SOFTWARE INSTRUCTIONS

DIGITAL STEREO MIXER M-864D

(Version 2.0.0)



Thank you for purchasing TOA's Digital Stereo Mixer.
Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

TOA Corporation

TABLE OF CONTENTS

1. M-864D PC SOFTWARE OUTLINE 4

2. SOFTWARE SETUP 5
- 2.1. Installing the M-864D PC Software 5
- 2.2. Uninstalling the M-864D PC Software 7

3. STARTING THE SOFTWARE 7
- 3.1. Starting from the “Start” Menu 7
- 3.2. Starting from the Shortcut Icon 7

4. INITIAL OPERATION SELECTION SCREEN 8

5. MAIN SCREEN AND INDIVIDUAL VIEWS 11
- 5.1. Menu View 12
- 5.2. Status View 14
- 5.3. Main View 15
- 5.4. Detail Setting View 20

6. MAIN VIEW 21
- 6.1. Flow View 21
- 6.2. Operation View 29
- 6.3. Level Monitor View 44
- 6.4. Contact Monitor View 45
- 6.5. Remote Monitor View 46

7. FUNCTION BOX 47
- 7.1. Gain 47
- 7.2. Trim 48
- 7.3. Fader 49
- 7.4. Tone 52
- 7.5. FBS (Feedback Suppressor Function) 54
- 7.6. Auto-Mute 57
- 7.7. Matrix 59
- 7.8. Assign 61
- 7.9. PEQ 63
- 7.10. ARC 65
- 7.11. Attenuator 70

8. STATUS VIEW 71
- 8.1. Memory View 71
- 8.2. Unit View 74
- 8.3. Connection View 74

9. COMMUNICATION SETTINGS 75
- 9.1. Connections between a PC and the Unit 75
- 9.2. Method to Enable Communications between the PC and the Unit 75
- 9.3. Connection Settings 76
- 9.4. Communications 79

10. REMOTE SETTINGS 81
- 10.1. Remote Function Overview 81

10.2. Contact Input Settings 82
10.3. Contact Output Settings 84
10.4. ZM Remote Controller Settings 87
10.5. External Control Port Setting 91
10.6. External Control Command Send Setting 92

11. CONFIGURATION SETTINGS 97
11.1. Unit Name Settings 98
11.2. Fader Settings 99
11.3. Unit Lock (System Lock) Setting 100
11.4. Preset Memory Settings 102

12. OPTION SETTINGS 103
12.1. Change Safe Setting 104
12.2. Example of Change Safe Function Use 107
12.3. Cautions at the time of grouping 108
12.4. Maintenance Window 109
12.5. User Level and Prohibition Settings 112

13. GLOSSARY 115
13.1. Associated Equipment 115
13.2. System Basic Terms 115
13.3. PC Software Screen 116
13.4. Signal Processing Function 116
13.5. System Function 118
13.6. Communication Related Terms 120
13.7. Contact Control, ZM Remote Controller Control, and External Control Functions 120
13.8. Maintenance Function 121

14. SPECIFICATIONS 122
14.1. Software Specification 122
14.2. Setting Items, Setting Ranges, and Default Settings 122

1. M-864D PC SOFTWARE OUTLINE

The M-864D performs settings of the following acoustic signal processing functions and those necessary for the control input and output I/F using dedicated setting software.

• Matrix function
• Trim gain function
• Fader function
• Filter function
• Feedback Suppressor (FBS) Function
• Automatic Resonance Control (ARC) Function

Settings can be performed regardless of whether the M-864D (referred to as “unit” hereinafter) is concurrently in communication with a PC (online mode) or not (offline mode).
However, note that there are some operations and displays, such as prior parameter settings for feedback suppression and various monitor view displays, which cannot be performed when not online.
The PC and unit communicate via a network. When both are online, Preset Memory can be recalled from the PC to the unit, and acoustic signal processing settings can be changed in real time. Only one unit at a time can be used with the setting software.
Set data can be stored in the PC.

Install the software in a PC that meets the following specifications:

[Recommended PC requirements]

Hardware Requirements	
CPU	2 GHz, Intel Pentium 4 or higher
Memory	Over 1.5 GB (2 GB or more recommended)
Display	1024 x 768 resolution or higher
Free Hard Disk Space	Over 16 MB however, over 600 MB is required for the 32 bit version or over 1.5 GB for the 64 bit version when “.NET Framework” is not yet installed
Optical Drive	CD-ROM drive
LAN	10BASE-T or faster connection
Software Requirements	
OS	Following are the verified operating systems: Windows XP Service Pack 3 (Professional) 64-bit Windows Vista Service Pack 2 (Business) 32-bit Windows 7 (Professional) 64-bit Windows 7 (Professional)
Required Component	.NET Framework 4 Client Profile (Internet access is required when “.NET Framework” needs to be installed)

- Pentium is the trademark of Intel Corporation in the United States and other countries.
- Windows and Windows Vista are the registered trademarks of Microsoft Corporation in the United States and other countries.
- Regarding other company names and products, they are also trademarks of individual companies.

2. SOFTWARE SETUP

2.1. Installing the M-864D PC Software

Terminate all other application programs in operation before installation.
Follow the procedures below to install.

Step 1. Insert the supplied CD into the PC's CD drive.

Step 2. Open the CD drive from the "Explorer" or "My Computer."
The "English" folder, "Japanese" folder, and other contents are displayed.

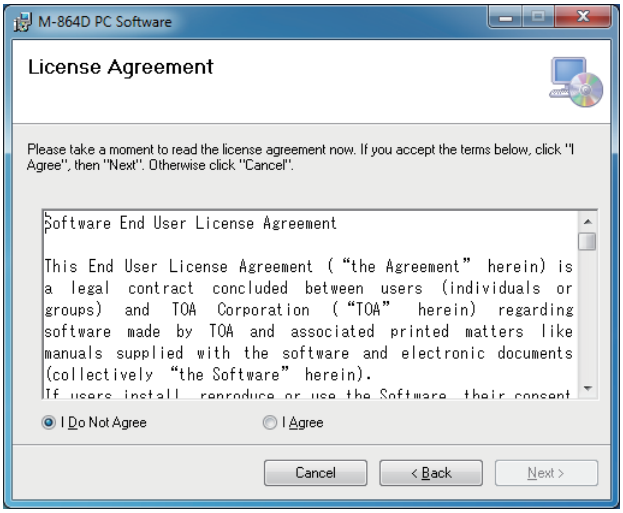
Step 3. Open the "English" folder.

Step 4. Open the "M864D_PC_Software" folder.

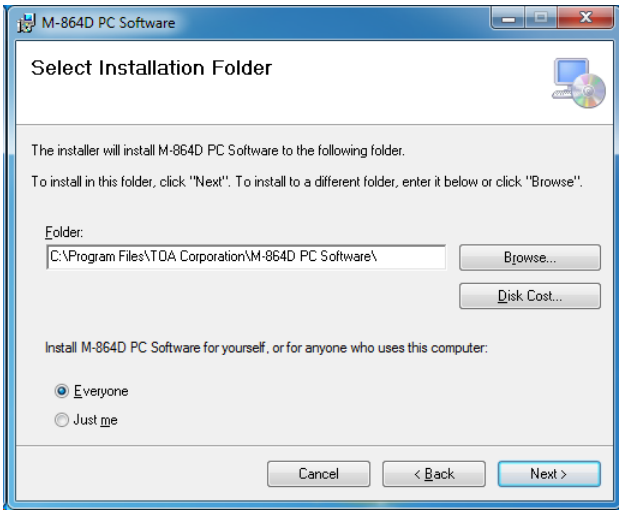
Step 5. Double-click the "setup.exe."
The following window is displayed.



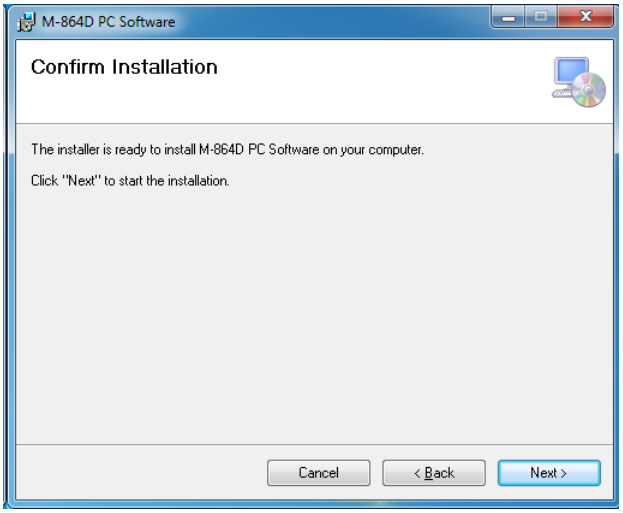
Step 6. Click the [Next] button.
The following window is displayed.
Check the contents of the License Agreement, then choose the "I Agree" or "I Do Not Agree" radio button.
Choosing "I Agree" allows to click the [Next] button.



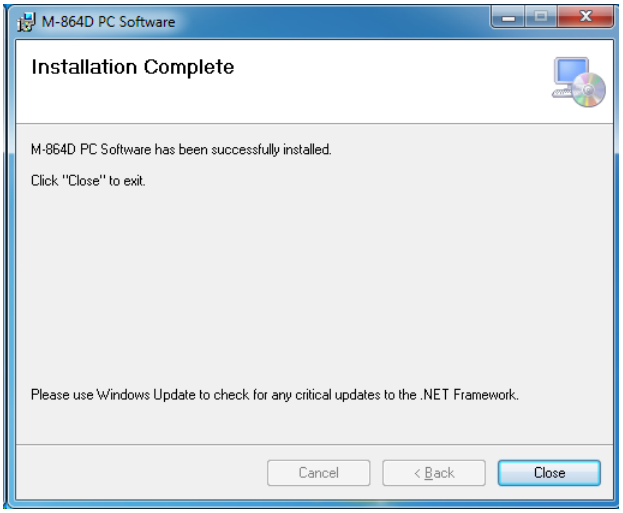
Step 7. Check the contents of the window, then click the [Next] button.
The following window is displayed.



Step 8. If necessary, change the folder into which the software will be installed, then click the [Next] button.
The following window is displayed.



Step 9. Start installation according to the instructions on the screen.
Note
If the .NET Framework is not installed in the PC, follow the on-screen instructions to install it.
Connection to the internet is required.



Step 10. Click the [Close] button after installation completion.
The shortcut icon for the M-864D GUI executable program is stored in the PC's start menu.

2.2. Uninstalling the M-864D PC Software

Step 1. Click the Start button on the PC's desktop, and select [Setting → Control Panel].
The "Control Panel" window is displayed.

Step 2. Double-click the following icon.
• Windows Vista and Windows 7: "Programs and Features"
• Windows XP: "Add or Remove Programs"
The currently installed program will then be displayed.

Step 3. Select "M864D PC Software."

Step 4. Click the following button to uninstall the software.
• Windows Vista and Windows 7: "Uninstall"
• Windows XP: "Delete"

3. STARTING THE SOFTWARE

The following two different methods are available for starting the installed M-864D PC Software:

3.1. Starting from the "Start" Menu

You can start the M-864D PC Software from the start menu.

Click the Start button on the PC's desktop, and select [Programs → TOA Digital Audio Control → M-864D PC Software] to start.

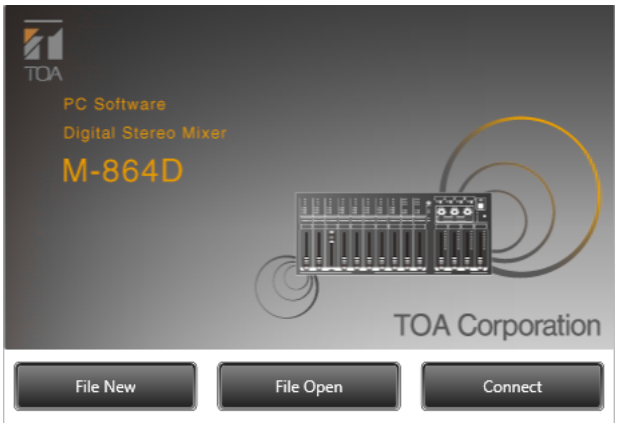
3.2. Starting from the Shortcut Icon

You can start the M-864D PC Software by double-clicking the shortcut icon 

created on the desktop after installation completion.

4. INITIAL OPERATION SELECTION SCREEN

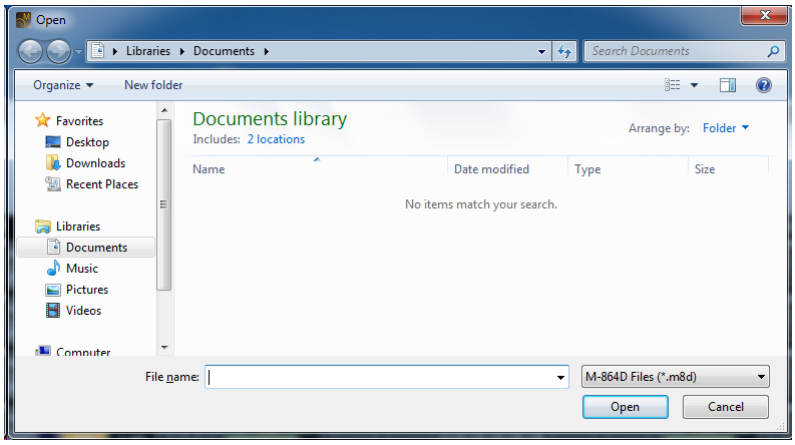
Starting the M-864 PC Software displays the Initial Operation Selection screen.



Depending on the job to be done, select the [File New], [File Open], or [Connect] button.

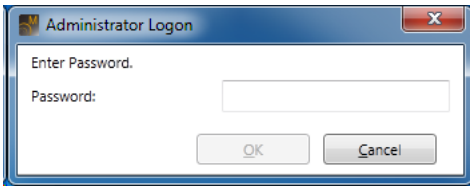
1. File New
The display switches to the Main screen (see p. 11).

2. File Open
The Open dialog is displayed.



Select the file to be opened and click the [Open] button.
The file opens and the display switches to the Main screen (see p. 11).

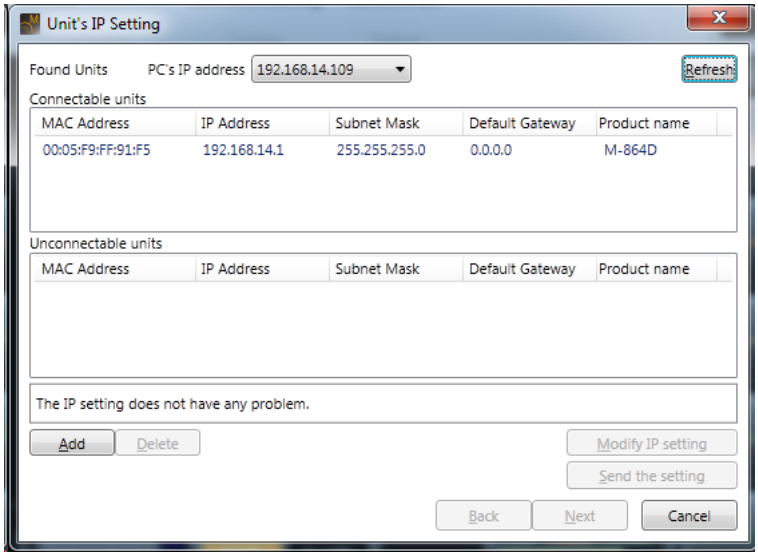
Note: The following logon screen may appear when the file opens:



When this screen appears, the User Level has been set.
Please read the section “Logging on with user level enabled” on p. 113.

3. Connect

Units are automatically detected and the Unit's IP Setting dialog is displayed.



Units that are available and not available for communications are displayed in the "Connectable units" and "Unconnectable units" lists. If no units from which to receive data are shown, click the [Add] button to display more units. Selecting this button causes the "Add target unit" dialog to be displayed (see the Add target unit dialog below).

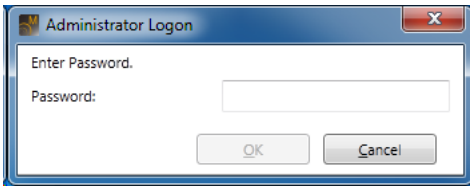
Select the unit from which to receive data from the "Connectable units," then click the [Next] button to display the Firmware version check screen.

If the displayed firmware version is old, update the firmware. (See, p. 78, **Step 6** in the "Connection Settings."

After selecting the unit from which to receive data, click the [Finish] button, and data reception begins, displaying the communication dialog.

After data reception is completed, clicking the [Completed] button of the Communication Dialog switches the display to the Main screen (see p. 11).

Note: The following logon screen may appear when the file opens:

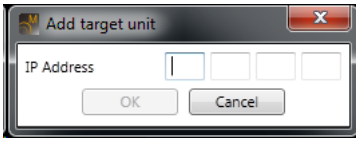


When this screen appears, the User Level has been set.

Please read the section "Logging on with user level enabled" on p. 113.

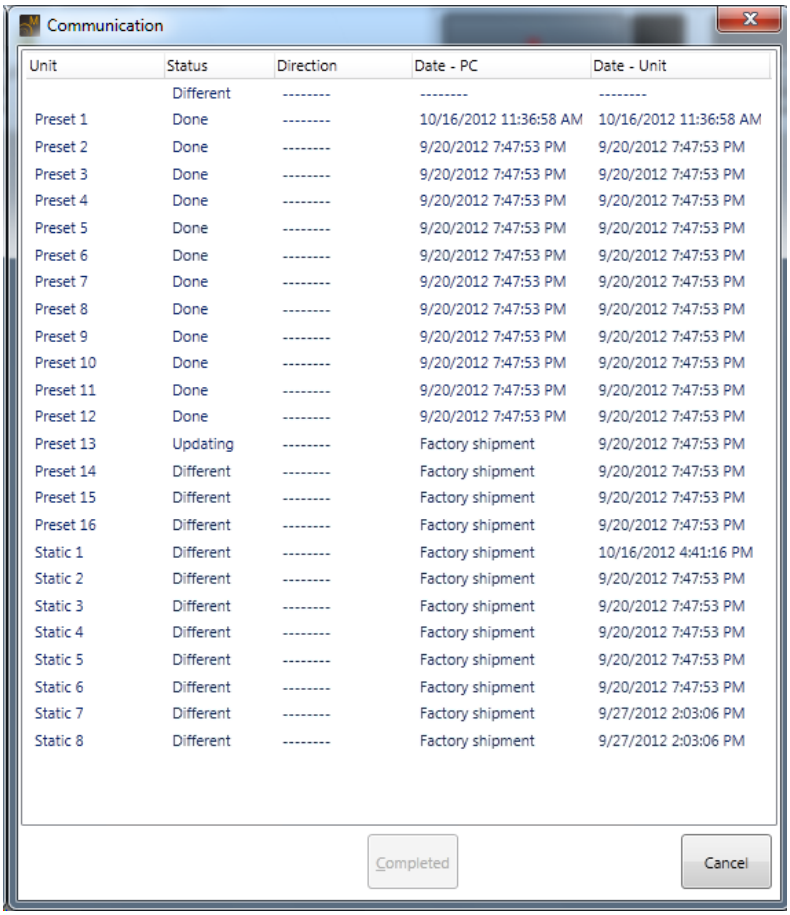
- **Add target unit Dialog**

  Used to add target units.



Enter the IP address of the unit to be connected.

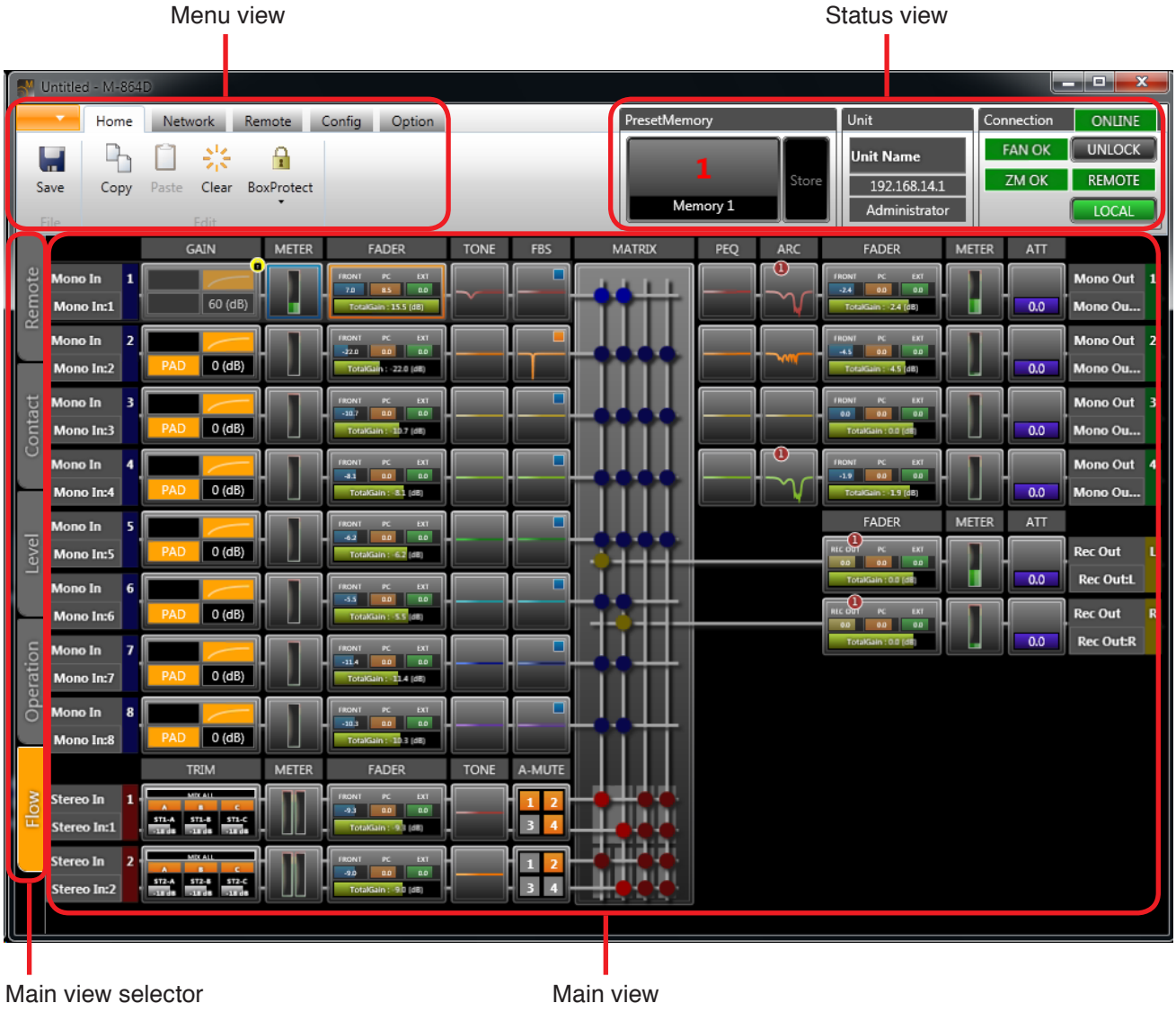
- **Communication Dialog**



Reception status is indicated.
Select [Cancel] button to return the display to the Initial Operation Selection screen.

5. MAIN SCREEN AND INDIVIDUAL VIEWS

After initial operation selection settings, the Main screen is displayed.



5.1. Menu View

The Menu view is located in the upper left section of the Main screen.
Clicking on the individual tabs in the Menu view displays the menu icons related to each corresponding function.
Click on a menu icon to execute its function.

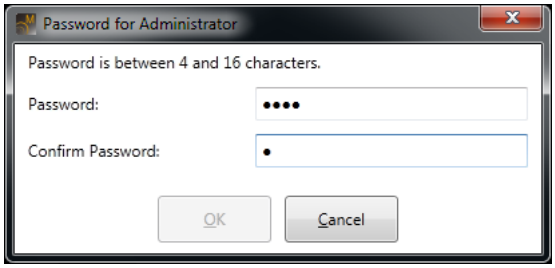
Note: Clicking the ALT key displays the shortcut keys of the ribbon menu.

5.1.1. Menu Term Description

[Application]

New: Creates (sets) a new data file.

Open... : Calls up the existing data file.
Note
When a file is opened, the following logon screen may be displayed.



This screen appears when a user level is set.
(See p. 113, “Logging on with user level enabled.”)

Save: Overwrites the file being edited.

Save As... : Saves the file being edited to the disk under a different name.

Close: Closes the file being edited.

About... : Displays the M-864D PC Software version number.

Exit: Exits the M-864D PC Software.

[Home]

Save: Updates the file being edited.

Copy: Copies the value set for the function box selected on the flow view (see p. 16) to the clipboard.

Paste: Pastes the data in clipboard to the function box selected on the flow view.

Clear: Initializes the value set for the function box selected on the flow view.

Box Protect
→ Off: Sets no restriction on write to box.

→ Low: Restricts the operator from changing the parameters set in the box.

→ Mid: Restricts the operator from changing all settings in the box.

→ High: Restricts the administrator from changing the parameters set in the box, and the operator from changing all settings in the box.

[Network]

Connect:	Connects the unit to a PC for online processing. (See p. 75.)
Disconnect:	Disconnects the unit from a PC for offline processing. (See p. 80.) **Note** The unit's setting does not change while in the offline state even if it is changed with a PC.
Connection Setting:	Allows you to perform network settings and to designate the unit's IP address to which this software can access.
Auto Connect:	Makes an automatic connection when the file is opened next time.

[Remote]

Input:	Displays the contact input setting dialog. (See p. 82.)
Output:	Displays the contact output setting dialog. (See p. 84.)
Setting:	Displays the ZM Remote controller setting dialog. (See p. 87.)
Port Setting:	Displays the Port Setting screen. (See p. 91.)
Remote Command:	Displays the External Control Command Setting screen. (See p. 92.)

[Config]

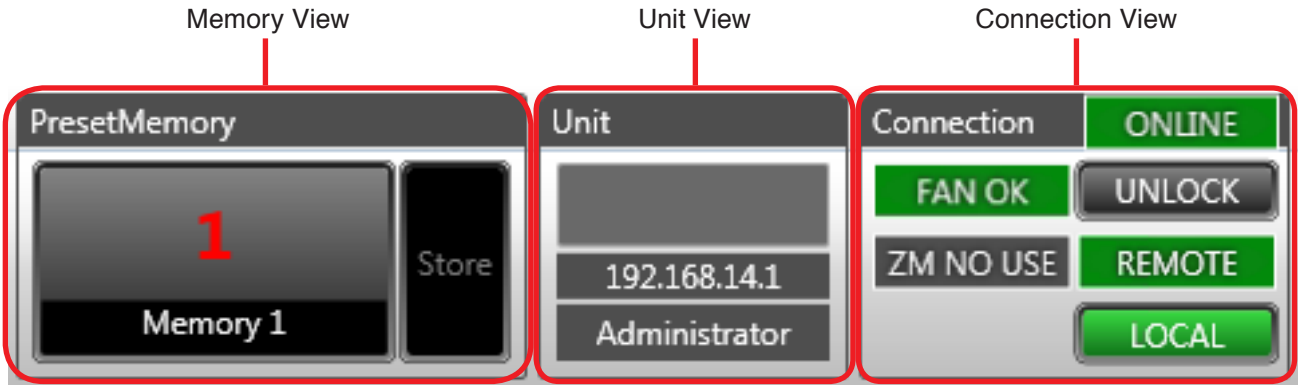
Name:	Displays the unit name setting dialog. (See p. 98.)
Fader:	Displays the fader setting dialog. (See p. 99.)
Lock:	Displays the lock setting dialog. (See p. 100.)
Preset Memory Setting:	Displays the preset memory setting dialog. (See p. 102.)

[Option]

Change Safe:	Displays the Change Safe Setting dialog. (See p. 104.)
Security Setting:	Sets the user level and the restriction of operations. (See p. 112.)
Maintenance:	Displays the Maintenance **window**. (See p. 109.)

5.2. Status View

The Status view is located in the upper right section of the Main screen.
The Status view consists of Memory, Unit and Connection views.



The Status view displays information related to the unit to be set.

5.2.1. Memory view

Displays the name and number of the currently selected Preset Memory (see p. 102). Click “Store” to write to Preset Memory. Clicking the Preset Memory name and number displays the Memory List panel (see p. 71).

5.2.2. Unit view

Displays the unit’s name and IP address.

5.2.3. Connection view

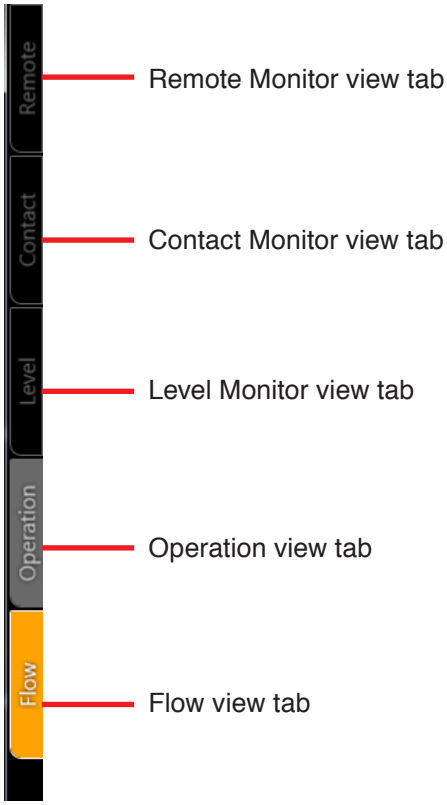
Displays the unit’s statuses.
- Unit communication connection status
- Unit cooling fan status
- ZM Remote controller status
- Unit’s system lock status
- Remote control status
- Local status

5.3. Main View

The Main view can be changed with the selection of one of the following 5 different views: Flow view, Operation view, Level Monitor view, Contact Monitor view, and Remote Monitor view.

5.3.1. Main view selector

Tabs for selecting individual view displays are provided on the left-hand side of the Main view. Clicking on these tabs switches the Main view display to the selected view.

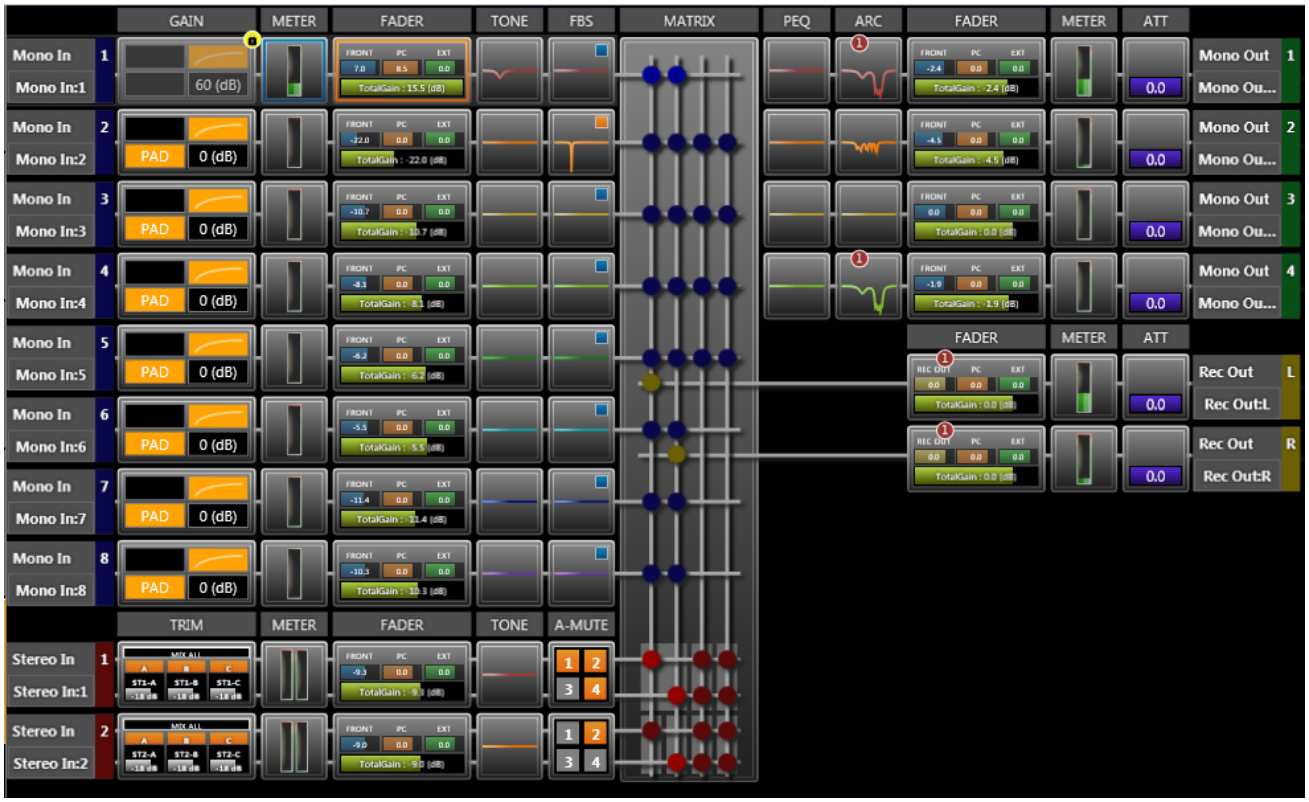


Notes

- Depending on the PC's display size, tabs may be arranged in multiple rows.
- The following tabs cannot be selected while in offline mode:
  - · Level Monitor view tab
  - · Contact Monitor view tab
  - · Remote Monitor view tab

5.3.2. Flow view

Displays the unit's signal processing image by means of a signal flow consisting of Function and Level Meter boxes, which indicate the unit's signal processing operation, and a straight line connecting the input and output. Signal input is at the left of the centrally located signal flow matrix box, and signal output at the right.



To change signal processing settings, click each of the signal processing function boxes. A pop-up sub-view is displayed, permitting changes to be entered.
The selected function box is highlighted with an orange frame (except for the Level Meter box, which is shown with a blue frame).

The following operations can be performed for each function box using the menu displayed by right-clicking the box.
Data can be copied and pasted by dragging and dropping the box.

Copy: Copies the parameters set for the function box selected on the flow view to the clipboard.
Paste: Pastes the data in clipboard to the function box selected on the flow view.
Clear: Initializes the parameters set for the function box selected on the flow view.
Box Write Protect... :
Off: Sets no restriction on write to box.
Low: Restricts the operator from changing the parameters set in the box.
Mid: Restricts the operator from changing all settings in the box.
High: Restricts the administrator from changing the parameters set in the box, and the operator from changing all settings in the box.

Note: The above operation cannot be performed on the Level Meter box.

5.3.3. Operation view

Looking like a mixer console, this view is used to operate the unit's signal processing functions.



To change signal processing settings, click each of the signal processing function boxes. A pop-up sub-view is displayed, permitting changes to be entered.

The following operations can be performed for each function box using the menu displayed by right-clicking the box.
Data can be copied and pasted by dragging and dropping the box.

Copy: Copies the parameters set for the function box selected on the operation view to the clipboard.
Paste: Pastes the data in clipboard to the function box selected on the operation view.
Clear: Initializes the parameters set for the function box selected on the operation view.
Box Write Protect... :
Off: Sets no restriction on write to box.
Low: Restricts the operator from changing the parameters set in the box.
Mid: Restricts the operator from changing all settings in the box.
High: Restricts the administrator from changing the parameters set in the box, and the operator from changing all settings in the box.

Note: The above operation cannot be performed on the Level Meter box.

