.
If the recalled memory number has been assigned to two or more program numbers, the program number of the lowest-numbered channel and lowest-numbered bank will be transmitted.

```
STATUS          1100nnnn Cn     Program Change
DATA            0nnnnnnn nn     Program No. ( 0-127)
```

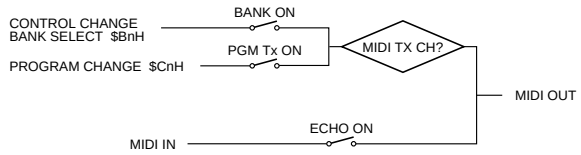
1.2 ACTIVE SENSING (Fe)

<<Reception>>

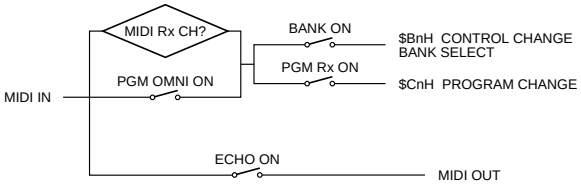
Once this message has been received, an interval of 300ms or more during which no message is received will cause MIDI communications to be initialized, clearing Running Status etc.

```
STATUS          11111110 FE     Active Sensing
```

2. TRANSMISSION CONDITION



3. RECEIVE CONDITION



Warning Message

These messages will disappear after a short time.

Message	Explanation
2TR IN DIGITAL-3 SRC TURNED OFF.	When WORD CLOCK was selected for 2TR IN3, SRC=ON changed to OFF.
CANNOT DROP!	You attempted to drop an EQ/COMP/GATE/GEQ graph onto a location of a different type.
CANNOT UNDO!	You pressed the [UNDO] switch when undo was not available.
CONTROL I/O OUT SYNC DETECTIVE ERROR![CONSOLE]	Synchronization data from the CONTROL I/O output of the console could not be detected.
CONTROL I/O OUT SYNC DETECTIVE ERROR![ENGINE]	Synchronization data from the CONTROL I/O output of the engine could not be detected.
DATA TYPE CONFLICT! CANCELED.	You attempted to execute Library Recall or Channel Copy on a channel of a different type.
DCA-(x) IS FOR INPUTS NOW.	You attempted to assign an output channel to DCA-(x), to which an input channel was already assigned (DCA 9-12).
DCA-(x) IS FOR OUTPUTS NOW.	You attempted to assign an input channel to DCA-(x), to which an output channel was already assigned (DCA 9-12).
DIGITAL INPUT SYNC ERROR! [2TR IN DIGITAL-(x)]	The signal from the device connected to 2TR IN DIGITAL-(x) is not synchronized to the engine.
DIGITAL INPUT SYNC ERROR! [UNIT-(x):SLOT-(x)]	The input signal from the corresponding digital card -(x) of the connected DIO8 is not synchronized to the engine (MY8-AT, TD).
DIGITAL INPUT SYNC ERROR! [UNIT-(x):SLOT-(x):CH-(x)/(x)]	The input signal from the corresponding digital card -(x) of the connected DIO8 is not synchronized to the engine (MY8-AE).
DUPLICATE TC EVENT! CANCELED.	You attempted to input an event at the same location as a previously-input TC event.
EFFECT CUE TURNED OFF.	CUE was defeated because you switched EFFECT screens.
MEMORY PROTECTED!	You attempted to store by overwriting onto Write Protected data.
MIDI: DATA FRAMING ERROR!	Invalid data was received at the selected MIDI IN.
MIDI: DATA OVERRUN!	Invalid data was received at the selected MIDI IN.
MIDI: Rx BUFFER FULL!	Incoming MIDI data was excessive.
MIDI: Tx BUFFER FULL!	Outgoing MIDI data was excessive.
MUTE GROUP-(x)IS FOR INPUTS NOW.	You attempted to assign an output channel to MUTE GROUP-(x), to which an input channel is already assigned. (MUTE GROUP 9-12)
MUTE GROUP-(x)IS FOR OUTPUTS NOW.	You attempted to assign an input channel to MUTE GROUP-(x), to which an output channel is already assigned. (MUTE GROUP 9-12)
NO DATA!	Data has not been stored in the memory you attempted to recall. Alternatively, the data is damaged and cannot be recalled.
PAIRING RELEASED.	When recalling, pairing was defeated since Recall Safe settings would have caused paired channels to have different settings.
READ ONLY!	You attempted to store by overwriting Read Only data.
SUB IN CUE TURNED OFF.	CUE was turned off because you switched the SUB IN screen.
SYNC ERROR! [COMPONENT NAME]	The indicated device is not synchronized with the engine.
TC EVENT FULL! CANCELED.	Registration was cancelled because no further TC events could be registered.
TIME CODE ACTIVE! CANNOT STORE.	The store operation is not possible because the TC EVENT RECALLING function is set to “ENABLE.”
TIME CODE: FRAME JUMP!	The currently-input time code has jumped frames or has run away.
TIME CODE: TYPE MISMATCHED!	The currently-input time code is of a type different from the specified type.
WRONG WORD CLOCK! [COMPONENT NAME]	The engine is not synchronized to the source selected by MASTER CLOCK SELECT in the SYS/W.CLOCK function WORD CLOCK screen.

Error Message

These messages will appear in a popup window in the center of the screen. After reading the message, press the OK button to close the popup window.

Message	Explanation
CONTROL LINE [CONSOLE-ENGINE A(B)] DISCONNECTED!	The connection between the console and engine A (B) has been broken.
CONTROL LINE HAS BEEN SWITCHED TO [1(2)]	The control line has switched to 1 (2).
[ERROR] Couldn't close file!	The file could not be closed correctly.
[ERROR] Couldn't copy Ini file! [IniFile Save Error]	Failed to write Scene.DAT.
[ERROR] Couldn't copy table file! [Destination File Open Error]	Failed to open the copy-destination file.
[ERROR] Couldn't copy table file! [Destination File Write Error]	Failed to write to the copy-destination.
[ERROR] Couldn't copy table file! [Source File Open Error]	Failed to open the copy-source file.
[ERROR] Couldn't copy table file! [Source File Read Error]	Failed to read the copy-source.
[ERROR] Couldn't delete file!	Failed to delete the file correctly.
[ERROR] Couldn't open file!	Failed to open the file.
[ERROR] Couldn't read file!	Failed to read the file.
[ERROR] Couldn't write file!	Failed to write the file.
[ERROR] File not found!	Failed to find the file to be read.
[ERROR] Illegal file name!	The assigned file name is invalid.
[ERROR] Illegal PM1D File Format!	You attempted to load a file that cannot be loaded.
[ERROR] No card in slot!	Memory card was not found.
[ERROR] No enough space to white!	You attempted to save a file that is larger than the free space in the memory card.
LOW BATTERY! [CONSOLE] [ENGINE A(B)]	The battery has run down, and should be replaced as soon as possible.
NO BATTERY! [CONSOLE] [ENGINE A(B)]	No battery is installed.
POWER SUPPLY HAS MALFUNCTIONED!	A problem has occurred in the PW1D power supply unit that provides power to the console.

* Contact your dealer as soon as possible to have the battery replaced/installed. This device will operate correctly even if the battery runs down, but ultimately, data other than the preset programs will be lost. We recommend that you save your data on an ATA-compliant PC flash storage card before you have the battery replaced.

About the PM1D system version checking function

When the CS1D starts up, or when the connection status of the various components in the PM1D system has changed, the software/firmware version of each component is checked to verify that it can function correctly within the PM1D system.
If a component with a version that has not been guaranteed to work within the PM1D system is found, the VERSION CHECK popup window will appear, warning you to halt operation or use caution.
If this occurs, please disconnect that component or update its software/firmware to the correct version before using it. If you continue using the system after this popup window appears, the operation of the entire PM1D system may become unstable.
For details on how to update the software/firmware of each component, refer to the documentation on the included PM1D system software disc.

Troubleshooting

■ Power does not turn on, Panel LEDs and LCD do not light

- Is the power cable connected to an AC outlet of the correct voltage?
- Are the CS1D and PW1D connected by the special cable? ("CS1D Operation Manual (Start-up)" →p.6, 10)
- Is the [POWER] switch turned on?
- In the UTILITY function PREFERENCE screen, has the LED brightness been turned down? ("CS1D Reference Manual (Software)" →p.36)
- If the power still does not turn on after the above items have been checked, please contact your dealer.

■ Cannot control the DSP1D, DIO8, AI8, or AO8 from the CS1D

- Are the CS1D and DSP1D connected to each other by a CONTROL I/O cable between the correct inputs and outputs? ("CS1D Operation Manual (Start-up)" →p.6, 10)
- Is the CS1D controlling the wrong (i.e., unconnected) DSP1D – either A or B? ("CS1D Reference Manual (Hardware)" →p.87, "CS1D Reference Manual (Software)" →p.2)
- Is the DSP1D correctly connected via DIGITAL I/O cables to the DIO8, AI8, or AO8? ("CS1D Operation Manual (Start-up)" →p.8, 9, 12, 13)
- Are the various select switches of the DIO8, AI8, or AO8 set appropriately for the cable connections? ("CS1D Operation Manual (Start-up)" →p.8, 9, 12, 13)

■ Sound is not input

- Are the option cards installed correctly? ("CS1D Reference Manual (Software)" →p.47)
- Is a signal being input from the external device? ("CS1D Operation Manual (Start-up)" →p.36)
- Is the signal from the input device (AI8, DIO8 etc.) patched to an input channel? ("CS1D Operation Manual (Start-up)" →p.33, "CS1D Operation Manual (Basic Operation)" →p.28)
- For a channel in which an input card with head amp is selected, is the [GAIN] encoder set to an appropriate level? ("CS1D Reference Manual (Hardware)" →p.31)
- Is the EQ attenuator raised? ("CS1D Reference Manual (Hardware)" →p.29)
- Has insertion been turned on even though it is not set correctly? ("CS1D Reference Manual (Hardware)" →p.21)
- Is the [ON] switch indicator of the input channel lit? ("CS1D Reference Manual (Hardware)" →p.32)
- Is the fader of the input channel raised? ("CS1D Reference Manual (Hardware)" →p.32)
- In SOLO mode, is CUE turned on for a channel that has no signal? ("CS1D Operation Manual (Basic Operation)" →p.119)
- Has the DCA fader to which that channel is assigned been raised? Has MUTE been turned on? ("CS1D Operation Manual (Basic Operation)" →p.93)

■ Sound is not output

- Are the option cards installed correctly? ("CS1D Reference Manual (Software)" →p.50)
- Is the [ON] switch indicator lit for the STEREO A/B channels? ("CS1D Reference Manual (Hardware)" →p.53)
- Is the output channel patched to a signal output device (AO8, DIO8 etc.)? ("CS1D Operation Manual (Start-up)" →p.42, "CS1D Operation Manual (Basic Operation)" →p.30)
- Is LCR PAN turned on and the CSR value set to 1.0? ("CS1D Reference Manual (Software)" →p.160)

■ A signal is sent to the 2-TRACK IN jack, but no sound is input

- Is the DIGITAL I/O cable correctly connected between the CS1D and the DSP1D? ("CS1D Operation Manual (Start-up)" →p.6, 10)
- Are the ANALOG or DIGITAL jacks selected correctly? ("CS1D Reference Manual (Software)" →p.67)

■ Sound is not output from the headphones or MONITOR OUT

- Is the DIGITAL I/O cable correctly connected between the CS1D and the DSP1D? ("CS1D Operation Manual (Start-up)" →p.6, 10)
- Are the MONITOR [PHONES] or [LEVEL] knobs set to an appropriate volume? ("CS1D Operation Manual (Start-up)" →p.36, "CS1D Operation Manual (Basic Operation)" →p.111)

■ Sound is too weak

- Is the head amp or [GAIN] encoder set correctly? ("CS1D Reference Manual (Hardware)" →p.31)
- Is the fader of the input channel raised? ("CS1D Reference Manual (Hardware)" →p.32)
- Is the EQ gain setting excessively low? ("CS1D Reference Manual (Hardware)" →p.29)

- Is the GATE/COMP set to an extreme threshold or ratio? ("CS1D Reference Manual (Hardware)" →p.25, 27)
- Is the EQ attenuator raised? ("CS1D Reference Manual (Hardware)" →p.29)
- Is the output channel [LEVEL] encoder raised? ("CS1D Reference Manual (Hardware)" →p.63)
- Check the levels in the METER screen. ("CS1D Reference Manual (Software)" →p.58)
- Is the [GAIN] switch (maximum output setting) of the analog output card set to the correct position? →refer to the manual included with the I/O cards.
- Has the DCA fader to which that channel is assigned been raised? ("CS1D Operation Manual (Basic Operation)" →p.93)

■ Sound is distorted

- Is the word clock set correctly? ("CS1D Operation Manual (Start-up)" →p.24, 28, "CS1D Reference Manual (Software)" →p.53)
- Are the head amp and [GAIN] encoder set correctly? ("CS1D Reference Manual (Hardware)" →p.21, 31)
- Is the input channel fader raised excessively? ("CS1D Reference Manual (Hardware)" →p.32)
- Is the STEREO A/B channel fader raised excessively? ("CS1D Reference Manual (Hardware)" →p.53)
- Is the EQ gain raised excessively? ("CS1D Reference Manual (Hardware)" →p.29)
- Is the analog output card [GAIN] switch (maximum output setting) set to the correct position? →refer to the manual included woth the I/O cards.