5.3.4. Level monitor view

Monitors the unit's input and output signal levels. Can only be displayed while in online mode.



Clicking on the Mono In, Stereo In, Mono Out, or Rec Out level meter boxes displayed in the Flow view highlights the selected box in a blue frame. In the Level Monitor view, the module corresponding to the selected box is also highlighted in a blue frame.

5.3.5. Contact monitor view

Monitors the unit's contact input and output statuses. Can only be displayed while in online mode.



5.3.6. Remote monitor view

Monitors the operation statuses of the connected ZM Remote controllers connected to the unit. Can only be displayed while in online mode.



5.4. Detail Setting View

Use the pop-up sub-view to set signal processing details (parameters, names, etc.).

5.4.1. Pop-up sub-view

Clicking on any signal processing function box in the Flow or Operation views displays a pop-up sub-view that allows signal processing settings to be changed.

To close the pop-up sub-view, click the [Close] button located in the upper right corner of the view, or click outside the view.

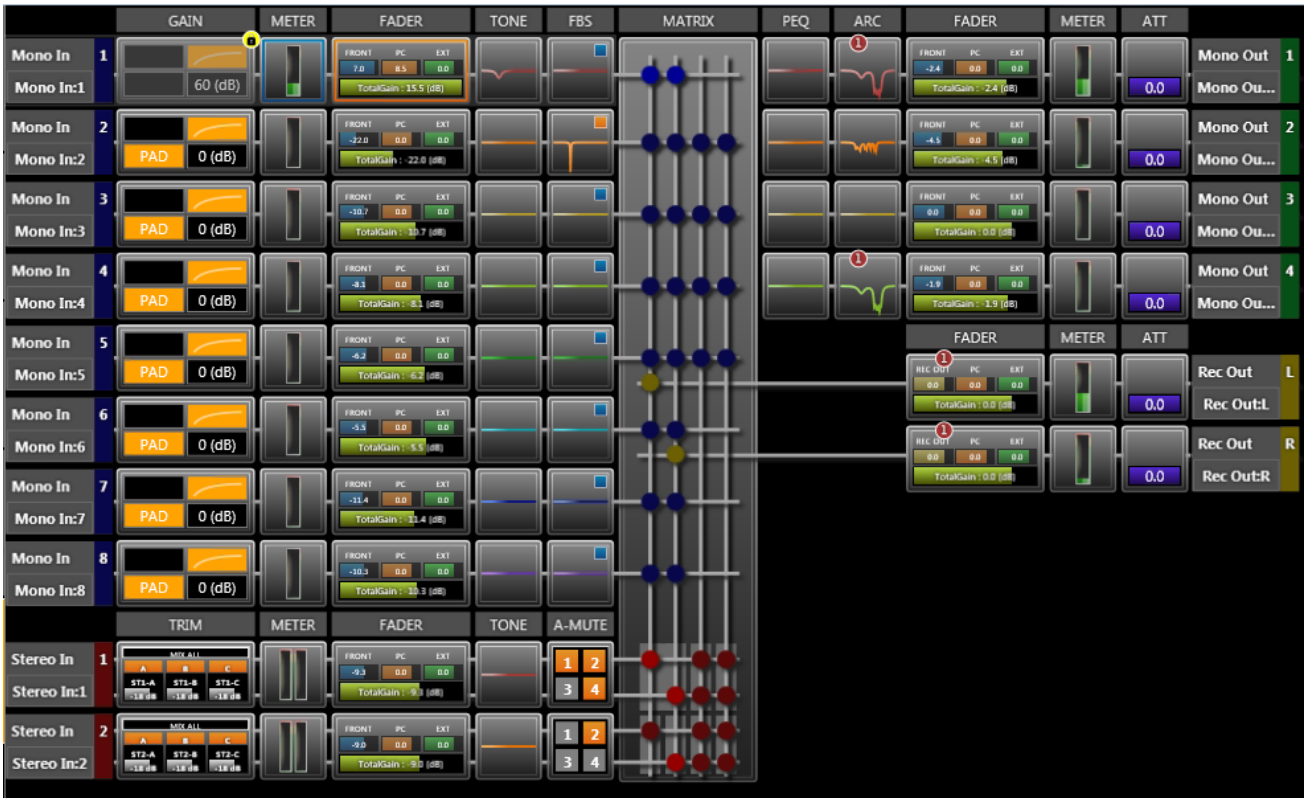


6. MAIN VIEW

Details of each view within the Main view are explained below:

6.1. Flow View

Displays the unit's signal processing image by means of a signal flow consisting of Function and Level Meter boxes, which indicate the unit's signal processing operation, and a straight line connecting the input and output. Signal input section is at the left of the centrally located signal flow matrix box, and signal output section at the right.

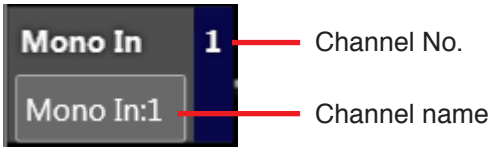


6.1.1. Monaural input

The 8-channel monaural input has the following boxes:

[Channel information]

The monaural input's channel numbers and channel names are displayed.



[Gain]

Statuses of the phantom power ON/OFF, PAD, low-cut filter and gain are displayed.



1. Phantom Power
Displayed in orange when the phantom power is ON, and in black when the phantom power is OFF.

2. PAD
Displayed in orange when PAD is ON, and in black when PAD is OFF.

3. Low-Cut Filter
Displays a curve as shown in the figure above when the low-cut filter is ON, or a straight line as shown in the figure below when OFF.

4. Gain
Displays gain values.

The following display shows the phantom power is OFF, PAD is ON, low-cut filter is OFF and gain is 0 dB:



For gain settings, see p. 47 “Function Box.”

[Level meter]

Displays the monaural input level.
The post-processing gain level is displayed.



The level meter box is only displayed while in online mode.

[Fader]

Displays individual gain values of the FRONT fader (fader on the unit’s front panel), PC VOL. (PC software fader) and EXT VOL. (external control of the ZM Remote controller, etc.), as well as their total gain value.
When grouping has been set, the corresponding group number is displayed.



Each gain is also indicated by a bar extending from the left.
Faders set to “Disable” in the fader settings (see p. 99) are not displayed.
The FRONT fader gain is displayed only while in online mode.
When in offline mode, the total gain is obtained as 0 dB of the FRONT fader gain.

Note: Faders set to “Disable” are fixed at 0 dB gain.

For fader settings, see p. 49, “Function Box.”

[Tone]

Roughly displays the frequency characteristics curve set with the tone control.



Frequency characteristics are indicated by a flat straight line when BASS, MID and TREBLE gains are all set to 0 dB.
For tone settings, see p. 52, “Function Box.”

[FBS]

Roughly displays the frequency characteristics curve of the Feedback Suppressor (FBS) filter.



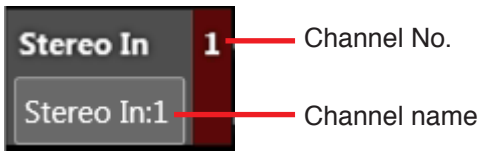
For FBS settings, see p. 54, “Function Box.”

6.1.2. Stereo input

Two-channel stereo inputs have the following boxes:

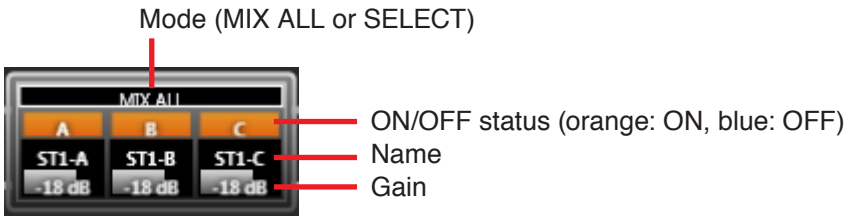
[Channel information]

The stereo input's channel numbers and channel names are displayed.



[Trim]

Displays MIX ALL/SELECT mode, and ON/OFF status, name and gain of A, B and C inputs.



Each gain is also indicated by a gray bar extending from the left.
The figure below shows Input B is selected and its gain is set to –36 dB.



Note: ON/OFF status and gains for both L and R stereo channels are interlocked.

For trim settings, see p. 48, "Function Box."

[Level meter]

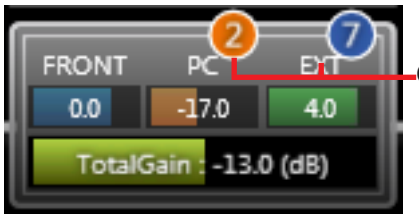
Displays post-trim processing stereo input level.



The Level Meter box is only displayed while in online mode.

[Fader]

Displays individual gain values of the FRONT fader (fader on the unit's front panel), PC VOL. (setting software fader) and EXT VOL. (external control of the ZM Remote controller, etc.), as well as their total gain value.
When grouping has been set, the corresponding group number is displayed.



Each gain is also indicated by a bar extending from the left.

Note: Gains for both L and R stereo channels are interlocked.

Faders set to "Disable" in the fader settings (see p. 99) are not displayed.
The FRONT fader gain is displayed only while in online mode.
When in offline mode, the total gain is obtained as 0 dB of the FRONT fader gain.

Note: Faders set to "Disable" are fixed at 0 dB gain.

For fader settings, see p. 49, "Function Box."

[Tone]

Roughly displays the frequency characteristic curve set with the tone control.



Frequency characteristics are indicated by a flat straight line when BASS, MID and TREBLE gains are all set to 0 dB.

Note: Tone control settings for both L and R stereo channels are interlocked.

For tone settings, see p. 52, "Function Box."

[Auto-Mute]

Displays the Auto-Mute ON/OFF status for output channels 1 – 4.
Orange indicates ON and gray indicates OFF.
(In the figure below, outputs 1 and 2 are ON, and outputs 3 and 4 are OFF.)



Note: ON/OFF settings here have nothing to do with output assignment.

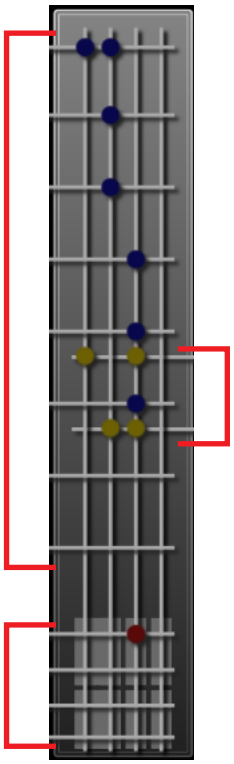
Use the matrix function boxes for output signal assignment (see p. 59).

Note: Auto-Mute ON/OFF settings for both L and R stereo channels are interlocked.

For Auto-Mute ON/OFF settings, see p. 57, "Function Box."

6.1.3. Matrix

- Displays the monaural input (1 – 8) to monaural output (1 – 4) assignment.
- During the Auto-Mute operation, the monaural input working as the mute trigger is displayed with a flashing point(s). (Only while in online mode)



- Displays the monaural output (1 – 4) to recording output (1 – 2) assignment.

- Displays the stereo input (1 – 2) to monaural output (1 – 4) assignment.
- The stereo input being muted by the Auto-Mute function is displayed with a flashing point(s). (Only while in online mode)

●, ●, and ●: Signal assignment set

For Matrix settings, see p. 59, “Function Box.”

6.1.4. Monaural output

Four-channel monaural outputs have the following boxes:

[PEQ (Parametric Equalizer)]

Roughly displays the frequency characteristics curve set with the PEQ.



Frequency characteristics are indicated by a flat straight line when all gains are set to 0 dB.

For PEQ settings, see p. 63, “Function Box.”

[ARC (Automatic Resonance Control)]

Roughly displays the frequency characteristics curve of the ARC sound field compensating filter.

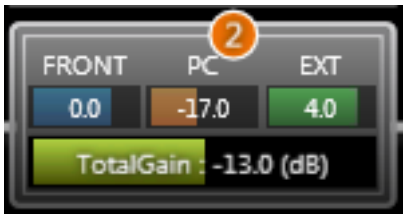


Frequency characteristics are indicated by a flat straight line when all sound field compensating filter gains are set to 0 dB.

For ARC operation settings, see p. 65, “Function Box.”

[Fader]

Displays individual gain values of the FRONT fader (fader on the unit's front panel), PC VOL. (setting software fader) and EXT VOL. (external control of the ZM Remote controller, etc.), as well as their total gain value.
When grouping has been set, the corresponding group number is displayed.



Each gain is also indicated by a bar extending from the left.
Faders set to "Disable" in the fader settings (see p. 99) are not displayed.
The FRONT fader gain is displayed only while in online mode.
When in offline mode, the total gain is obtained as 0 dB of the FRONT fader gain.

Note: Faders set to "Disable" are fixed at 0 dB gain.

For fader settings, see p. 49, "Function Box."

[Level meter]

Displays the monaural output level.
The pre-attenuator processing level is displayed.



The level meter box is only displayed while in online mode.

[Attenuator]

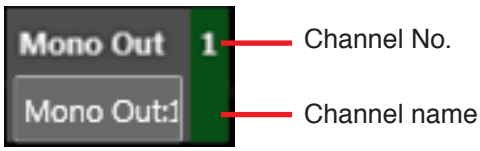
Displays attenuator gains (dB).



Gains are also indicated by a bar extending from the left.
For attenuator settings, see p. 70, "Function Box."

[Channel information]

The monaural output's channel numbers and channel names are displayed.



6.1.5. Recording output

Two-channel recording outputs have the following boxes:

[Fader]

Displays individual gain values of the REC OUT VOL. (volume control on the unit's front panel), PC VOL. (PC software fader) and EXT VOL. (external control of the ZM Remote controller, etc.), as well as their total gain value.
When grouping has been set, the corresponding group number is displayed.



Each gain is also indicated by a bar extending from the left.
Faders set to "Disable" in the configuration settings (see p. 99) are not displayed.

Note: Faders set to "Disable" are fixed at 0 dB gain.

For fader settings, see p. 49, "Function Box."

[Level meter]
Displays the recording output level.
The pre-attenuator processing level is displayed.



The level meter box is only displayed while in online mode.

[Attenuator]

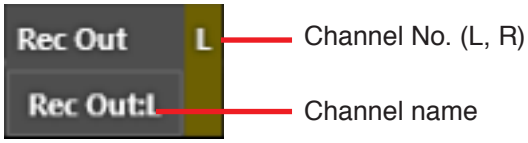
Displays attenuator gains (dB).



Gains are also indicated by a bar extending from the left.
For attenuator settings, see p. 70, "Function Box."

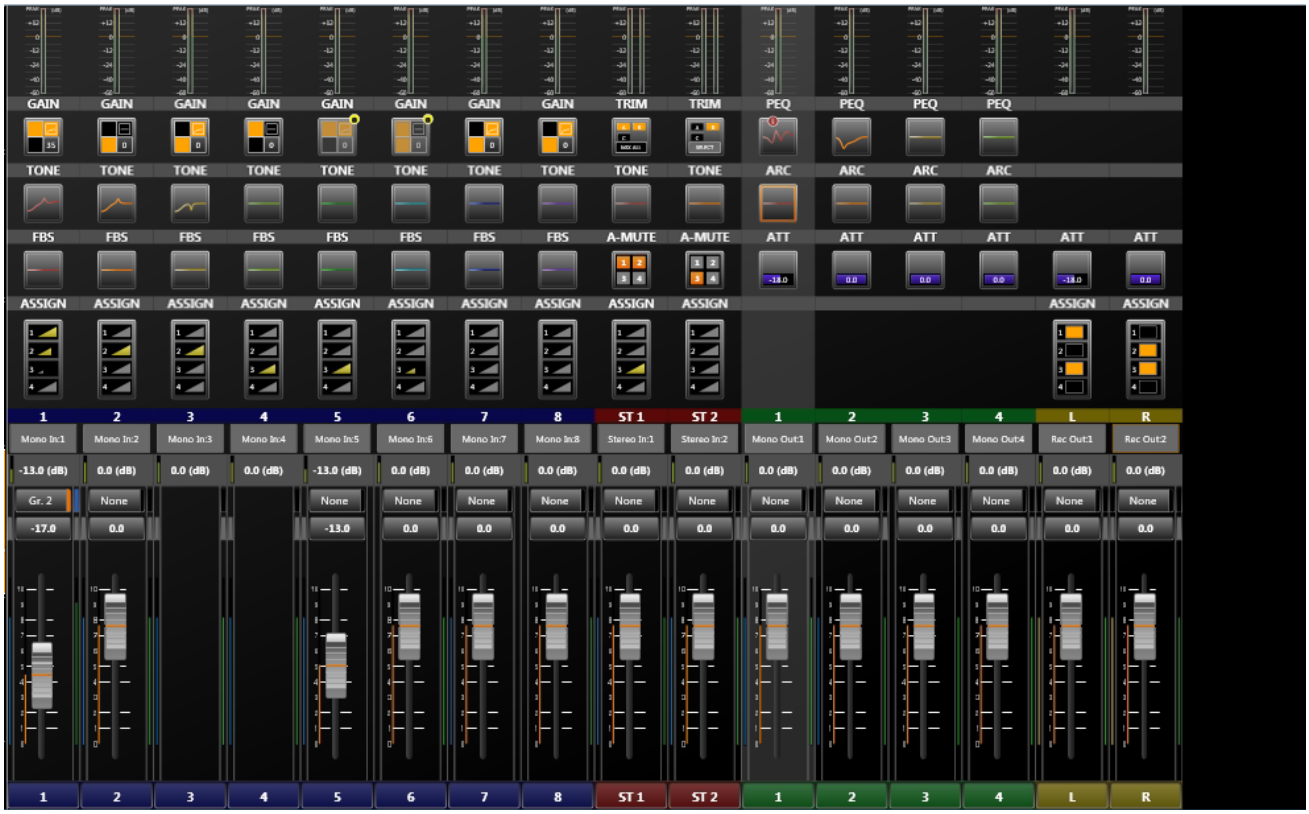
[Channel information]

The recording output's channel numbers and channel names are displayed.



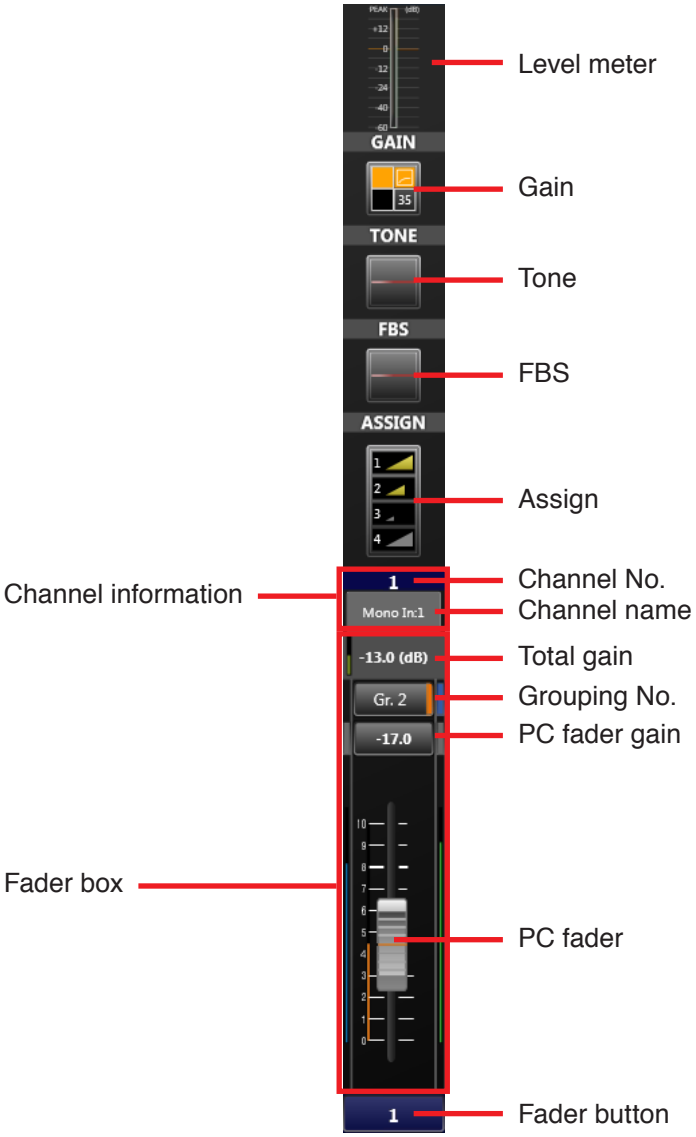
6.2. Operation View

Looking like a mixer console, this view is used to operate the unit's signal processing functions.



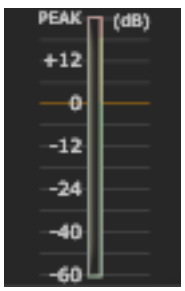
6.2.1. Monaural input

The 8-channel monaural input is comprised of the following elements shown in the figure below:



[Level meter]

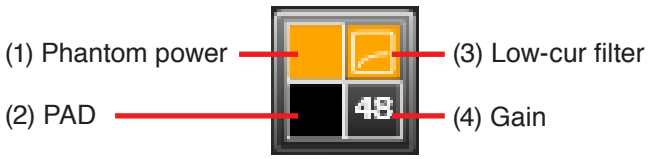
Displays the monaural input level.
The post-processing gain level is displayed.



The level meter is only displayed while in online mode.

[Gain]

Statuses of the phantom power ON/OFF, PAD, low-cut filter and gain are displayed.



1. Phantom Power
Displayed in orange when the phantom power is ON, and in black when the phantom power is OFF.

2. PAD
Displayed in orange when PAD is ON, and in black when PAD is OFF.

3. Low-Cut Filter
Displayed as shown in the figure above when the low-cut filter is ON, and as shown in the figure below when the filter is OFF.

4. Gain
Displays gain values.

The following display shows the phantom power is OFF, PAD is ON and low-cut filter is OFF, gain is 0 dB:



For gain settings, see p. 47, “Function Box.”

[Tone]

Roughly displays the frequency characteristics curve set with the tone control.



Frequency characteristics are indicated by a flat straight line when BASS, MID and TREBLE gains are all set to 0 dB.

For tone settings, see p. 52, “Function Box.”

[FBS]

Roughly displays the frequency characteristics curve of the Feedback Suppressor (FBS) filter.



For FBS settings, see p. 54, “Function Box.”

[Assign]

Displays the monaural output (1 – 4) assignment.
A yellow triangle is displayed if Assign is set to ON, and a gray triangle if set to OFF.
The triangle varies in size depending on gain.



For Assign settings, see p. 61, “Function Box.”

[Channel information]

The monaural input’s channel numbers and channel names are displayed.

[Total gain]

Displays a total gain value of the FRONT fader (fader on the unit’s front panel) gain, PC VOL. (PC software fader) gain and EXT VOL. (external ZM Remote controller, etc.) gain.
The green bar on the left indicates total gain value.

[Grouping number]

Displays the PC (software) fader’s grouping number.
Clicking this button opens the dialog for selecting the grouping number.
The color corresponding to the group is displayed to the right of the grouping number.
Further, the grouping settings for EXT VOL. gains (external ZM Remote controller, etc.) are displayed far right of the box in the color corresponding to the group.



Grouping setting for EXT VOL. gain
(Figure at left shows Group 7 settings.)

Note: Displayed in black when no groups have been set.

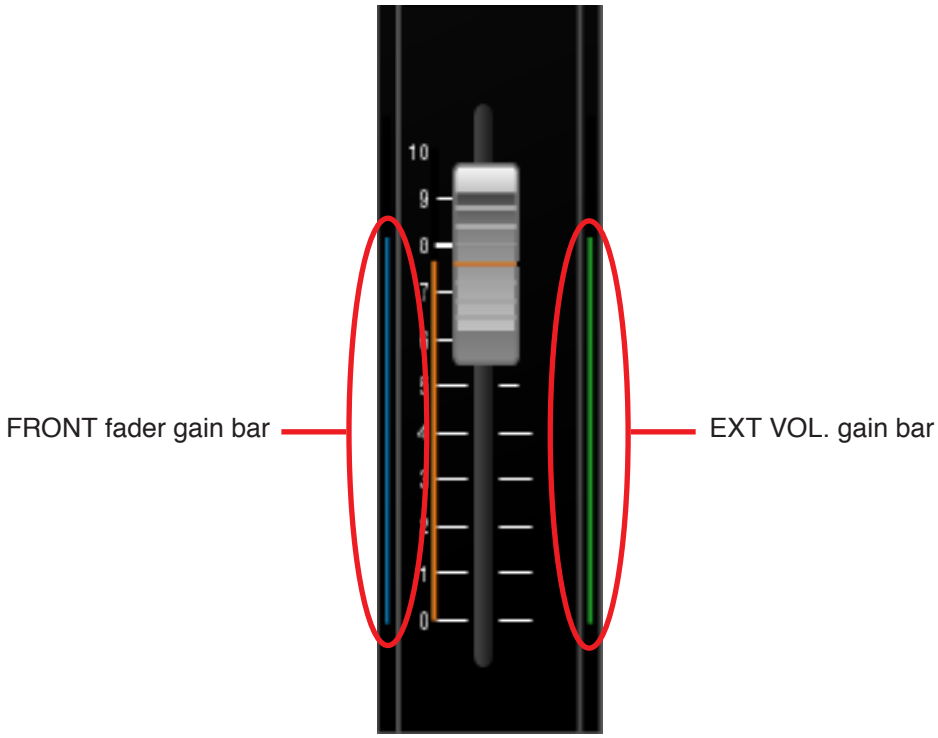
PC fader grouping number

Note: The “None” indication is displayed when no groups have been set.

Group No.	Color
None	Black
1	Red
2	Orange
3	Yellow
4	Yellow-green
5	Green
6	Light blue
7	Blue
8	Dark blue
9	Purple
10	Gray

[PC fader gain]
Displays PC software fader gains in dB. Clicking the box displays the dialog for gain settings, allowing gain values to be entered. The gain is interlocked with the fader shown below.

[PC fader]
The PC software fader is operational and interlocked with the PC fader gains shown above.
The blue bar at left indicates the FRONT fader (fader on the unit's front panel) gains.
The green bar at right indicates the EXT VOL. (external ZM Remote controller, etc.) gains.



Faders set to "Disable" in the fader settings (see p. 99) are not displayed.
The FRONT fader gain is displayed only while in online mode.
When in offline mode, the total gain is obtained as 0 dB of the FRONT fader gain.

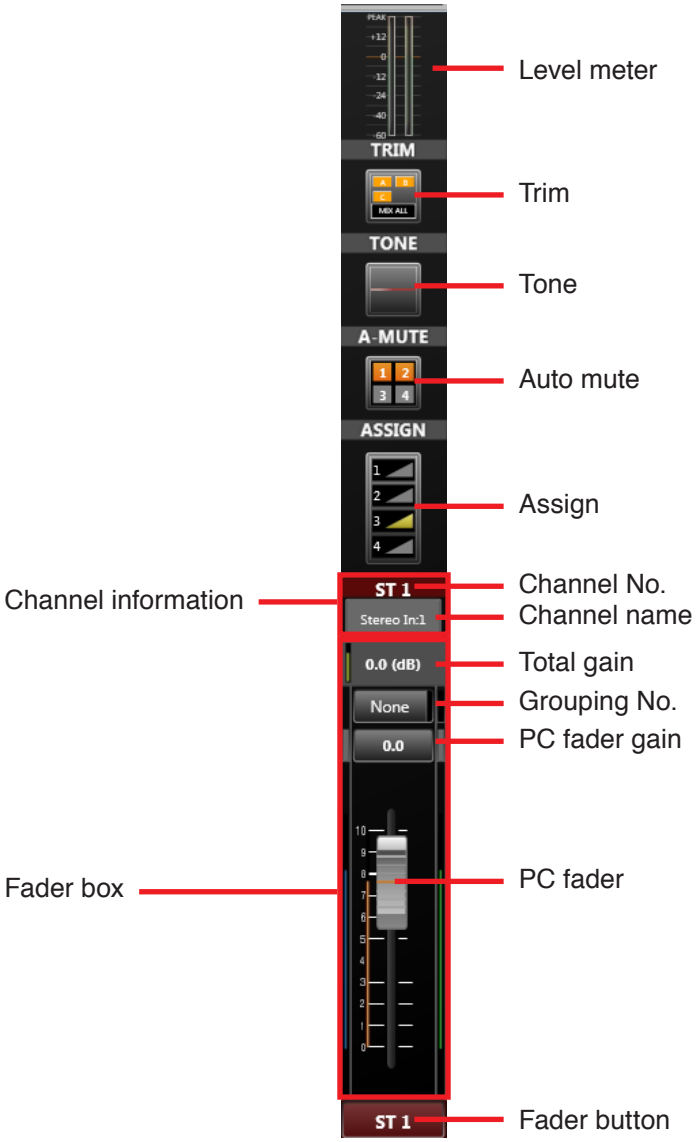
Note: Faders set to "Disable" are fixed at 0 dB gain.

[Fader button]

Clicking this button displays the pop-up sub-view for fader detail settings, allowing the fader settings to be changed. (See p. 49.)

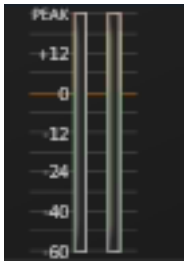
6.2.2. Stereo input

Two-channel stereo inputs are comprised of the following elements in the figure shown below:



[Level meter]

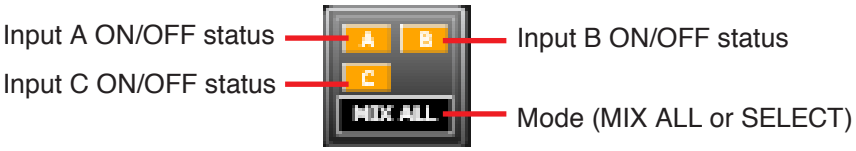
Displays the stereo input level.
The post-Trim processing level is displayed.



The level meter is only displayed while in online mode.

[Trim]

Displays MIX ALL/SELECT mode, and ON/OFF status of A, B and C inputs.



Note: Inputs A, B and C are displayed in orange when ON and black when OFF.

Status is displayed as shown in the following figure when in SELECT mode.



Note: This display shows that Input C is selected.

For trim settings, see p. 48, “Function Box.”

[Tone]

Roughly displays the frequency characteristics curve set with the tone control.



Frequency characteristics are indicated by a flat straight line when BASS, MID and TREBLE gains are all set to 0 dB.

For tone settings, see p. 52, “Function Box.”

[Auto-Mute]

Displays the Auto-Mute ON/OFF status for output channels 1 – 4.
Orange indicates ON and gray indicates OFF.
(In the figure below, outputs 1 and 2 are ON, and outputs 3 and 4 are OFF.)



Note: ON/OFF settings here have nothing to do with output assignment.

Use the matrix function boxes for output signal assignment (see p. 59).

Note: Auto-Mute ON/OFF settings for both L and R stereo channels are interlocked.

For Auto-Mute ON/OFF settings, see p. 57, “Function Box.”

[Assign]

Displays the monaural output (1 – 4) assignment.
A yellow triangle is displayed if Assign is set to ON, and a gray triangle if set to OFF.
The triangle varies in size depending on gain.



For Assign settings, see p. 61, “Function Box.”

[Channel information]

The stereo input’s channel numbers and channel names are displayed.

[Total gain]
Displays a total gain value of the FRONT fader (fader on the unit’s front panel) gain, PC VOL. (PC software fader) gain and EXT VOL. (external ZM Remote controller, etc.) gain.

The green bar on the left indicates total gain value.

Note: Gains for both L and R stereo channels are interlocked.

[Grouping number]

Displays the PC (software) fader’s grouping number.
Clicking this button opens the dialog for selecting the grouping number.
The color corresponding to the group is displayed to the right of the grouping number.
Further, the grouping settings for EXT VOL. gains (external control of the ZM Remote controller, etc.) are displayed far right of the box in the color corresponding to the group.



Grouping setting for EXT VOL. gain
(Figure at left shows Group 7 settings.)

Note: Displayed in black when no groups have been set.

PC fader grouping number

Note: The “None” indication is displayed when no groups have been set.

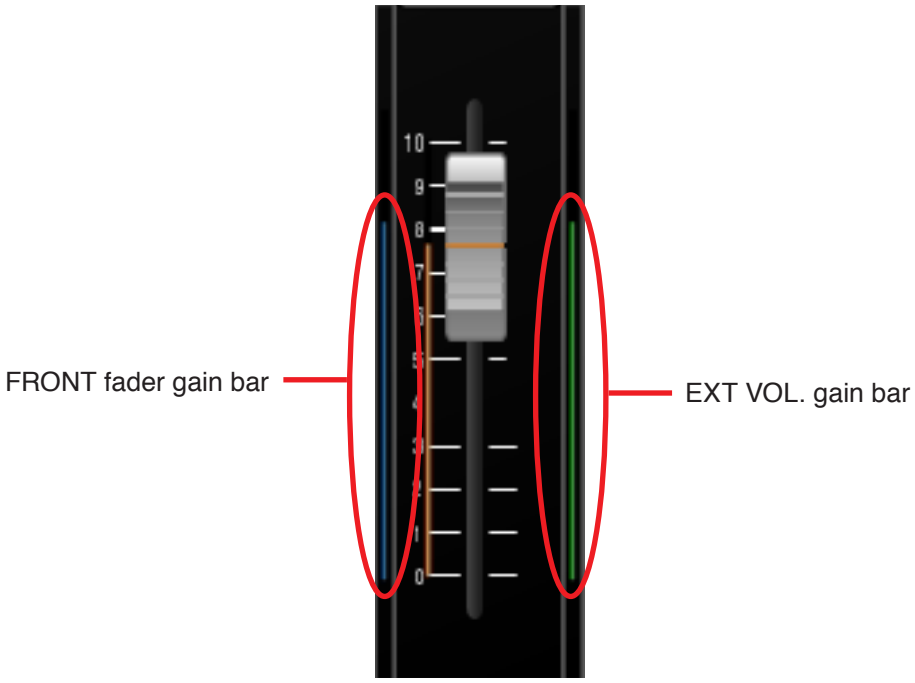
Group No.	Color
None	Black
1	Red
2	Orange
3	Yellow
4	Yellow-green
5	Green
6	Light blue
7	Blue
8	Dark blue
9	Purple
10	Gray

[PC fader gain]

Displays PC software fader gains in dB.
Clicking the box displays the dialog for gain settings, allowing gain values to be entered.
The gain is interlocked with the fader shown on the next page.

[PC fader]

The PC software fader is operational and interlocked with the PC fader gains on the previous page.
The blue bar at left indicates the FRONT fader (fader on the unit's front panel) gains.
The green bar at right indicates the EXT VOL. (external control of the ZM Remote controller, etc.) gains.



Faders set to "Disable" in the fader settings (see p. 99) are not displayed.
The FRONT fader gain is displayed only while in online mode.
When in offline mode, the total gain is obtained as 0 dB of the FRONT fader gain.

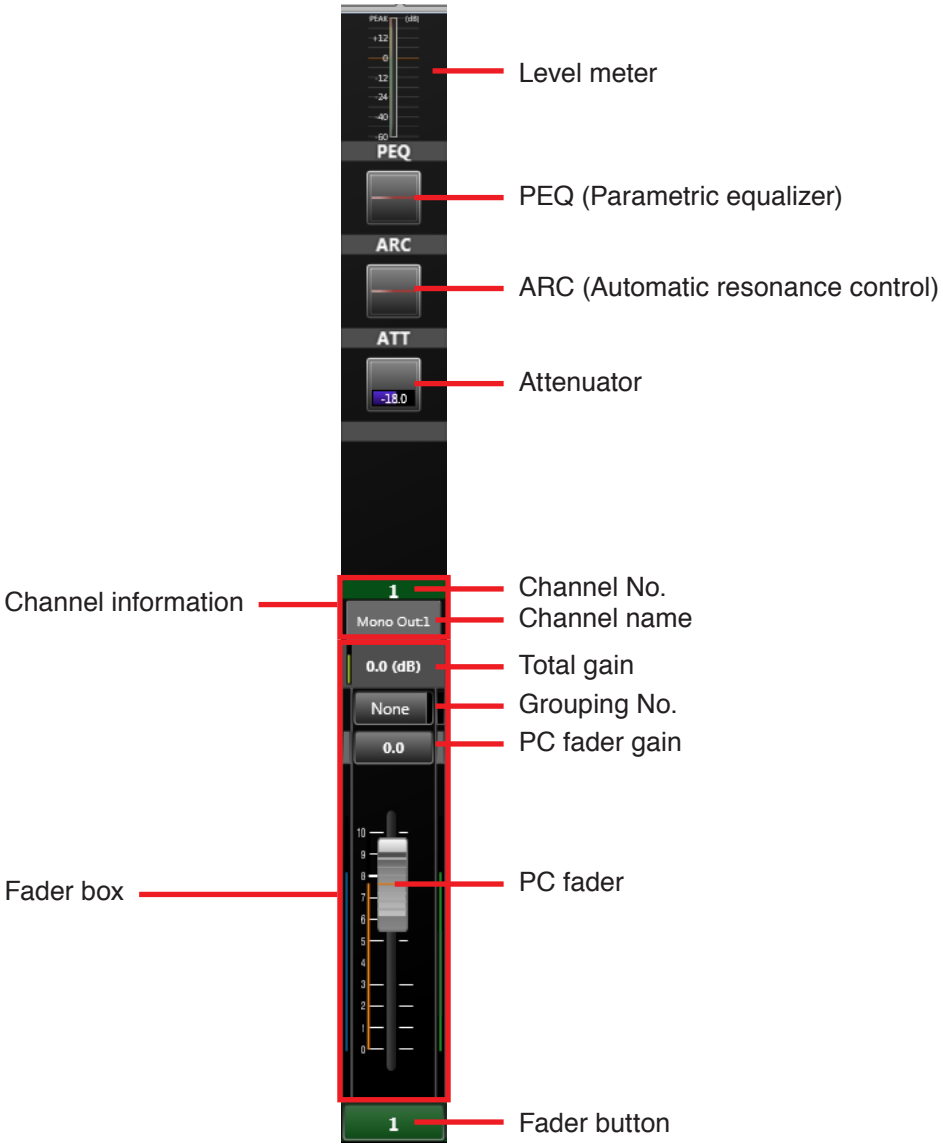
Note: Faders set to "Disable" are fixed at 0 dB gain.

[Fader button]

Clicking this button displays the pop-up sub-view for fader detail settings, allowing the fader settings to be changed. (See p. 49.)

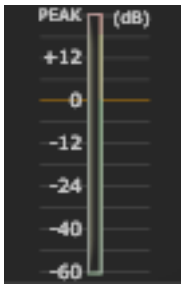
6.2.3. Monaural Output

The 4-channel monaural output is comprised of the following elements shown in the figure below:



[Level meter]

Displays the monaural output level.
The pre-attenuator processing level is displayed.



The level meter is only displayed while in online mode.

[PEQ (Parametric equalizer)]

Roughly displays the frequency characteristics curve set with the PEQ.



Frequency characteristics are indicated by a flat straight line when all gains are set to 0 dB.

For PEQ settings, see p. 63, “Function Box.”

[ARC (Automatic resonance control)]

Roughly displays the frequency characteristics curve of the ARC sound field compensating filter.



Frequency characteristics are indicated by a flat straight line when all sound field compensating filters are set to 0 dB gain.

For ARC operation settings, see p. 65, “Function Box.”

[Attenuator]

Displays attenuator gains (dB).



Gains are also indicated by a bar extending from the left.
For attenuator settings, see p. 70, “Function Box.”

[Channel information]

The monaural output’s channel numbers and channel names are displayed.

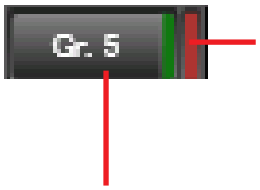
[Total gain]

Displays a total gain value of the FRONT fader (fader on the unit’s front panel) gain, PC VOL. (PC software fader) gain and EXT VOL. (external ZM Remote controller, etc.) gain.

The green bar at left indicates total gain value.

[Grouping number]

Displays the PC (software) fader's grouping number.
Clicking this button opens the dialog for selecting the grouping number.
The color corresponding to the group is displayed to the right of the grouping number.
Further, the grouping settings for EXT VOL. gains (external control of the ZM Remote controller, etc.) are displayed far right of the box in the color corresponding to the group.



Grouping setting for EXT VOL. gains
(Figure at left shows Group 1 settings.)

Note: Displayed in black when no groups have been set.

PC fader grouping number

Note: The "None" indication is displayed when no groups have been set.

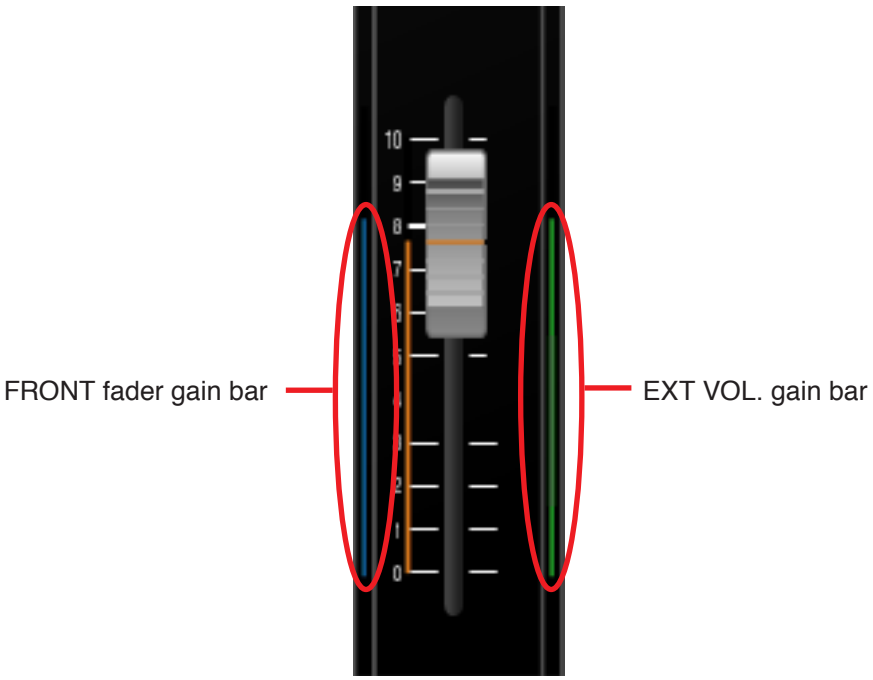
Group No.	Color	
None		Black
1		Red
2		Orange
3		Yellow
4		Yellow-green
5		Green
6		Light blue
7		Blue
8		Dark blue
9		Purple
10		Gray

[PC fader gain]

Displays PC software fader gains in dB. Clicking the box displays the dialog for gain settings, allowing gain values to be entered. The gain is interlocked with the fader shown below.

[PC fader]

The PC software fader is operational and interlocked with the PC fader gains (mentioned above).
The blue bar at left indicates the FRONT fader (fader on the unit's front panel) gains.
The green bar at right indicates the EXT VOL. (external control of the ZM Remote controller, etc.) gains.



Faders set to "Disable" in the fader settings (see p. 99) are not displayed.
The FRONT fader gain is displayed only while in online mode.
When in offline mode, the total gain is obtained as 0 dB of the FRONT fader gain.

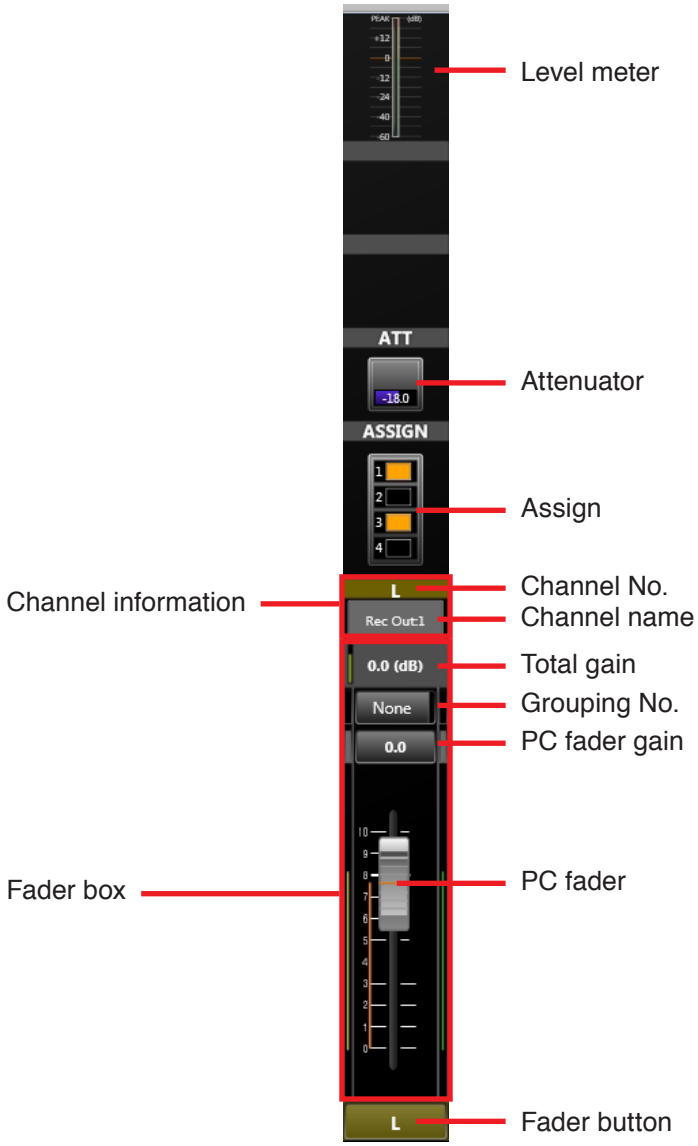
Note: Faders set to "Disable" are fixed at 0 dB gain.

[Fader button]

Clicking this button displays the pop-up sub-view for fader detail settings, allowing the fader settings to be changed. (See p. 49.)

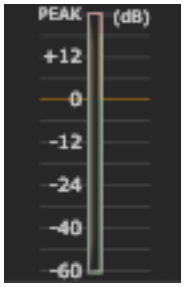
6.2.4. Recording output

The 2-channel recording output is comprised of the following elements shown in the figure below:



[Level meter]

Displays the recording output level.
The pre-attenuator processing level is displayed.



The level meter is only displayed while in online mode.

[Attenuator]

Displays attenuator gains (dB).



Gains are also indicated by a bar extending from the left.
For attenuator settings, see p. 70, “Function Box.”

[Assign]

Displays the monaural output (1 – 4) assignment.
Displayed in orange if the monaural output assignment is set to ON, and in black if set to OFF.



Note: This figure shows that monaural outputs 1 and 3 are assigned.

For Assign settings, see p. 61, “Function Box.”

[Channel information]

The recording output’s channel numbers and channel names are displayed.

[Total gain]

Displays individual gain values of the FRONT fader (fader on the unit’s front panel), PC VOL. (PC software fader) and EXT VOL. (external control of the ZM Remote controller, etc.), as well as their total gain value.

The green bar at left indicates total gain value.

[Grouping number]

Displays the PC (software) fader's grouping number.
Clicking this button opens the dialog for selecting the grouping number.
The color corresponding to the group is displayed to the right of the grouping number.
Further, the grouping settings for REC OUT VOL. gains (REC OUT volume control on the unit's front panel) are displayed far left of the box, and those for EXT VOL. gains (external control of the ZM Remote controller) are displayed far right in the color corresponding to the group.

Group No.	Color	
None		Black
1		Red
2		Orange
3		Yellow
4		Yellow-green
5		Green
6		Light blue
7		Blue
8		Dark blue
9		Purple
10		Gray

Grouping setting for REC OUT VOL. gains
(Example of Group 1 settings)

Note: Displayed in black when no groups have been set.



Grouping setting for EXT VOL. gains
(Figure at left shows Group 2 settings.)

Note: Displayed in black when no groups have been set.

PC fader grouping number

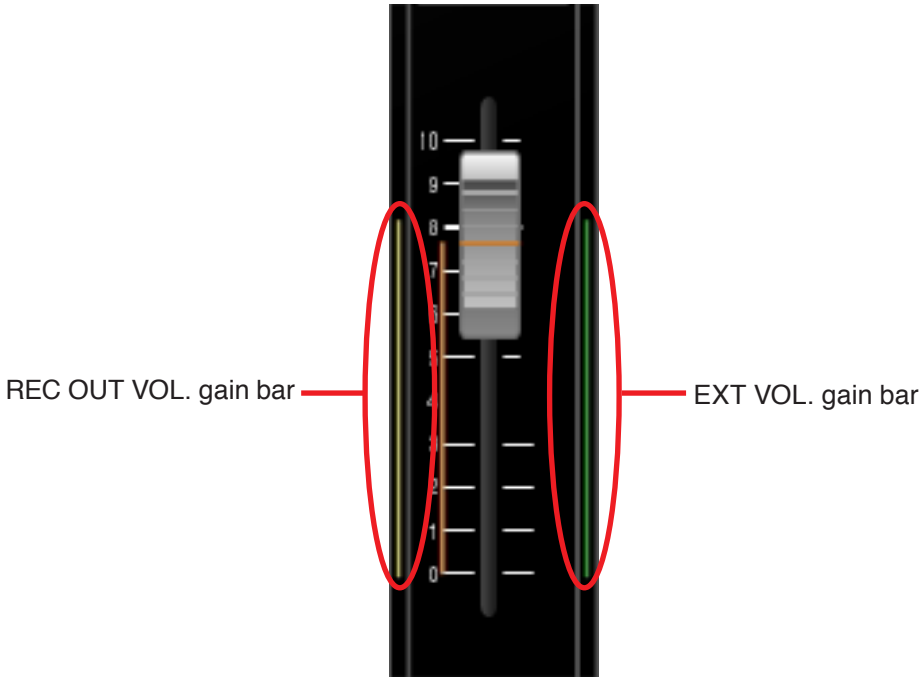
Note: The "None" indication is displayed when no groups have been set.

[PC fader gain]

Displays PC software fader gains in dB. Clicking the box displays the dialog for gain settings, allowing gain values to be entered. The gain is interlocked with the fader shown below.

[PC fader]

The PC software fader is operational and interlocked with the PC fader gains (mentioned above).
The yellow bar at left indicates the REC OUT VOL. (REC OUT volume control on the unit's front panel) gains.
The green bar at right indicates the EXT VOL. (external control of the ZM Remote Control, etc.) gains.



Faders set to "Disable" in the configuration settings (see p. 99) are not displayed.

Note: Faders set to "Disable" are fixed at 0 dB gain.

[Fader button]

Clicking this button displays the pop-up sub-view for fader detail settings, allowing the fader settings to be changed. (See p. 50.)

6.3. Level Monitor View

Monitors the unit's input and output signal levels. Can only be displayed while in online mode. This view is interlocked with the monaural input, stereo input, monaural output and recording output level meter boxes displayed in the Flow view.

6.3.1. Level meter box

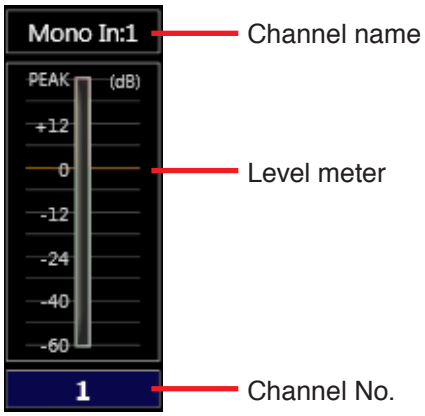


The level meter box is only displayed in the Flow view while connected online. If the level meter box is clicked, it is highlighted with a blue frame.

6.3.2. Level monitor view



Clicking the monaural input, stereo input, monaural output or recording output level meter boxes displayed in the Flow view highlights the corresponding level meter in the Level Monitor view with a blue frame.



[Channel name]

Displays the channel name.

[Level meter]

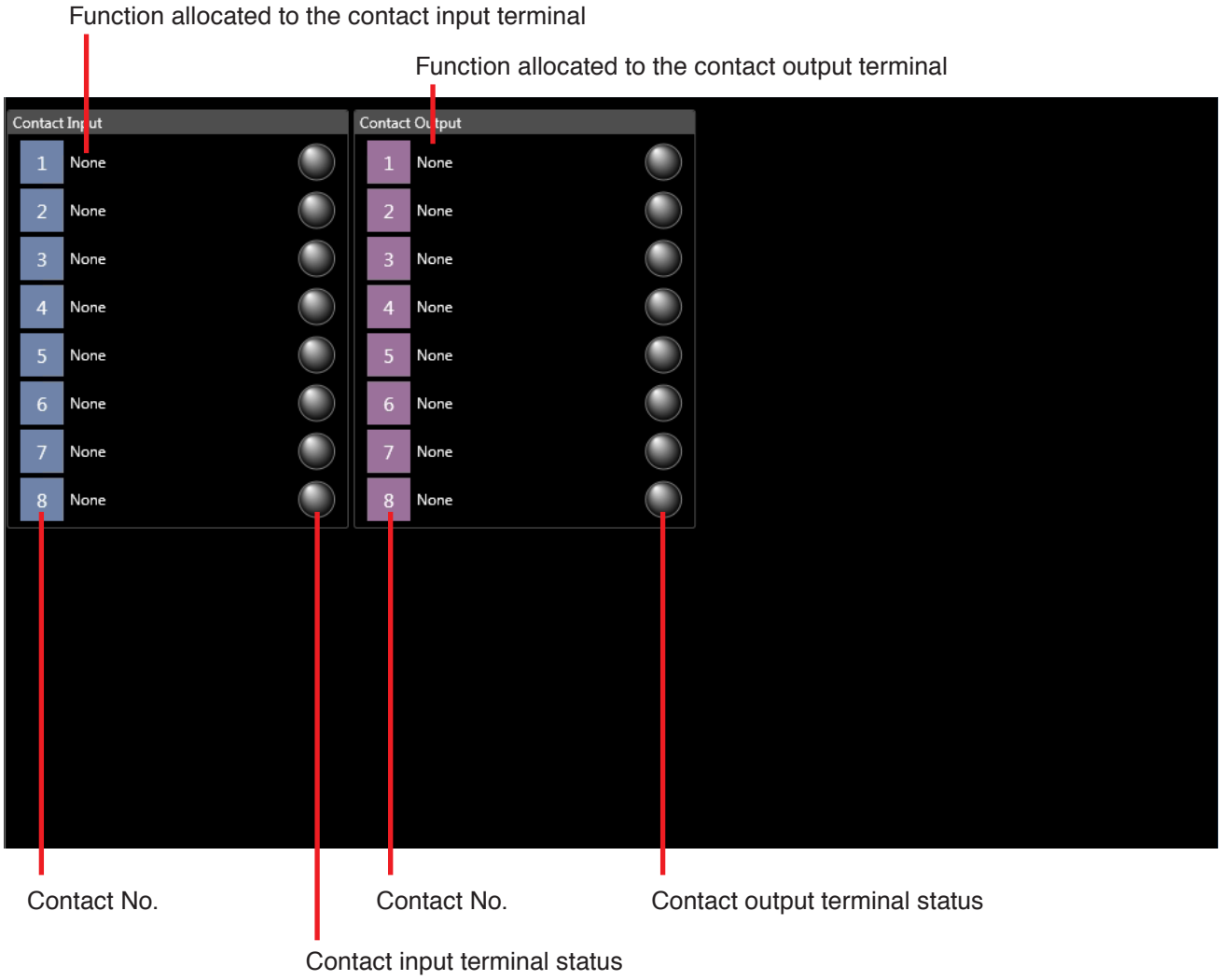
Indicates the signal level with a bar graph.

Channel kind	Mono In, Stereo In, Mono Out		Rec Out	
Signal level	+18 dB to Peak:	Red	+4 dB to Peak:	Red
	+6 to +18 dB:	Yellow	–8 to +4 dB:	Yellow
	Under +6 dB:	Green	Under –8 dB:	Green

The post-gain processing level is displayed for the monaural input, and the post-Trim processing level for the stereo input, and the pre-attenuator processing level for both monaural and recording outputs.

6.4. Contact Monitor View

Monitors the unit's contact input and output statuses. Only displayed while in online mode.
Displays the functions allocated to each contact terminal and terminal status.



Break contact is displayed in black, and make contact is displayed in yellow.

Break: 

Make: 

For function allocations to each contact input and output, see p. 81, "REMOTE SETTINGS."

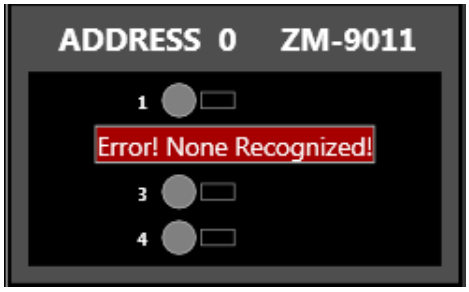
6.5. Remote Monitor View

Monitors the operating status of the connected ZM Remote controller. This view is only displayed while in online mode.



Displays the ZM Remote controller's ID number, model number, function and name allocated to the button and volume control, and LED ON/OFF statuses of the button and volume control.

The indication "Error! None (or Model No. of ZM Remote controller) Recognized!" is displayed when a failure is detected in the connection between the unit and the ZM Remote controller.



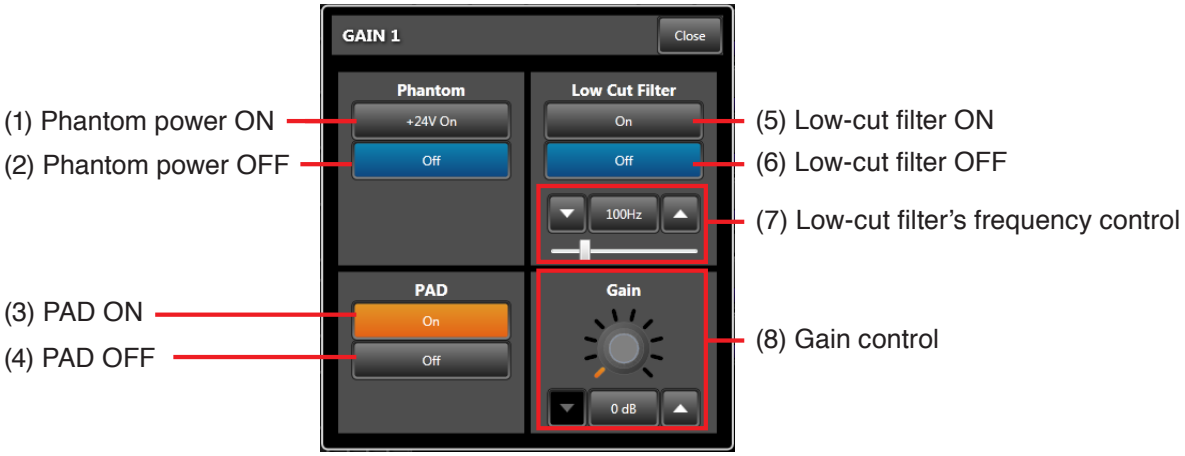
In this condition, the ZM Remote controller cannot be operated, functions cannot be assigned to it, and its name cannot be set from the Remote Monitor view. For ZM Remote controller function assignment and name settings, see p. 87, "ZM Remote Controller Settings."

7. FUNCTION BOX

Use the pop-up sub-view to set the details of each signal processing function (parameters, names, etc.).
In the Flow View (see p. 21) or the Operation View (see p. 29), clicking each function box displays the current settings on the pop-up sub-view (see p. 20) and allows the setting to be changed.
Function box settings are explained below using the pop-up sub-view's operation screen:

7.1. Gain

This monaural input function box is used to set phantom power ON/OFF, PAD, low-cut filter and gain.



1. Phantom Power ON
Clicking this button sets the phantom power to ON, causing the display to be shown in orange.

2. Phantom Power OFF
Clicking this button sets the phantom power to OFF, causing the display to be shown in blue.

3. PAD ON
Clicking this box sets PAD to ON, causing the display to be shown in orange. Set PAD to ON when the corresponding channel's monaural input signal is a line level.

4. PAD OFF
Clicking this button sets PAD to OFF, causing the display to be shown in black. Set PAD to OFF when connecting a microphone to the corresponding channel.

5. Low-Cut Filter ON
Clicking this button sets the low-cut filter to ON, causing the display to be shown in orange.

6. Low-Cut Filter OFF
Clicking this button sets the low-cut filter to OFF, causing the display to be shown in blue.

7. Low-Cut Filter's Frequency Control
Sets the low-cut filter's cutoff frequency.
Clicking on the downward-pointing triangle at left reduces the cutoff frequency.
Clicking on the upward-pointing triangle at right increases the cutoff frequency.
Clicking the frequency indication in the center opens the dialog for entering the cutoff frequency.



The cutoff frequency can be set by moving the lower slider to the left or right. Move the slider to the right to increase the cutoff frequency and to the left to reduce it.

8. Gain Control
Used to set the gains.
Clicking on the downward-pointing triangle reduces the cutoff frequency.
Clicking on the upward-pointing triangle increases the cutoff frequency.
Clicking the frequency indication in the center opens the dialog for entering the gain.



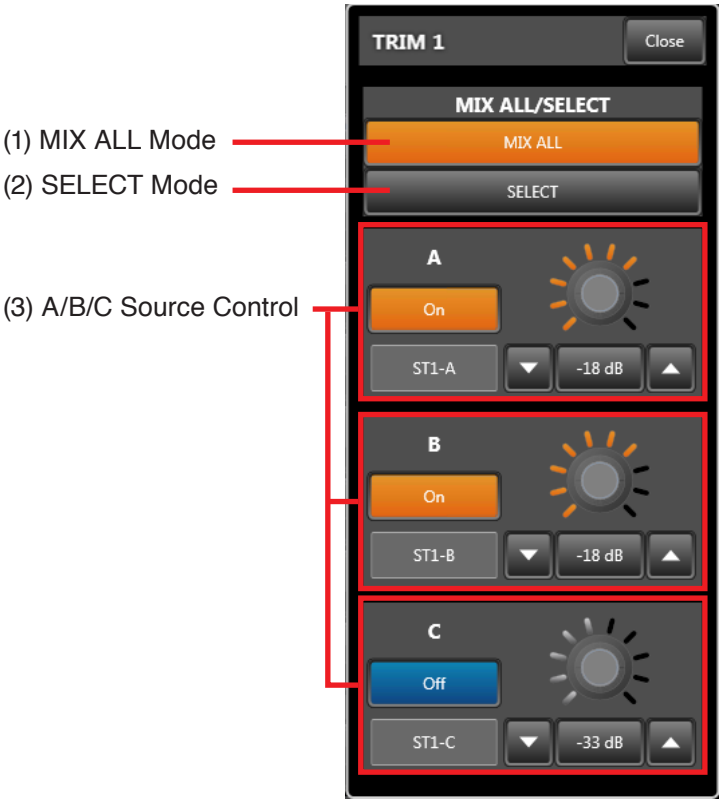
Gain settings can be changed by dragging the vicinity of the GUI's center of the volume control.



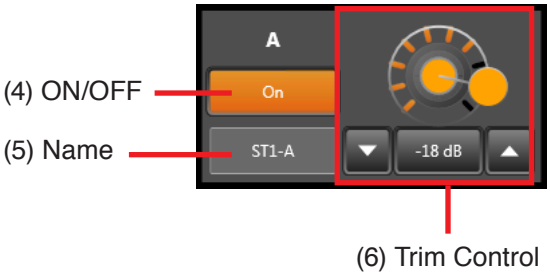
Note
Variable gain ranges can be changed with the PAD ON/OFF settings:
PAD ON: 0 to +18 dB
PAD OFF: +15 to +60 dB

7.2. Trim

This is a function box for the stereo input function and is used to set the MIX ALL/SELECT mode, ON/OFF statuses and names of each of input sources A, B and C, and gains.



Control Details for sources A, B and C



1. MIX/ALL Mode

Clicking this button sets it to MIX ALL mode and illuminates the display in orange. In MIX ALL mode, the signal levels of Sources A, B and C are adjusted with their respective trim gains, and then mixed together.

Note

Input sources set to OFF in the “ON/OFF” settings are not mixed.

2. SELECT Mode

Clicking this button sets it to SELECT mode and illuminates the display in orange. In SELECT mode, only one of Sources A, B and C is selectable.

3. A/B/C Source Control

Sets Source A/B/C’s “ON/OFF,” “Name” and “Trim Gain.”

4. ON/OFF

Sets the ON/OFF status of input sources A, B and C. In the SELECT mode, only one of Sources A, B, and C can be set to ON. Also, all three sources cannot be simultaneously set to OFF (one must always be ON).

The display is illuminated in orange if set to ON, and in blue if set to OFF.

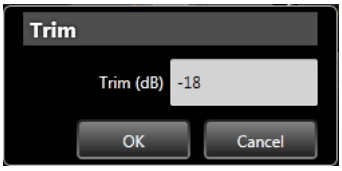
5. Name

Sets the names of input sources A, B and C. Each name can be entered if clicked.

6. Trim Control

Sets the trim gain, which can be reduced by clicking on the downward-pointing triangle and increased by clicking on the upward-pointing triangle.

Clicking the gain indication in the center opens the diagram for trim gain entry.



Trim gain settings can be changed by dragging the vicinity of the GUI’s center of the volume control.



7.3. Fader

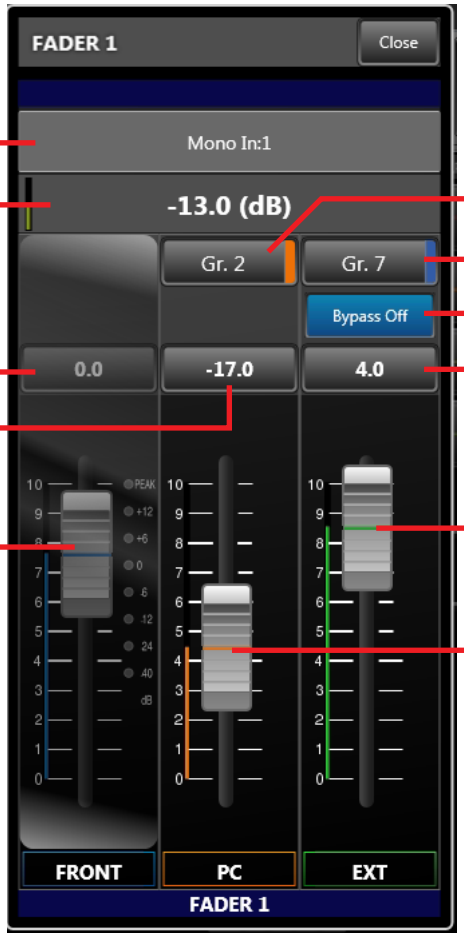
This function box is for monaural input, stereo input, monaural output and recording output.

- Fader Type and Name

Fader Type	Fader Name	Remarks
FRONT FADER	FRONT fader	Fader on the unit's front panel
PC VOL.	PC VOL. fader	PC software and external control protocol
EXT VOL.	EXT VOL. fader	ZM Remote controller and contact control
REC OUT VOL.	REC OUT VOL. fader	Volume control on the unit's front panel

- Disabling the Fader
  To disable gain changes made with fader operation, set the corresponding fader to "Disable" in the Fader Settings on p. 99.
  (Faders set to "Disable" are fixed at 0 dB gain.)
  Faders set to "Disable" are not displayed.

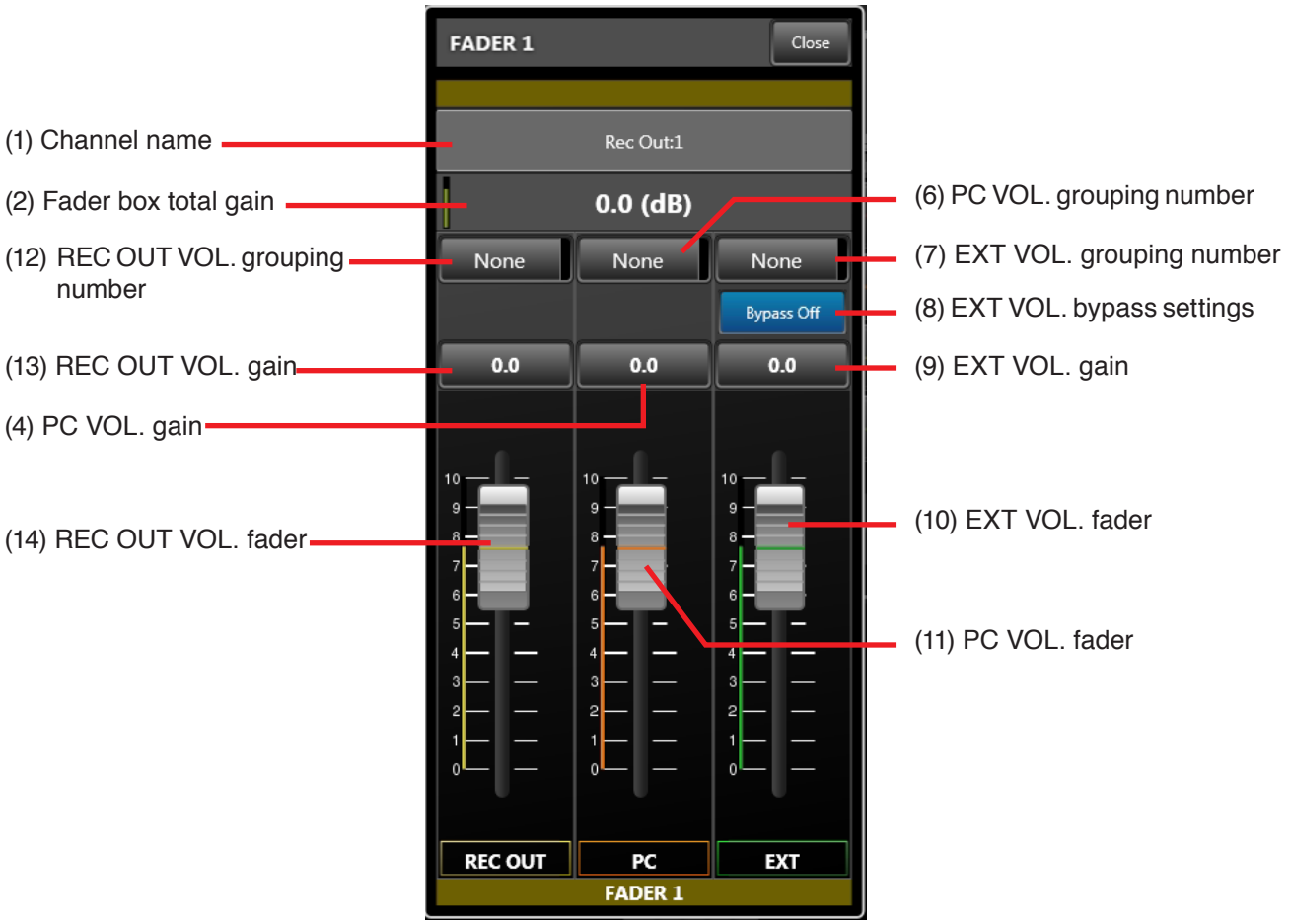
[Monaural input, Stereo input and Monaural output]



(1) Channel name
(2) Fader box total gain
(3) FRONT fader gain
(4) PC VOL. gain
(5) FRONT fader
(6) PC VOL. grouping number
(7) EXT VOL. grouping number
(8) EXT VOL. bypass settings
(9) EXT VOL. gain
(10) EXT VOL. fader
(11) PC VOL. fader

Note
This fader is displayed in online mode as shown at right when the fader is set to "Enable" in the Fader Settings on p. 99.