■ Sound is output even though not patched to an output channel

- Is the signal set to DIRECT OUT? ("CS1D Operation Manual (Basic Operation)" →p.91)
- Is the signal set to INSERT OUT? ("CS1D Operation Manual (Basic Operation)" →p.85)

■ No response when the MIX SEND encoder is rotated

- Is the MIX bus set to FIX MODE? ("CS1D Reference Manual (Software)" →p.155)
- Is MIX SEND turned on? ("CS1D Reference Manual (Hardware)" →p.23)
- In the case of the send point is set to POST, has the fader been lowered? ("CS1D Reference Manual (Hardware)" →p.23, "CS1D Reference Manual (Software)" →p.158)

■ A paired channel does not sound like stereo

- Is the pan mode setting and the pan value correct? ("CS1D Reference Manual (Hardware)" →p.30, "CS1D Reference Manual (Software)" →p.158)

■ The volume of a specific channel rises and falls

- Is ducking specified for GATE/COMP? ("CS1D Operation Manual (Basic Operation)" →p.55)

■ Cannot save a scene memory or library data

- Are you attempting to save over read-only memory number or number that has been memory protected? ("CS1D Reference Manual (Software)" →p.18, 166)
- In TC EVENT, the EVENT RECALLING parameter may have been set to ENABLE. ("CS1D Reference Manual (Software)" →p.33)

■ Can't save to memory card

- Is the memory card protected?
- Does the memory card contain sufficient space for saving the data?

■ Can't load from memory card

- TC EVENT IN may have been set to ENABLE.

■ Cannot transmit/receive MIDI data

- Does the MIDI PORT selection match the connections? ("CS1D Reference Manual (Software)" →p.29)
- Are the MIDI MODE and channel settings made correctly for the transmitting and receiving devices? ("CS1D Reference Manual (Software)" →p.29)
- Has an event been specified for the program change? ("CS1D Reference Manual (Software)" →p.29)

■ Operating the faders does not produce the desired level adjustment

- Are the [LAYER] or [FLIP] switches set to the appropriate fader mode or mixing layer? ("CS1D Reference Manual (Hardware)" →p.5, 13)

■ Only a specific channel is heard from the MONITOR or PHONES jack

- Is CUE turned ON? ("CS1D Operation Manual (Basic Operation)" →p.116)

■ Noise is heard on a connected external device (recorder, etc.)

- Is the word clock setting correct? ("CS1D Operation Manual (Start-up)" →p.24, 28, "CS1D Reference Manual (Software)" →p.53)
- Is an unsynchronized signal being input? ("CS1D Reference Manual (Software)" →p.55)
- Is the Dither setting appropriate? ("CS1D Reference Manual (Software)" →p.56)
- Is the OSCILLATOR, TALKBACK, or SUB IN operating? ("CS1D Operation Manual (Basic Operation)" →p.120)

■ High frequency range is muted

- Is emphasis being applied? If the emphasis data does not match the input signal, the high frequency range will be muted. ("CS1D Reference Manual (Software)" →p.133)
- Is EQ applied? ("CS1D Operation Manual (Basic Operation)" →p.57, 83)

■ The [ON] switches and [SEL] switches select the wrong channel

- Make sure that the correct mixing layer is selected. ("CS1D Reference Manual (Hardware)" →p.5, 13, 41, 47)

■ An input signal is being received, but there is no monitor output

- Is "CUE INTERRUPTION" turned on? If CUE is ON, the CUE signal will be output from MONITOR OUT. ("CS1D Reference Manual (Software)" →p.71)

■ A channel continues to be heard even in SOLO mode

- Is that channel set to SOLO SAFE? ("CS1D Reference Manual (Software)" →p.74)

■ Insufficient headroom, especially when EQ is boosted

- Use the EQ attenuator to lower the level. ("CS1D Reference Manual (Hardware)" →p.29)

■ Sound recorded via ST OUT DIGITAL or a MY card with digital output appears fragmented

- Make sure that the dither setting matches the word length of the recording device. ("CS1D Reference Manual (Software)" →p.56)

■ Signal phase is incorrect for a stereo pair

- You must set both input channels of a stereo pair to the same phase setting. Phase settings are not linked when you specify stereo pairing. ("CS1D Reference Manual (Hardware)" →p.21)

■ Signal appears to be delayed

- Make sure that the channel delay function is set correctly. ("CS1D Reference Manual (Hardware)" →p.22)

■ Some channels are not updated when a scene memory is recalled

- Are those channels set to Recall Safe? ("CS1D Operation Manual (Basic Operation)" →p.106)

■ I selected CUE in the EFFECT screen, but it is defeated without my action

- This will be defeated automatically when you switch to a different display screen. ("CS1D Reference Manual (Software)" →p.10)

■ Cannot make boost settings in the GEQ

- Is the LIMIT set to –24 dB? ("CS1D Operation Manual (Basic Operation)" →p.136)

■ When a scene is recalled, some time is required before faders stop moving

- Has the fade time been set? ("CS1D Reference Manual (Software)" →p.25)

■ Unconnected units or uninstalled cards are displayed

- Have virtual unit or virtual card settings been made? ("CS1D Reference Manual (Software)" →p.47, 50)

■ CS1D panel LEDs are dim

- Adjust the LED BRIGHTNESS setting in the PREFERENCE screen of the UTILITY function. ("CS1D Reference Manual (Software)" →p.36)

■ The VERSION CHECK popup window appeared

- The software/firmware of the component that failed the test does not match the version of the PM1D system. The software/firmware of that component must be updated.
  For details on how to perform the update, refer to the documentation on the included PM1D system software disc.

General Specifications

TALKBACK IN

Output impedance of signal generator: 150Ω, MONITOR OUT ANALOG volume MAX, fs= 44.1k or 48kHz

Frequency Response 20Hz-20kHz, refer to the nominal output level @1kHz

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
TALKBACK IN 1, 2	MONITOR OUT ANALOG	Gain: –44dB@+10dB	–2		1	dB
		Gain: +10dB@+10dB	–2		1	dB

Gain Error @1kHz

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
TALKBACK IN 1, 2	MONITOR OUT ANALOG	Gain: –44dB@+10dB	–1		1	dB
		Gain: +10dB@+10dB	–1		1	dB

Total Harmonic Distortion

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
TALKBACK IN 1, 2	MONITOR OUT ANALOG	+10dB@20Hz-20kHz, Gain: –44dB			0.1	%
		full scale output @1kHz, Gain: –44dB			0.02	%
		+10dB@20Hz-20kHz, Gain: +10dB			0.02	%
		full scale output @1kHz, Gain: +10dB			0.02	%

* Total Harmonic Distortion are measured with a 6dB/octave filter @80kHz.

Dynamic Range

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
TALKBACK IN 1, 2	MONITOR OUT ANALOG	Gain: +10dB *		105		dB

* Dynamic range are measured with a 6dB/octave filter @12.7kHz;
equivalent to a 20kHz filter with infinite dB/octave attenuation.

Hum & Noise @20Hz-20kHz

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
TALKBACK IN 1, 2	MONITOR OUT ANALOG	Equivalent Input Noise Rs= 150Ω, Gain: –44dB		–127		dB
		Rs= 150Ω, Gain: +10dB		–81		dB

* Hum & Noise are measured with a 6dB/octave filter @12.7kHz;
equivalent to a 20kHz filter with infinite dB/octave attenuation

2-TRACK IN

Output impedance of signal generator: 150Ω, MONITOR OUT ANALOG volume MAX, fs= 44.1k or 48kHz

Frequency Response 20Hz-20kHz, refer to the nominal output level @1kHz

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
2-TRACK IN 1, 2 ANALOG	MONITOR OUT ANALOG	@+10dB	–2		1	dB

Gain Error @1kHz

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
2-TRACK IN 1, 2 ANALOG	MONITOR OUT ANALOG	@+10dB	–1		1	dB

Total Harmonic Distortion

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
2-TRACK IN 1, 2 ANALOG	MONITOR OUT ANALOG	+10dB@20Hz-20kHz			0.02	%
		full scale output @1kHz			0.01	%

* Total Harmonic Distortion are measured with a 6dB/octave filter @80kHz.

Dynamic Range

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
2-TRACK IN 1, 2 ANALOG	MONITOR OUT ANALOG	*		110		dB

* Dynamic range are measured with a 6dB/octave filter @12.7kHz; equivalent to a 20kHz filter with infinite dB/octave attenuation.

Crosstalk @1kHz

FROM/TO	TO/FROM	CONDITIONS	MIN	TYP	MAX	UNITS
2-TRACK IN N L ANALOG	2-TRACK IN N R ANALOG	adjacent inputs			–80	dB

* Hum & Noise are measured with a 6dB/octave filter @12.7kHz; equivalent to a 20kHz filter with infinite dB/octave attenuation

MONITOR OUT ANALOG & CUE OUT ANALOG

Output impedance of signal generator: 150Ω, fs= 44.1k or 48kHz

Frequency Response 20Hz-20kHz, refer to the nominal output level @1kHz

INPUT	OUTPUT	RL	CONDITIONS	MIN	TYP	MAX	UNITS
2-TRACK IN 1 ANALOG	MONITOR OUT ANALOG	600Ω	volume MAX @+10dB	–2		1	dB
	CUE OUT ANALOG	600Ω	volume MAX @+10dB	–2		1	dB

Gain Error @1kHz

INPUT	OUTPUT	RL	CONDITIONS	MIN	TYP	MAX	UNITS
2-TRACK IN 1 ANALOG	MONITOR OUT ANALOG	600Ω	volume MAX @+10dB	–1		1	dB
	CUE OUT ANALOG	600Ω	volume MAX @+10dB	–1		1	dB

Total Harmonic Distortion

INPUT	OUTPUT	RL	CONDITIONS	MIN	TYP	MAX	UNITS
2-TRACK IN 1 ANALOG	MONITOR OUT ANALOG	600Ω	+10dB@20Hz-20kHz, volume MAX			0.02	%
			full scale output @1kHz, volume MAX			0.01	%
	CUE OUT ANALOG	600Ω	+10dB@20Hz-20kHz, volume MAX			0.02	%
			full scale output @1kHz, volume MAX			0.01	%

* Total Harmonic Distortion are measured with a 6dB/octave filter @80kHz.

Hum & Noise residual output noise

INPUT	OUTPUT	RL	CONDITIONS	MIN	TYP	MAX	UNITS
2-TRACK IN 1 ANALOG	MONITOR OUT ANALOG	600Ω	* volume MAX		–86		dB
			* volume MIN		–100		dB
	CUE OUT ANALOG	600Ω	* volume MAX		–86		dB
			* volume MIN		–100		dB

* Hum & Noise are measured with a 6dB/octave filter @12.7kHz; equivalent to a 20kHz filter with infinite dB/octave attenuation.

Dynamic Range

INPUT	OUTPUT	RL	CONDITIONS	MIN	TYP	MAX	UNITS
2-TRACK IN 1 ANALOG	MONITOR OUT ANALOG	600Ω	volume MAX @+10dB		110		dB
	CUE OUT ANALOG	600Ω	volume MAX @+10dB		110		dB

* Dynamic range are measured with a 6dB/octave filter @12.7kHz; equivalent to a 20kHz filter with infinite dB/octave attenuation.