[Recording output]



1. Channel Name
Displays the channel name.
Clicking the channel name indicator allows its name to be changed.

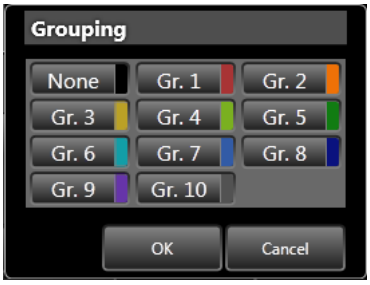
2. Fader Box Total Gain
Displays total gain values set with the FRONT fader, PC VOL. and EXT VOL. faders for monaural and stereo inputs and monaural output.
Displays total gain values set with the REC OUT VOL., PC VOL. and EXT VOL. faders for recording output. The green bar at left indicates the total gain value.

3. FRONT Fader gain
Displays the gain value set with the FRONT fader (5). The gain value cannot be changed.

4. PC VOL. gain
Displays the gain value set with the PC VOL. fader in dB. Clicking this button displays the dialog for gain settings, allowing gains to be entered using numerical values. This PC VOL. gain is interlocked with the PC VOL. fader (11).

5. FRONT Fader
Displays the fader position corresponding to the gain value set with the unit's FRONT fader gain (3) only while in online mode. (In this case, the fader is displayed but cannot be operated.)
Even in online mode, however, the fader is not displayed when set to "Disable" in the Fader Settings on p. 99.
The total gain in offline mode is obtained as 0 dB of the FRONT fader gain.

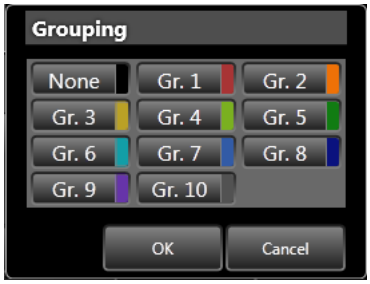
6. PC VOL. Grouping Number
Displays the PC VOL. fader's grouping number. The color corresponding to the group is displayed to the right of the grouping number. Clicking this button opens the dialog for grouping number selection.



After selecting the group to be set, click the [OK] button, and the setting is enabled.

7. EXT VOL. Grouping Number

Displays the EXT VOL. fader's grouping number. The color corresponding to the group is displayed to the right of the grouping number. Clicking this button opens the dialog for grouping number selection.



After selecting the group to be set, click the "OK" button, and the setting is enabled.

8. EXT VOL. Bypass Settings

Displays the EXT VOL. fader's bypass settings. The indication is displayed in orange if set to ON, and in blue if set to OFF.

Notes

- If Bypass is set to ON, gains set with the EXT VOL. fader are not enabled in the fader box total gain.
- Each Preset Memory allows the volume control operation by ZM Remote controller or contact input to be bypassed.

9. EXT VOL. Gain

Displays the gain value set with the EXT VOL. (10) in dB. Clicking this button displays the dialog for gain settings, allowing gains to be entered using numerical values. This EXT VOL. gain is interlocked with the EXT VOL. fader (10).

10. EXT VOL. Fader

Displays the fader position corresponding to the gain value set with the EXT VOL. gain (9). This fader is interlocked with the EXT VOL. gain (9) and can be operated by dragging the fader knob.

11. PC VOL. Fader

Displays the fader position corresponding to the gain value set with the PC VOL. gain (4). This fader is interlocked with the PC VOL. gain (4) and can be operated by dragging the fader knob.

12. REC OUT VOL. Grouping Number

Displays the REC OUT VOL. fader's grouping number. The color corresponding to the group is displayed to the right of the grouping number. Clicking this button opens the dialog for grouping number selection.



After selecting the group to be set, click the "OK" button, and the setting is enabled.

13. REC OUT VOL. Gain

Displays the gain value set with the REC OUT VOL. (14) in dB. Clicking this button displays the dialog for gain settings, allowing gains to be entered using numerical values. This REC OUT VOL. gain is interlocked with the REC OUT VOL. fader (14).

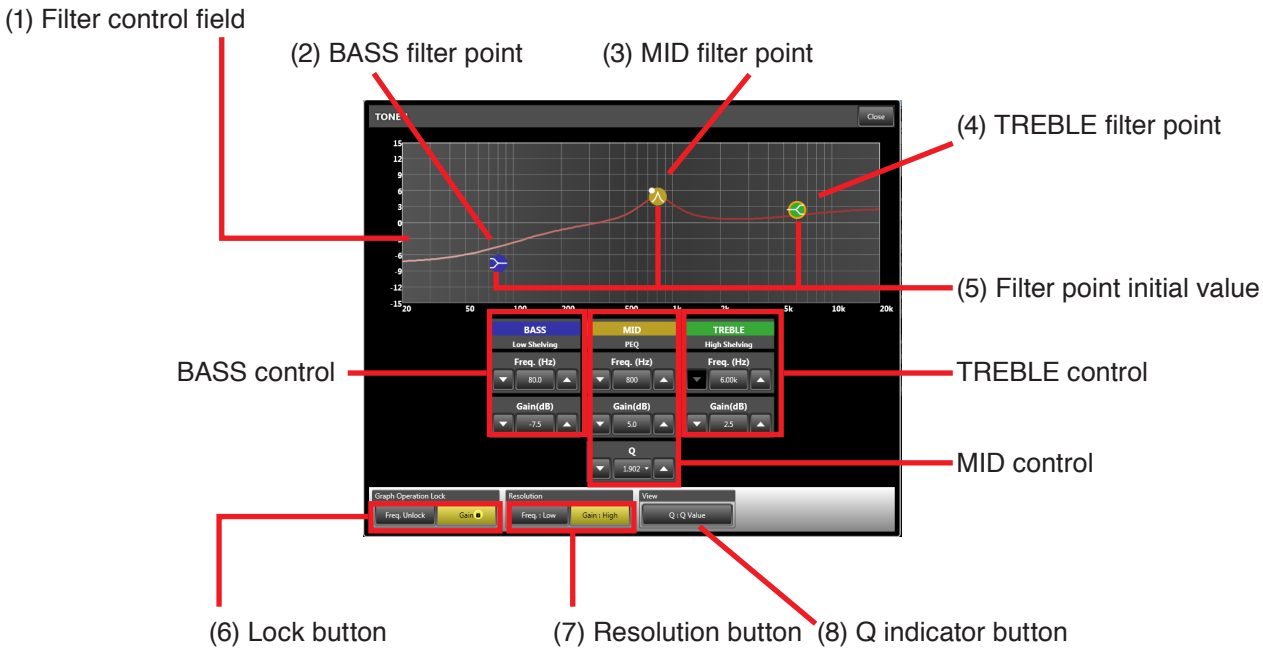
14. REC OUT VOL. Fader

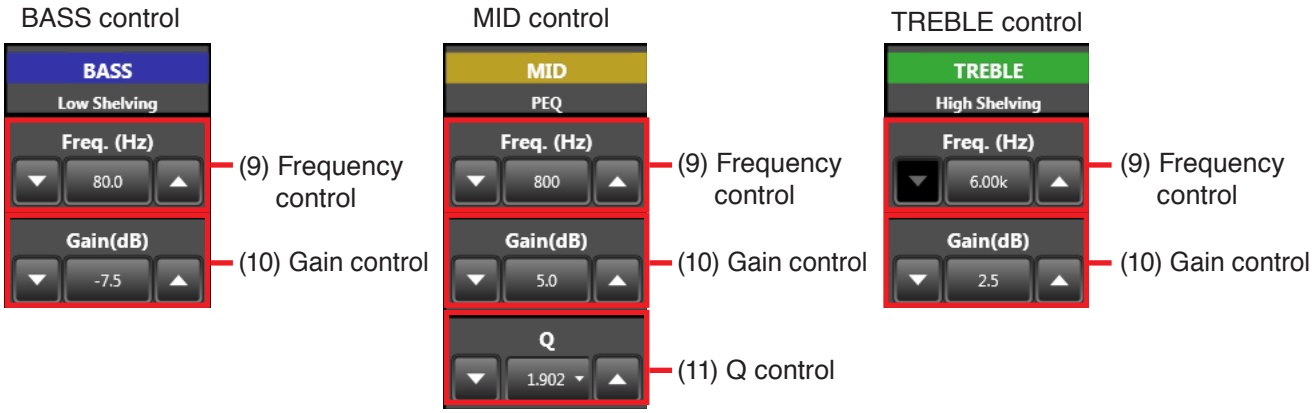
The fader setting is interlocked with the unit's recording output volume setting.

Displays the fader position corresponding to the gain value set with the REC OUT VOL. gain (13). This fader is interlocked with the REC OUT VOL. gain (13) and can be operated by dragging the fader knob.

7.4. Tone

This function box for monaural and stereo inputs is used to set tone using the BASS, MID and TREBLE filters accessible at 3 points.





1. Filter Control Field
Displays tone frequency characteristics in a graph. By dragging the BASS, MID and TREBLE filter points, each filter can be set.

2. BASS Filter Point
The blue circle within the filter control field is a BASS filter point. Frequencies and gains can be changed by dragging the filter point. The BASS filter is a low shelving filter.

3. MID Filter Point
The yellow circle within the filter control field is a MID filter point. Frequencies and gains can be changed by dragging the filter point. Clicking the white circle displayed to the left of the filter point and dragging it up and down allows the MID filter point's Q value to be changed. The MID filter is a parametric equalizer.

4. TREBLE Filter Point
The green circle within the filter control field is a TREBLE filter point. Frequencies and gains can be changed by dragging the filter point. The TREBLE filter is a high shelving parametric equalizer.

5.Filter point initial value (Right-click menu)
The setting value of each point can be initialized by selecting the "Point Clear" from the menu displayed when you right-click on the filter point on a graph.

6. Lock Button

Used for locking frequencies or gains when dragging the BASS, MID or TREBLE filter points.



Clicking “Freq. Unlock” at left changes the indication, locking the frequency.



If the frequency is locked, it becomes unchangeable even if the filter point is dragged left and right.

Clicking the same button again restores the previous display and releases the lock. Clicking “Gain Unlock” at right changes the indication, locking the gain.

If the gain is locked, it becomes unchangeable even if the filter point is dragged up and down.

Clicking the same button again restores the previous display and releases the lock.

Both the frequency and gain can be locked.

Note

Frequencies and gains can only be locked for the filter point operation. The frequency and gain controls can be used to change settings even while in locked mode.

7. Resolution Button

Used to set the resolution for frequency and gain settings.



If “Freq. : Low” at left is clicked, the indication changes and the frequency settings resolution is set to “High.”



Clicking the same button again restores the previous display and sets the resolution for frequency settings to “Low.” Resolution for frequency settings is as follows:

Low: 1/24 octave

High: 3-digit significant figure

If “Amplitude: Low” at right is clicked, the indication changes and the resolution for gain settings is set to “High.”



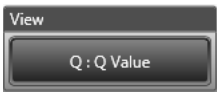
Clicking the same button again restores the previous display and sets the resolution for gain settings to “Low.” Resolution for gain settings is as follows:

Low: 0.5 dB

High: 0.1 dB

8. Q Indication Button

Used to switch the display method for the MID filter’s Q.



The following 3 display methods are available:

(1) Numerical indication

Q values are indicated by means of a numerical figure.

(2) Oct/band fractional indication

The value of the octave bandwidth corresponding to the Q value is indicated by a fractional figure.

(3) Oct/band numerical indication

The value of the octave bandwidth corresponding to the displayed Q value is indicated by a numerical figure.

Example: When the Q value is 4.318

Numerical indication: 0.333

Oct/band fractional indication: 1/3 oct/band

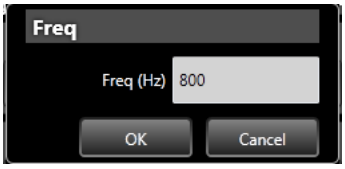
Oct/band numerical indication: 4.318 oct/band

9. Frequency Control

Used to set the individual frequencies of the BASS, MID and TREBLE filters.

The downward pointing triangle button reduces the frequency, and the upward pointing triangle button increases the frequency.

Clicking the frequency indication in the center opens the dialog for entering the frequency.

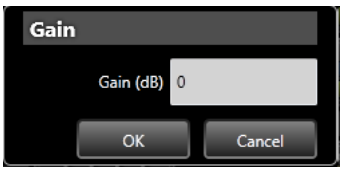


10. Gain Control

Used to set the individual gains of the BASS, MID and TREBLE filters.

The downward pointing triangle button reduces the gain, and the upward pointing triangle button increases the gain.

Clicking the gain indication in the center opens a dialog for entering the gain.

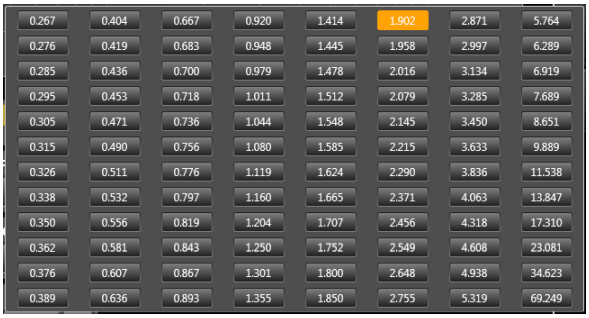


11. Q Control

Used to set the MID filter’s Q.

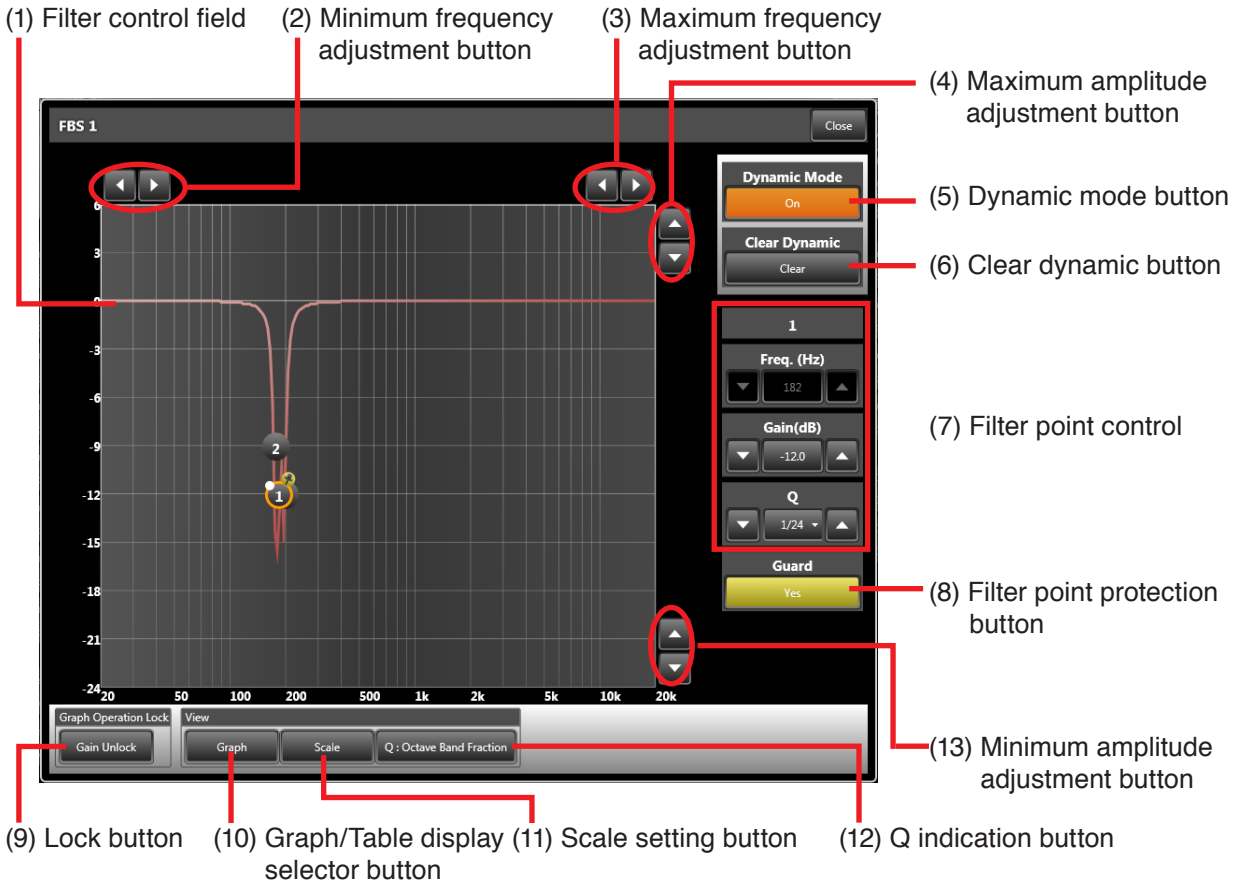
The downward pointing triangle button reduces Q, and the upward pointing triangle button increases Q.

Clicking the Q indication in the center opens the dialog for selecting Q.



7.5. FBS (Feedback Suppressor Function)

This function box is for monaural input and is used to set the FBS filter.

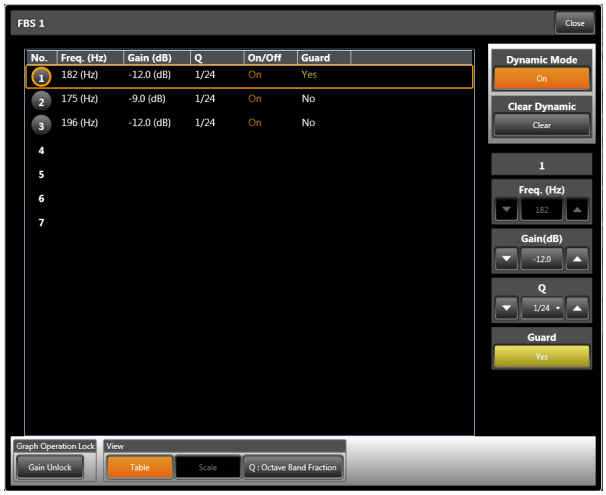


1. Filter Control Field

Displays the FBS frequency characteristics when in graph display mode. In table display mode, the FBS filter's parameter ON/OFF and protection settings are displayed in table formats.

To set the display mode, click the Graph/Table Display Selector Button (10).

(Table format display)



Select the filter point to be set in the Filter Point Control (7) menu.

In graph display mode, protected filter point gains and Q parameters can be changed by drag operation.

2. Minimum Frequency Adjustment Button

Sets the minimum frequency for the graph display. (Sets the left edge of a graph.)

The leftward pointing triangle button decreases the frequency, and the rightward pointing triangle button increases the frequency.

3. Maximum Frequency Adjustment Button

Sets the maximum frequency for the graph display. (Sets the right edge of a graph.)

The leftward pointing triangle button decreases the frequency, and the rightward pointing triangle button increases the frequency.

4. Maximum Amplitude Adjustment Button

Sets the maximum amplitude for the graph display. (Sets the upper limit of the graph.)

The downward pointing triangle button reduces the amplitude and the upward pointing triangle button increases the amplitude.

5. Dynamic Mode Button

Sets the dynamic FBS function ON/OFF.

Notes

- ON: When acoustic feedback is detected, the FBS filter's parameter is automatically enabled, dynamically suppressing the feedback.
- OFF: No automatic settings are performed for the FBS filter's parameter, and dynamic feedback suppression is not enabled.
- Switching the button from ON to OFF clears the filter that has been automatically created when acoustic feedback was detected in dynamic mode.

6. Clear Dynamic Button

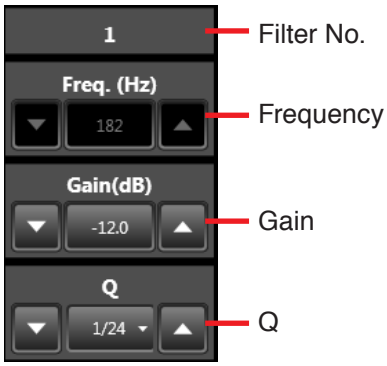
Clears the set parameters of all FBS filter points that have been automatically created when acoustic feedback was detected in dynamic mode.

Notes

- Protected filter points are not cleared.
- This button can be operated only while in online mode.

7. Filter Point Control

Displays the selected FBS filter point's parameters. At the protected point, gains and Q values can be changed.



Note

The FBS filter's parameter is automatically set if the FBS function is set to ON. Parameters of unprotected points cannot be changed.

8. Filter Point Protection Button

Sets the protection function for the selected FBS filter point.

The indication is displayed in yellow if "Yes" is selected, and in gray if "No" is selected.

Notes

- For the FBS filter set to "Yes," the filter parameter is not updated even if the dynamic FBS function has been set to ON with the Dynamic Mode button. Select "Yes" when not wishing to change the filter parameter because, for example, it is desirable to fix the frequency for feedback suppression.
- For the FBS filter set to "No," the filter parameter may be changed when feedback is newly detected. Gains and Q values can be changed for the protected point.

9. Lock Button

Used to enable or disable the locking of gains when dragging filter points.

Clicking "Gain Unlock" changes the indication, locking the gain.

If the gain is locked, it becomes unchangeable even if the filter point is dragged up and down.

Clicking the same button again restores the previous display and releases the lock.

Note

Gains can only be locked for the filter point operation. The gain control can be used to change settings even while in locked mode.

10. Graph/Table Display Selector Button

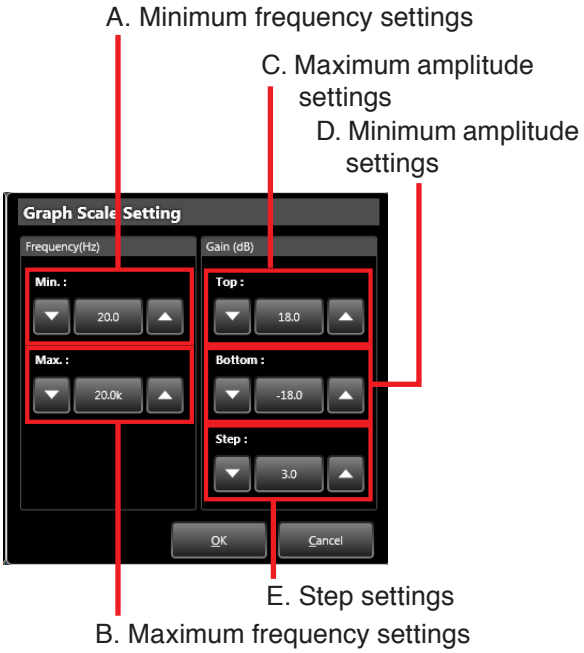
Switches the display of the filter control field.

"Graph": The button is displayed in gray and the filter control field is placed in graph display mode.

"Table": The button is displayed in orange and the filter control field is placed in table display mode.

11. Scale Setting Button

Clicking this button while the filter control field is in graph display mode displays the dialog for setting the graph's scale.



A. Minimum Frequency Settings

Sets the minimum frequency for the graph display (i.e. sets the left edge of the graph).

The downward pointing triangle button decreases the frequency and the upward pointing triangle button increases the frequency.

Clicking the frequency indication in the center opens the dialog for frequency entry.

B. Maximum Frequency Settings

Sets the maximum frequency for the graph display (i.e. sets the right edge of the graph).

The downward pointing triangle button decreases the frequency and the upward pointing triangle button increases the frequency.

Clicking the frequency indication in the center opens the dialog for frequency entry.

C. Maximum Amplitude Settings

Sets the maximum amplitude for the graph display (i.e. sets the upper limit of the graph).

The downward pointing triangle button decreases the amplitude and the upward pointing triangle button increases the amplitude.

The amplitude varies by the value set in the

Step settings each time the button is clicked.
Clicking the amplitude indication in the center opens the dialog for amplitude entry.

D. Minimum Amplitude Settings

Sets the minimum amplitude for the graph display (i.e. sets the lower limit of the graph).
The downward pointing triangle button decreases the amplitude and the upward pointing triangle button increases the amplitude.
The amplitude varies by values set in the Step settings each time the button is clicked.
Clicking the amplitude indication in the center opens the dialog for amplitude entry.

E. Step Settings

Sets the spacing between amplitude scale lines in the graph display.
Set step values are also used as spacing for the amplitude set with the triangle buttons in the maximum and minimum amplitude settings of Items (C) and (D) above.

12. Q Indication Button

Used to switch the FBS filter's Q indication.
The following 3 methods are available:
(1) Numerical indication
Q values are indicated by a numerical figure.
(2) Oct/band fractional indication
The value of the octave bandwidth corresponding to the Q value is indicated by a fractional figure.
(3) Oct/band numerical indication
The value of the octave bandwidth corresponding to the displayed Q value is indicated by a numerical figure.
Example: When the Q value is 69.249
Numerical indication: 0.021
Oct/band fractional indication: 1/48 oct/band
Oct/band numerical indication: 69.249 oct/band

13. Minimum Amplitude Adjustment Button

Sets the minimum amplitude for the graph display. (Sets the lower limit of the graph.)
The downward pointing triangle button reduces the amplitude and the upward pointing triangle button increases the amplitude.

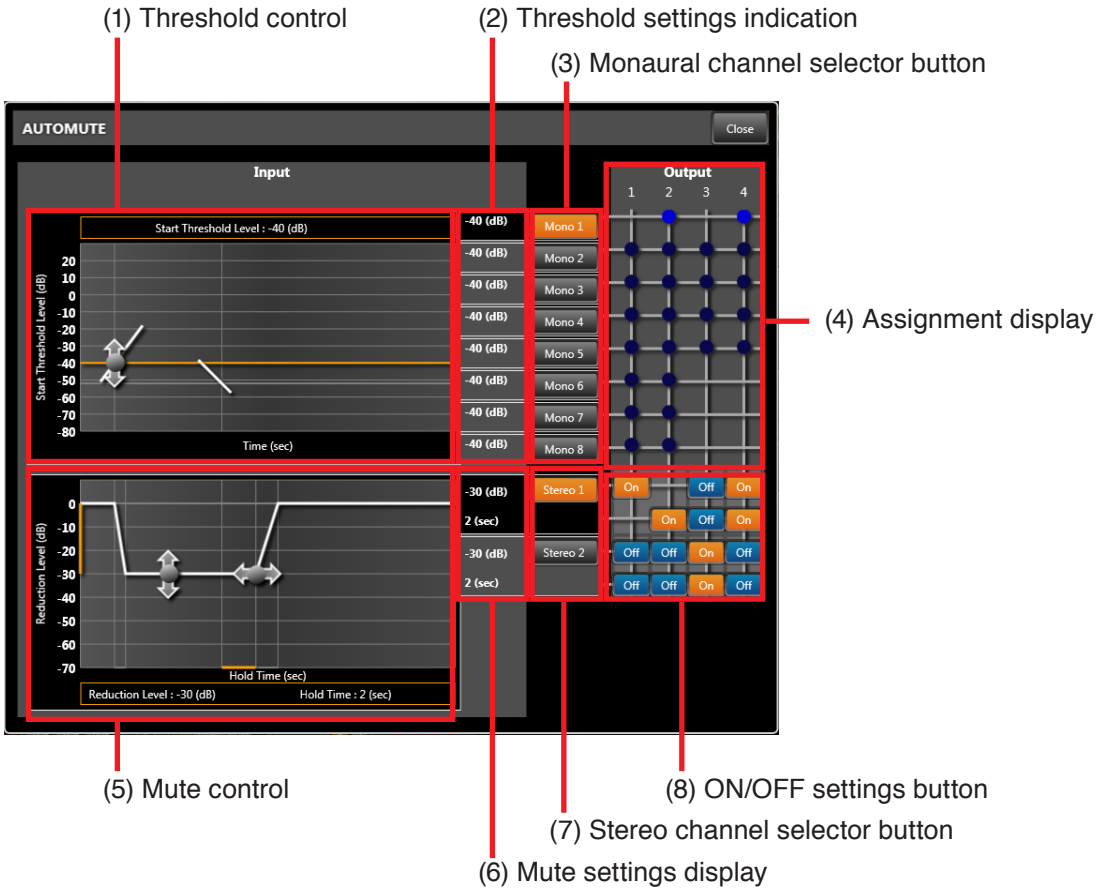
Tip

During FBS filter operation, the filter stored in preset memory is not recalled even when changing the preset memory. The FBS filter in operation continues to work. This operational function may place the FBS filter in edit mode (being edited) when changing the preset memory in online mode.

7.6. Auto-Mute

This function box for stereo input is used to set the Auto-Mute function* for each of monaural output channels 1 – 4.

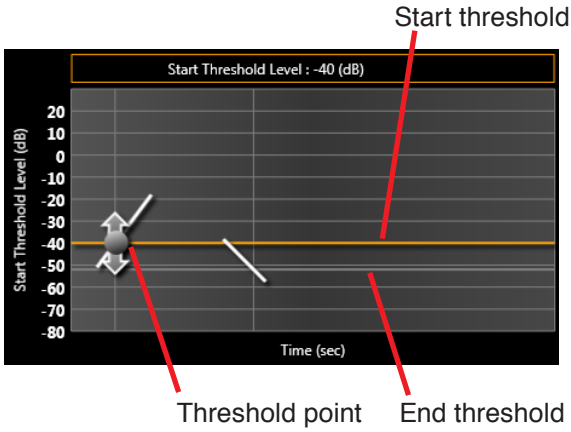
* This function attenuates the stereo input level when the monaural input signal level exceeds the threshold. All monaural inputs 1 – 8 become triggers that attenuate the stereo input level. Threshold can be set individually for each monaural input.
Attenuation and hold time can be set individually for stereo inputs 1 and 2.
(Application example)
Connection of a microphone to the monaural input, and a background music (BGM) device to the stereo input: The Auto-Mute function automatically reduces the BGM level during microphone announcements to make it easier to hear the announcement.
For more information on the Auto-Mute function, see p. 117, “Automatic mute function” in the Glossary.



1. Threshold Control

Sets the start threshold of the monaural input that triggers the Auto-Mute. Monaural inputs subject to this setting are those selected with the Channel Selector button.

The start threshold can be set by dragging the threshold point (gray circle) up and down.



The start threshold set here is reflected in the “Threshold Settings” indication.

Note on Start threshold level and end threshold level:

If the monaural input level set to become a trigger exceeds the start threshold, the Auto-Mute function is enabled and the stereo input gain is attenuated.

If the monaural input level drops below the end threshold, the Auto-Mute is disabled and, after a hold time passes, the stereo input gain is gradually restored.

Since hysteresis (the difference between start and end thresholds) is fixed at 12 dB, the end threshold is automatically set to a value 12 dB below the start threshold.

The orange line in the threshold control indicates the start threshold, and the gray line indicates the end threshold.

2. Threshold Settings Indication
Indicates the start threshold of the monaural input that becomes the Auto-Mute trigger.

3. Monaural Channel Selector Button
Selects the monaural input channel for which the start threshold is set.
Clicking the button selects the corresponding channel, turning that button's color to orange.

4. Assignment Display
Monaural input matrix assignment is displayed by a black circle.
The monaural input working as the mute trigger is displayed with a flashing point(s) only while in online mode.
Note
To perform assignment settings, see p. 59, "Matrix."

5. Mute Control
Sets the Auto-Mute reduction level (gain attenuation) and hold time.
Stereo inputs subject to this setting are those selected with the Stereo Channel Selector button (7).
The attenuation level can be set by dragging a reduction level point (gray circle at left) up and down.
The hold time can be set by dragging a hold time point (gray circle at right) left and right.



Reduction level point Hold time point

The reduction level and hold time set here are reflected in the Mute Settings display.

Note on Auto-Mute operation:
If the monaural input level set as the trigger exceeds the start threshold, the Auto-Mute function is enabled and the stereo input gain gradually attenuates to the reduction level. The stereo input gain's fade-out time varies depending on the reduction level setting. The fade-out time slope (length) is fixed, and set at 0.65 seconds when the reduction level is –30 dB.
When the monaural input level drops below the end threshold, the Auto-Mute is disabled and, after a hold time passes, the stereo input gain is gradually restored.
The stereo input gain's fade-in time varies depending on the reduction level settings. The fade-in time slope (length) is fixed, and set to 1.3 seconds when the attenuation level is –30 dB.
For more information on the Auto-Mute function, see p. 117, "Automatic mute function" in the Glossary.

6. Mute Settings Display
Displays the Auto-Mute attenuation level (gain attenuation) and hold time.

7. Stereo Channel Selector Button
Used to select the stereo input channel for which the attenuation level (gain attenuation) and hold time are set.
Clicking the button selects the corresponding channel, turning that button's color to orange.

8. ON/OFF Settings Button
Used to set the Auto-Mute function ON/OFF.
Notes
- ON/OFF settings here have nothing to do with output assignment.
  Use the matrix function boxes for output signal assignment (see the next item "Matrix").
- Since the L (left) channel of both stereo inputs 1 and 2 cannot be assigned to Output 2 in the matrix stereo assignment settings, the ON/OFF button is not displayed at an Output 2 matrix point. Similarly, since the R (right) channel cannot be assigned to Output 1 in the matrix stereo assignment settings, the ON/OFF button is not displayed at an Output 1 matrix point.
- Auto-Mute ON/OFF settings are interlocked with both L and R stereo channels.

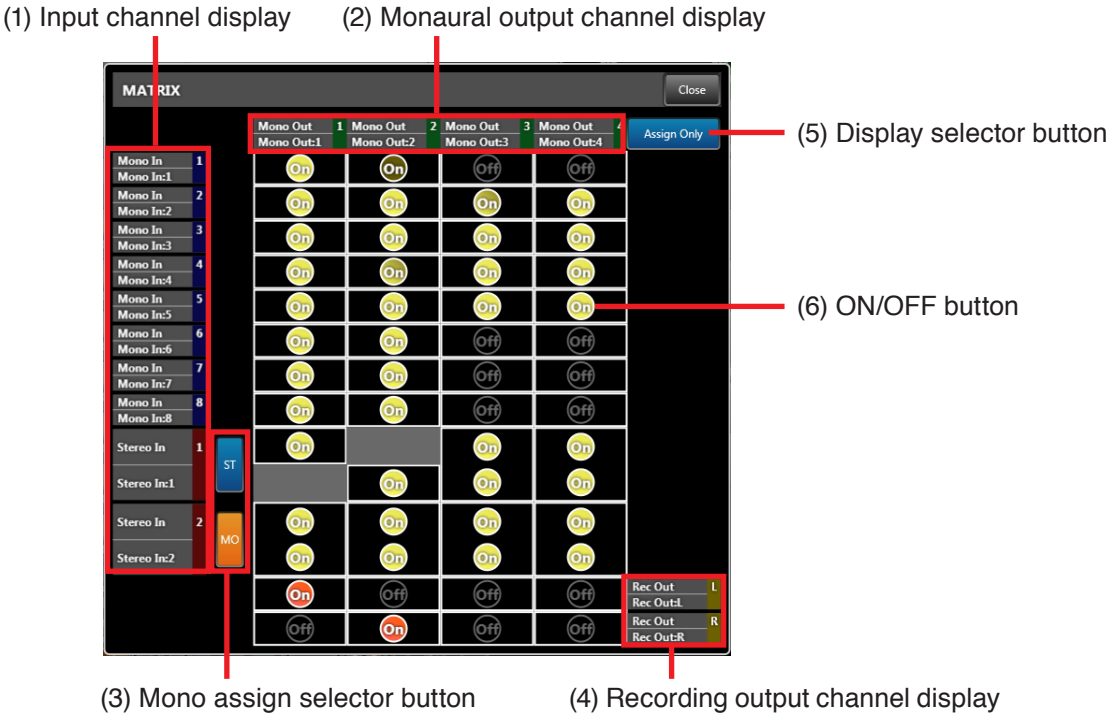
7.7. Matrix

This function box is used for monaural input, stereo input, monaural output and recording output signal routing.