Crosstalk @1kHz

FROM/TO	TO/FROM	CONDITIONS	MIN	TYP	MAX	UNITS
MONITOR OUT A, B L ANALOG	MONITOR OUT A, B R ANALOG	adjacent inputs			–80	dB
CUE OUT L ANALOG	CUE OUT R ANALOG	adjacent inputs			–80	dB

PHONES OUT

Output impedance of signal generator: 150Ω, fs= 44.1k or 48kHz

Frequency Response 20Hz-20kHz, refer to the nominal output level @1kHz

INPUT	OUTPUT	RL	CONDITIONS	MIN	TYP	MAX	UNITS
2-TRACK IN 1 ANALOG	PHONES A1, B1, A2, B2	8Ω	volume MAX @0dB	–3		1	dB

Gain Error @1kHz

INPUT	OUTPUT	RL	CONDITIONS	MIN	TYP	MAX	UNITS
2-TRACK IN 1 ANALOG	PHONES A1, B1, A2, B2	8Ω	volume MAX @0dB	–2		2	dB

Total Harmonic Distortion

INPUT	OUTPUT	RL	CONDITIONS	MIN	TYP	MAX	UNITS
2-TRACK IN 1 ANALOG	PHONES A1, B1, A2, B2	8Ω	0dB@20Hz-20kHz, volume MAX			0.7	%
		8Ω	full scale output @1kHz, volume MAX			1	%

Hum & Noise

INPUT	OUTPUT	RL	CONDITIONS	MIN	TYP	MAX	UNITS
—	PHONES A1, B1, A2, B2	8Ω	* volume MAX		–88		dB
		8Ω	* volume MIN		–92		dB

* Hum & Noise are measured with a 6dB/octave filter @12.7kHz; equivalent to a 20kHz filter with infinite dB/octave attenuation.

Crosstalk @1kHz

FROM/TO	TO/FROM	RL	CONDITIONS	MIN	TYP	MAX	UNITS
PHONES A1, B1, A2, B2 L	PHONES A1, B1, A2, B2 R	8Ω	adjacent inputs			–55	dB
		40Ω	adjacent inputs			–60	dB

ANALOG INPUT (AI8 plus LMY2-ML)

A/B select	
phantom ON/OFF	+48V DC is individually supplied inputs.
analog gain control	–68 - +10dB (6dB step)
AD converter	24bit linear +4bit floating, 128 times oversampling.
digital gain control	0 - 6dB (1dB step)

ANALOG INPUT (AI8 plus LMY4-AD)

AD converter	24bit linear +4bit floating, 128 times oversampling

DIGITAL INPUT (DIO8)

Option card	MY8, MY4 series

INPUT CHANNEL CH 1-48(DSP1D) / CH 1-96(DSP1D-EX)

Phase	normal / reverse
Input patch	
De-emphasis	automatic de-emphasis filter (15µs/50µs)
Attenuator	–96 - 0dB (1dB step)
High pass filter	20Hz – 600Hz (60 point) slope –6dB / –12dB / –18dB on/off
Equalizer	4 band PEQ on/off crossover gain –3dB / –4dB / –5dB / –6dB LOW: Q 0.1 - 10 (41 point) low shelving; F 20Hz - 20kHz (1/12 oct step); G –18dB - +18dB (0.5dB step) LOW-MID: Q 0.1 - 10 (41 point); F 20Hz - 20kHz (1/12 oct step); G –18dB - +18dB (0.5dB step) HIGH-MID: Q 0.1 - 10 (41 point); F 20Hz - 20kHz (1/12 oct step); G –18dB - +18dB (0.5dB step) HIGH / LPF: Q 0.1 - 10 (41 point) high shelving LPF; F 20Hz - 20kHz (1/12 oct step); G –18dB - +18dB (0.5dB step)
Gate	on/off key in self pre EQ / self post EQ / left CH/key in source1 / key in source2 / key in source3 / key in source4 key in LPF on/off 20Hz - 20kHz (1/12 oct step) key in HPF on/off 20Hz - 20kHz (1/12 oct step) key in cue on/off key in link on/off gate ducking
Compressor	on/off key in self pre EQ / self post EQ / left CH / key in source1 / key in source2 / key in source3 / key in source4 input filter LPF / HPF on/off 20Hz - 20kHz (1/12 oct step) key in link on/off comp expander compander hard compander soft
Delay	0 - 250msec (0.02msec step)
Fader	100mm motorized –∞, –90 - +10dB (128 step/100mm) input / mix 1-48
DCA	DCA assign 1-12
ON/OFF	
Cue	on/off
Mute	mute group 1-12
Pan	127 positions (L= 1 - 63, center, R= 1 - 63) pan mode individual / gang pan / inv.gang
Routing	stereo on/off mix 1 - 48 on/off, pre/post, fix / vari vari: level
Direct out	pre EQ / pre fader / post fader / post on
Metering	peak hold on/off

STEREO CHANNEL ST 1-4(DSP1D) / ST 1-8(DSP1D-EX)

Phase	normal / reverse
Input patch	
De-emphasis	automatic de-emphasis filter (15µs/50µs)
Attenuator	–96 - 0dB (1dB step)
High pass filter	parameter are as same as input CH High pass filter.
Equalizer	parameter are as same as input CH Equalizer.
Gate	parameter are as same as input CH Gate.
Compressor	parameter are as same as input CH Compressor.
Delay	0 - 250msec (0.02msec step)
Fader	100mm motorized –∞, –90 - +10dB (128 step/100mm) input / mix 1-48
DCA	DCA assign 1-12
ON/OFF	
Cue	on/off
Mute	mute group 1-12
Pan	127 positions (L= 1 - 63, center, R= 1 - 63) pan mode individual / gang pan / inv.gang
Routing	stereo on/off mix 1 - 48 on/off, pre/post, fix / vari vari: level
Direct out	pre EQ / pre fader / post fader / post on
Metering	peak hold on/off

2-TRACK IN ANALOG 1-2 (CS1D)

AD converter	24bit linear +4bit floating, 128 times oversampling.
Phase	normal / reverse

2-TRACK IN DIGITAL 1-6 (CS1D)

SRC	on/off
Phase	normal / reverse

TALKBACK IN 1-2 (CS1D)

Gain Switch	–44dB / +10dB
Level control	analog rotary potentiometer
AD converter	24bit linear, 128 times oversampling
Phase	normal / reverse

COMM IN (DSP1D)

De-emphasis	automatic de-emphasis filter (15µs/50µs)
Gate	parameter are as same as input CH Gate.
Level	–∞, –90 - +10dB (128 step)

SUB IN (DSP1D)

De-emphasis	automatic de-emphasis filter (15µs/50µs)

DIRECT IN (DSP1D)

De-emphasis	automatic de-emphasis filter (15µs/50µs)

MIX 1-48 (DSP1D, DSP1D-EX)

Equalizer	6 band PEQ (SUB LOW, LOW, LOW MID, MID, HIGH MID, HIGH) bypass on/off SUB LOW / LOW SHELVING / HPF HIGH / HIGH SHELVING / LPF parameter are as same as input CH Equalizer
Compressor	parameter are as same as input CH Compressor.
Delay	0 - 1000msec (0.02msec step)
Level control	rotary encoder
DCA	DCA assign 9-12
ON/OFF	
MIX to STEREO	on/off pre fader / post fader
MIX to STEREO Pan	127 positions (L= 1 - 63, center, R= 1 - 63)
Cue	on/off
Mute	mute group 1-12
Metering	peak hold on/off
Output patch	
Dither	on/off word length 16bit - 24bit (DIO8 only)

MATRIX 1-24 (DSP1D, DSP1D-EX)

Send level	mix 1-48, stereo A, B
Send on/off	mix 1-48, stereo A, B
Equalizer	parameter are as same as input MIX Equalizer
Compressor	parameter are as same as input MIX Compressor.
Delay	0 - 1000msec (0.02msec step)
Level control	rotary encoder
DCA	DCA assign 9-12
ON/OFF	
Cue	on/off
Metering	peak hold on/off
Output patch	
Dither	on/off word length 16bit - 24bit (DIO8 only)

STEREO OUT A, B (DSP1D, DSP1D-EX)

Equalizer	parameter are as same as input MIX Equalizer
Compressor	parameter are as same as input MIX Compressor.
Delay	0 - 1000msec (0.02msec step)
Fader	100mm motorized –∞, –90 - +10dB (128 step/100mm)
Balance	127 positions (L= 1 - 63, center, R= 1 - 63)
ON/OFF	
Cue	on/off
Metering	peak hold on/off
Output patch	
Dither	on/off word length 16bit - 24bit (DIO8 only)

ANALOG OUTPUT (AO8 plus LMY4-DA)

DA converter	24bit linear +3bit floating, 128 times oversampling.

DIGITAL OUTPUT (DIO8)

Option card	MY8, MY4 series

MONITOR OUT A (CS1D)

Select switch	2TR IN 1 / 2TR IN 2 / STEREO A / STEREO B / DEFINE / DIRECT IN
Monitor mode	STEREO / L-MONO/R-MONO / LR-MONO
Delay	0 - 750msec (0.02msec step)
COMM IN dimmer	–96 - 0dB (1dB step)
TALKBACK dimmer	–96 - 0dB (1dB step)
Cue interruption	on/off
DA converter	24bit linear, 128 times oversampling
Level control	analog rotary potentiometer
ON/OFF	
Phones level	analog rotary potentiometer
Metering	peak hold on/off

MONITOR OUT B (CS1D)

Select switch	2TR IN 1 / 2TR IN 2 / STEREO A / STEREO B / MONITOR A / DEFINE / DIRECT IN
Monitor mode	STEREO / L-MONO / R-MONO / LR-MONO
DA converter	24bit linear, 128 times oversampling
Level control	analog rotary potentiometer
ON/OFF	
Phones level	analog rotary potentiometer
Metering	peak hold on/off

LIBRARIES

PATCH Libraries	Number of factory presets 10 Number of user library 90
NAME Libraries	Number of factory presets 10 Number of user library 90
UNIT Libraries	Number of factory presets 10 Number of user library 90
INPUT EQ Libraries	Number of factory presets 37 Number of user library 62
OUTPUT EQ Libraries	Number of factory presets 3 Number of user library 96
INPUT GATE Libraries	Number of factory presets 4 Number of user library 95
INPUT COMP Libraries	Number of factory presets 34 Number of user library 65
OUTPUT COMP Libraries	Number of factory presets 9 Number of user library 90
INPUT CH Libraries	Number of factory presets 1 Number of user library 99
OUTPUT CH Libraries	Number of factory presets 1 Number of user library 99
EFFECT Libraries	Number of factory presets 71 Number of user library 128
GEQ Libraries	Number of user library 99

SCENE MEMORIES

Number of factory presets	10
Number of scene memories	990

SIGNAL DELAY

fs= 48kHz

PATH	DELAY TIME
ANALOG IN(AI8 plus LMY card) → INPUT(DSP1D) → MIX(DSP1D) → ANALOG OUT(AO8 plus LMY card)	MAX 3.1msec
ANALOG IN(AI8 plus LMY card) → INPUT(DSP1D) → STEREO OUT(DSP1D) → ANALOG OUT(AO8 plus LMY card)	MAX 3.1msec
ANALOG IN(AI8 plus LMY card) → INPUT(DSP1D) → MIX(DSP1D) → MATRIX(DSP1D) → ANALOG OUT(AO8 plus LMY card)	MAX 3.27msec
ANALOG IN(AI8 plus LMY card) → INPUT(DSP1D) → MIX(DSP1D) → STEREO OUT(DSP1D) → ANALOG OUT(AO8 plus LMY card)	MAX 3.4msec

PARAMETER		CONDITIONS	MIN	TYP	MAX	UNIT
Sampling Frequency Range		External	39.69		50.88	kHz
Fan Circuit		Fixed speed (always)	—	—	—	˚C
Power Requirement		DC 60V		5		A
		DC 12V		0.5		A
Dimensions	Height			355		mm
	Depth			974		mm
	Width			1906		mm
Net Weight				133		kg
Temperature Range		operating temperature range	10		35	˚C
		storage temperature range	–20		+60	˚C

Controls & Indicators

INPUT BLOCK

Keys (w/ LED)	CH 1-48/49-96 ON, CH 1-48/49-96 SEL CH 1-48/49-96 TO ST, CH 1-48/49-96 CUE MIX SEND LOCAL
Keys	CH 1-48/49-96 ASSIGN DCA MIX SEND DEC, MIX SEND INC
Faders	CH 1-48/49-96
Rotary encoders (w/ 25 points LEDs)	CH 1-48/49-96 GAIN, CH 1-48/49-96 PAN CH 1-48/49-96 MIX
4 digits 5 x 7 dot LED	CH 1-48/49-96 NAME, MIX SEND NAME
2 digits 7 segment LED	MIX SEND NUMBER
LEDs	CH 1-48/49-96 SAFE SELECT CH 1-48/49-96 DCA SELECT CH 1-48/49-96 INPUT meter 6 elements CH 1-48/49-96 GATE meter 3 elements CH 1-48/49-96 COMP meter 3 elements CH 1-48/49-96 CLIP CH 1-48/49-96 A SELECT, CH 1-48/49-96 B SELECT CH 1-48/49-96 PHANTOM +48V, CH 1-48/49-96 INSERT CH 1-48/49-96 PHASE, CH 1-48/49-96 MIX ON MIX SEND FIX, MIX SEND VARI