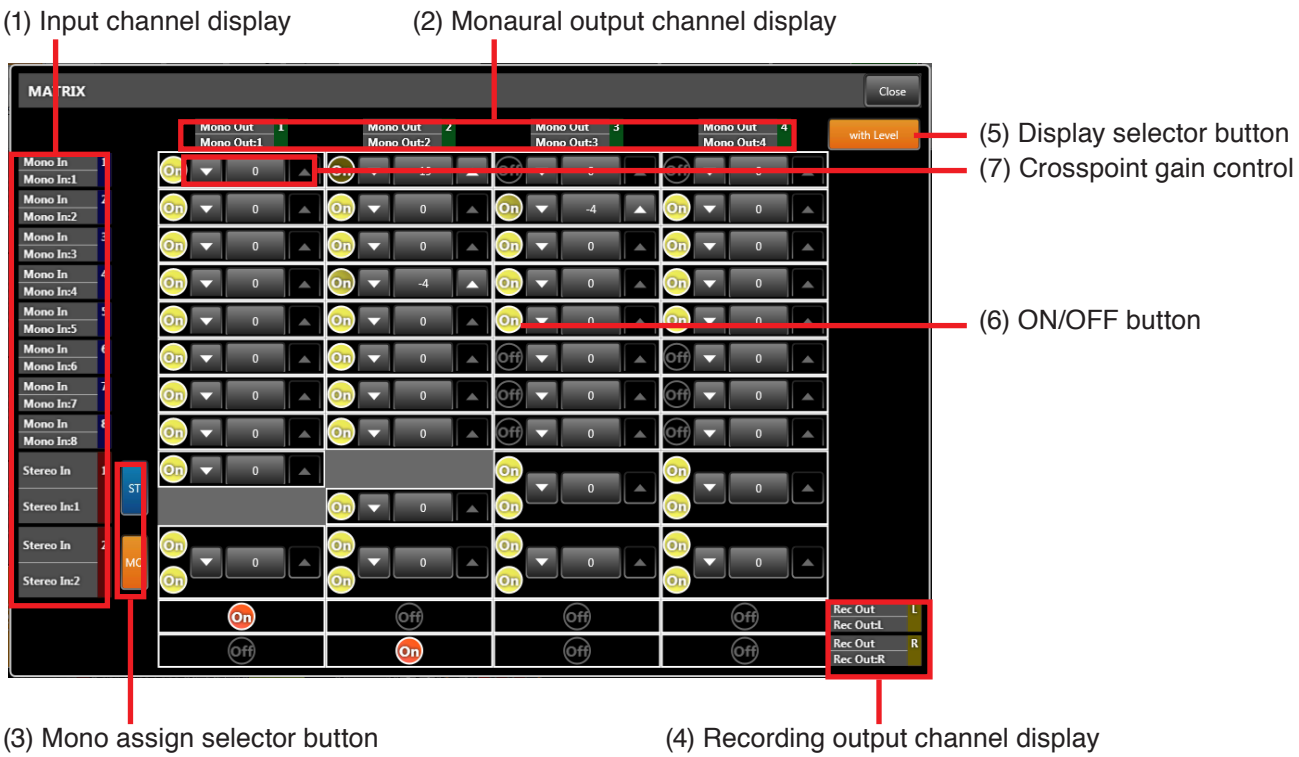
Notes

- The Matrix Function box is displayed in the Flow view, and not displayed in the Operation view.
- The Matrix Function box is interlocked with the Assign Function box.

[Assignment display only]



[Assignment and crosspoint gain display]



1. Input Channel Display
Displays information (name and number) for each monaural and stereo input channel.

2. Monaural Output Channel Display
Displays information (name and number) for each monaural output channel.

3. Mono Assign Selector Button
Stereo input can be assigned to monaural Outputs 1 – 4.
Usually, the Stereo Assign mode is used for assignment to monaural Outputs 1 and 2, however the Mono Assign mode can also be used.
For assignment to monaural Outputs 3 and 4, always use the Mono Assign mode.
The Mono Assign selector button is used to switch the method of assigning the stereo input to monaural Outputs 1 and 2.

- **Stereo Assign**



In this mode, the “L” (left) stereo input is assigned to monaural Output 1, and “R” (right) to monaural Output 2.

- **Mono Assign**



In this mode, “L” (left) and “R” (right) of the stereo input are mixed and assigned to each of monaural outputs 1 and 2.

4. Recording Output Channel Display
Displays information (name and number) for each recording output channel.

5. Display Selector Button
Switches the display mode between “Assign only” and “with Level.”

6. ON/OFF Button
Used to select Assign ON or OFF.
For monaural and stereo input assignments, set the point at which the left side “Input Channel” display crosses the upper “Monaural Output Channel” display.
For recording output assignment, set the point at which the upper “Monaural Output Channel” display crosses the right side “Recording Output Channel” display.
Assignment is turned ON or OFF by clicking, and displayed in yellow (orange for recording output assignment) if set to ON, or black if set to OFF.
Reducing the crosspoint gain makes the yellow color depth darker. (Since the recording output’s crosspoint gain is always set at 0dB, the orange color’s depth does not change.)
Note
The assign ON/OFF settings for both “L” (left) and “R” (right) stereo input channels are interlocked.

7. Crosspoint Gain Control
Used to set the crosspoint gain.
Use the downward pointing triangle button to reduce the gain, and the upward pointing button to increase the gain. Clicking the gain indication in the center opens the dialog for gain entry.



Notes

- The stereo input’s crosspoint gain is interlocked with the “L” (left) and “R” (right).
- The recording output’s crosspoint gain is fixed at 0 dB.

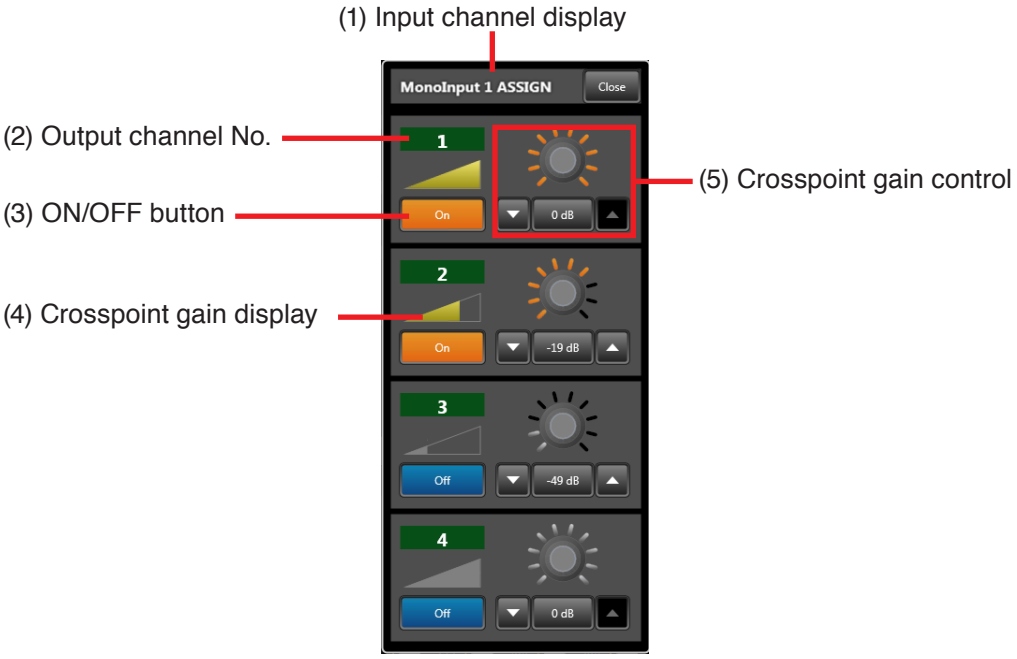
7.8. Assign

This function box is used for monaural input, stereo input and recording output signal routing.

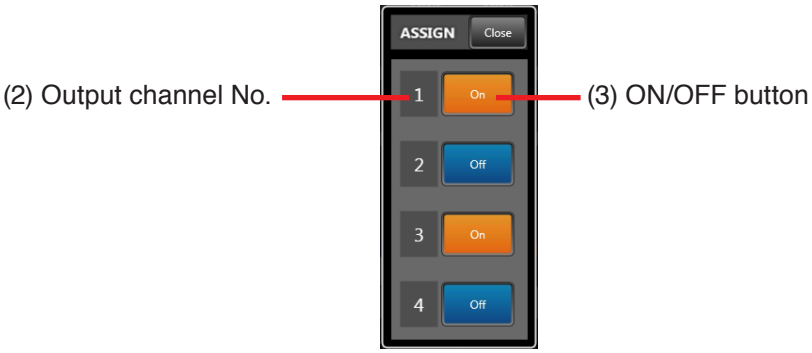
Notes

- The Assign Function box is displayed in the Operation view, and not displayed in the Flow view.
- The Assign Function box is interlocked with the Matrix Function box.

[Monaural Input and Stereo Input Assignments]



[Recording Output Assignment]



1. Input Channel Display
Displays the monaural or stereo input channel.

2. Output Channel Number
Monaural or stereo input assignment:
The channel number to which the input is assigned is displayed.
Recording output assignment:
The assigned monaural output channel number is displayed.

3. ON/OFF Button
Click to select assignment ON or OFF. This button is displayed in orange when set to ON, and blue when OFF.

Notes

- ON/OFF settings are interlocked with the Matrix Function box.
- Two different modes can be used to assign the stereo input to monaural output 1 or 2: Mono Assign mode and Stereo Assign mode.

- **Mono Assign mode**
  Stereo inputs L (left) and R (right) are mixed and assigned.
- **Stereo Assign mode**
  Stereo input “L” (left) is assigned to Monaural Output 1 and stereo input “R” (right) is assigned to Monaural Output 2.
  Use the Matrix Function box’s Mono assign selector button (see p. 59) to change the assign mode.
  (Only the Mono Assign mode can be used to assign the stereo input to Monaural Outputs 3 and 4, and the monaural output to recording output.)

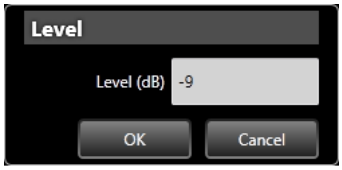
4. Crosspoint Gain Display

A yellow triangle indicates the gain by varying in size depending on the crosspoint gain set with the Crosspoint Gain Control (5).

5. Crosspoint Gain Control

Used to set the crosspoint gain.

Use the downward pointing triangle button to reduce the gain, and the upward pointing button to increase the gain. Clicking the gain indication in the center opens the dialog for gain entry.



Dragging in the vicinity of the center of the volume control allows gain settings to be changed.

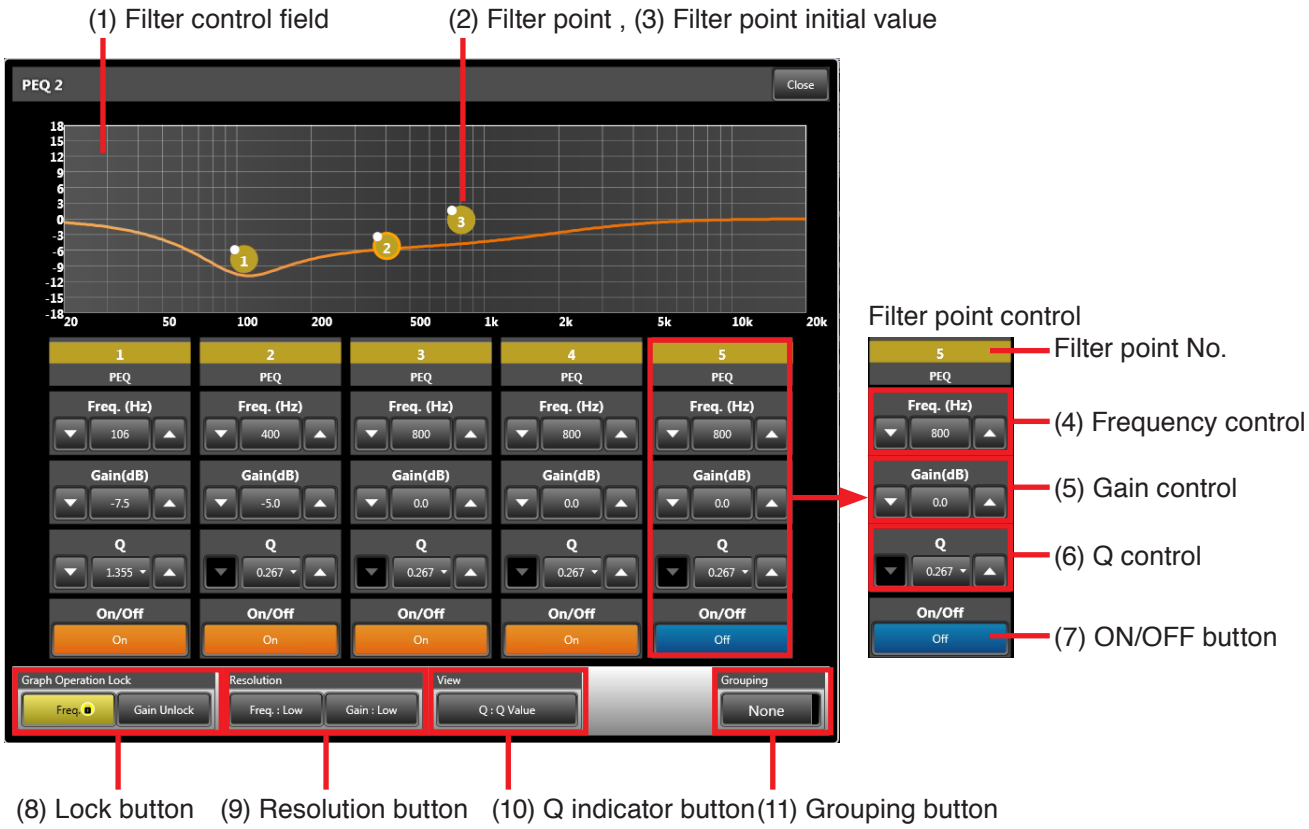


Notes

- The stereo input's crosspoint gain is interlocked with "L" (left) or "R" (right).
- The recording output's crosspoint gain is fixed at 0 dB.

7.9. PEQ

This function box for monaural outputs is used to compensate for each output's frequency characteristics with a 5-point parametric equalizer.



1. Filter Control Field

PEQ frequency characteristics are displayed by a graph.

Each filter can be set by dragging its corresponding filter point.

2. Filter Point

Filter points are indicated by five yellow circles within the filter control field. Frequencies and gains can be changed by dragging the filter points.

3. Filter point initial value (Right-click menu)

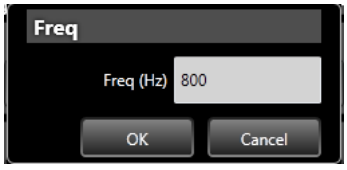
The setting value of each point can be initialized by selecting the "Point Clear" from the menu displayed when you right-click on the filter point on a graph.

4. Frequency Control

Sets each filter point's frequency.

The downward pointing triangle button decreases the frequency and the upward pointing triangle button increases the frequency.

Clicking the frequency indication in the center opens the dialog for frequency entry.

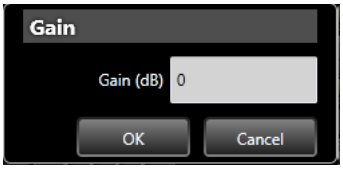


5. Gain Control

Sets each filter point's gain.

The downward pointing triangle button reduces the gain and the upward pointing triangle button increases the gain.

Clicking the gain indication in the center opens the dialog for gain entry.



6. Q Control

Sets each filter point's Q.

The downward pointing triangle button reduces Q and the upward pointing triangle button increases Q. Clicking the Q indication in the center opens the dialog for Q selection.



7. ON/OFF Button

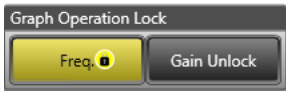
Sets each filter point to ON or OFF.
ON: Filter is enabled (orange display).
OFF: Filter is disabled (blue display).
The filter is bypassed if set to OFF.

8. Lock Button

Used to enable or disable the locking of frequencies or gains when dragging filter points.



Clicking "Freq. Unlock" at left changes the indication, locking the frequency.



If the frequency is locked, it becomes unchangeable even if the filter point is dragged left and right.
Clicking the same button again restores the previous display and releases the lock. Clicking "Gain Unlock" at right changes the indication, locking the gain.
If the gain is locked, it becomes unchangeable even if the filter point is dragged up and down
Clicking the same button again restores the previous display and releases the lock.
Both the frequency and gain can be locked.

Note

Frequencies and gains can only be locked for the filter point operation. The frequency and gain controls can be used to change settings even while in locked mode.

9. Resolution Button

Used to set the resolution for frequency and gain settings.



If "Freq. : Low" at left is clicked, the indication changes and the frequency settings resolution is set to "High."



Clicking the same button again restores the previous display and sets the frequency settings resolution to "Low." The frequency settings resolution is as follows:

Low: 1/24 octave
High: 3-digit significant figure

If "Gain: Low" at right is clicked, the indication changes and the gain settings resolution is set to "High."



Clicking the same button again restores the previous display and sets the for gain settings resolution to "Low." The gain settings resolution is as follows:

Low: 0.5 dB
High: 0.1 dB

10. Q Indicator Button

Used to switch the Q display method of each filter point.



The following 3 different display methods are available:

(1) Numerical indication
Q values are indicated by a numerical figure.
(2) Oct/band fractional indication
The value of the octave bandwidth corresponding to the Q value is indicated by a fractional figure.
(3) Oct/band numerical indication
The value of the octave bandwidth corresponding to the Q value is indicated by a numerical figure.

Example: When the Q value is 4.318
Numerical indication: 0.333
Oct/band fractional indication:
1/3 oct/band
Oct/band numerical indication:
4.318 oct/band

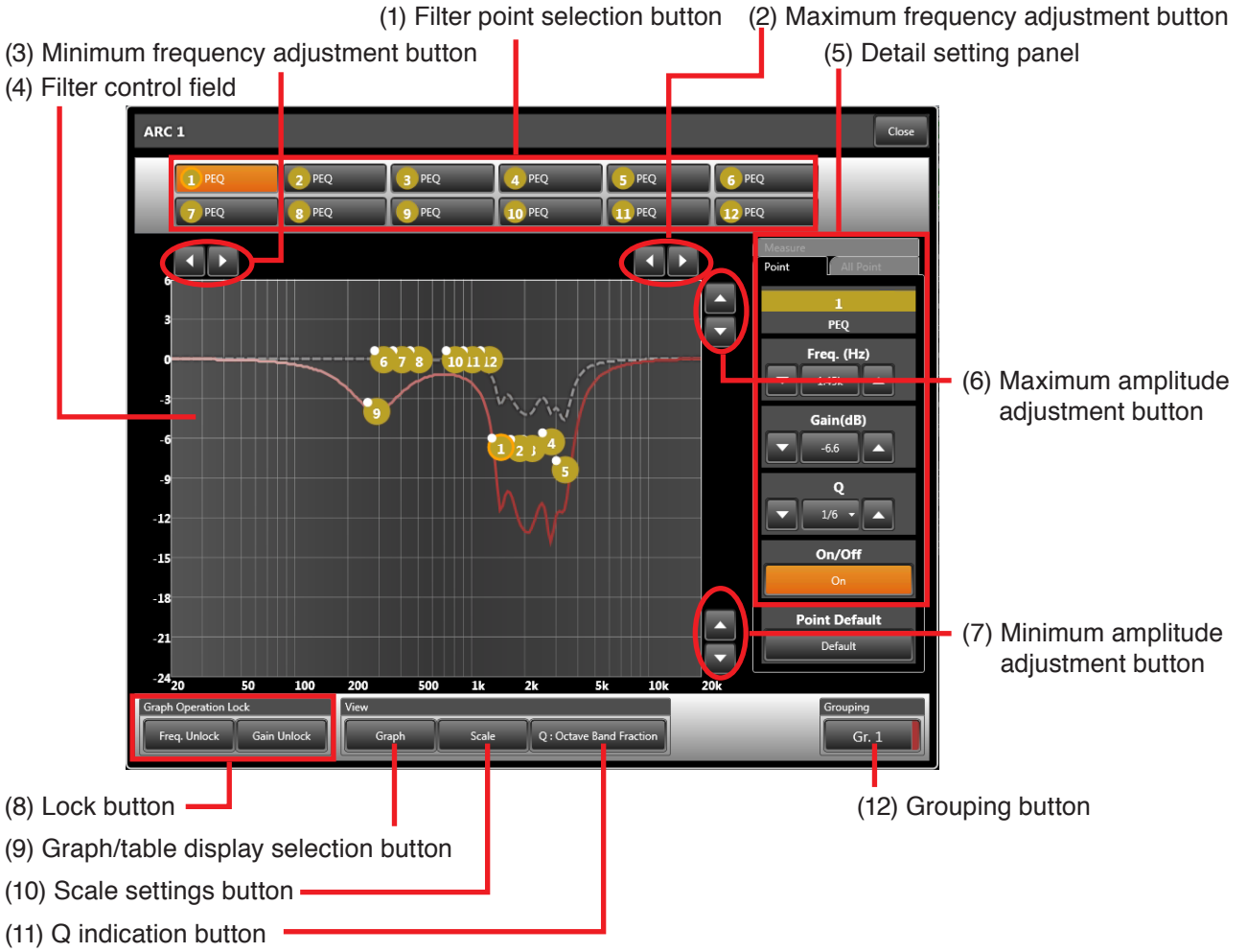
11. Grouping Button

Clicking this button opens the dialog for selecting the grouping number.



7.10. ARC

This function box for monaural output is used to set the Automatic Resonance Control (ARC) function for each of output channels 1 – 4.



1. Filter Point Selection Button

Click to select one of 12 filters.
In graph display mode, the selected filter's filter point is highlighted.
In table display mode, the selected filter's row is highlighted.
When the detail setting panel is set to "Individual Settings," the selected filter's parameter is displayed.

2. Maximum Frequency Adjustment Button

Sets the maximum frequency in graph display mode (sets the right edge of a graph).
The leftward pointing triangle button decreases the frequency and the rightward pointing triangle button increases the frequency.

3. Minimum Frequency Adjustment Button

Sets the minimum frequency in graph display mode (sets the left edge of a graph).
The leftward pointing triangle button decreases the frequency and the rightward pointing triangle button increases the frequency.

4. Filter Control Field

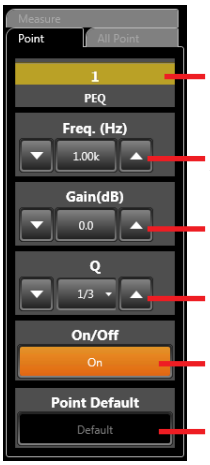
ARC frequency characteristics are displayed by a graph in graph display mode.
In table display mode, the ARC filter parameters and ON/OFF settings are displayed in table form.
To set the display mode, click the Graph/table Display Selection Button (9).
(Table format display)



5. Detail Settings Panel

Individual Settings, Global Settings and Measurement Settings can be performed through tab selection.

(1) Individual Settings



Filter point No.

A. Frequency control

B. Gain control

C. Q control

D. ON/OFF button

E. Default button

A. Frequency Control

Sets each filter point's frequency.

The downward pointing triangle button decreases the frequency and the upward pointing triangle button increases the frequency.

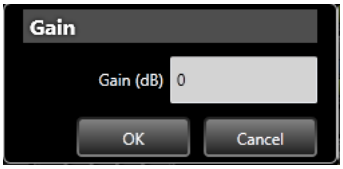
Clicking the frequency indication in the center opens the dialog for frequency entry.



B. Gain Control

Sets each filter point's gain.

The downward pointing triangle button reduces the gain and the upward pointing triangle increases the gain. Clicking the gain indication in the center opens the dialog for gain entry.



C. Q Control

Sets each filter point's Q.

The downward pointing triangle button reduces Q and the upward pointing triangle button increases Q.

Clicking the Q indication in the center opens the dialog for Q selection.



D. ON/OFF Button

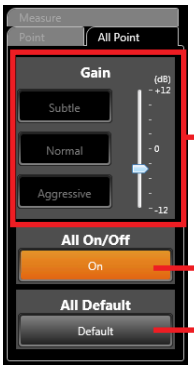
Used to set each filter point to ON or OFF.

ON: Filter is enabled (orange display).

OFF: Filter is disabled (blue display).

The filter is bypassed if set to OFF.

(2) Global Settings



A. Global gain control

B. All On/Off button

C. All Default button

A. Global Gain Control

Used to finely adjust the strength of automatically created filters.

To increase the filter strength, click the lower [Aggressive] button, and the upper [Moderate] button to moderate it. To return the filter to standard strength, click the [Normal] button in the center. The strength can also be finely adjusted with the use of a slider at right.

B. All On/Off Button

Selects ON or OFF for all 12 filters.

ON: Filter is enabled. (orange display)

OFF: Filter is disabled. (blue display)

The filter is bypassed if set to OFF.

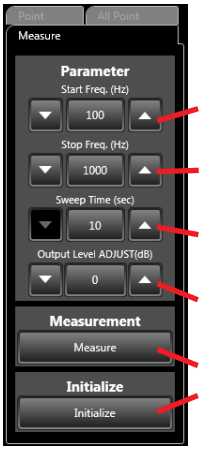
C. All Default Button

Returns all 12 filters to the parameters created by ARC measurement.

Tips

- The ARC box retains the following 2 different settings: filter data created by ARC measurement and actual operation filter data manually adjusted. The former data can be initialized by the Initialize button shown on the next page.
- On the graph display, the filter data created at measurement is indicated by a dotted line and the actual operation filter data is indicated by a solid line.

(3) Measurement Settings



A. Measurement start frequency settings button
B. Measurement stop frequency settings button
C. Sweep time settings button
D. Output level compensation button
E. Measurement button
F. Initialize button

A. Measurement Start Frequency Settings Button

Sets the measurement start frequency.
The downward pointing triangle button decreases the frequency and the upward pointing triangle button increases the frequency.

B. Measurement Stop Frequency Settings Button

Sets the measurement stop frequency.
The downward pointing triangle button decreases the frequency and the upward pointing triangle button increases the frequency.

C. Sweep Time Settings Button

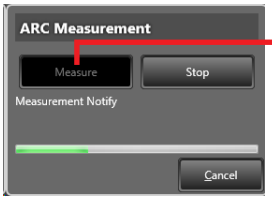
Sets the frequency sweep time from the start of measurement till its end.
The downward pointing triangle button decreases the time and the upward pointing triangle button increases the time.

D. Output Level Compensation Button

Sets the compensation value of the measuring signal's output level.
The downward pointing triangle button decreases the output level and the upward pointing triangle button increases the output level.

E. Measurement Button

This button can be operated only while in online mode.
The ARC Measurement dialog is displayed.



Measurement start button

Measurement begins if the Measurement start button is clicked.

F. Initialize Button

This button can be operated only while in online mode.
Initializes the filter that has been created by ARC measurement.

6. Maximum Amplitude Button

Sets the maximum amplitude for the graph display. (Sets the upper limit of the graph.)
The downward pointing triangle button reduces the amplitude and the upward pointing triangle button increases the amplitude.

7. Minimum Amplitude Button

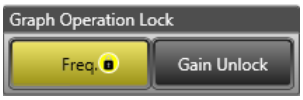
Sets the minimum amplitude in graph display mode (sets the lower limit of the graph).
The downward pointing triangle button decreases amplitude and the upward pointing triangle button increases amplitude.

8. Lock Button

Used to enable or disable the locking of frequencies or gains when dragging filter points.



Clicking "Freq. Unlock" at left changes the indication, locking the frequency.



If the frequency is locked, it cannot be changed, even if the filter point is dragged left or right.
Clicking the same button again restores the previous display and releases the lock. Clicking "Gain Unlock" at right changes the indication, locking the gain.
If the gain is locked, it cannot be changed even if the filter point is dragged up or down.
Clicking the same button again restores the previous display and releases the lock.
Both the frequency and gain can be locked.

Note

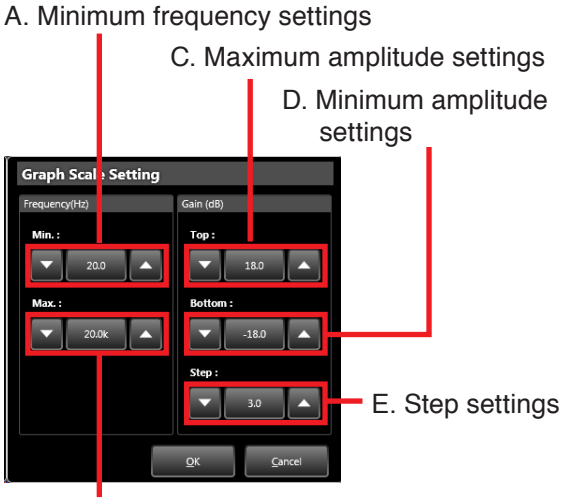
Frequencies and gains can only be locked by operating the filter point. The frequency and gain controls can be used to change settings even while in Lock mode.

9. Graph/Table Display Selection Button

Switches the display of the filter control field.
Graph: The button is displayed in gray and the filter control field is placed in graph display mode.
Table: The button is displayed in orange and the filter control field is placed in table display mode.

10. Scale Setting Button

Clicking this button while the filter control field is in graph display mode displays the dialog for setting the graph's scale.



A. Minimum Frequency Settings

Sets the minimum frequency for graph display (i.e. sets the left edge of the graph).

The downward pointing triangle button decreases the frequency and the upward pointing triangle button increases the frequency.

Clicking the frequency indication in the center opens the dialog for frequency entry.

B. Maximum Frequency Settings

Sets the maximum frequency for the graph display (i.e. sets the right edge of the graph).

The downward pointing triangle button decreases the frequency and the upward pointing triangle button increases the frequency.

Clicking the frequency indication in the center opens the dialog for frequency entry.

C. Maximum Amplitude Settings

Sets the maximum amplitude for the graph display (i.e. sets the upper limit of the graph).

The downward pointing triangle button decreases the amplitude and the upward pointing triangle button increases the amplitude. The amplitude varies by values set in the Step settings each time the button is clicked.

Clicking the amplitude indication in the center opens the dialog for amplitude entry.

D. Minimum Amplitude Settings

Sets the minimum amplitude for the graph display (i.e. sets the lower limit of the graph).

The downward pointing triangle button decreases the amplitude and the upward pointing triangle button increases the amplitude. The amplitude varies by values set in the Step settings each time the button is clicked.

Clicking the amplitude indication in the center opens the dialog for amplitude entry.

E. Step Settings

Sets the spacing between amplitude scale lines in the graph display.

Set step values are also used as spacing for the amplitude set with the triangle buttons in the maximum and minimum amplitude settings of Items (C) and (D) above.

11. Q Indication Button

Used to switch the filter point's Q indication method.

The following three methods are available:

(1) Numerical indication

Q values are indicated by a numerical figure.

(2) Oct/band fractional indication

The value of the octave bandwidth corresponding to the Q value is indicated by a fractional value.

(3) Oct/band numerical indication

The value of the octave bandwidth corresponding to the Q value is indicated by a numerical figure.

Example: When the Q value is 4.318

Numerical indication: 4.318

Oct/band fractional indication: 1/3 oct/band

Oct/band numerical indication: 0.333 oct/band

12. Grouping Button

Sets grouping within the ARC box.

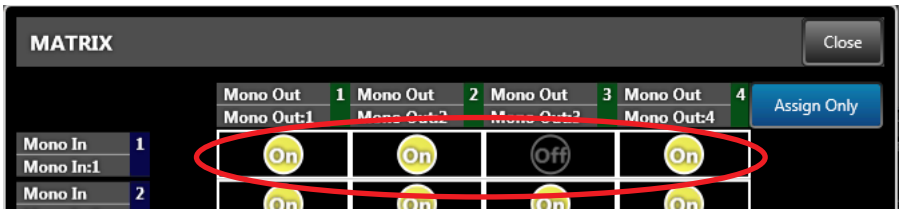
On ARC measurement completion, the measurement target ARC boxes are automatically grouped, cancelling already-set grouping on any of these boxes, if there was. Actual operation filter data, measurement parameters, and the filter data created by ARC measurement are interlocked among the grouped ARC boxes.

[ARC operating procedures]

Before Starting Operation:
Set the external equipment sound volume and other settings to actual usage conditions to ensure that sound can be amplified at an appropriate volume level.

Note
Connect the microphone to MONO INPUT 1.
Connect the unit to a PC to allow communications between the two.
Measurements for all ARC boxes connected to the MONO OUTPUTs to which the MONO INPUT 1 is assigned are performed simultaneously.
Refer to the separate M-864D instruction manual for details about ARC measurement such as an installation example of the measuring microphone.

Step 1. In the Matrix setting screen, assign the MONO INPUT 1 to the MONO OUTPUT connecting the target ARC box for measurement.
(Example when ARC 1, 2, and 4 are targeted for ARC settings)

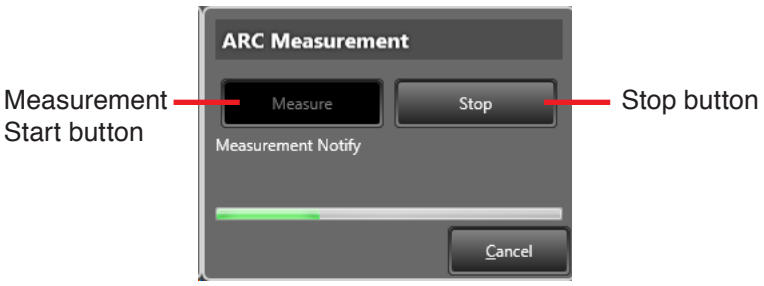


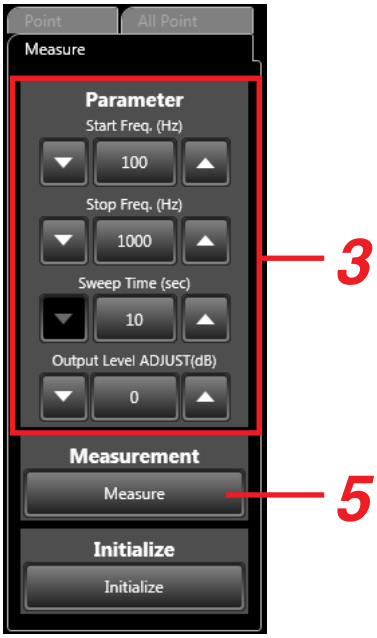
Step 2. Click the ARC box targeted for the ARC setting to open the pop-up sub-view.

Step 3. Make the following measurement settings on the Detail Settings panel: Measurement start and stop frequencies, Sweep time, and Output level compensation.