ST IN BLOCK

Keys (w/ LED)	ST IN 1-4/5-8 ON, ST IN 1-4/5-8 L SEL, ST IN 1-4/5-8 R SEL ST IN 1-4/5-8 TO ST, ST IN 1-4/5-8 CUE
Keys	ST IN 1-4/5-8 ASSIGN DCA
Faders	ST IN 1-4/5-8
Rotary encoders (w/ 25 points LEDs)	ST IN 1-4/5-8 GAIN, ST IN 1-4/5-8 PAN, ST IN 1-4/5-8 MIX
4 digits 5 x 7 dot LED	ST IN 1-4/5-8 NAME
LEDs	ST IN 1-4/5-8 SAFE SELECT ST IN 1-4/5-8 DCA SELECT ST IN 1-4/5-8 INPUT meter 6 elements x 2 ST IN 1-4/5-8 GATE meter 3 elements x 2 ST IN 1-4/5-8 COMP meter 3 elements x 2 ST IN 1-4/5-8 CLIP L, R ST IN 1-4/5-8 A SELECT ST IN 1-4/5-8 B SELECT ST IN 1-4/5-8 PHANTOM +48V ST IN 1-4/5-8 INSERT ST IN 1-4/5-8 PHASE ST IN 1-4/5-8 MIX ON ST IN 1-4/5-8 STATUS L, R

MIX OUT BLOCK

Keys (w/ LED)	MIX 1-24/25-48 ON, MIX 1-24/25-48 SEL, MIX 1-24/25-48 TO ST, MIX 1-24/25-48 CUE MIX 1-24/25-48 TO MATRIX MIX LAYER 1-24 SELECT, MIX LAYER 25-48 SELECT
Keys	MIX 1-24/25-48 ASSIGN DCA
Rotary encoders (w/ 25 points LEDs)	MIX 1-24/25-48 LEVEL
4 digits 5 x 7 dot LED	MIX 1-24/25-48 NAME
LEDs	MIX 1-24/25-48 SAFE SELECT MIX 1-24/25-48 DCA SELECT MIX 1-24/25-48 INSERT

MATRIX OUT BLOCK

Keys (w/ LED)	MATRIX 1-12/13-24 ON, MATRIX 1-12/13-24 SEL, MATRIX 1-12/13-24 CUE MATRIX LAYER 1-12 SELECT MATRIX LAYER 13-24 SELECT
Rotary encoders (w/ 25 points LEDs)	MATRIX 1-12/13-24 LEVEL
4 digits 5 x 7 dot LED	MATRIX 1-12/13-24 NAME
LEDs	MATRIX 1-12/13-24 SAFE SELECT MATRIX 1-12/13-24 INSERT

STEREO OUT BLOCK

Keys (w/ LED)	STEREO A ON, STEREO B ON STEREO A SEL, STEREO B SEL STEREO A CUE, STEREO B CUE STEREO A TO MTRX, STEREO B MONO
Fader	STEREO A, STEREO B
LEDs	STEREO A SAFE SELECT, STEREO B SAFE SELECT STEREO A INSERT, STEREO B INSERT

SELECTED INPUT CHANNEL BLOCK

Keys (w/ LED)	PHANTOM +48V, PHASE, INSERT, DELAY ON, INPUT A SELECT, INPUT B SELECT MIX SEND 1-24/25-48 ON, MIX SEND 1-24/25-48 PRE MIX SEND LAYER 1-24, MIX SEND LAYER 25-48 COMPRESSOR ON, COMPESSOR LINK COMPRESSOR ATTACK SELECT COMPRESSOR RELEASE SELECT COMPRESSOR FILTER ON NOISE GATE ON, NOISE GATE LINK NOISE GATE ATTACK SELECT NOISE GATE DECAY SELECT NOISE GATE KEY IN FILTER ON NOISE GATE KEY IN CUE NOISE GATE KEY IN FILTER HPF SELECT NOISE GATE KEY IN FILTER LPF SELECT EQ ON, HPF ON, HIGH SHELF ON, LOW SHELF ON HPF 6dB/OCT SELECT, HPF 12dB/OCT SELECT HPF 18dB/OCT SELECT, LPF ON FIXED MIX PAN, TO STEREO ON, CUE, DCA ASSIGN 1-12, RECALL SAFE, MUTE SAFE CHANNEL COPY, FADER FLIP, MODULE FLIP
Keys	SHIFT, DEC, INC
Fader	

SELECTED INPUT CHANNEL BLOCK

Rotary encoders (w/ 25 point LED)	MIX SEND1-24/25-48 LEVEL COMPRESSOR GAIN, COMPRESSOR THR NOISE GATE RANGE, NOISE GATE THR EQ GAIN, EQ Q, STEREO PAN, GAIN, ATTENUATOR
Rotary encoders (w/ 3 digits 7 segment LED)	DELAY TIME, COMPRESSOR RATIO COMPRESSOR FILTER FREQUENCY COMPRESSOR ATTACK/RELEASE TIME COMPRESSOR WIDTH/KNEE NOISE GATE KEY IN FILTER FREQUENCY NOISE GATE ATTACK/DECAY TIME NOISE GATE HOLD TIME, EQ FREQUENCY EQ HPF FREQUENCY
4 digits 5 x 7 dot LED	MIX 1-24/25-48 NAME CHANNEL SELECT NAME
2 digits 7 segment LED	CHANNEL SELECT NUMBER
LEDs	MIX SEND PAIR, MIX SEND FIX COMPRESSOR FILTER Hz/kHz COMPRESSOR ATTACK/RELEASE TIME sec/msec COMPRESSOR WIDTH/KNEE, COMPRESSOR PRE CLIP COMPRESSOR GR meter 6 elements COMPRESSOR POST meter 6 elements NOISE GATE KEY IN FILTER Hz/kHz NOISE GATE KEY IN SIG meter 3 elements NOISE GATE ATTACK/RELEASE TIME sec/msec NOISE GATE HOLD TIME sec/msec NOISE GATE GR meter 6 elements NOISE GATE POST meter 6 elements EQ FREQUENCY Hz/kHz, EQ HPF FREQUENCY Hz/kHz GAIN CLIP, CLIP EQ, CLIP CH $\sum$ CHANNEL SELECT MONO, CHANNEL SELECT PAIR INPUT meter 12 elements

SELECTED OUTPUT CHANNEL BLOCK

Keys (w/LED)	DELAY ON COMPRESSOR ON, COMPESSOR LINK COMPRESSOR ATTACK/RELEASE SELECT COMPRESSOR FILTER ON EQ ON, HPF ON, LPF ON, HIGH SHELF ON LOW SHELF ON, BYPASS ON, CUE, INSERT, TO ST, TO MATRIX TO ST PAN SELECT, BAL SELECT DCA ASSIGN 9-12, RECALL SAFE, MUTE SAFE CHANNEL COPY, ST SELECT, MATRIX SELECT MIX SELECT
Keys	SHIFT, DEC, INC
Rotary encoders (w/ 25 point LED)	COMPRESSOR GAIN, COMPRESSOR THR EQ GAIN, EQ Q, PAN, OUTPUT LEVEL
Rotary encoders (w/ 3 digits 7 segment LED)	COMPRESSOR RATIO COMPRESSOR FILTER FREQUENCY COMPRESSOR ATTACK/RELEASE TIME COMPRESSOR WIDTH/KNEE EQ FREQUENCY
Rotary encoders (w/ 4 digits 7 segment LED)	DELAY TIME
4 digits 5 x 7 dot LED	CHANNEL SELECT NAME
2 digits 7 segment LED	CHANNEL SELECT NUMBER
LEDs	COMPRESSOR FILTER Hz/kHz COMPRESSOR ATTACK/RELEASE TIME sec/msec COMPRESSOR WIDTH/KNEE COMPRESSOR PRE CLIP COMPRESSOR GR meter 6 elements COMPRESSOR POST meter 6 elements EQ FREQUENCY Hz/kHz

DCA GROUP BLOCK

Keys (w/ LED)	DCA 1-12 MUTE DCA1-12 ASSIGN DCA DCA1-12 CUE FADER STATUS IN, FADER STATUS 1-12 FADER STATUS 13-24, FADER STATUS 25-36 FADER STATUS 37-48, FADER STATUS DCA
Faders	DCA 1-12
4 digits 5 x 7 dot LED x 2	DCA NAME
LEDs	DCA 1-12 NOMINAL, DCA 1-12 RECALL SAFE

SCENE MEMORY BLOCK

Keys (w/ LED)	SCENE MEMORY 1-12, PREVIEW
Keys	SCENE MEMORY RECALL UNDO SCENE MEMORY RECALL, SCENE MEMORY STORE SCENE MEMORY 0-9, SCENE MEMORY CLEAR SCENE MEMORY DEC, SCENE MEMORY INC
3 digits 7 segment LED	SCENE NUMBER
LEDs	SCENE MEMORY RECALL, SCENE MEMORY MUTE

LCD FUNCTION ACCESS, USER DEFINE BLOCK

Keys (w/ LED)	USER DEFINE 1-8
Keys	EFFECT, GEQ, SCENE, MIDI/GPI/TC, UTILITY SYS/W.CLOCK, METER, MON/CUE INPUT PATCH, INPUT HA/INSERT, INPUT EQ INPUT GATE/COMP, INPUT DELAY, INPUT DCA/MUTE INPUT PAN/ROUTING, INPUT CH VIEW OUTPUT PATCH, OUTPUT INSERT, OUTPUT EQ OUTPUT COMP, OUTPUT DELAY, OUTPUT DCA/MUTE OUTPUT MATRIX/ST, OUTPUT CH VIEW

MASTER BLOCK

Keys (w/ LED)	ASSIGN TO MON B, TB OUT, TB ON OSC ON, OSC OUT SOLO, INPUT AFL, OUTPUT PFL, LAST CUE DCA PRE PAN MONITOR A SOURCE 2TR IN 1 MONITOR A SOURCE 2TR IN 2 MONITOR A SOURCE ST A MONITOR A SOURCE ST B MONITOR A SOURCE DEFINE MONITOR A DELAY ON MONITOR A L MONO, MONITOR A R MONO MONITOR A ON MONITOR B SOURCE 2TR IN 1 MONITOR B SOURCE 2TR IN 2 MONITOR B SOURCE ST A MONITOR B SOURCE ST B MONITOR B SOURCE MONITOR A MONITOR B SOURCE DEFINE MONITOR B ON ENGINE A, ENGINE B GLOBAL LAYER 1-48, GLOBAL LAYER 49-96 METER PRE, METER PEAK HOLD METER SELECT MIX 25-48 METER SELECT MATRIX 1-24
Rotary encoders (w/ 3 digits 7 segment LED)	MONITOR A DELAY TIME
Analog Rotary Potentiometer	TALKBACK 1 LEVEL, TALKBACK 2 LEVEL CUE OUT, MONITOR A LEVEL, MONITOR A PHONES MONITOR B LEVEL, MONITOR B PHONES
LEDs	TALKBACK 1 PHANTOM +48V, TALKBACK 1 +10dB TALKBACK 2 PHANTOM +48V, TALKBACK 2 +10dB CUE ACTIVE INPUT, CUE ACTIVE DCA CUE ACTIVE OUTPUT

DATA ENTORY BLOCK

Keys	CURSOR UP, CURSOR DOWN, CURSOR LEFT CURSOR RIGHT, DEC, INC, SHIFT, ENTER LEFT, RIGHT
Rotary encoders	
PC ATA STORAGE CARD SLOT	A, B
Trackpad	

METER BRIDGE BLOCK

8 digits 7 segment LED	TIME CODE
3 digits 7 segment LED	SCENE MEMORY NUMBER
16 digits 5 x 7 dot LED	SCENE MEMORY NAME
LEDs	SCENE MEMORY CURRENT, SCENE MEMORY PREVIEW MIX OUT 1-24 meter 21 elements MIX OUT 25-48 / MATRIX OUT 1-24 meter 21 elements STEREO A L, R meter 21 elements STEREO B L, R meter 21 elements CUE L, R meter 21 elements

DISPLAY BLOCK

DISPLAY	800 x 600 dots COLOR GRAPHIC LCD w/ backlight
Analog Rotary Potentiometer	BRIGHTNESS

Analog Input Characteristics

Input Terminals	GAIN	Actual Load Impedance	For Use With Nominal	Input level		Connector
				Nominal	Max. before clip	
TALKBACK IN 1, 2 *1	–44dB	3kΩ	50-600Ω Mics & 600Ω Lines	–44dB (4.89mV)	–30dB (24.5mV)	XLR-3-31 type (Balanced) *2
	+10dB			+10dB (2.45V)	+24dB (12.3V)	
2-TRACK IN ANALOG 1, 2 *3	—	10kΩ	600Ω Lines	+10dB (2.45V)	+24dB (12.3V)	XLR-3-31 type (Balanced)

*1. AD converters are 24bit linear, 128 times oversampling.
+48V DC (phantom power) is individually supplied to each TALKBACK connectors via 6.8kΩ resistors.
*2. Balanced (1= GND, 2= HOT, 3= COLD)
*3. AD converters are 24bit linear +4bit floating, 128 times oversampling.
• 0dB= 0.775Vrms, 0dBV= 1Vrms.