Step 4. Install the measuring microphone.

Step 5. Click the Measurement button on the Detail Settings panel to display the ARC measurement dialog. Then, click the Measurement start button.
The ARC measurement is started.
The progress status of the measurement is displayed on the screen as shown in the figure below:





Note: To stop before the operation is complete, click the [Stop] button.

Upon measurement completion, the filter parameter is automatically set, displaying the frequency characteristics in the filter control field.
The measurement target ARC boxes are automatically grouped.
If any of the ARC boxes had been grouped before measurement, this group setting is automatically canceled at ARC measurement.

Step 6. Adjust the filter.

6-1. Adjust the filter strength.

The automatically created filter is set to a standard level of strength. To adjust it, use the Global Gain Control button located on the global settings panel of the Detail Settings panel. (See p. 66.)

Click the lower [Aggressive] button to make the filter relatively stronger, or the upper [Moderate] button to modulate its strength.

To return the filter to standard strength, click the [Normal] button in the center. Filter strength can also be finely adjusted with the slider.

6-2. Manually changing the filter.

Values can be changed by dragging the filter point in the filter control field or by using the Frequency or Gain controls on the individual settings panel of the Detail Setting panel.

Tip

To cancel the manually changed parameter and revert it to the automatically created parameter, click the Default button on the Individual Settings panel appearing through the Point tab to cancel individual points, and click the All Default button on the Global Settings panel appearing through the All Point tab to cancel all points simultaneously.

[When canceling the set ARC data]

The ARC box handles the following 3 types of data:

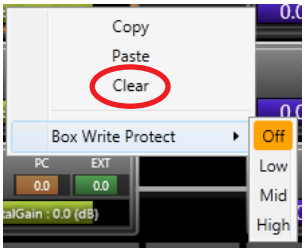
(1) Actual operation filter data
(2) Filter data created by measurement
(3) Measurement parameters (measurement start and stop frequencies, sweep time, and output level compensation)

The above data can be cancelled by the following methods.

- To cancel the above data (2), click the [Initialize] button on the Detailed Settings panel appearing through the Measure tab only while in online mode.

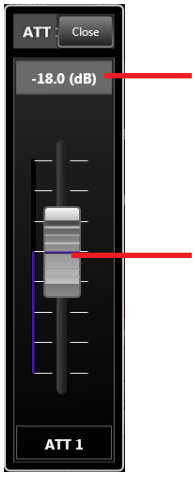


- To cancel the above data (1) and (3), select “Clear” from the menu appearing by right-clicking on the ARC box. (For default settings, see p. 125.)



7.11. Attenuator

This function box for monaural and recording outputs is used to set the attenuation of each output.



(1) Gain Display

(2) Fader

1. Gain Display

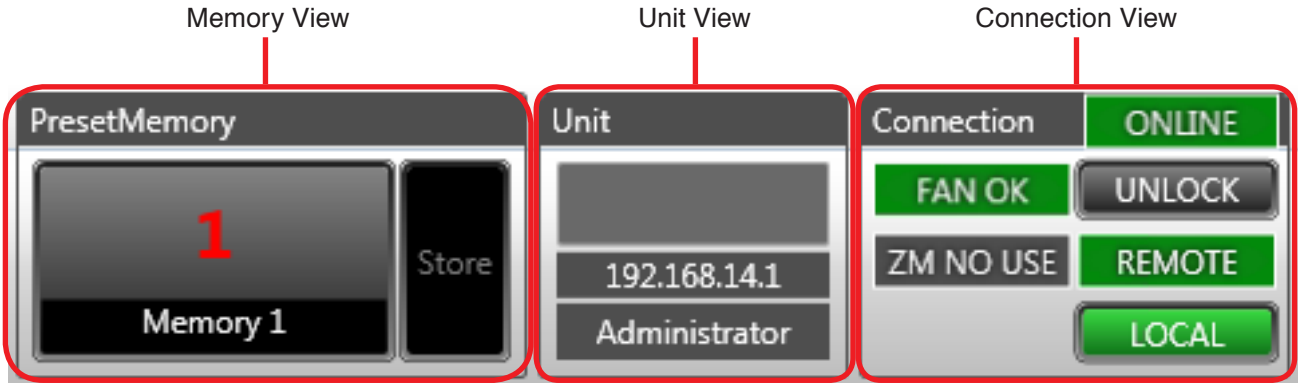
Indicates the attenuator gain.

2. Fader

Sets the attenuator gain. A fader knob is displayed in the position corresponding to the gain value. Drag the fader knob to operate the fader. The attenuation varies in 6 dB steps (fixed).

8. STATUS VIEW

The Status view is located in the upper right section of the Main screen.
The Status view is comprised of Memory view, Unit view and Connection view.



8.1. Memory View

Displays the name and the number of the currently selected Preset Memory (see p. 102). If “Store” is also clicked, data can be written in the Preset Memory. Clicking the Preset Memory name and number displays the Memory List panel.

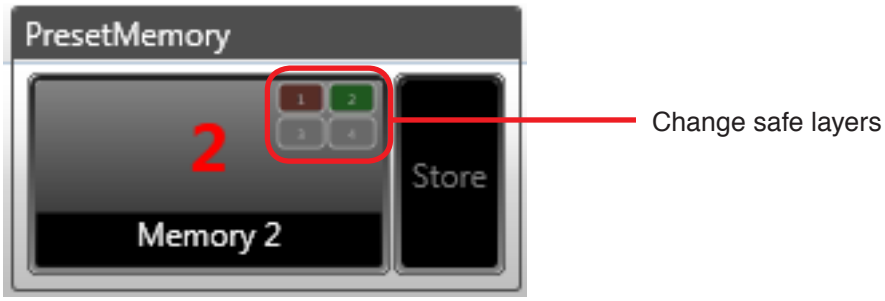
[Memory list panel]



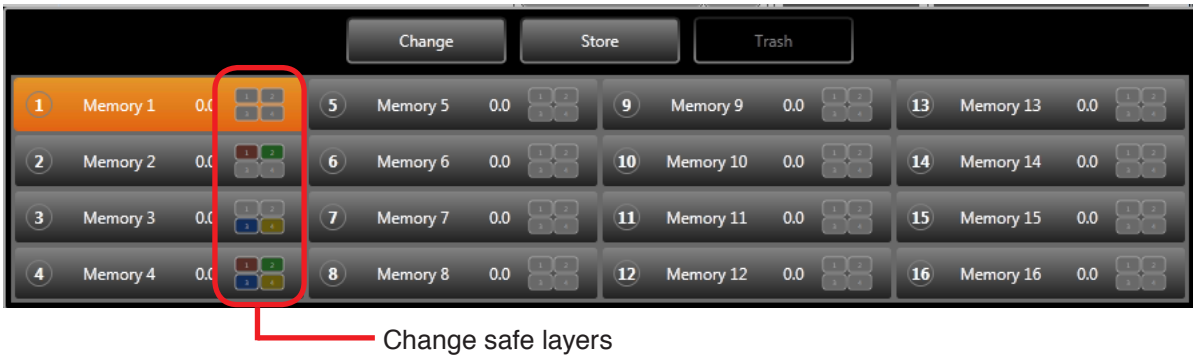
A total of 16 buttons, each of which shows a Preset Memory name and crossfade time (see p. 102), are displayed. The currently selected Preset Memory button is displayed in orange.

“Change safe layers” are displayed in the Memory view and on the Memory list panel when the change safe function is enabled.

[Memory view] (when the change safe function is enabled)



[Memory list panel] (when the change safe function is enabled)



8.1.1. Changing the Preset Memory

Select the Preset Memory button to be changed and click the [Change] button.

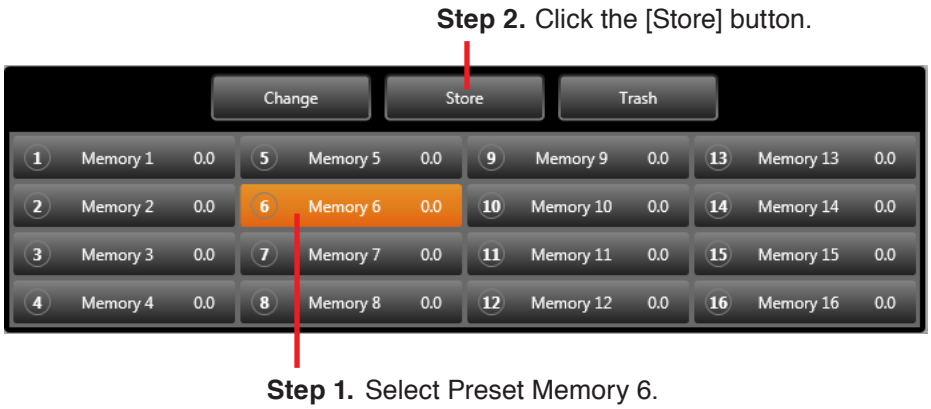
Example: Changing to Preset Memory 6



8.1.2. Storing edit contents in the Preset Memory

To store the edit content, select the Preset Memory button in which the contents are to be stored, then click the [Store] button.

Example: Storing in Preset Memory 6



When storing in the Preset Memory being edited, the contents can also be stored by clicking the Memory view's [Store] button.



8.1.3. Deleting edit contents

To discard the contents in edit, click the [Trash] button.
After the contents are deleted, the previously stored pre-edit parameters are loaded.

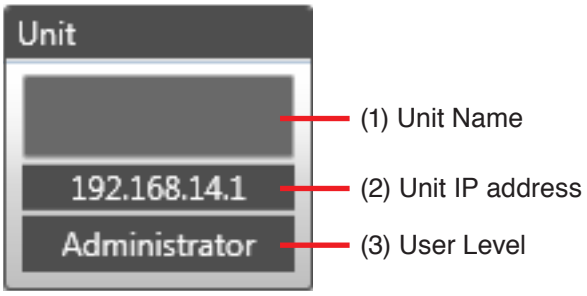
Note: Once the edit contents have been deleted, they cannot be restored.



For each Preset Memory's name and crossfade time settings, see p. 102, "Preset Memory Settings" in the Configuration settings.

8.2. Unit View

The unit's name and IP address are displayed.



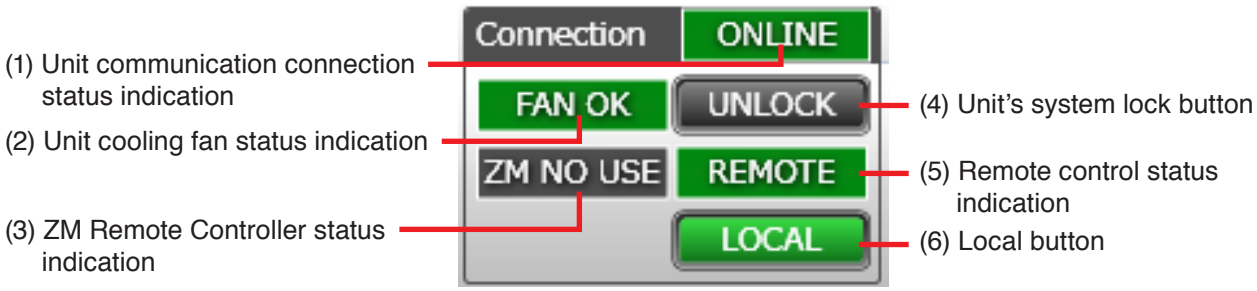
1. Unit Name
Displays the unit's name.

2. Unit IP Address
The unit's IP address is displayed. For the unit IP address, see p. 76, "Connection Settings" in the "Communication Settings."

3. User Level
The user level is displayed. For the user level, see p. 112, "User Level and Prohibition Settings."

8.3. Connection View

This view displays the unit's status.



1. Unit Communication Connection Status Indication
The status of the unit's communication connection is displayed.

OFFLINE : Not connected (Offline mode)
ONLINE : Connection in progress (Online mode)

2. Unit Cooling Fan Status Indication
The status of the unit's cooling fan is displayed.

FAN OK : Normal
FAN ERROR : Failure

3. ZM Remote Controller Status Indication
The ZM Remote Controller's connection status is displayed.

ZM NO USE : No settings
ZM OK : Normal
ZM ERROR : Failure

4. Unit's System Lock Button
The status of the lock button on the unit's front panel is displayed.

LOCK : Locked
UNLOCK : Unlocked

5. Remote Control Status Indication
Displays the status that any operation by a PC, external control, or ZM Remote controller is enabled.
It is enabled whenever the PC is online with the unit.

REMOTE : Remote

6. Local Button
The unit's local status is displayed. This button is used to switch between local and non-local statuses while in Online mode.

LOCAL : Local
UNLOCAL : Unlocal

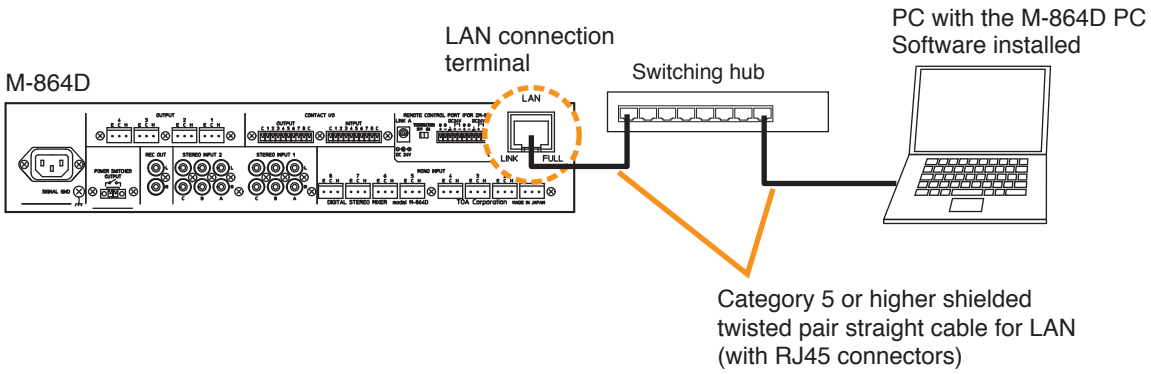
[Local status]
The unit's front panel knobs and other controls are enabled and their values are valid.
[Unlocal status]
The unit's front panel knobs and other controls are disabled and their values are invalid. Faders are set to 0 dB gain (bypassed mode).

Note
The "Cannot confirm" indication is displayed while in Offline mode.

9. COMMUNICATION SETTINGS

9.1. Connections between a PC and the Unit

Connect a PC and the M-864D to a switching hub using LAN straight cables individually.



9.2. Method to Enable Communications between the PC and the Unit

Step 1. Perform network settings by selecting [Network → Connection Settings] from the menu.
(See p. 76, “Connection Settings.”)

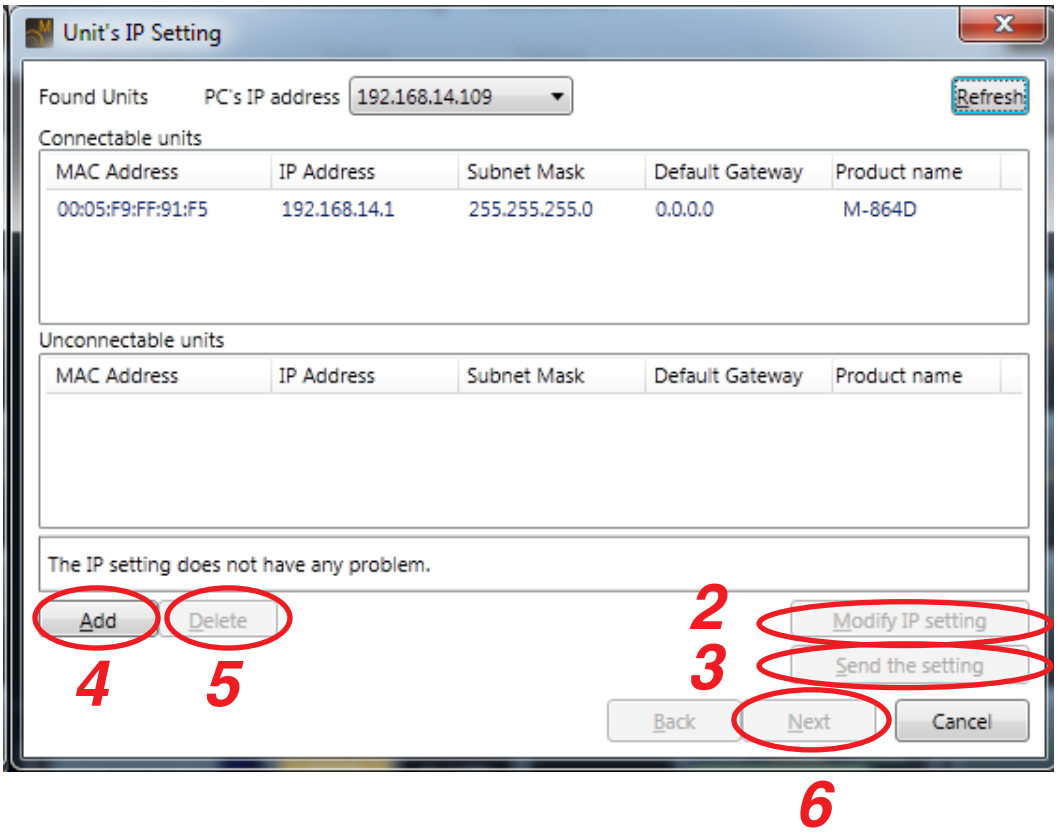
Step 2. Make Communications by selecting [Network → Connect] from the menu.
(See p. 79, “Communications.”)

9.3. Connection Settings

Perform settings needed to communicate with the units in this section.
Network settings can be made.

Step 1. Select [Network → Connection Setting] from the menu.
Network settings of the units found on the network are displayed.
The table below shows the factory preset settings for each unit.

IP address	192.168.14.1
Subnet mask	255.255.255.0
Default gateway	0.0.0.0



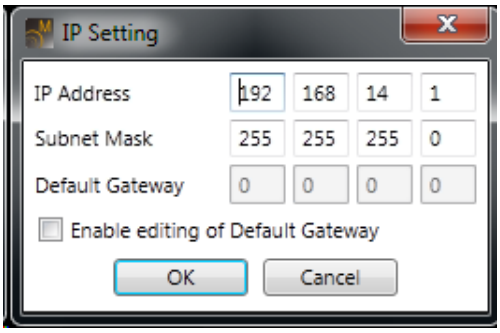
If no unit was detected:

Install the undetected unit within the reach of broadcast packet.
Communications may be interrupted when the PC is firewall-protected.

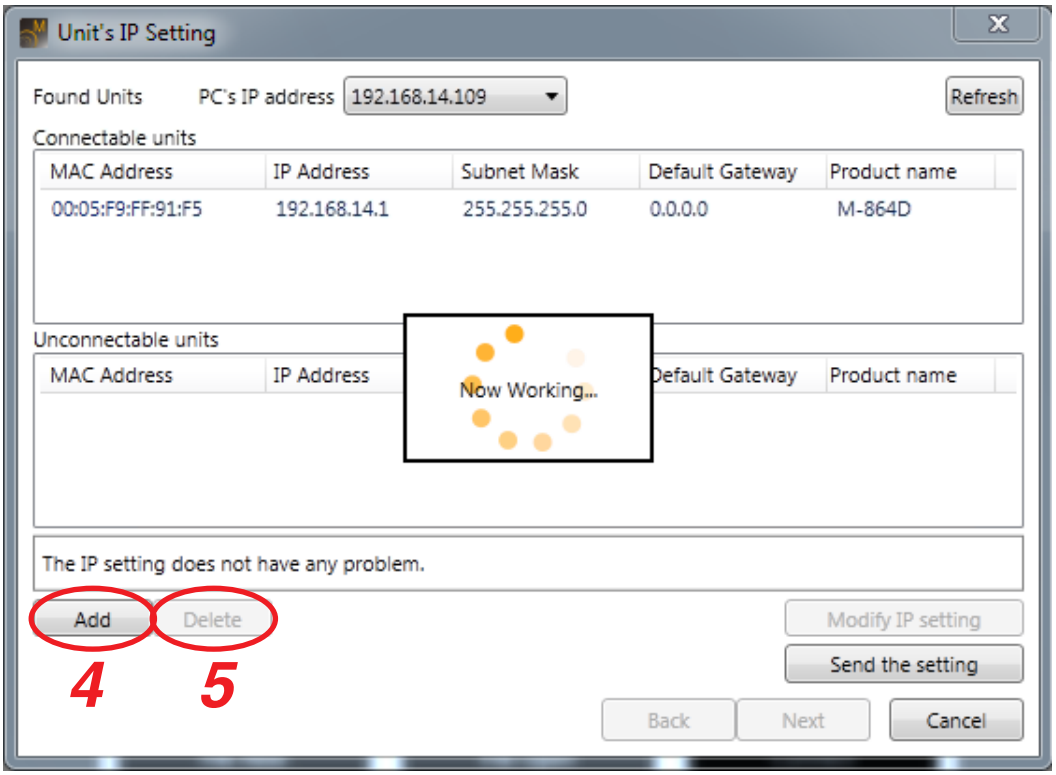
If a unit's IP address is duplicated or inappropriate network setting has been performed, such device is displayed in the Unconnectable units list.

- To change the unit's IP address setting, advance to **Step 2**.
- When transmitting the settings data changed in **Step 2** to the unit, advance to **Step 3**.
- When changing the PC's network settings, change them from the Windows Control Panel. PC network setting cannot be changed using the M-864D PC software.
- When connecting to the unit via a router, network settings are not displayed on this screen. The unit network settings cannot be changed. Connect such unit to a LAN and perform the network settings in advance.
- If a unit needs to be connected via a router, advance to **Step 4** to add it.
- If the unit that should not be communicated with is displayed in the list, advance to **Step 5** to delete it from the list.
- Advance to **Step 6** when all the units to be connected are displayed in "Connectable units" list.
- When the PC has two or more IP addresses, select the unit and IP address to be communicated with from the PC's IP address.

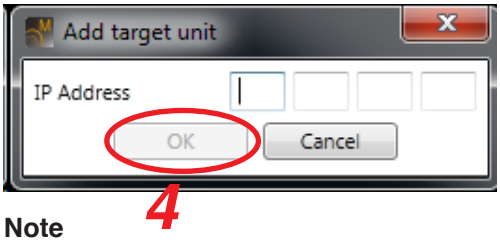
Step 2. Change the unit's network setting.
Select the unit for which you want to change the network setting, then click the [Modify IP setting] button. The IP Setting screen is displayed.
Set the IP address, then click the [OK] button.



Step 3. Transmit changed setting data to the unit.
Clicking the [Send the setting] button transmits the IP settings to the corresponding unit and network setting for the unit is changed.



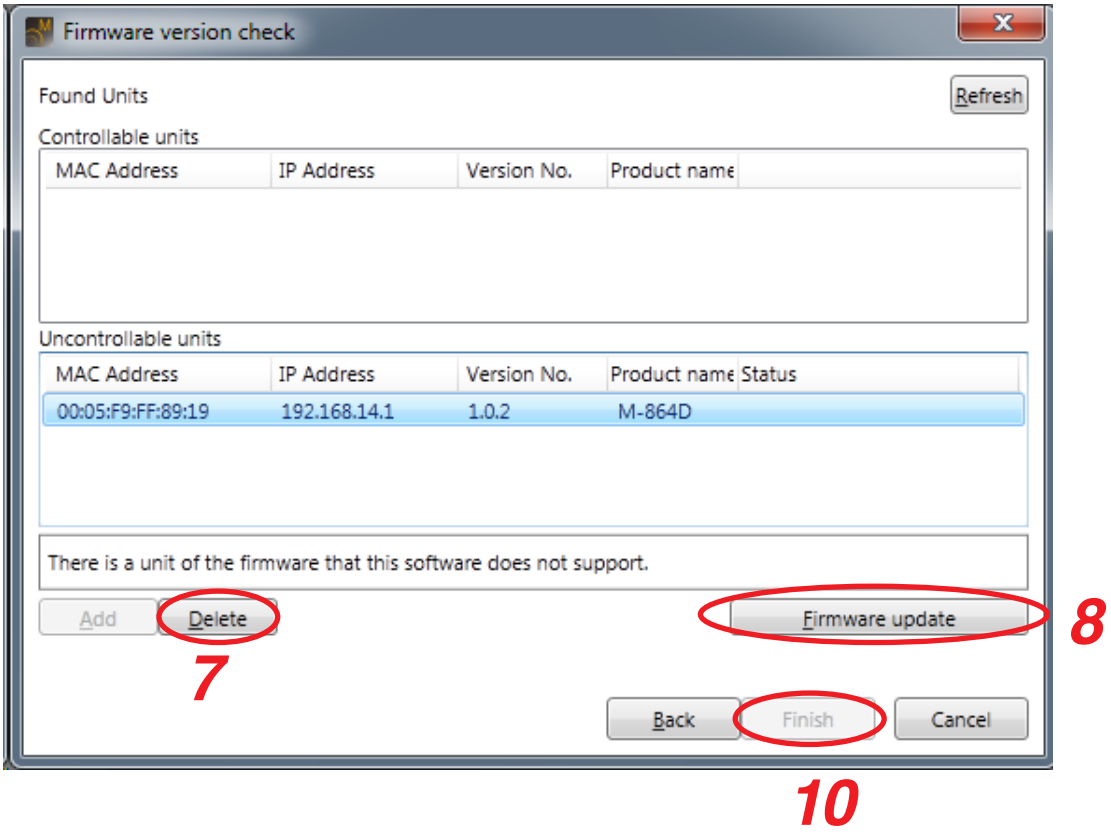
Step 4. Add the unit to be connected via a router in a list. Clicking the [Add] button displays the [Add target unit] screen. Enter the IP address of the added unit and click the [OK] button.



Note
Network setting for the unit to be connected via a router cannot be changed using the method described in **Step 2**.
If you need to change the network setting, connect such unit to a LAN and change the network setting in advance.

Step 5. Delete the unit from the list.
Select the unit to be deleted, then click the[Delete] button.
The selected unit is deleted from the list.

Step 6 Click the[Next] button, then the Firmware version check screen is displayed.



- When the firmware version of the M-864D is older than that the M-864D software supports, the M-864D is displayed in the Uncontrollable units list.
- If a unit that does not need to be controlled is displayed, advance to **Step 7** to delete it from the list.
- When updating firmware, advance to **Step 8** .
- If all units to be controlled are shown in the Controllable units list, advance to **Step 9**.

Step 7. Delete the unit from the list.
Select the unit to be deleted, then click the [Delete] button.
The selected unit is deleted from the list.

Step 8. Update the firmware.
Select the unit from the Uncontrollable units list and click the [Firmware update] button.
Firmware update starts.
The unit is moved to and displayed in the Controllable units list after the firmware update is complete.

Note
Updating the firmware version from Ver. 1.0.x to Ver. 2.0.x causes the unit to reactivate twice. (“x” represents a revision number.)
Never switch off the M-864D unit’s power during firmware update.

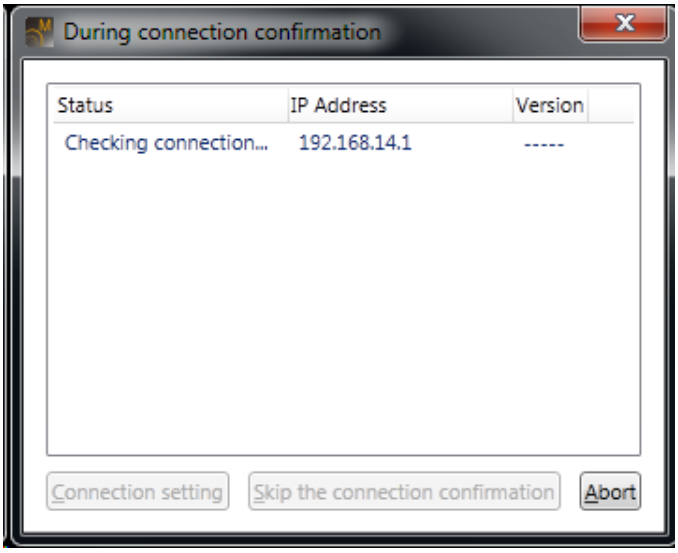
Step 9. Select the unit(s) from the Controllable units list.

Step 10. Click the[Finish] button.
Setting is complete.

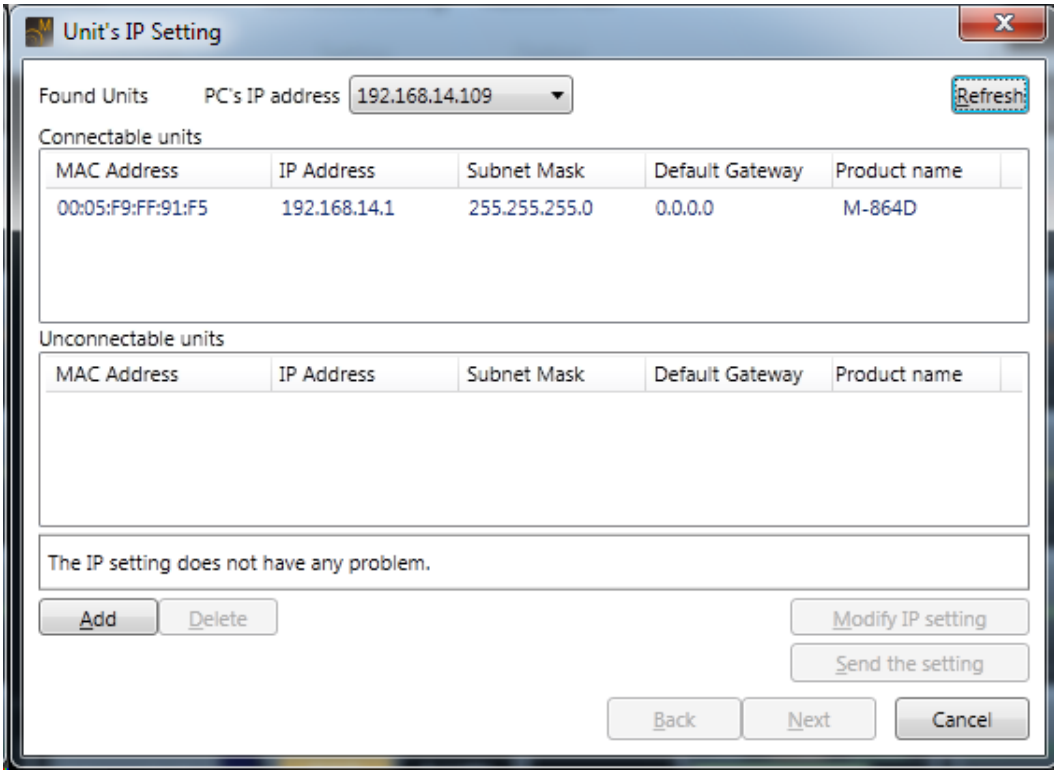
9.4. Communications

Connect to the unit displayed “Connectable units” field in the Unit’s IP setting screen.

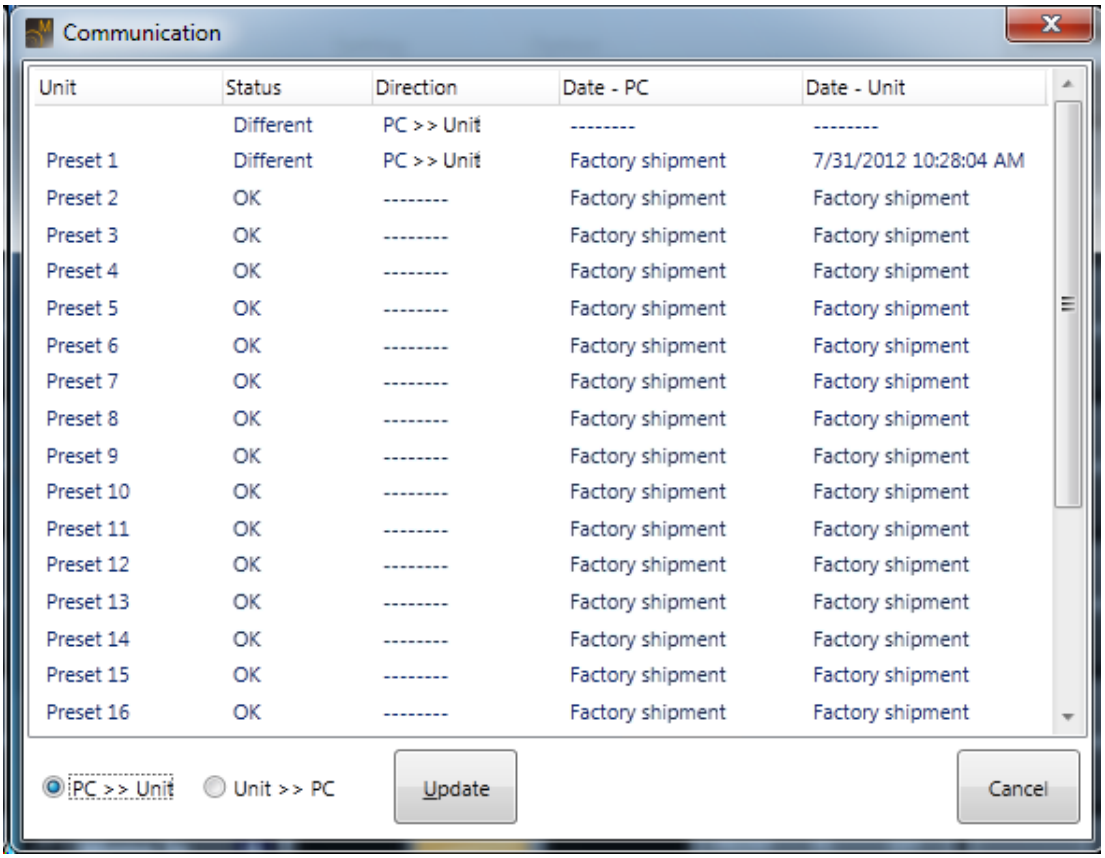
Step 1. Select [Network → Connect] from the menu.
While the screen below is displayed, the target unit designated with the connection settings are being detected.



Note
If no units on the network have been set for the connection settings, the Unit’s IP Setting screen is displayed.
Perform network settings in the same manner as in the steps on p. 76, “Connection Settings.”
On completion of network settings, the units listed in “Connectable units” field start being connected.



Step 2. Match both setting data of the PC and the unit if not identical.
To enable communications between the PC and the unit, both setting data must be the same.
If data is different between the PC and the target unit, the Communication screen appears indicating "Different" in the Status column during connection.
Designate the transfer direction "PC >> Unit" or "Unit >> PC," and click the [Update] button. Then, all unmatched setting data is simultaneously transferred in the designated direction.



Step 3. Select [Network → Disconnect] from the menu.
This terminates communications between a PC and the unit.

10. REMOTE SETTINGS

Set contact input and output functions, ZM Remote Controller control functions, and the external control port.

10.1. Remote Function Overview

10.1.1. Contact input and output functions

Various functions can be allocated to the contact input and output by changing the settings on the contact input and contact output setting screens. To permit external control by connected equipment, short terminals 1 – 8 to the C terminal. For example, when terminals 1 – 8 have been allocated to Preset Memory Nos. 1 – 8 in the contact input settings, shorting individual terminals to the C terminal allows Preset Memory Nos. 1 – 8 to be called up.

(1) Contact input functions

None (unused)
Channel On/Off
EXT VOL. Up/Down
ST Line Source Select
Preset Memory Load
Remote Command

(2) Contact output functions

Break
Make
Channel On/Off
ST Line Source Select
Preset Memory Load
Contact Through Out
Remote Switched Out
Fader Tally

For details, see p. 82, “Contact Input Settings” and p. 84, “Contact Output Settings.”