Analog Output Characteristics

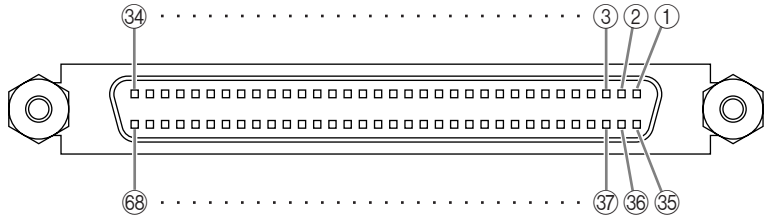
Input Terminals	Actual Load Impedance	For Use With Nominal	Output level		Connector
			Nominal	Max. before clip	
MONITOR OUT A, B	150Ω	600Ω Lines	+10dB (2.45V)	+24dB (12.3V)	XLR-3-32 type (Balanced) *1
CUE OUT	150Ω	600Ω Lines	+10dB (2.45V)	+24dB (12.3V)	XLR-3-32 type (Balanced) *1
PHONES A1, B1	15Ω	8Ω Phones	75mW *3	150mW	Stereo Phone Jack (Unbalanced) *2
		40Ω Phones	65mW *3	150mW	
PHONES A2, B2	15Ω	8Ω Phones	75mW *3	150mW	Stereo Phone Jack (Unbalanced) *2
		40Ω Phones	65mW *3	150mW	

*1. Balanced (1= GND, 2= HOT, 3= COLD)
*2. Unbalanced (Tip= LEFT, Ring= RIGHT, Sleeve= GND)
• 0dB= 0.775Vrms, 0dBV= 1Vrms.
• DA converters are 24bit linear, 128 times oversampling.
*3. The position of the level control is 10dB lowered from MAX.

Digital Input & Output Characteristics

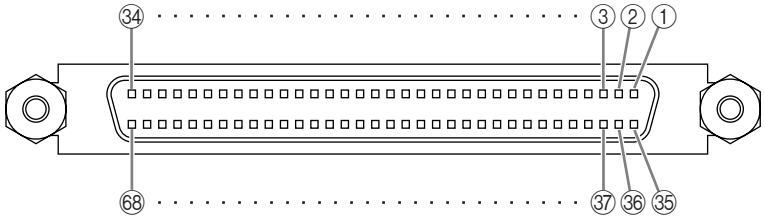
INPUT/OUTPUT TERMINALS	FORMAT	LEVEL	CONNECTOR	
			TYPE	QUANTITY
DIGITAL I/O ENGINE A1, A2 ENGINE B1, B2 CONSOLE 1, 2	—	RS422	D-SUB Half Pitch Connector 68P (Female)	6
2-TRACK IN DIGITAL AES/EBU 1-6	AES/EBU	RS422	XLR-3-31 type Connector	6
2-TRACK IN DIGITAL COAXIAL 1-2	IEC60958	0.5Vpp/75Ω	RCA Phono JACK	2
STEREO OUT DIGITAL AES/EBU A, B	AES/EBU	RS422	XLR-3-32 type Connector	2
STEREO OUT DIGITAL COAXIAL A, B	IEC60958	0.5Vpp/75Ω	RCA Phono JACK	2
WORD CLOCK IN	—	TTL/75Ω (ON/OFF)	BNC Connector	1
WORD CLOCK OUT	—	TTL/75Ω	BNC Connector	1
SVGA OUT	SVGA	2Vpp	High density D-sub 15pin Connector (Female)	1
KEYBOARD	PS2	TTL	Mini DIN 6pin Connector	2
MOUSE	PS2	TTL	Mini DIN 6pin Connector	2
NUMKEY	PS2	TTL	Mini DIN 6pin Connector	1
REMOTE RS-422	—	RS422	D-sub 9pin Connector (Female)	1
MIDI IN, OUT, THRU	MIDI	—	DIN 5pin Connector	3
TIME CODE IN	SMPTE	Nominal –10dB/ 10kΩ	XLR-3-31 type Connector	1
GPI	—	C-MOS IN, Open collector out	D-SUB 25pin Connector (Female)	1
PC CONTROL USB	—	0V - 3.3V	B Type USB Connector	1
PC CONTROL RS-232-C	—	RS-232-C	D-SUB 9pin Connector (Male)	1
CONTROL I/O ENGINE A 1IN, 1OUT, 2IN, 2OUT ENGINE B 1IN, 1OUT, 2IN, 2OUT CONSOLE 1IN, 1OUT, 2IN, 2OUT	—	–0.225V - –1.825V /50Ω	BNC Connector	12
DC POWER INPUT	—	DC 60V	KN-27-31S 27pin (Female)	2

Pin Assignment DIGITAL I/O ENGINE A1, A2, B1, B2 (D-SUB Half Pitch Connector 68P)



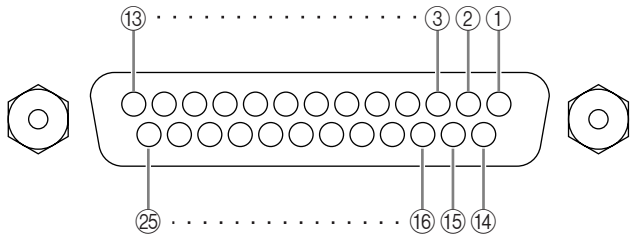
Pin No.	Signal	Pin No.	Signal
1	GND	**35**	GND
2	2TRK 1 OUT (+)	**36**	2TRK 1 OUT (–)
3	2TRK 2 OUT (+)	**37**	2TRK 2 OUT (–)
4	2TRK 3 OUT (+)	**38**	2TRK 3 OUT (–)
5	2TRK 4 OUT (+)	**39**	2TRK 4 OUT (–)
6	2TRK 5 OUT (+)	**40**	2TRK 5 OUT (–)
7	2TRK 6 OUT (+)	**41**	2TRK 6 OUT (–)
8	TB 1-2 OUT (+)	**42**	TB 1-2 OUT (–)
9	RESERVED	**43**	RESERVED
10	NC	**44**	NC
11	NC	**45**	NC
12	GND	**46**	GND
13	WORD CLOCK OUT (+)	**47**	WORD CLOCK OUT (–)
14	WORD CLOCK IN (+)	**48**	WORD CLOCK IN (–)
15	NC	**49**	NC
16	NC	**50**	NC
17	GND	**51**	ID6 OUT
18	GND	**52**	ID6 IN
19	STEREO A IN (+)	**53**	STEREO A IN (–)
20	STEREO B IN (+)	**54**	STEREO B IN (–)
21	MONITOR A IN (+)	**55**	MONITOR A IN (–)
22	MONITOR B IN (+)	**56**	MONITOR B IN (–)
23	CUE A IN (+)	**57**	CUE A IN (–)
24	CUE B IN (+)	**58**	CUE B IN (–)
25	RESERVED	**59**	RESERVED
26	RESERVED	**60**	RESERVED
27	ID0 OUT	**61**	ID1 OUT
28	ID2 OUT	**62**	ID3 OUT
29	ID4 OUT	**63**	ID5 OUT
30	ID0 IN	**64**	ID1 IN
31	ID2 IN	**65**	ID3 IN
32	ID4 IN	**66**	ID5 IN
33	MSB/nLSB OUT	**67**	2ch/n4ch OUT
34	FG	**68**	FG

Pin Assignment DIGITAL I/O CONSOLE 1, 2 (D-SUB Half Pitch Connector 68P)



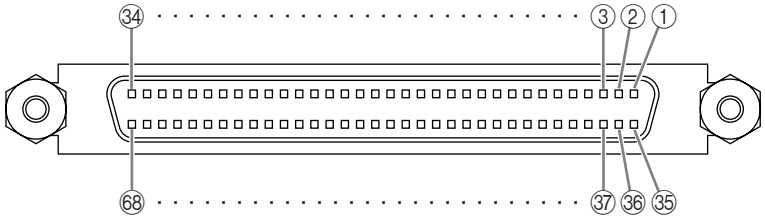
Pin No.	Signal	Pin No.	Signal
1	GND	**35**	GND
2	2TRK 1 IN (+)	**36**	2TRK 1 IN (–)
3	2TRK 2 IN (+)	**37**	2TRK 2 IN (–)
4	2TRK 3 IN (+)	**38**	2TRK 3 IN (–)
5	2TRK 4 IN (+)	**39**	2TRK 4 IN (–)
6	2TRK 5 IN (+)	**40**	2TRK 5 IN (–)
7	2TRK 6 IN (+)	**41**	2TRK 6 IN (–)
8	TB 1-2 IN (+)	**42**	TB 1-2 IN (–)
9	RESERVED	**43**	RESERVED
10	NC	**44**	NC
11	NC	**45**	NC
12	GND	**46**	GND
13	WORD CLOCK IN (+)	**47**	WORD CLOCK IN (–)
14	WORD CLOCK OUT (+)	**48**	WORD CLOCK OUT (–)
15	NC	**49**	NC
16	NC	**50**	NC
17	GND	**51**	ID6 IN
18	GND	**52**	ID6 OUT
19	STEREO A OUT (+)	**53**	STEREO A OUT (–)
20	STEREO B OUT (+)	**54**	STEREO B OUT (–)
21	MONITOR A OUT (+)	**55**	MONITOR A OUT (–)
22	MONITOR B OUT (+)	**56**	MONITOR B OUT (–)
23	CUE A OUT (+)	**57**	CUE A OUT (–)
24	CUE B OUT (+)	**58**	CUE B OUT (–)
25	RESERVED	**59**	RESERVED
26	RESERVED	**60**	RESERVED
27	ID0 IN	**61**	ID1 IN
28	ID2 IN	**62**	ID3 IN
29	ID4 IN	**63**	ID5 IN
30	ID0 OUT	**64**	ID1 OUT
31	ID2 OUT	**65**	ID3 OUT
32	ID4 OUT	**66**	ID5 OUT
33	MSB/nLSB IN	**67**	2ch/n4ch IN
34	FG	**68**	FG

Pin Assignment GPI (D-SUB Connector 25P)



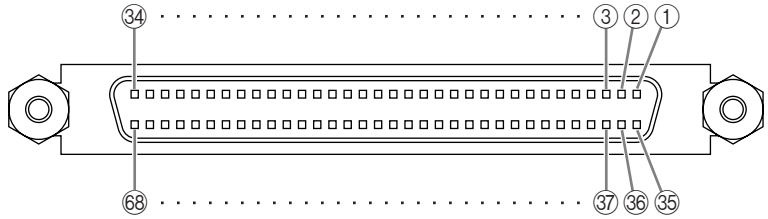
Pin No.	Signal	Pin No.	Signal
1	Data OUT 1	**14**	Data OUT 2
2	Data OUT 3	**15**	Data OUT 4
3	Data OUT 5	**16**	Data OUT 6
4	Data OUT 7	**17**	Data OUT 8
5	GND	**18**	GND
6	GND	**19**	GND
7	GND	**20**	GND
8	GND	**21**	+5V
9	+5V	**22**	Data IN 1
10	Data IN 2	**23**	Data IN 3
11	Data IN 4	**24**	Data IN 5
12	Data IN 6	**25**	Data IN 7
13	Data IN 8		

Pin Assignment OUTPUT A,B,C (D-SUB Half Pitch Connector 68P)