10.1.2. ZM Remote Controller control functions

The ZM Remote Controller Settings screen permits various functions to be allocated to the remote controller.

ZM Remote Controller control button functions

None (unused)
Channel On/Off
EXT VOL. Gain
ST Line Source Select
Matrix Crosspoint Assign
Matrix Crosspoint Gain
Preset Memory Load
Remote Switched Out
Remote Command
EXT VOL. GainCS(H) (ZM-9014 only)
Matrix Crosspoint GainCS(E) (ZM-9014 only)

ZM Remote Controller volume control functions

None (unused)
EXT VOL. Gain
Matrix Crosspoint Gain
EXT VOL. GainCS(H) (ZM-9014 only)
Matrix Crosspoint GainCS(E) (ZM-9014 only)

For details, see p. 87, “ZM Remote Controller Settings.”

10.1.3. External control port

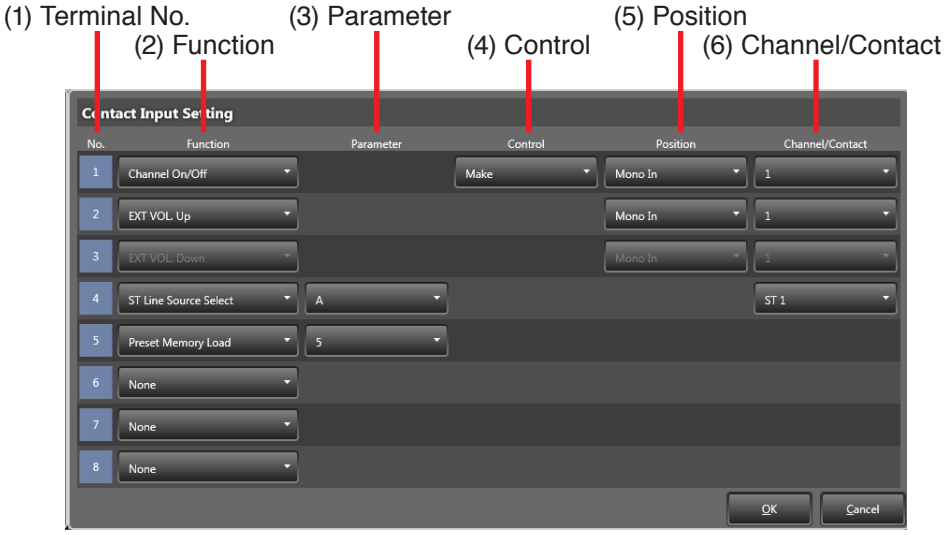
Set the port number of the external control port (the port to be externally controlled from the external device).
For details, see p. 91, “External Control Port Setting.”

10.1.4. External control command send function

Performs command control to the external devices via TCP/IP
Commands can be sent to the external devices by means of a contact input or the control signal from the ZM Remote controller that works as a trigger.
For details, see p. 92, “External Control Command Send setting.”

10.2. Contact Input Settings

Select [Remote → Input] from the Menu view to display the Contact Input Settings screen.
This setting item is related to the system.



1. Terminal No.
Displays the contact input terminal number (1 – 8).

2. Function
Displays the function assigned to the terminal.
Clicking the button allows the function to be selected.
Select “None” when assigning no functions to the terminal.

3. Parameter
Displays parameter settings corresponding to the function assigned in the “Function” Column.
Clicking the button allows the parameters to be selected.
Note that some assigned functions have no parameters.

4. Control
Displays control settings if “Channel On/Off” is assigned on the “Function” menu. Click the button to select either “Make” or “Pulse.”

5. Position
Displays the position settings corresponding to the function assigned in the “Function” Column.
Click on the button to select the position.
Mono In: Monaural input
Stereo In: Stereo input
Mono Out: Monaural output
Rec Out: Recording output
Note that some assigned functions have no position settings.

6. Channel/Contact
Displays the channel selection settings corresponding to the function assigned in the “Function” Column.
Clicking the button allows the channel to be selected.
When Position is “Mono In”: 1 – 8
When Position is “Stereo In”: 1 – 2
When Position is “Mono Out”: 1 – 4
When Position is “Rec Out”: L, R
Note that some assigned functions have no channel selection settings.

• **Function Settings**

The following functions can be set for each terminal:

[Channel On/Off]

Switches the selected channels On or Off.
Use the “Position” and “Channel/Contact” columns to select the channel.
The On/Off control method differs depending on the “Control” column settings.

Make: Channels are set to On when their terminals are shorted to the C terminal, and to Off when opened.
Pulse: Channels alternate between On and Off when their terminals are shorted to the C terminal.

[EXT VOL. Up/Down]

Used to increase or reduce the EXT VOL. fader gain for the selected channels. Use the “Position” and “Channel/Contact” columns to select the channels. Whenever a terminal is shorted to the C terminal, its gain increases or decreases by 1 dB. If the button is held down and the terminal is kept closed, the gain continues to increase or decrease.

Notes

- This function is allocated to any 2 terminals in consecutive order.
  Gain “Up” is allocated to the terminal with the lower number, and gain “Down” is allocated to the terminal with the higher number. For example, if this function is selected at Terminal 4, it is automatically allocated to both Terminals 4 and 5, giving Terminal 4 the “Up” function and Terminal 5 the “Down” function.
  The “Up” function cannot be assigned to Terminal 8. If this function is selected for Terminal 7, Terminal 7 will be designated as “Up” and Terminal 8 as “Down.”
- This gain UP/DOWN function cannot be allocated to any channel that has its EXT VOL. fader disabled.
  For EXT VOL. fader Enable/Disable settings, see p. 99, “Fader Settings” section in the Configuration settings.

[ST Line Source Select]

Used to select the stereo input source (connected to Terminals A, B and C of each stereo input).
Stereo Input 1 and Stereo Input 2 are selected in the “Channel/Contact” column. Use the “Parameter” column to select Source A, B or C.
Operation differs depending on the stereo input trim mode settings.

MIX ALL mode: The ON/OFF settings of Terminals A, B and C set in the “Parameter” column are switched. Sources are toggled between ON and OFF each time a connected terminal is shorted to the C terminal.
SELECT mode: The input source set in the “Parameter” column is selected and set to ON when its corresponding terminal is shorted to the C terminal.
When Sources A, B and C are assigned to multiple terminals, the last shorted terminal takes precedence.

[Preset Memory Load]

Accesses the Preset Memory.
Set the Preset Memory (1 – 16) to be called up in the “Parameter” column.
The Preset Memory set in the “Parameter” column is accessed when its corresponding terminal is shorted to the C terminal.
If different Preset Memories are assigned to multiple terminals, the last shorted terminal takes precedence.

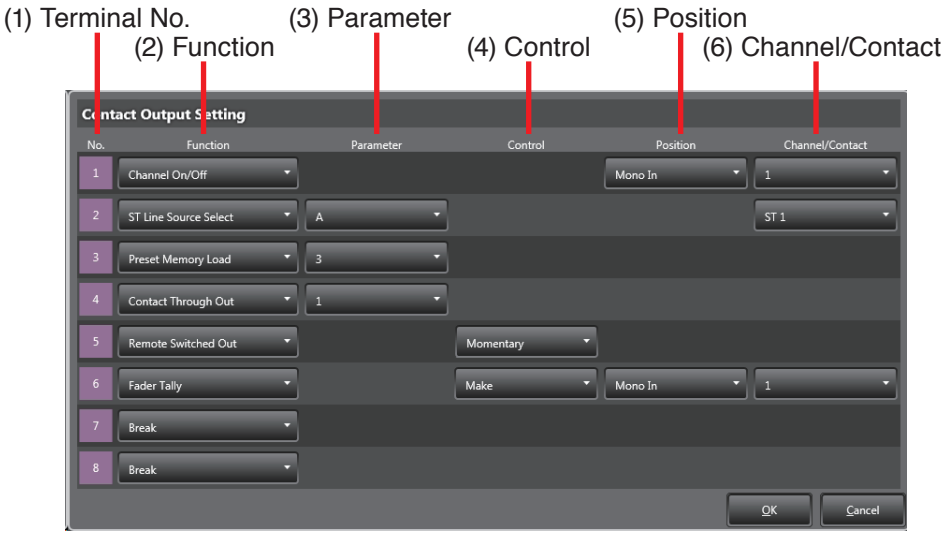
[Remote Command]

Assign the command number for the External control command send function to the terminals.
Shorting the corresponding terminal to the C terminal sends the specified command.

When no function is to be assigned to a terminal, select “None” in the “Function” column.

10.3. Contact Output Settings

Select [Remote → Output] from the Menu view to display the Contact Output Settings screen.
This setting item is related to the system.



1. Terminal No.
Displays the contact output terminal number (1 – 8).

2. Function
Displays the function assigned to the terminal.
Clicking the button permits the function to be selected.
Select “Break” when assigning no function to the terminal.

3. Parameters
Displays the parameter settings that correspond to the function assigned in the “Function” column.
Clicking the button allows the parameters to be selected.
Note that some assigned functions have no parameters.

4. Control
Displays control settings if “Remote Switched Out” or “Fader Tally” is assigned in the “Function” column.
When “Remote Switched Out” is set, clicking the button permits the selection of either “Momentary” or “Latch.”
When “Fader Tally” is set, clicking the button permits the selection of either “Make” or “Pulse.”

5. Position
Displays the position settings that correspond to the function assigned in the “Function” column.
Click on the button to select the position.
Mono In: Monaural input
Stereo In: Stereo input
Mono Out: Monaural output
Rec Out: Recording output
Note that some assigned functions have no position settings.

6. Channel/Contact
Displays channel selection settings that correspond to the function assigned in the “Function” column.
Click on the button to select the channel:.
When Position is “Mono In”: 1 – 8
When Position is “Stereo In”: 1 – 2
When Position is “Mono Out”: 1 – 4
When Position is “Rec Out”: L, R
Note that some assigned functions have no channel selection settings.

• Function Settings

The following functions can be set for each terminal:

[Break]

The terminal remains open.

[Make]

The terminal remains closed (shorted to the C terminal).

[Channel On/Off]

Provides a Make or Break contact for the specified channel On/Off.
Select the channel in the “Position” and “Channel/Contact” columns.
The terminal is closed (Make contact) when the channel is On, and open (Break contact) when the channel is Off.

[ST Line Source Select]

Outputs a Make or Break contact depending on the selection status of the specified channel’s stereo input source.
Set the selection status to be output in the “Parameter” column.
Select the channel in the “Channel/Contact” column.
Operation differs depending on the stereo input trim mode settings.

(1) MIX ALL mode
Provides a Make or Break contact according to ON/OFF status of Terminals A, B or C set in the “Parameter” column.
The terminal is closed when ON and is opened when OFF.

(2) SELECT mode
Outputs a Make or Break contact depending on the selection status of A, B or C set in the “Parameter” Column. The terminal is closed when selected and remains open when not selected.

[Preset Memory Load]

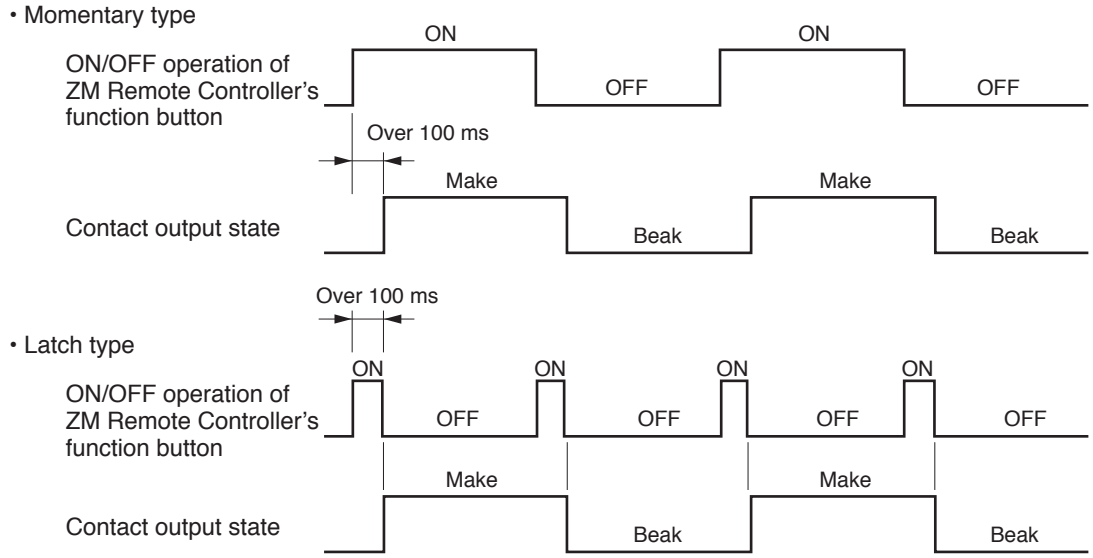
Outputs a Make or Break contact depending on the selection status of the specified Preset Memory.
Set the desired Preset Memory number in the “Parameter” column.
The terminal is closed if the Preset Memory set in the “Parameter” column is selected, and opened if another Preset Memory is selected.

[Contact Through Out]

Outputs a Make or Break contact depending on the selection status of the specified Preset Memory.
Set the desired contact input terminal in the “Parameters” column.
If the contact input terminal set in the “Parameters” column is closed, the contact output terminal is also closed.
If the contact input terminal is opened, then the contact output terminal is also opened.

[Remote Switched Out]

Outputs a Make or Break contact by ON/OFF operation control from the ZM Remote Controller or other externally connected device.
Both momentary type and latch type are available for the terminal control method. Select either type in the “Control” Column.
Below is the operation diagram for each type of control method.



Note
To output a contact for control by the ZM Remote Controller, perform the following operations on the ZM Remote Controller Settings screen (shown on p. 87):

Step 1. Allocate “Remote Switched Out” to the ZM Remote Controller’s “Function” button.

Step 2. Set the contact output terminal number.

[Fader Tally]

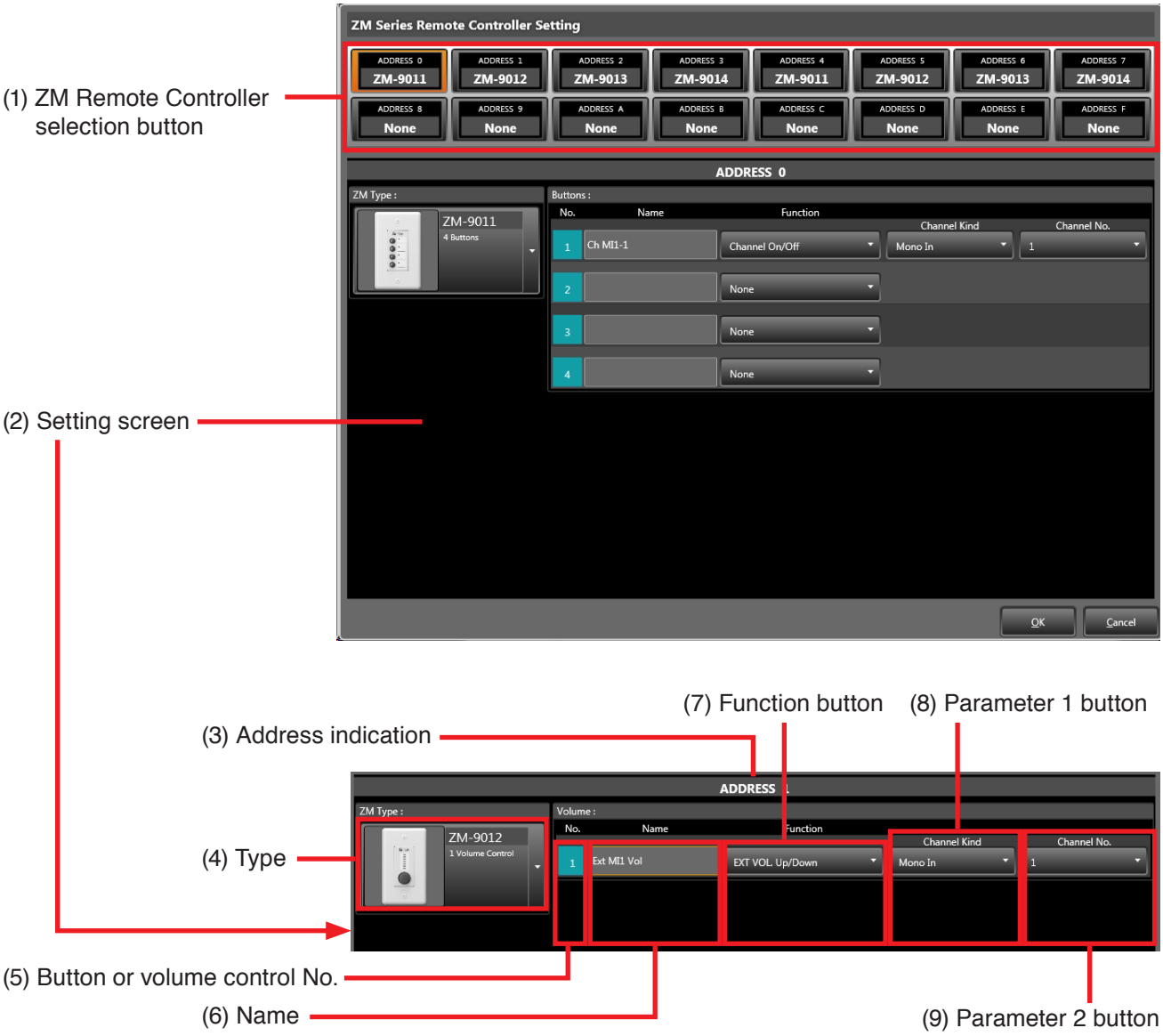
Outputs a Make or Break contact depending on whether the FRONT fader’s gain value exceeds (ON) the threshold level or not (OFF). The threshold level corresponds to the fader scale “1” (approximately –60 dB).
Terminal control differs depending on the “Control” column setting.

Make: The terminal is closed when in ON status, and is opened when in OFF status.
Pulse: A shorting pulse is generated between the corresponding terminal and the C terminal when the status changes from ON to OFF.

Tip
When no function is allocated to the terminal, select “Break” with the corresponding “Function” column button.

10.4. ZM Remote Controller Settings

Selecting [Remote → Setting] from the Menu view displays the ZM Remote Controller Settings screen.
This setting item is related to the system.



1. ZM Remote Controller Selection Button
Displays both the address and ZM Remote Controller model number.
If a ZM Remote Controller is not connected or not set, the “None” indication is displayed.
Clicking this button displays the settings of the ZM Remote Controller with the selected address on the “Settings” screen. The selected address button is displayed with an orange frame.

2. Settings Screen
The ZM Remote Controller set for each address and its settings are displayed.

3. Address Indication
The selected address is displayed.

4. Type

The ZM Remote Controller's type is displayed.



: None



: ZM-9011



: ZM-9012



: ZM-9013



: ZM-9014

5. Button or Volume Control No.

The ZM Remote Controller's button number or volume control number is displayed.

6. Name

The names of the ZM Remote Controller's buttons and volume control are displayed.
Clicking this button permits the name to be entered.

7. Function Button

Functions assigned to the ZM Remote Controller's buttons and volume control are displayed.
Functions can be selected by clicking the Function column button.
When no functions are assigned to the button, select "None."

8. Parameter 1 Button

Parameter settings corresponding to the function assigned in the Function column are displayed. Clicking the Parameter 1 button allows the first parameter to be selected. Note that some assigned functions have no parameters.

9. Parameter 2 Button

Parameter settings corresponding to the function assigned in the Function column are displayed. Clicking the Parameter 2 Button allows the second parameter to be selected. Note that some assigned functions have no parameters.

10.4.1. Assigning button functions

The following functions can be set for each button on the ZM Remote Controller:

[Channel On/Off]

Switches the specified channel On or Off.
Select the channel in the "Channel Kind" column of Parameter 1 and the "Channel No." column of Parameter 2.

Parameter 1	Parameter 2
Channel Kind	Channel No.
Mono In	1 – 8
Stereo In	1 – 2
Mono Out	1 – 4
Rec Out	L, R

Channels toggle between On and Off with each depression of the ZM Remote Controller's button.

[EXT VOL. Gain]

Used to increase or reduce the EXT VOL. fader gain for the selected channels. Use the “Channel Kind” column of Parameter 1 and the “Channel No.” column of Parameter 2 to select the channel. The gain increases or decreases by 1 dB with each depression of the ZM Remote Controller’s button. If the button is held down and the terminal is kept closed, the gain continues to increase or decrease.

Notes

- This function is allocated to 2 buttons in consecutive order.
  Gain “Up” is allocated to the button with the lower number, and gain “Down” is allocated to the button with the higher number. For example, if this function is selected for Button 2, it is automatically allocated to both Buttons 2 and 3, giving Button 2 the “Up” function and Button 3 the “Down” function.
  For this reason, it is impossible to allocate the “UP” function to Button 4 of the ZM-9011 and ZM-9014 Remote Controllers and to Button 8 of the ZM-9013 Remote Controller.
- This function does not work even if allocated to any channel that has its EXT VOL. fader disabled.

[ST Line Source Select]

Selects stereo input sources (A, B and C).
Select stereo input 1 or 2 in the “Channel No.” column of Parameter 1. For A, B and C channel selection, use the “Line Source” column of Parameter 2.
Operation differs depending on the stereo input trim mode settings.

(1) MIX ALL mode

The ON and OFF settings of Terminals A, B and C set in the “Line Source” column are switched. Sources are toggled between ON and OFF each time the ZM Remote Controller’s corresponding button is pressed.

(2) SELECT mode

Input source A, B or C set in the “Line Source” column is selected and set to ON when its corresponding ZM Remote Controller’s button is pressed. When sources A, B and C are assigned to multiple buttons, the last selected button takes precedence.

[Matrix Crosspoint Assign]

The assign ON/OFF settings of the specified matrix crosspoint are switched. Select the crosspoint in the “Input Channel” column of Parameter 1 and in the “Output Channel” column of Parameter 2.

Parameter 1	Parameter 2
Input channel	Output channel
Mono In 1 – 8 Stereo In 1 – 2	Mono Out 1 – 4

Assignment status alternates between ON and OFF with each depression of the ZM Remote Controller’s corresponding button.

[Matrix Crosspoint Gain]

Used to increase or reduce the specified matrix crosspoint’s gain. Select the crosspoint in the “Input Channel” column of Parameter 1 and in the “Output Channel” column of Parameter 2.
The gain increases or decreases by 1 dB with each depression of the ZM Remote Controller’s button. If the button is held down and the terminal is kept closed, the gain continues to increase or decrease.

Note

This function is allocated to any 2 buttons in consecutive order.
Gain “Up” is allocated to the button with the lower number, and gain “Down” is allocated to the button with the higher number. For example, if this function is selected for Button 2, it is automatically allocated to both Buttons 2 and 3, giving Button 2 the “Up” function and Button 3 the “Down” function.
For this reason, the “UP” function cannot be assigned to Button 4 of the ZM-9011 and ZM-9014 Remote Controllers, and to Button 8 of the ZM-9013 Remote Controller.

[Preset Memory Load]

Calls up Preset Memory.
Set the Preset Memory (1 – 16) to be called up in the ”Preset No.” column of Parameter 1. If the ZM Remote Controller’s button is pressed, the Preset Memory set in the “Preset Number” column is called up. If different Preset Memories are assigned to multiple buttons, the last pressed button takes precedence.

[Remote Switched Out]

Controls the M-864D’s contact output terminals.
Set the control output terminal number (1 – 8) to be operated in the “Contact Out No.” column of Parameter 1.

Notes
- If the selected contact output terminal is not assigned the “Remote Switched Out” function, it will not operate. The contact input terminal of the device to be controlled must also be set to the “Remote Contact Input” function.
- The control method of the selected contact output terminal differs depending on its “Control” column settings.
  Make: The terminal is closed when the button is pressed and opened when the button is released.
  Pulse: A shorting pulse is generated between the corresponding terminal and the C terminal with each depression of the button.

[Remote Command]

Assign the command number for the External control command send function to the terminals.
Press the ZM Remote controller’s button to send the specified command.

[EXT VOL. GainCS (Channel Select)] (function provided only with the ZM-9014)

Select the channel to be operated with the volume control knob.
Change the channel to be operated with the volume control knob by pressing the ZM Remote controller’s button.

Notes
- Assign the same function to the volume control knob.
- This function does not work even if allocated to the channel for which the EXT VOL. fader is disabled.

[Matrix Crosspoint GainCS (Crosspoint Select)] (function provided only with the ZM-9014)

Select the Matrix crosspoint to be operated with the volume control knob.
Change the Matrix crosspoint to be operated with the volume control knob by pressing the ZM Remote controller’s button.

Note: Assign the same function to the volume control knob.

[When no functions are assigned to the button]

Select “None” with the Function button.

10.4.2. Assigning functions to the volume control

The following functions can be set for the Volume Control on the ZM Remote Controller.

[EXT VOL. Gain]

Increases or decreases the specified channel's EXT VOL. fader gain.
To select the channel, perform settings in the "Channel Kind" column of Parameter 1 and in the "Channel No." column of Parameter 2.

Note: This function does not work even if allocated to channels for which the EXT VOL. fader is disabled.

[Matrix Crosspoint Gain]

Increases or reduces the specified matrix crosspoint gain.
To select the crosspoint, perform settings in the "Input Channel" column of Parameter 1 and in the "Output Channel" column of Parameter 2.

Parameter 1	Parameter 2
Input channel	Output channel
Mono In 1 – 8 Stereo In 1 – 2	Mono Out 1 – 4

[EXT VOL. GainCS (Channel Select)] (function provided only with the ZM-9014)

Increases or decreases the gain of the specified channel's EXT VOL. fader.
The channel can be selected with the button to which the same function is assigned.

[Matrix Crosspoint GainCS (Crosspoint Select)] (function provided only with the ZM-9014)

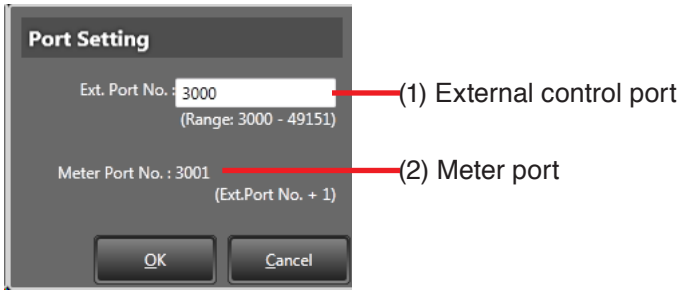
Increases or decreases the gain of the specified Matrix crosspoint.
The crosspoint can be selected with the button to which the same function is assigned.

[When no functions are assigned to the Volume Control]

Select "None" with the Function button.

10.5. External Control Port Setting

Select [Remote → Port Setting] from the Menu view to display the Port Setting screen.
This setting item is related to the system.



1. External control port
Set the port number for receiving the external control commands from the external control device such as AMX.
Note: For details about the external control, read the "M-864D External Control Protocol" included in the supplied CD.
The latest version is made available on the TOA product data download site (http://www.toa-products.com/international/).

2. Meter port setting
Indicates the port number for sending level meter data.
The meter port number is automatically set to External control port number plus 1.

10.6. External Control Command Send Setting

Select [Remote → Remote Command] from the Menu view to display the External Command Setting screen.
This setting item is related to the system.
The set command can be sent by assigning it to a contact input or ZM Remote controller.

[External control command send setting screen]

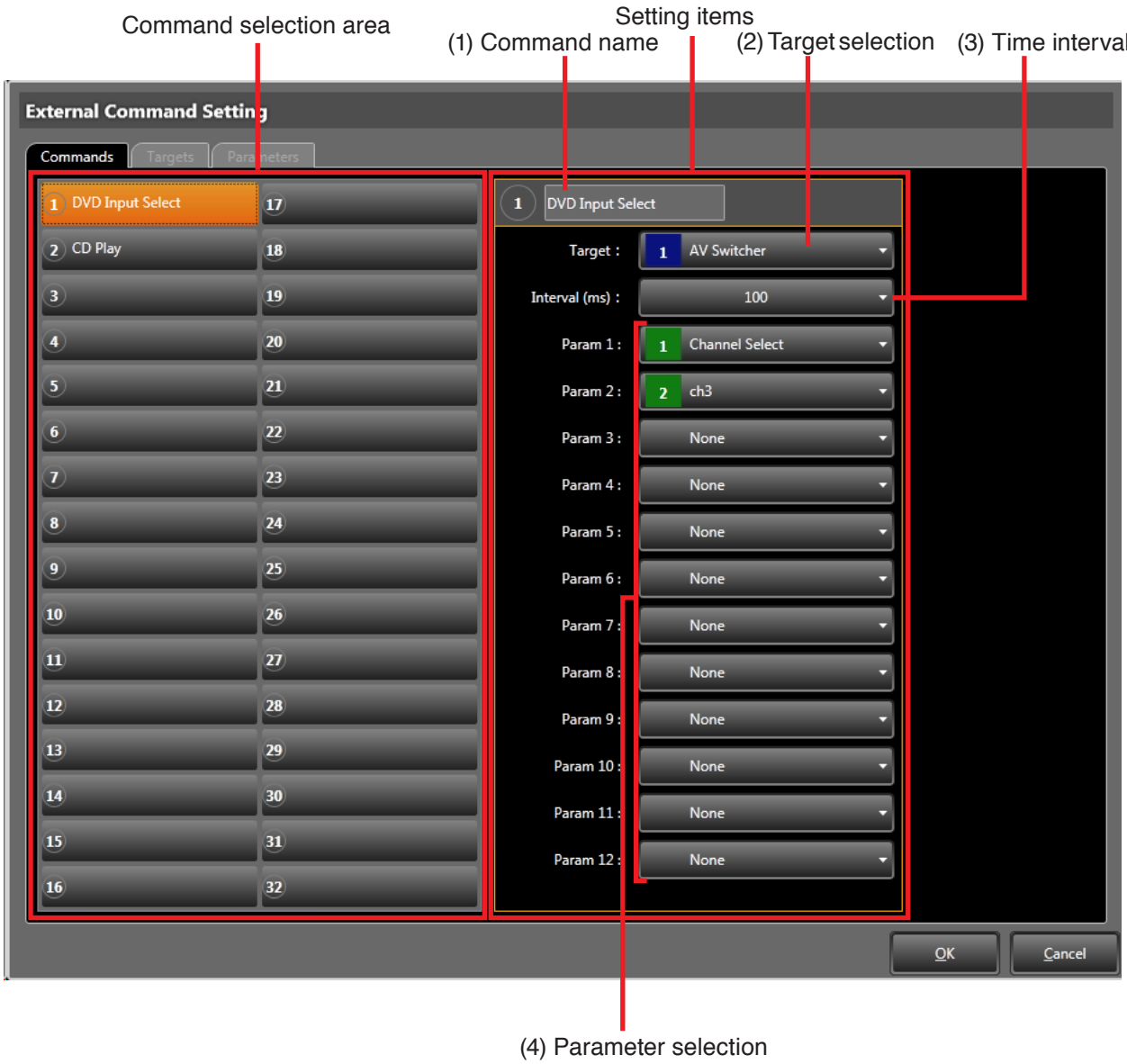


Step 1. Select the Targets tab, and perform settings related to the control target device.
(See p. 94)

Step 2. Select the Parameters tab, and perform settings related to the parameters.
(See p. 95.)

Step 3. Select the Commands tab, and perform settings related to the commands.
(See p. 93.)

[External Command Setting screen (when the Commands tab is selected)]



Create the external control commands.
Up to 32 commands can be created.
Select the command to be set from the Command selection area, then perform settings for each item shown below.

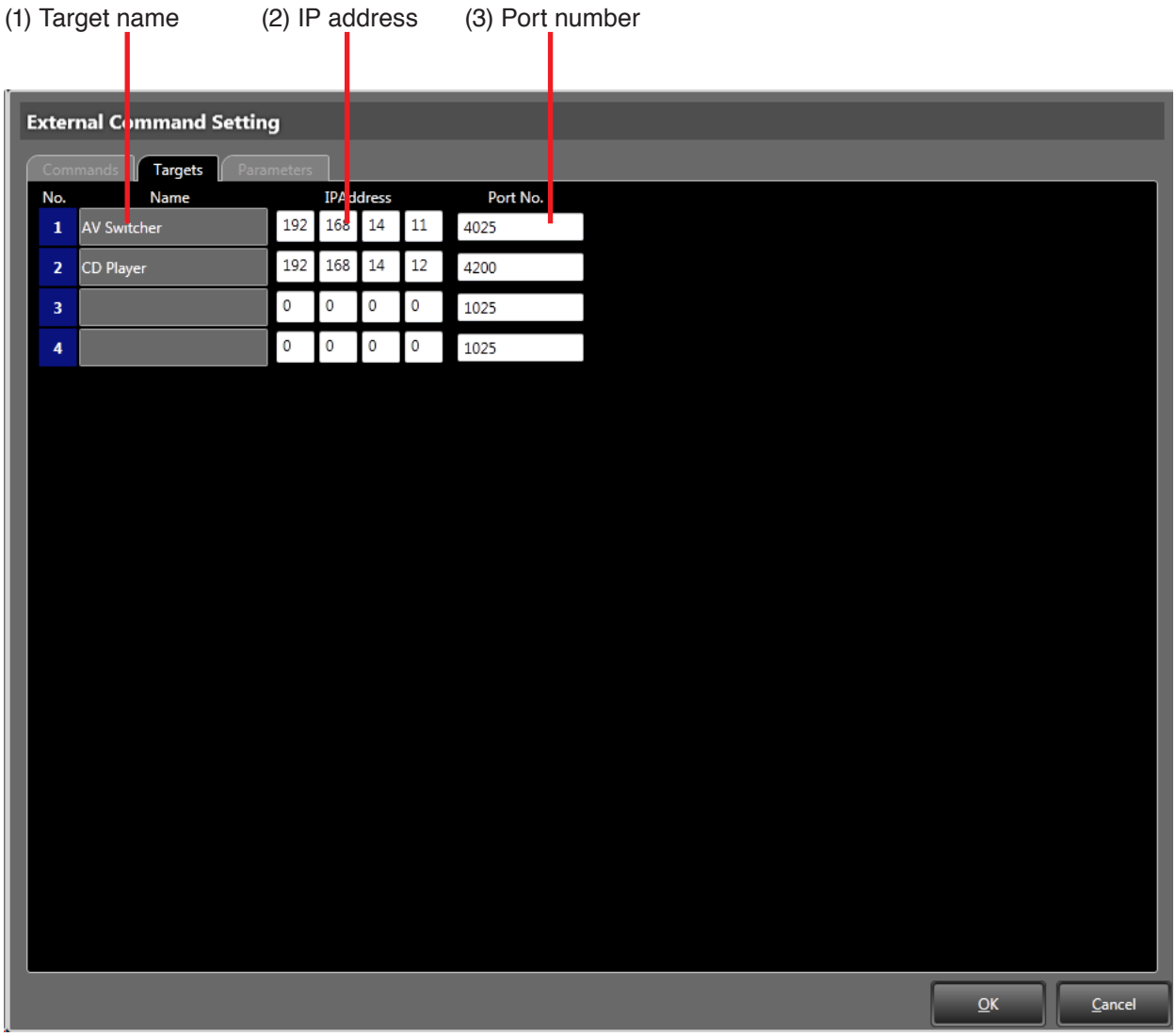
1. Command name
Enter the command name.
Use up to 20 alphanumeric characters for input.