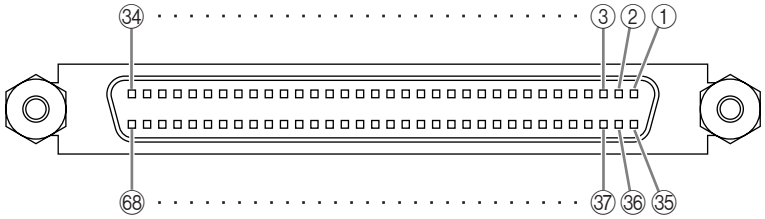
Pin No.	Signal	Pin No.	Signal
1	GND	35	GND
2	Data OUT 1-2 (+)	36	Data OUT 1-2 (–)
3	Data OUT 3-4 (+)	37	Data OUT 3-4 (–)
4	Data OUT 5-6 (+)	38	Data OUT 5-6 (–)
5	Data OUT 7-8 (+)	39	Data OUT 7-8 (–)
6	Data OUT 9-10 (+)	40	Data OUT 9-10 (–)
7	Data OUT 11-12 (+)	41	Data OUT 11-12 (–)
8	Data OUT 13-14 (+)	42	Data OUT 13-14 (–)
9	Data OUT 15-16 (+)	43	Data OUT 15-16 (–)
10	DTR OUT (+)	44	DTR OUT (–)
11	RTS IN (+)	45	RTS IN (–)
12	GND	46	GND
13	WORD CLOCK OUT (+)	47	WORD CLOCK OUT (–)
14	WORD CLOCK IN (+)	48	WORD CLOCK IN (–)
15	CONTROL OUT (+)	49	CONTROL OUT (–)
16	CONTROL IN (+)	50	CONTROL IN (–)
17	GND	51	ID6 OUT
18	GND	52	ID6 IN
19	Data OUT 17-18 (+)	53	Data OUT 17-18 (–)
20	Data OUT 19-20 (+)	54	Data OUT 19-20 (–)
21	Data OUT 21-22 (+)	55	Data OUT 21-22 (–)
22	Data OUT 23-24 (+)	56	Data OUT 23-24 (–)
23	Data OUT 25-26 (+)	57	Data OUT 25-26 (–)
24	Data OUT 27-28 (+)	58	Data OUT 27-28 (–)
25	Data OUT 29-30 (+)	59	Data OUT 29-30 (–)
26	Data OUT 31-32 (+)	60	Data OUT 31-32 (–)
27	ID0 OUT	61	ID1 OUT
28	ID2 OUT	62	ID3 OUT
29	ID4 OUT	63	ID5 OUT
30	ID0 IN	64	ID1 IN
31	ID2 IN	65	ID3 IN
32	ID4 IN	66	ID5 IN
33	MSB/nLSB OUT	67	2ch/n4ch OUT
34	FG	68	FG

Pin Assignment INPUT A,B (D-SUB Half Pitch Connector 68P)



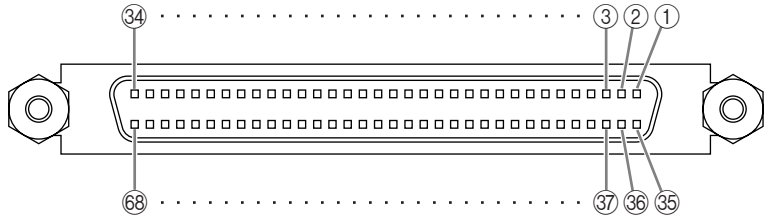
Pin No.	Signal	Pin No.	Signal
1	GND	35	GND
2	Data IN 1-2 (+)	36	Data IN 1-2 (–)
3	Data IN 3-4 (+)	37	Data IN 3-4 (–)
4	Data IN 5-6 (+)	38	Data IN 5-6 (–)
5	Data IN 7-8 (+)	39	Data IN 7-8 (–)
6	Data IN 9-10 (+)	40	Data IN 9-10 (–)
7	Data IN 11-12 (+)	41	Data IN 11-12 (–)
8	Data IN 13-14 (+)	42	Data IN 13-14 (–)
9	Data IN 15-16 (+)	43	Data IN 15-16 (–)
10	RTS IN (+)	44	RTS IN (–)
11	DTR OUT (+)	45	DTR OUT (–)
12	GND	46	GND
13	WORD CLOCK IN (+)	47	WORD CLOCK IN (–)
14	WORD CLOCK OUT (+)	48	WORD CLOCK OUT (–)
15	CONTROL IN (+)	49	CONTROL IN (–)
16	CONTROLOUT (+)	50	CONTROL OUT (–)
17	GND	51	ID6 OUT
18	GND	52	ID6 IN
19	Data IN 17-18 (+)	53	Data IN 17-18 (–)
20	Data IN 19-20 (+)	54	Data IN 19-20 (–)
21	Data IN 21-22 (+)	55	Data IN 21-22 (–)
22	Data IN 23-24 (+)	56	Data IN 23-24 (–)
23	Data IN 25-26 (+)	57	Data IN 25-26 (–)
24	Data IN 27-28 (+)	58	Data IN 27-28 (–)
25	Data IN 29-30 (+)	59	Data IN 29-30 (–)
26	Data IN 31-32 (+)	60	Data IN 31-32 (–)
27	ID0 OUT	61	ID1 OUT
28	ID2 OUT	62	ID3 OUT
29	ID4 OUT	63	ID5 OUT
30	ID0 IN	64	ID1 IN
31	ID2 IN	65	ID3 IN
32	ID4 IN	66	ID5 IN
33	MSB/nLSB IN	67	2ch/n4ch IN
34	FG	68	FG

Pin Assignment DIGITAL I/O INPUT 1-10 (D-SUB Half Pitch Connector 68P)



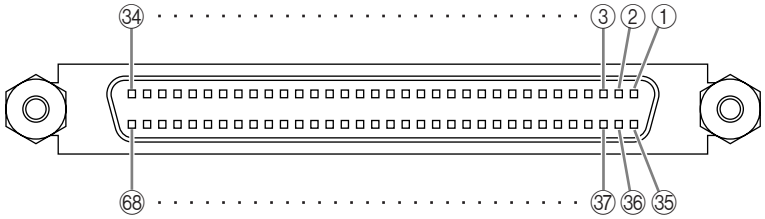
Pin No.	Signal	Pin No.	Signal
1	GND	35	GND
2	Data IN 1-2 (+)	36	Data IN 1-2 (–)
3	Data IN 3-4 (+)	37	Data IN 3-4 (–)
4	Data IN 5-6 (+)	38	Data IN 5-6 (–)
5	Data IN 7-8 (+)	39	Data IN 7-8 (–)
6	Data IN 9-10 (+)	40	Data IN 9-10 (–)
7	Data IN 11-12 (+)	41	Data IN 11-12 (–)
8	Data IN 13-14 (+)	42	Data IN 13-14 (–)
9	Data IN 15-16 (+)	43	Data IN 15-16 (–)
10	DTR IN (+)	44	DTR IN (–)
11	RTS OUT (+)	45	RTS OUT (–)
12	GND	46	GND
13	WORD CLOCK IN (+)	47	WORD CLOCK IN (–)
14	WORD CLOCK OUT (+)	48	WORD CLOCK OUT (–)
15	CONTROL IN (+)	49	CONTROL IN (–)
16	CONTROLOUT (+)	50	CONTROL OUT (–)
17	GND	51	ID6 IN
18	GND	52	ID6 OUT
19	Data IN 17-18 (+)	53	Data IN 17-18 (–)
20	Data IN 19-20 (+)	54	Data IN 19-20 (–)
21	Data IN 21-22 (+)	55	Data IN 21-22 (–)
22	Data IN 23-24 (+)	56	Data IN 23-24 (–)
23	Data IN 25-26 (+)	57	Data IN 25-26 (–)
24	Data IN 27-28 (+)	58	Data IN 27-28 (–)
25	Data IN 29-30 (+)	59	Data IN 29-30 (–)
26	Data IN 31-32 (+)	60	Data IN 31-32 (–)
27	ID0 IN	61	ID1 IN
28	ID2 IN	62	ID3 IN
29	ID4 IN	63	ID5 IN
30	ID0 OUT	64	ID1 OUT
31	ID2 OUT	65	ID3 OUT
32	ID4 OUT	66	ID5 OUT
33	MSB/nLSB IN	67	2ch/n4ch IN
34	FG	68	FG

Pin Assignment DIGITAL I/O OUTPUT 1-6 (D-SUB Half Pitch Connector 68P)



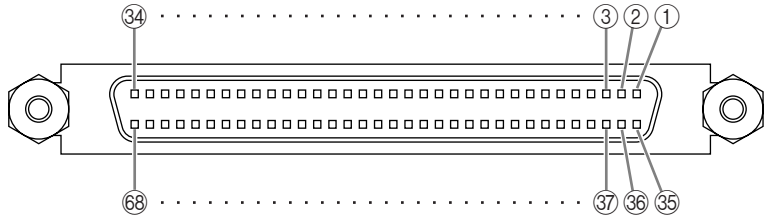
Pin No.	Signal	Pin No.	Signal
1	GND	35	GND
2	Data OUT 1-2 (+)	36	Data OUT 1-2 (–)
3	Data OUT 3-4 (+)	37	Data OUT 3-4 (–)
4	Data OUT 5-6 (+)	38	Data OUT 5-6 (–)
5	Data OUT 7-8 (+)	39	Data OUT 7-8 (–)
6	Data OUT 9-10 (+)	40	Data OUT 9-10 (–)
7	Data OUT 11-12 (+)	41	Data OUT 11-12 (–)
8	Data OUT 13-14 (+)	42	Data OUT 13-14 (–)
9	Data OUT 15-16 (+)	43	Data OUT 15-16 (–)
10	RTS OUT (+)	44	RTS OUT (–)
11	DTR IN (+)	45	DTR IN (–)
12	GND	46	GND
13	WORD CLOCK OUT (+)	47	WORD CLOCK OUT (–)
14	WORD CLOCK IN (+)	48	WORD CLOCK IN (–)
15	CONTROL OUT (+)	49	CONTROL OUT (–)
16	CONTROL IN (+)	50	CONTROL IN (–)
17	GND	51	ID6 IN
18	GND	52	ID6 OUT
19	Data OUT 17-18 (+)	53	Data OUT 17-18 (–)
20	Data OUT 19-20 (+)	54	Data OUT 19-20 (–)
21	Data OUT 21-22 (+)	55	Data OUT 21-22 (–)
22	Data OUT 23-24 (+)	56	Data OUT 23-24 (–)
23	Data OUT 25-26 (+)	57	Data OUT 25-26 (–)
24	Data OUT 27-28 (+)	58	Data OUT 27-28 (–)
25	Data OUT 29-30 (+)	59	Data OUT 29-30 (–)
26	Data OUT 31-32 (+)	60	Data OUT 31-32 (–)
27	ID0 IN	61	ID1 IN
28	ID2 IN	62	ID3 IN
29	ID4 IN	63	ID5 IN
30	ID0 OUT	64	ID1 OUT
31	ID2 OUT	65	ID3 OUT
32	ID4 OUT	66	ID5 OUT
33	MSB/nLSB OUT	67	2ch/n4ch OUT
34	FG	68	FG

Pin Assignment DIGITAL I/O CASCADE IN (D-SUB Half Pitch Connector 68P)



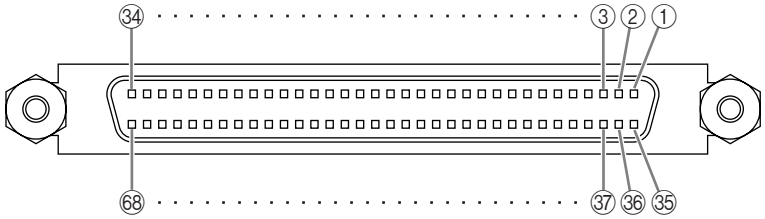
Pin No.	Signal	Pin No.	Signal
1	GND	35	GND
2	MIX IN 1-4 (+)	36	MIX IN 1-4 (–)
3	MIX IN 5-8 (+)	37	MIX IN 5-8 (–)
4	MIX IN 9-12 (+)	38	MIX IN 9-12 (–)
5	MIX IN 13-16 (+)	39	MIX IN 13-16 (–)
6	MIX IN 17-20 (+)	40	MIX IN 17-20 (–)
7	MIX IN 21-24 (+)	41	MIX IN 21-24 (–)
8	MIX IN 25-28 (+)	42	MIX IN 25-28 (–)
9	MIX IN 29-32 (+)	43	MIX IN 29-32 (–)
10	DTR IN (+)	44	DTR IN (–)
11	RTS OUT (+)	45	RTS OUT (–)
12	GND	46	GND
13	WORD CLOCK IN (+)	47	WORD CLOCK IN (–)
14	WORD CLOCK OUT (+)	48	WORD CLOCK OUT (–)
15	CONTROL IN (+)	49	CONTROL IN (–)
16	CONTROL OUT (+)	50	CONTROL OUT (–)
17	GND	51	ID6 IN
18	GND	52	ID6 OUT
19	MIX IN 33-36 (+)	53	MIX IN 33-36 (–)
20	MIX IN 37-40 (+)	54	MIX IN 37-40 (–)
21	MIX IN 41-44 (+)	55	MIX IN 41-44 (–)
22	MIX IN 45-48 (+)	56	MIX IN 45-48 (–)
23	STEREO A,B IN (+)	57	STEREO A,B IN (–)
24	MONITOR A,B IN (+)	58	MONITOR A,B IN (–)
25	CUE A,B IN (+)	59	CUE A,B IN (–)
26	TB, COMM IN (+)	60	TB, COMM IN (–)
27	ID0 IN	61	ID1 IN
28	ID2 IN	62	ID3 IN
29	ID4 IN	63	ID5 IN
30	ID0 OUT	64	ID1 OUT
31	ID2 OUT	65	ID3 OUT
32	ID4 OUT	66	ID5 OUT
33	MSB/nLSB IN	67	2ch/n4ch IN
34	FG	68	FG

Pin Assignment DIGITAL I/O CASCADE OUT (D-SUB Half Pitch Connector 68P)



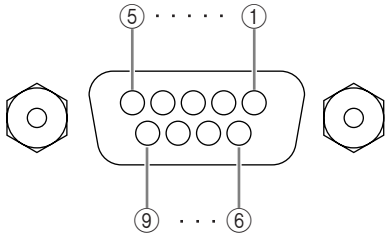
Pin No.	Signal	Pin No.	Signal
1	GND	35	GND
2	MIX OUT 1-4 (+)	36	MIX OUT 1-4 (–)
3	MIX OUT 5-8 (+)	37	MIX OUT 5-8 (–)
4	MIX OUT 9-12 (+)	38	MIX OUT 9-12 (–)
5	MIX OUT 13-16 (+)	39	MIX OUT 13-16 (–)
6	MIX OUT 17-20 (+)	40	MIX OUT 17-20 (–)
7	MIX OUT 21-24 (+)	41	MIX OUT 21-24 (–)
8	MIX OUT 25-28 (+)	42	MIX OUT 25-28 (–)
9	MIX OUT 29-32 (+)	43	MIX OUT 29-32 (–)
10	RTS OUT (+)	44	RTS OUT (–)
11	DTR IN (+)	45	DTR IN (–)
12	GND	46	GND
13	WORD CLOCK OUT (+)	47	WORD CLOCK OUT (–)
14	WORD CLOCK IN (+)	48	WORD CLOCK IN (–)
15	CONTROL OUT (+)	49	CONTROL OUT (–)
16	CONTROL IN (+)	50	CONTROL IN (–)
17	GND	51	ID6 OUT
18	GND	52	ID6 IN
19	MIX OUT 33-36 (+)	53	MIX OUT 33-36 (–)
20	MIX OUT 37-40 (+)	54	MIX OUT 37-40 (–)
21	MIX OUT 41-44 (+)	55	MIX OUT 41-44 (–)
22	MIX OUT 45-48 (+)	56	MIX OUT 45-48 (–)
23	STEREO A,B OUT (+)	57	STEREO A,B OUT (–)
24	MONITOR A,B OUT (+)	58	MONITOR A,B OUT (–)
25	CUE A,B OUT (+)	59	CUE A,B OUT (–)
26	TB, COMM OUT (+)	60	TB, COMM OUT (–)
27	ID0 OUT	61	ID1 OUT
28	ID2 OUT	62	ID3 OUT
29	ID4 OUT	63	ID5 OUT
30	ID0 IN	64	ID1 IN
31	ID2 IN	65	ID3 IN
32	ID4 IN	66	ID5 IN
33	MSB/nLSB OUT	67	2ch/n4ch OUT
34	FG	68	FG

Pin Assignment DIGITAL I/O CONSOLE 1,2 (D-SUB Half Pitch Connector 68P)



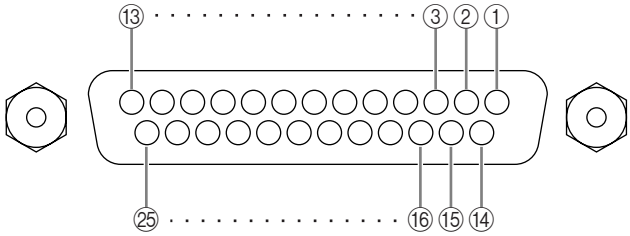
Pin No.	Signal	Pin No.	Signal
1	GND	35	GND
2	2TRK 1 IN (+)	36	2TRK 1 IN (–)
3	2TRK 2 IN (+)	37	2TRK 2 IN (–)
4	2TRK 3 IN (+)	38	2TRK 3 IN (–)
5	2TRK 4 IN (+)	39	2TRK 4 IN (–)
6	2TRK 5 IN (+)	40	2TRK 5 IN (–)
7	2TRK 6 IN (+)	41	2TRK 6 IN (–)
8	TB 1-2 IN (+)	42	TB 1-2 IN (–)
9	RESERVED	43	RESERVED
10	NC	44	NC
11	NC	45	NC
12	GND	46	GND
13	WORD CLOCK IN (+)	47	WORD CLOCK IN (–)
14	WORD CLOCK OUT (+)	48	WORD CLOCK OUT (–)
15	NC	49	NC
16	NC	50	NC
17	GND	51	ID6 IN
18	GND	52	ID6 OUT
19	STEREO A OUT (+)	53	STEREO A OUT (–)
20	STEREO B OUT (+)	54	STEREO B OUT (–)
21	MONITOR A OUT (+)	55	MONITOR A OUT (–)
22	MONITOR B OUT (+)	56	MONITOR B OUT (–)
23	CUE A OUT (+)	57	CUE A OUT (–)
24	CUE B OUT (+)	58	CUE B OUT (–)
25	RESERVED	59	RESERVED
26	RESERVED	60	RESERVED
27	ID0 IN	61	ID1 IN
28	ID2 IN	62	ID3 IN
29	ID4 IN	63	ID5 IN
30	ID0 OUT	64	ID1 OUT
31	ID2 OUT	65	ID3 OUT
32	ID4 OUT	66	ID5 OUT
33	MSB/nLSB IN	67	2ch/n4ch IN
34	FG	68	FG

Pin Assignment CONTROL I/O REMOTE RS-422 (D-SUB Connector 9P)



Pin No.	Signal	Pin No.	Signal
1	FG	6	FG
2	TX (–)	7	TX (+)
3	RX (+)	8	RX (–)
4	FG	9	FG
5	NC		

Pin Assignment CONTROL I/O GPI (D-SUB Connector 25P)

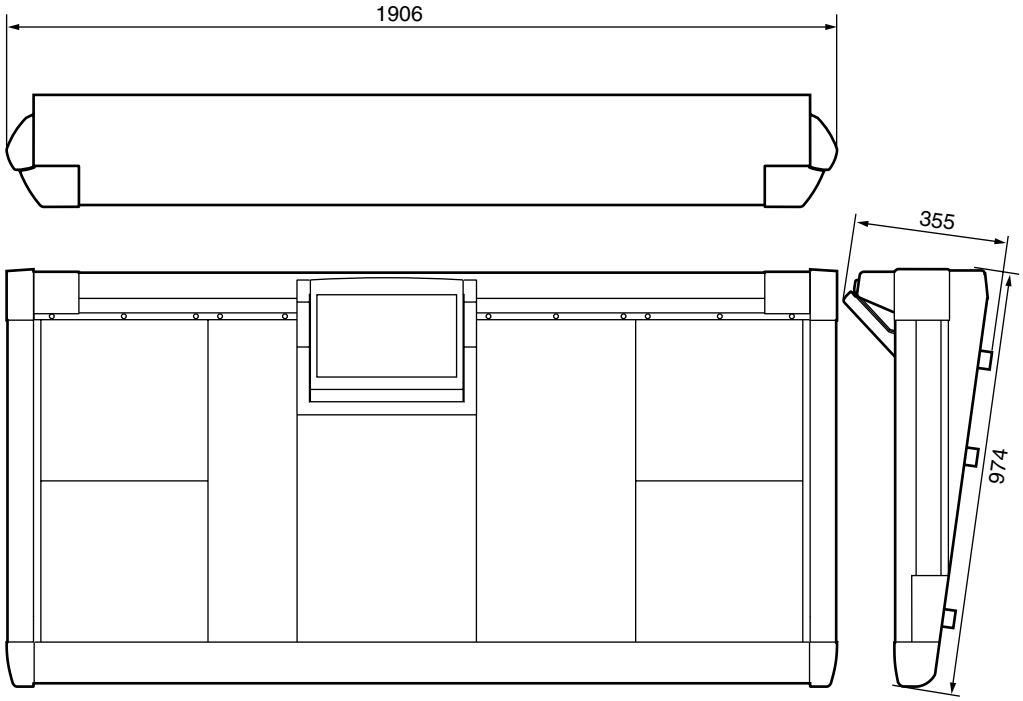


Pin No.	Signal	Pin No.	Signal
1	Data OUT 1	14	Data OUT 2
2	Data OUT 3	15	Data OUT 4
3	Data OUT 5	16	Data OUT 6
4	Data OUT 7	17	Data OUT 8
5	GND	18	GND
6	GND	19	GND
7	GND	20	GND
8	GND	21	+5V
9	+5V	22	Data IN 1
10	Data IN 2	23	Data IN 3
11	Data IN 4	24	Data IN 5
12	Data IN 6	25	Data IN 7
13	Data IN 8		

Accessories

DIGITAL AUDIO CABLE	10m × 1
CONTROL CABLE	10m × 2
LAMP	× 4
DUST COVER	× 1
OWNER'S MANUAL	× 1
PM1D SYSTEM SOFTWARE DISC (CD-R media)	× 1

Dimensions



Unit: mm

Specifications and external appearance subject to change without notice.

For European Model

Purchaser/User Information specified in EN55103-1 and EN55103-2.

Conformed Environment: E1, E2, E3 and E4

Cards Specifications

• LMY2-ML

1. GENERAL SPECIFICATIONS

Output impedance of signal generator: 150Ω, fs=44.1k or 48kHz.

Frequency Response 20Hz-20kHz, refer to the nominal output level @1kHz

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
CH1A, 1B CH2A, 2B	LMY4-DA	Gain: –68dB@+10dB	–3		1	dB
		Gain: +10dB@+10dB	–2		1	dB

Gain Error @1kHz

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
CH1A, 1B CH2A, 2B	LMY4-DA	Gain: –68dB@+10dB	–1		1	dB
		Gain: +10dB@+10dB	–1		1	dB

Total Harmonic Distortion

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
CH1A, 1B CH2A, 2B	LMY4-DA	+10dB@20Hz–20kHz, Gain: –68dB			0.3	%
		full scale output @1kHz, Gain: –68dB			0.05	%
		+10dB@20Hz–20kHz, Gain: +10dB			0.02	%
		full scale output @1kHz, Gain: +10dB			0.007	%

Dynamic Range

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
CH1A, 1B CH2A, 2B	LMY4-DA	Gain: +10dB *		120		dB

* Dynamic range are measured with a 6dB/octave filter @12.7kHz; equivalent to a 20kHz filter with infinite dB/octave attenuation.

Hum & Noise @20Hz-20kHz

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
CH1A, 1B CH2A, 2B	LMY4-DA	Equivalent Input Noise Rs=150Ω, Gain: –68dB		–128		dB
CH1A, 1B CH2A, 2B	LMY4-DA	Rs=150Ω, Gain: –26dB		–74		dB

* Hum & Noise are measured with a 6dB/octave filter @12.7kHz; equivalent to a 20kHz filter with infinite dB/octave attenuation.

Crosstalk @1kHz

INPUT	TO/FROM	CONDITIONS	MIN	TYP	MAX	UNITS
CH N	CH (N-1) or (N+1)	adjacent input			–90	dB
CH N A	CH N B	adjacent input			–90	dB

• LMY4-AD

1. GENERAL SPECIFICATIONS

Output impedance of signal generator: 150Ω, fs=44.1k or 48kHz.

Frequency Response 20Hz-20kHz, refer to the nominal output level @1kHz

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
CH1–4	LMY4-DA	@+10dB	–2		1	dB

Gain Error @1kHz

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
CH1–4	LMY4-DA	@+10dB	–1		1	dB

Total Harmonic Distortion

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
CH1–4	LMY4-DA	+10dB@20Hz–20kHz			0.02	%
		full scale output @1kHz			0.007	%

Dynamic Range

INPUT	OUTPUT	CONDITIONS	MIN	TYP	MAX	UNITS
CH1–4	LMY4-DA	*		120		dB

* Dynamic range are measured with a 6dB/octave filter @12.7kHz; equivalent to a 20kHz filter with infinite dB/octave attenuation.

Crosstalk @1kHz

INPUT	TO/FROM	CONDITIONS	MIN	TYP	MAX	UNITS
CH N	CH (N-1) or (N+1)	adjacent input			–90	dB

• LMY4-DA

1. GENERAL SPECIFICATIONS

Output impedance of signal generator: 150Ω, fs=44.1k or 48kHz.

Frequency Response 20Hz-20kHz, refer to the nominal output level @1kHz

INPUT	OUTPUT	RL	CONDITIONS	MIN	TYP	MAX	UNITS
LMY4-AD	CH1–4	600Ω	Gain sw: +24dB@+10dB	–2		1	dB
			Gain sw: +18dB@+4dB	–2		1	dB
			Gain sw: +15dB@+1dB	–2		1	dB

Gain Error @1kHz

INPUT	OUTPUT	RL	CONDITIONS	MIN	TYP	MAX	UNITS
LMY4-AD	CH1–4	600Ω	Gain sw: +24dB@+10dB	–1		1	dB
			Gain sw: +18dB@+4dB	–1		1	dB
			Gain sw: +15dB@+1dB	–1		1	dB

Total Harmonic Distortion

INPUT	OUTPUT	RL	CONDITIONS	MIN	TYP	MAX	UNITS
LMY4-AD	CH1–4	600Ω	+10dB@20Hz–20kHz, Gain sw: +24dB			0.02	%
			+4dB@20Hz–20kHz, Gain sw: +18dB			0.02	%
			+1dB@20Hz–20kHz, Gain sw: +15dB			0.02	%
			full scale output @1kHz, Gain sw: +24dB			0.007	%
			full scale output @1kHz, Gain sw: +18dB			0.007	%
			full scale output @1kHz, Gain sw: +15dB			0.007	%

Hum & Noise residual output noise

INPUT	OUTPUT	RL	CONDITIONS	MIN	TYP	MAX	UNITS
–	CH1–4	600Ω	Gain sw: +24dB, OUTPUT off *		–96		dB

* Hum & Noise are measured with a 6dB/octave filter @12.7kHz; equivalent to a 20kHz filter with infinite dB/octave attenuation.

Dynamic Range

INPUT	OUTPUT	RL	CONDITIONS	MIN	TYP	MAX	UNITS
LMY4-AD	CH1–4	600Ω	*		120		dB

* Dynamic range are measured with a 6dB/octave filter @12.7kHz; equivalent to a 20kHz filter with infinite dB/octave attenuation.

Crosstalk @1kHz

INPUT	TO/FROM	CONDITIONS	MIN	TYP	MAX	UNITS
CH N	CH (N-1) or (N+1)	adjacent input			–90	dB

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Pro Audio & Digital Musical Instrument Division
P.O. Box 3, Hamamatsu, 430-8651, Japan

V509020 R41 1 IP

08 06 100 AP Printed in Japan

YAMAHA [Digital Audio Mixing System] **Date: 25 Dec. 2000**

Model: PM1D

MIDI Implementation Chart

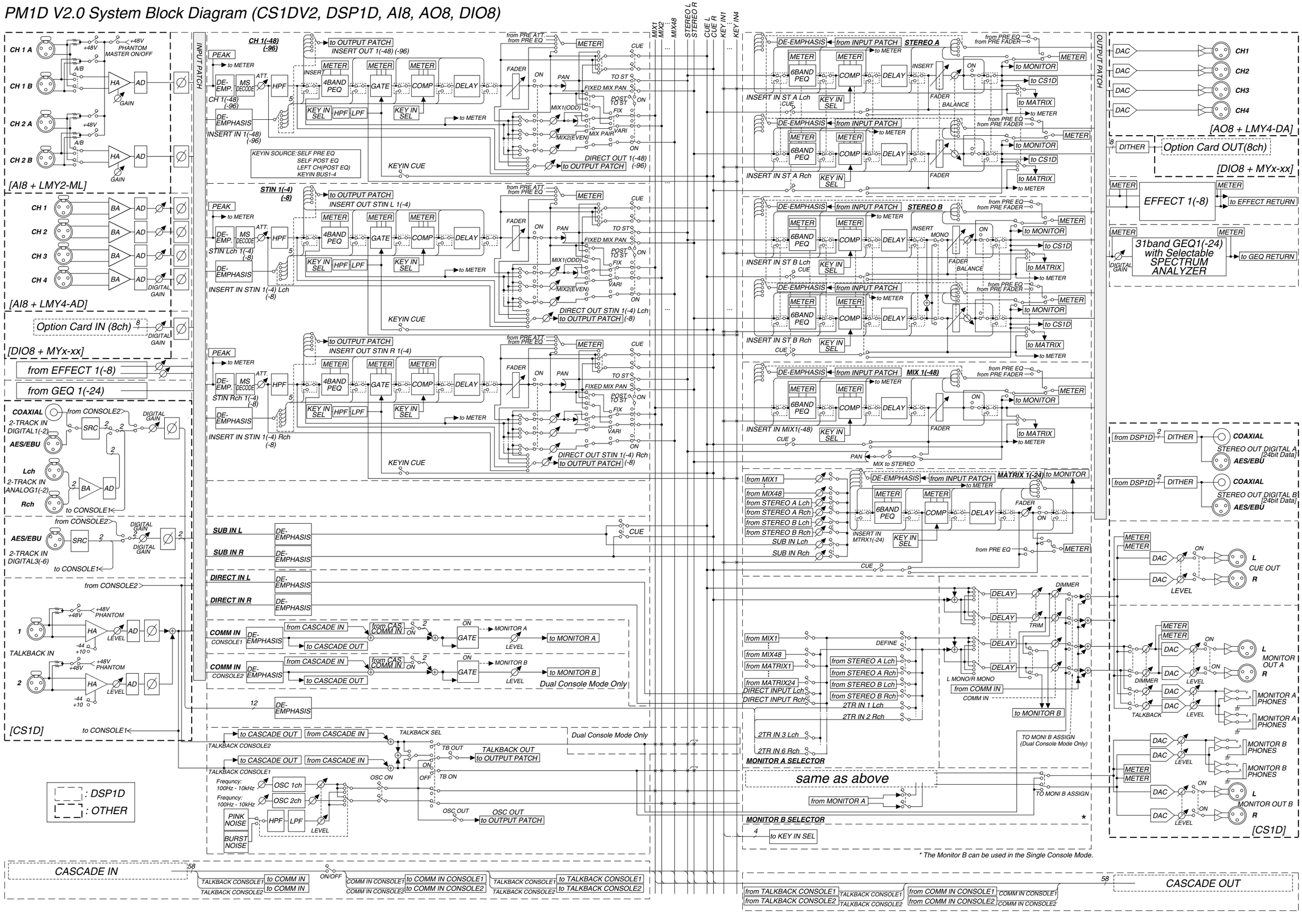
Version: 1.0

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1–16 1–16	1–16 1–16	Memorized
Mode	Default Messages Altered	X X **********	OMNI off/OMNI on X X	Memorized
Note Number	True Voice	X **********	0–127 X	
Velocity	Note On Note Off	X X	X X	
After Touch	Keys Ch's	X X	X X	
Pitch bend		X	X	
Control Change	0, 32 (Bank Select)	O	O	Assignable
Prog Change	:True#	0–127 **********	0–127 *1	Assignable
System Exclusive		X	X	
System Common	:Song Pos :Song Sel :Tune	X X X	X X X	
System Real Time	:Clock :Commands	X X	X X	
Aux Messages	:Local ON/OFF :All Notes OFF :Active Sense :Reset	X X X X	X X O X	
Notes		*1)SCENE 00.0–99.9, EFFECT LIBRARY 001–199		

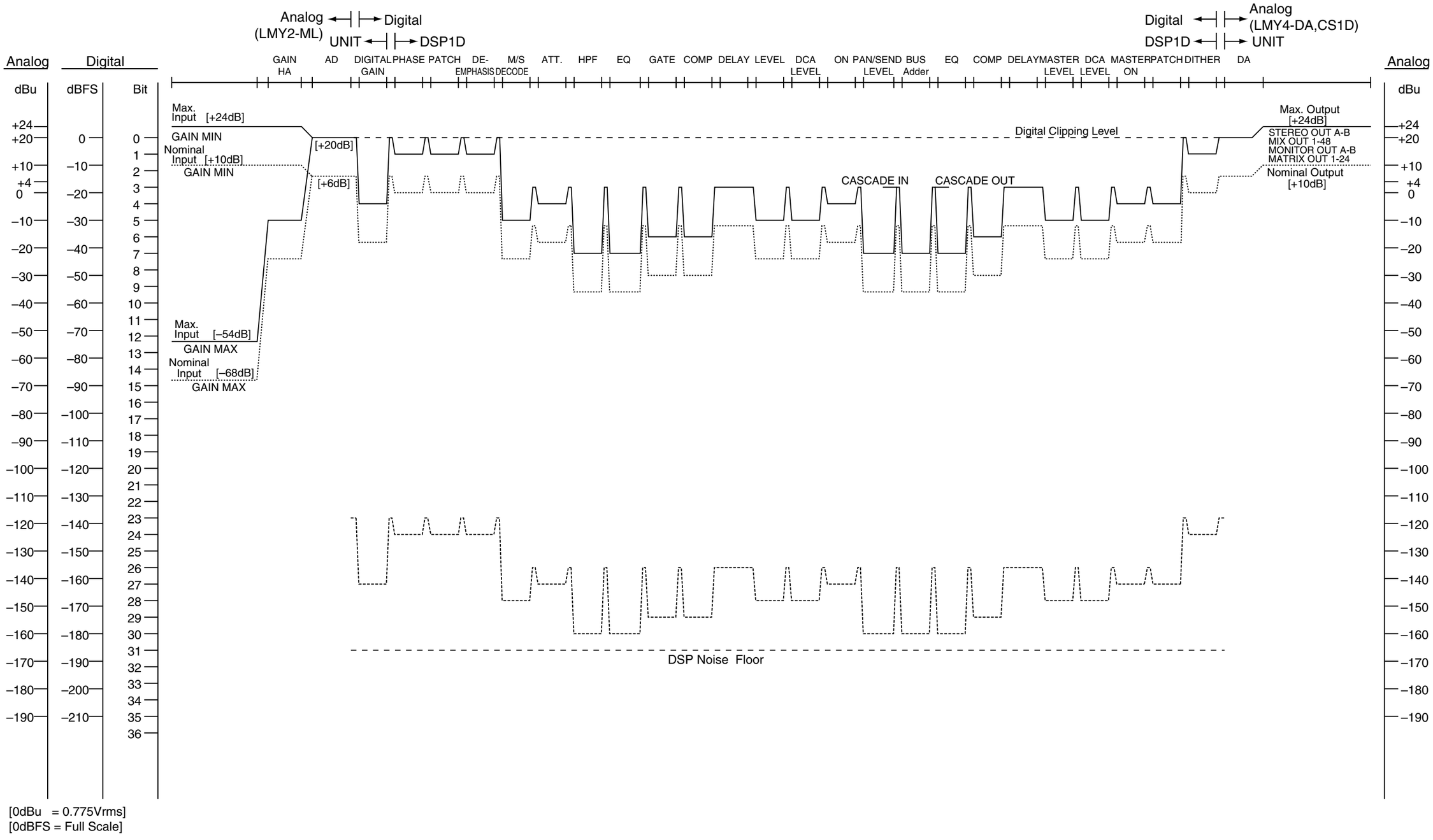
Mode 1: OMNI ON, POLY Mode 2: OMNI ON, MONO O: Yes

Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO X: No

PM1D V2.0 System Block Diagram (CS1DV2, DSP1D, AI8, AO8, DIO8)



PM1D System V2.0 Level Diagram



[0dBu = 0.775Vrms]
[0dBFS = Full Scale]