2. Target selection
Select the control target device from the pull-down menu.
Perform settings related to the control target device on the screen displayed when the targets tab is selected (see p. 94).

3. Time interval
Select the send interval from the pull-down menu.
(Setting range: 0 to 3000 ms, 100 ms steps)

4. Parameter selection (1 through 12)
Select the Parameter name from the pull-down menu.
Perform settings related to the parameters on the screen displayed when the Parameters tab is selected (see p. p. 95).

[External Command Setting screen (when the Targets tab is selected)]



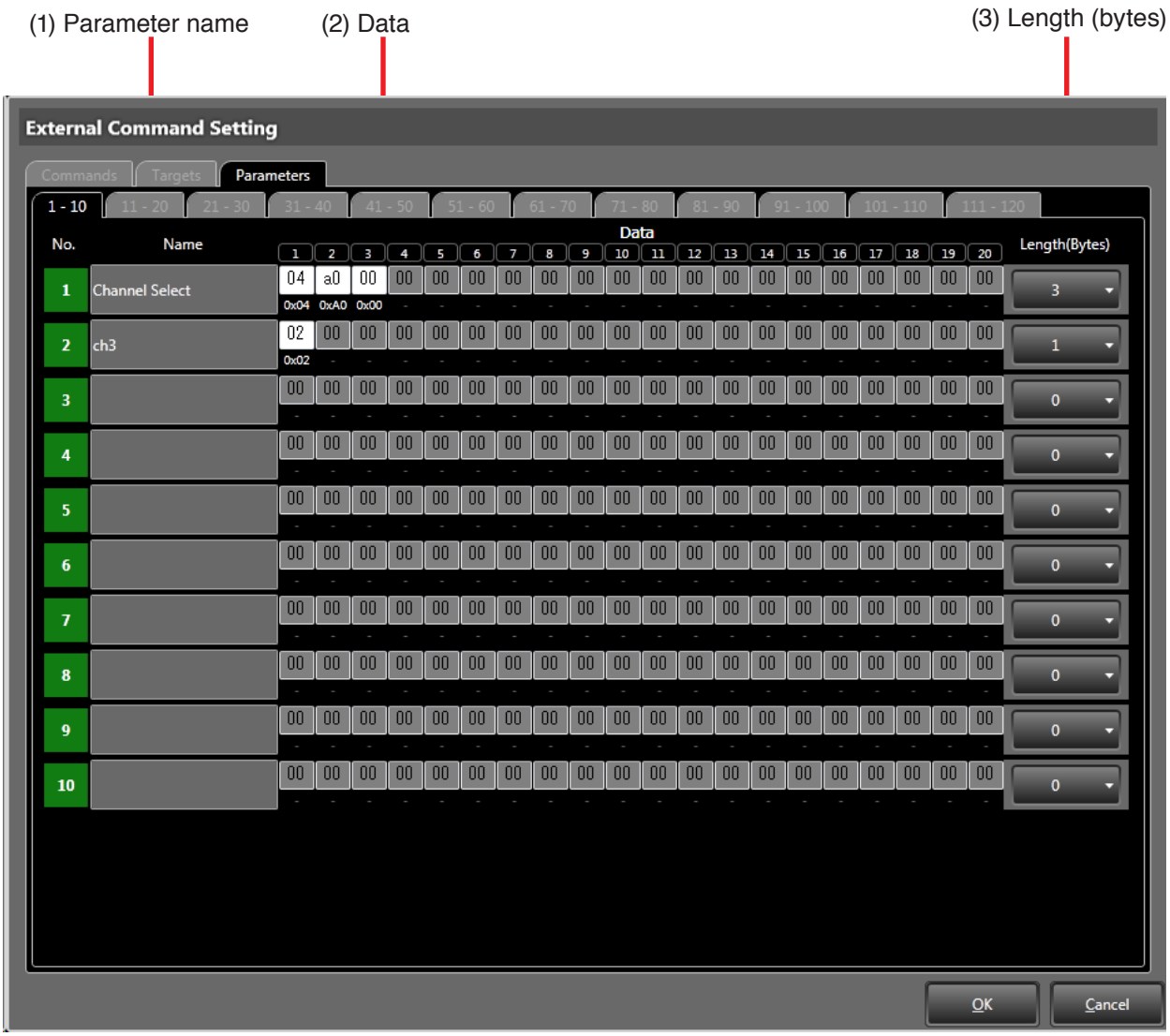
Perform settings related to the target (control target device).
Up to 4 targets can be registered.

1. Target name
Enter the control target device name.
Use up to 20 alphanumeric characters for input.

2. IP address
Enter the control target device's IP address.

3. Port number
Enter the port number to connect to the control target device.

[External Command Setting screen (when the Parameters tab is selected)]



Set the parameters to be used in the command settings.
Up to 120 parameters can be registered.

1. Parameter name
Enter the parameter name.
Use up to 20 alphanumeric characters for input.

2. Data
Enter the data in hexadecimal notation (2 digits of 0 to 9 and A to F).
ASCII characters cannot be used for entry.
To enter the data name, convert ASCII character to character code.
Each parameter can be registered using up to 20 bytes in 1-byte units.

3. Length (bytes)
Set the parameter length to be used.

10.6.1. TCP/IP communication specifications

- Assign the M-864D as a TCP client.
- The TCP port performs connection and disconnection every time a command is sent.

Note
This function cannot control all external control devices.
Check the functional operation on the actual device.

10.6.2. Command configuration

Parameter 1	Interval	Parameter 2	• • •	Interval	Parameter 12

(Maximum)

10.6.3. Command sequence

1. Connection to the target (Session starts.)
2. Command data send
3. Disconnection from the target (Session ends.)

11. CONFIGURATION SETTINGS

This chapter covers the setting of the unit's name, the names of its inputs and outputs, the enabling/disabling of its faders, unit operation lock, and Preset Memory names.

[Unit Name Settings]
The names of the unit, its monaural and stereo inputs, monaural and recording outputs, and stereo input sources can all be set on a single screen.

Note
Stereo input source names can also be set at the corresponding stereo input channel's trim box.

[Fader Settings]

Each fader can be independently enabled or disabled.
Faders set to Disable are fixed at 0 dB gain.

[Unit Lock (System Lock) Setting]

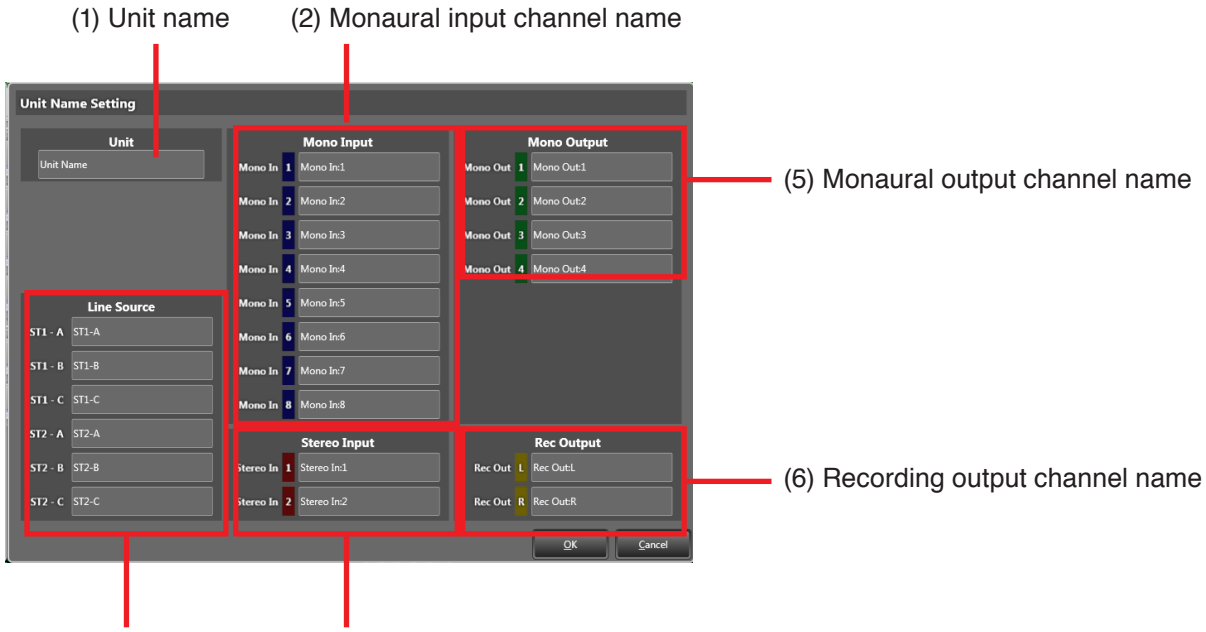
Unit operation can be locked.
If locked, parameters cannot be changed by way of the front panel faders or switches.
The unit's system lock function can be used to prevent changes in parameter settings through either misoperation or tampering.
Faders and switches can be selected by type to be locked or unlocked.
Use the unit's System lock key or the System lock button located in the Connection view to enable the lock function.

[Preset Memory Settings]

The following items can be set: Preset Memory name, cross-fade time, Preset Memory number load when power is ON, and Preset Memory interlock.

11.1. Unit Name Settings

Select [Config → Name] from the Menu view to display the Name Settings screen.



1. Unit Name
The unit's name is displayed.
Click on the button to enter the unit's name.

2. Monaural Input Channel Name
The name of each monaural input channel is displayed.
Click on the corresponding button to enter the channel name.

3. ST Line Source Name
The name of each stereo input source is displayed.
Click on the corresponding button to enter the input source name.

4. Stereo Input Channel Name
The name of each stereo input channel is displayed.
Click on the corresponding button to enter the channel name.

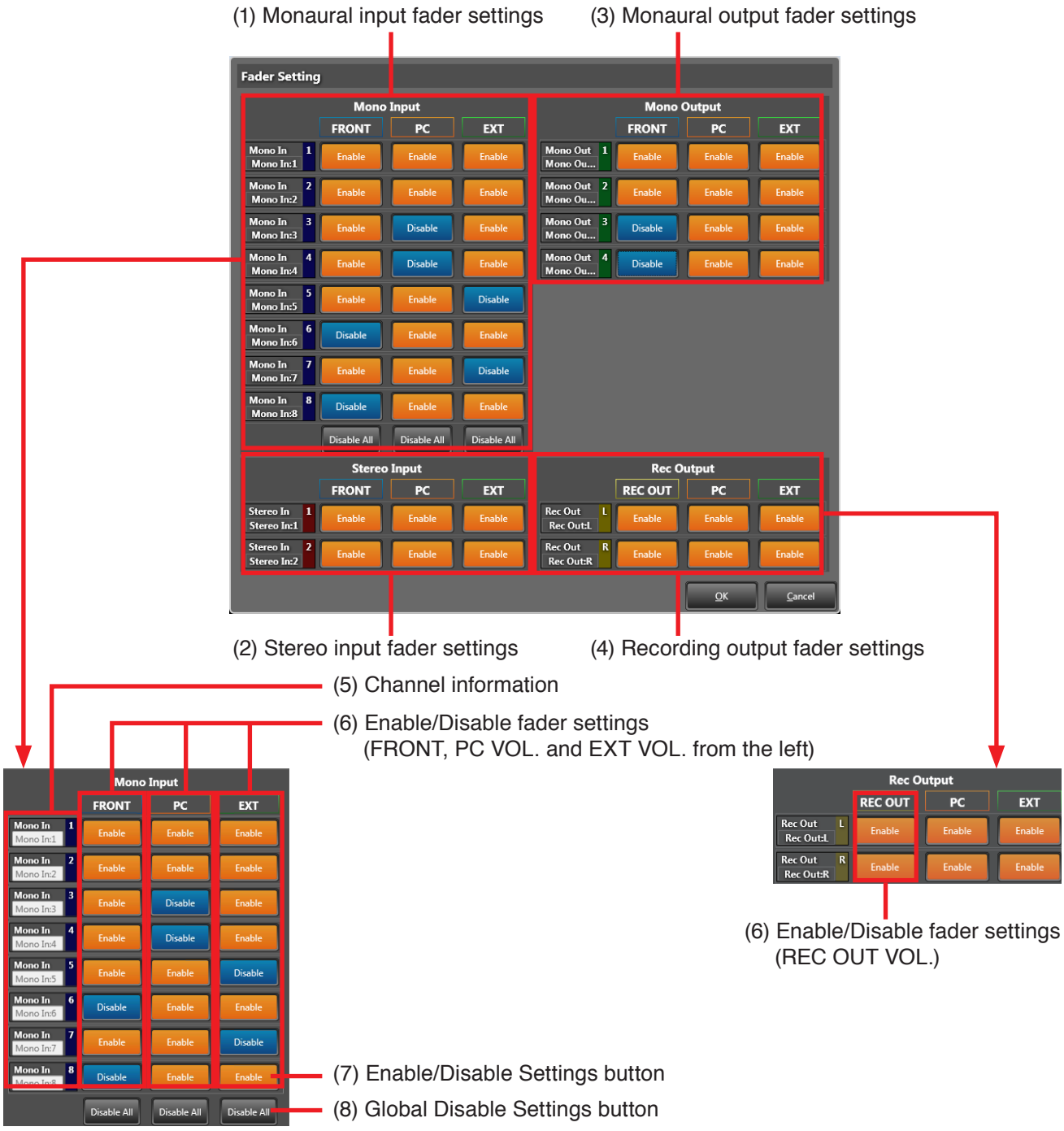
5. Monaural Output Channel Name
The name of each monaural output channel is displayed.
Click on the corresponding button to enter the channel name.

6. Recording Output Channel Name
The name of each recording output is displayed.
Click on the corresponding button to enter the channel name.

Tip: Up to 20 characters can be entered for each name.

11.2. Fader Settings

Enable/Disable settings for all fader types of each channel.
This setting item is related to the system.
Faders set to “Disable” are fixed at 0 dB gain.
Select [Config → Fader] from the Menu view to display the Fader Settings screen.



To disable fader-operated gain changes, set the corresponding fader to “Disable.” (Faders set to “Disable” are fixed at 0 dB gain.) Disabled faders are not displayed on the screen.

1. Monaural Input Fader Settings
Fader settings of each monaural input channel are displayed.

2. Stereo Input Fader Settings
Fader settings of each stereo input channel are displayed.

3. Monaural Output Fader Settings
Fader settings of each monaural output channel are displayed.

4. Recording Output Fader Settings
Fader settings of each recording output channel are displayed.

5. Channel Information
The names and numbers of all channels are displayed.

6. Fader Enable/Disable Settings
Each fader's settings status is displayed. Settings can be changed by clicking the Enable/Disable Settings Button (7) for each channel. For monaural input channels, all channels can be set to "Disable" at the same time using the Global Disable Settings Button (8).

7. Enable/Disable Settings Button
Displays the Enable/Disable Settings status for each fader of each channel.

Enable: 

Disable: 

Status toggles between Enable and Disable with each depression of the button.

8. Global Disable Settings Button
Clicking this button simultaneously disables the faders of all channels.
Use this button to simultaneously disable all channels of each of the FRONT fader, PC VOL. fader and EXT VOL. fader for monaural input.

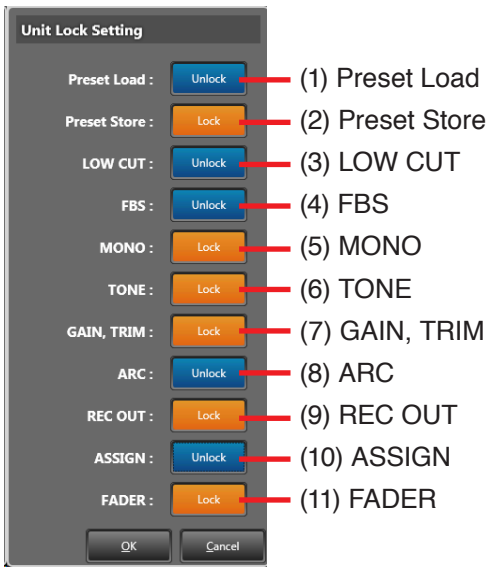
11.3. Unit Lock (System Lock) Setting

Sets the items that are subject to the System Lock function. System Lock prohibits locked items from being accessed by way of the unit's front panel. This setting item is related to the system.

Tip
To prohibit access and operation from a PC, refer to the "Box write protection" section on p. 114. Operations using the ZM Remote Controller and external control protocol are not prohibited.

M-864D front panel	Unit lock setting (see this section.)
M-864D PC Software	Box write protection (see p. 114)
ZM Remote Controller, contact	—
External control protocol	—

Use the M-864D unit's System lock key or the System lock button found in the Connection view to select Lock or Unlock mode.
Select [Config → Lock] from the Menu view to display the Unit Lock Setting screen.



For all buttons, the Lock mode toggles ON and OFF with each depression of the button.

1. **Preset Load**
   Sets whether to lock or unlock the Preset Memory Load function.
   If set to Lock, the Preset Memory cannot be recalled using the unit's front panel Preset Memory key.

2. **Preset Store**
   Sets whether to lock or unlock the Preset Memory Storage function.
   If set to Lock, the Preset Memory cannot be stored using the unit's front panel Preset Memory key.

3. **LOW CUT**
   Sets whether to lock or unlock the monaural input low-cut filters.
   If set to Lock, the low-cut filters cannot be switched ON or OFF using the unit's front panel Low-Cut switch.

4. **FBS**
   Sets whether to lock or unlock the monaural input Feedback Suppression switch.
   If set to Lock, the FBS dynamic mode cannot be switched ON or OFF using the unit's front panel Feedback Suppression switch.

5. **MONO**
   Sets whether to lock or unlock the stereo input Assign mode.
   If set to Lock, the Assign mode cannot be switched using the unit's front panel Mono/Mix switch.

6. **TONE**
   Sets whether to lock or unlock the monaural and stereo input Tone/Gain selector switches.
   If set to Lock, the Tone control settings cannot be changed from the unit's front panel.

7. **GAIN, TRIM**
   Sets whether to lock or unlock the Monaural Input Gain switch and Stereo Input Trim switch.
   If set to Lock, the monaural input gain settings (Phantom Power, PAD, and Gain) and stereo input trim settings (Trim, Gain) cannot be changed from the unit's front panel.

8. **ARC**
   Sets whether to lock or unlock the ARC switch.
   If set to Lock, the ARC switch cannot be used for operation.

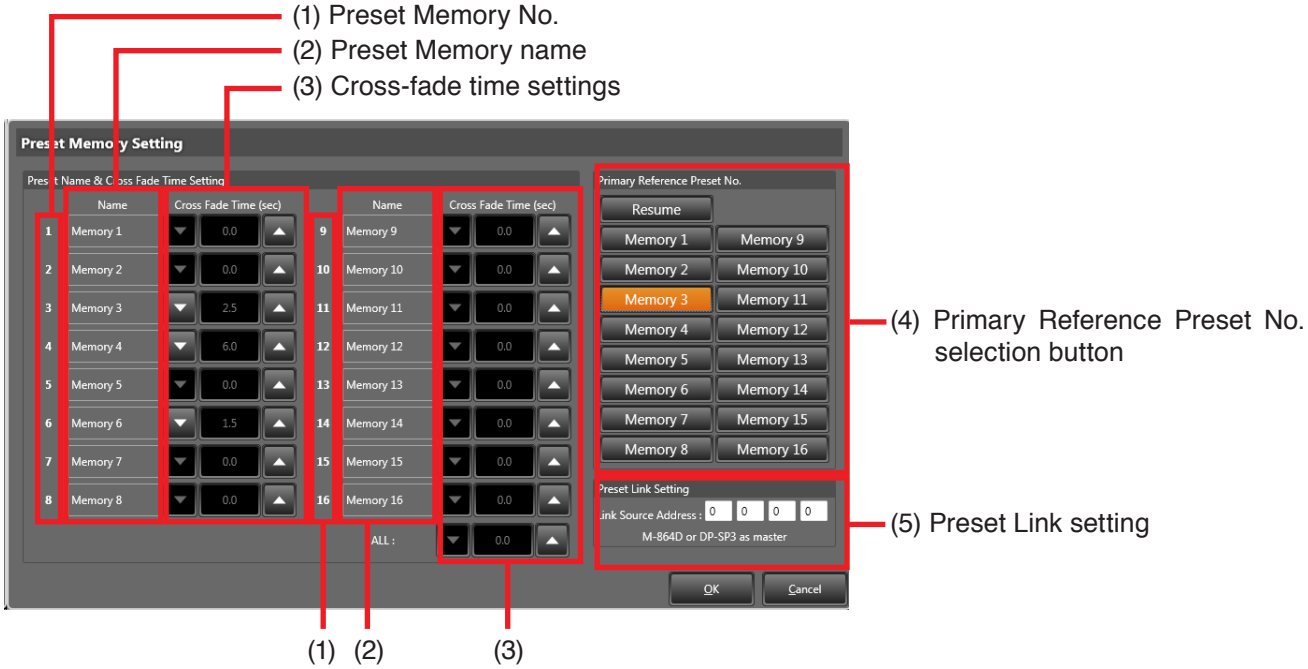
9. **REC OUT**
   Sets whether to lock or unlock the recording output switch.
   If set to Lock, operation of the unit's front panel REC OUT VOL. knob is disabled.

10. **ASSIGN**
    Sets whether to lock or unlock the Assign switch.
    If set to Lock, the unit's front panel Assign switch cannot be used to change assignment settings.

11. **FADER**
    Sets whether to lock or unlock the FRONT fader.
    If set to Lock, front fader operations are disabled retaining the fader gain as it was at the time the fader was locked.
    Notes
    - Front faders disabled in the Fader Settings (see p. 99) are fixed at 0 dB gain, regardless of their Locked or Unlocked status.
    - To change the FRONT fader gain using the FRONT fader, the Lock mode must be set to "Unlock" and the fader enabled in the Fader Settings (See p. 99).

11.4. Preset Memory Settings

Select [Config → Preset Memory Setting] in the Menu view to display the preset Memory settings screen.



Settings to be stored in the Preset Memories are set parameters of all setting items in the “Signal processing box” on p. 122.

[Name and Cross-Fade Time Settings]

Set the name and cross-fade time for each Preset Memory.

1. Preset Memory No.
The Preset Memory Number is displayed.

2. Preset Memory Name
The name of each Preset Memory is displayed.
Click on the button to enter the Preset Memory name.

3. Cross-Fade Time Settings
Displays cross-fade time for each Preset Memory.
The downward-pointing triangle button shortens the cross-fade time, and the upward-pointing triangle button lengthens the cross-fade time.
The triangle buttons located in the “ALL” section can be used to change cross-fade times for all Preset Memories simultaneously.

[Primary Reference Preset No. Setting]

4. Primary Reference Preset No. Selection Button
The Preset Memory number is displayed.
The button corresponding to the Preset Memory number in effect when the power is switched ON is displayed in orange.
Click on the button to set the Preset Memory number.
When [Resume] button is clicked to select, the M-864D is activated in the status* just before the power was switched OFF.
When any button other than [Resume] button is selected, the corresponding Preset Memory is recalled when the power is switched ON.

* Preset Memory that had been recalled just before the power was switched OFF is loaded when the power is switched ON. If the Preset Memory was being edited at power-off, the M-864D is activated in the status that the Preset Memory is in edit.

[Preset Link Setting]

5. Primary Link Setting
Displays the IP address of the unit that functions as the master unit interlocking Preset Memory with other units.
Click on the IP address indication to enter the IP address.
To interlock the Preset Memory with other units, designate the IP address of the unit that functions as the master interlock unit.

Notes
- When the Preset Memory is not interlocked with other units, set the IP address to the initial value (0,0,0,0).
- The units that can be interlocked are the M-864D and the DP-SP3.

12. OPTION SETTINGS

Perform the Change safe setting and the restriction setting to user level. Also, display the Maintenance menu screen.

[Change safe setting]

Change safe function prevents some parameters from being recalled when changing the Preset memory number.
Use this function when wishing to retain the fader settings in operation (not to be changed) at the time of Preset memory number change.

[Prohibition settings corresponding to user level]

The user level refers to the authorization classification that restricts certain operable items.
Prohibition settings stop changes in settings using a PC.

[Maintenance window]

The operation logs can be recorded into the M-864D.
These logs allow you to check what kinds of operation or commands have been executed to the M-864D.
For the behavior to be recorded, refer to the table on p. 110.

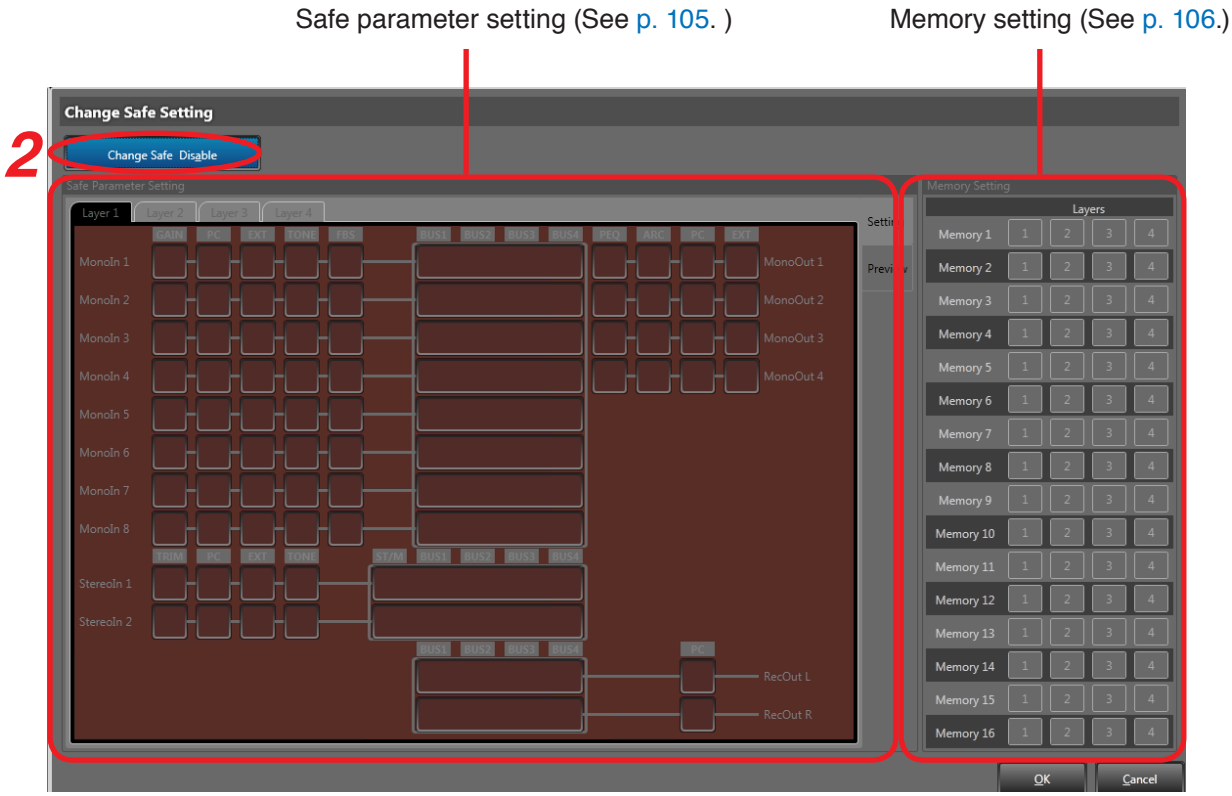
It is possible to retrieve the operation logs recorded into the M-864D and save them into the file.
The saved operation logs can be viewed on the Maintenance **window**.
Operation logs can also be retrieved and saved in real time.

12.1. Change Safe Setting

Change safe function prevents the set parameters from being recalled when changing the Preset memory number.
Parameters to be assigned in safe mode can be set for each of 4 layers and designated in the form of overlay to each Preset number.

12.1.1. Enabling the change safe function

Step 1. Select [Option → Change Safe] from the Menu view to display the Change Safe Setting dialog.



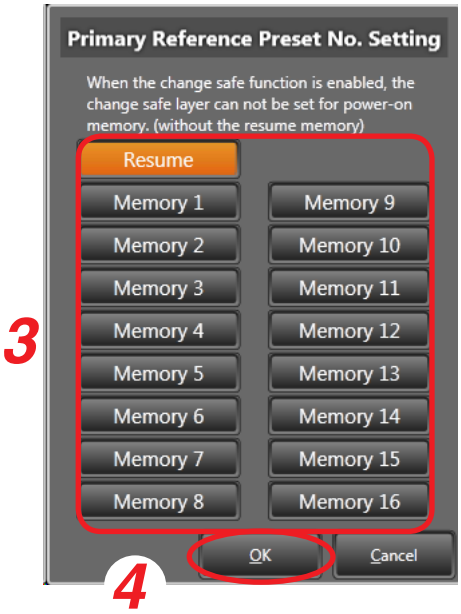
Step 2. Click the [Change Safe Disable] button to enable the change safe function.
A “Primary Reference Preset No. Setting” dialog is displayed.

Notes

- When the Change Safe function is enabled, no Change Safe layer can be set for the “Primary Reference Preset No.”
- Safe parameter settings and Memory settings related to this function are all cleared at the time when the Change Safe function is disabled.

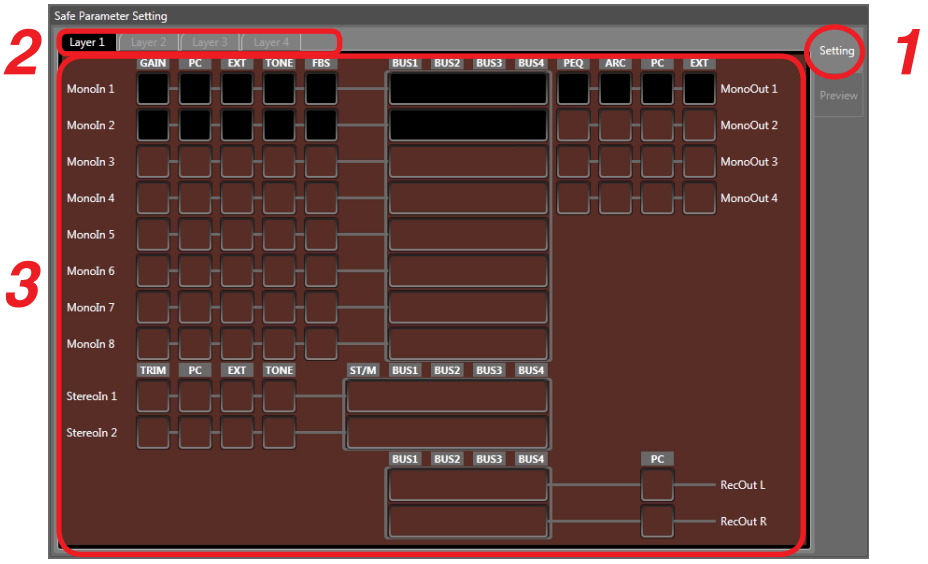
Step 3. Click the Preset memory number button to be set.
The selected Preset memory number button turns into orange.

Step 4. Click the [OK] button.
The selected Preset memory number is set to the Preset memory at power-on.



12.1.2. Safe parameter setting (only when the change safe function is enabled)

Step 1. Select the Setting tab in the Change safe setting dialog.



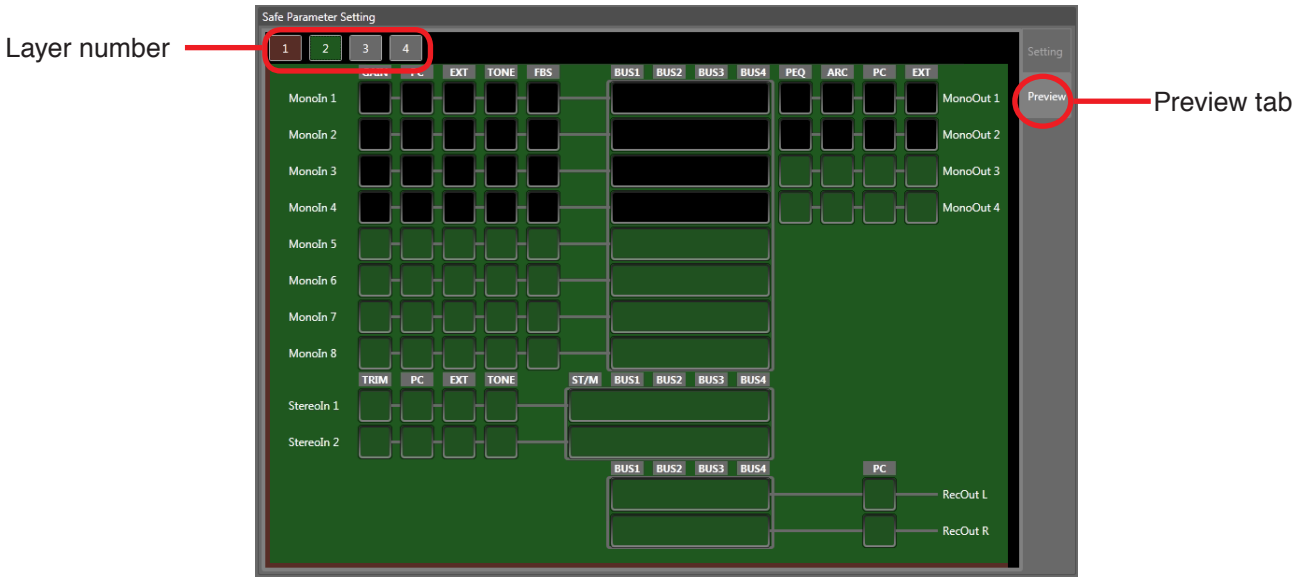
Step 2. Select the layer to perform the setting from the Layer tab.

Step 3. Click the signal processing function of the channel to perform safe parameter setting.
The selected area is displayed in black.

Step 4. Repeat Steps 2 and 3 in the same way to set the safe parameters to other layers.

Tip
Parameters contained in the layer can be checked using the Preview function.
Select the Preview tab to display the Preview screen, then select the layer number.
Multiple layers can be selected.
The background color of the selected layer number button changes to the specific color for each layer (1: Red, 2: Green, 3: Blue, 4: Yellow).

Parameters contained in any of the selected layers can be checked.
The area to perform change safe setting is displayed in black.



12.1.3. Memory setting (only when the change safe function is enabled)

Set the layer for which change safe setting is enabled when the Preset memory is recalled.
Multiple layers can be set to a single Preset memory.
The background color of the selected layer number button changes to the specific color for each layer (1: Red, 2: Green, 3: Blue, 4: Yellow).



Note
Memory setting cannot be assigned to the Preset memory number at power-on.

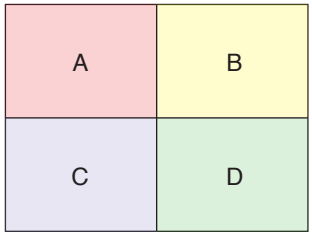
12.2. Example of Change Safe Function Use

12.2.1. Setting example when using the system in a meeting room that can be partitioned or connected.

Suppose that the system is operated by changing the Preset memories for the following 2 patterns.
Using the change safe function permits Room C + D to be used by switching the current Preset memory even if Rooms A and B are being used as they are.

- Memory 1 (A,B,C, and D : 4-partition use pattern)

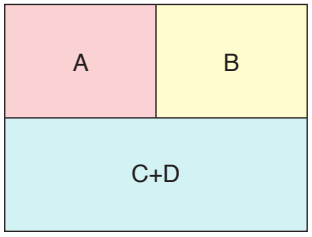
Change safe layer setting : Unset



In the morning
Rooms A,B,C, and D are independently used.

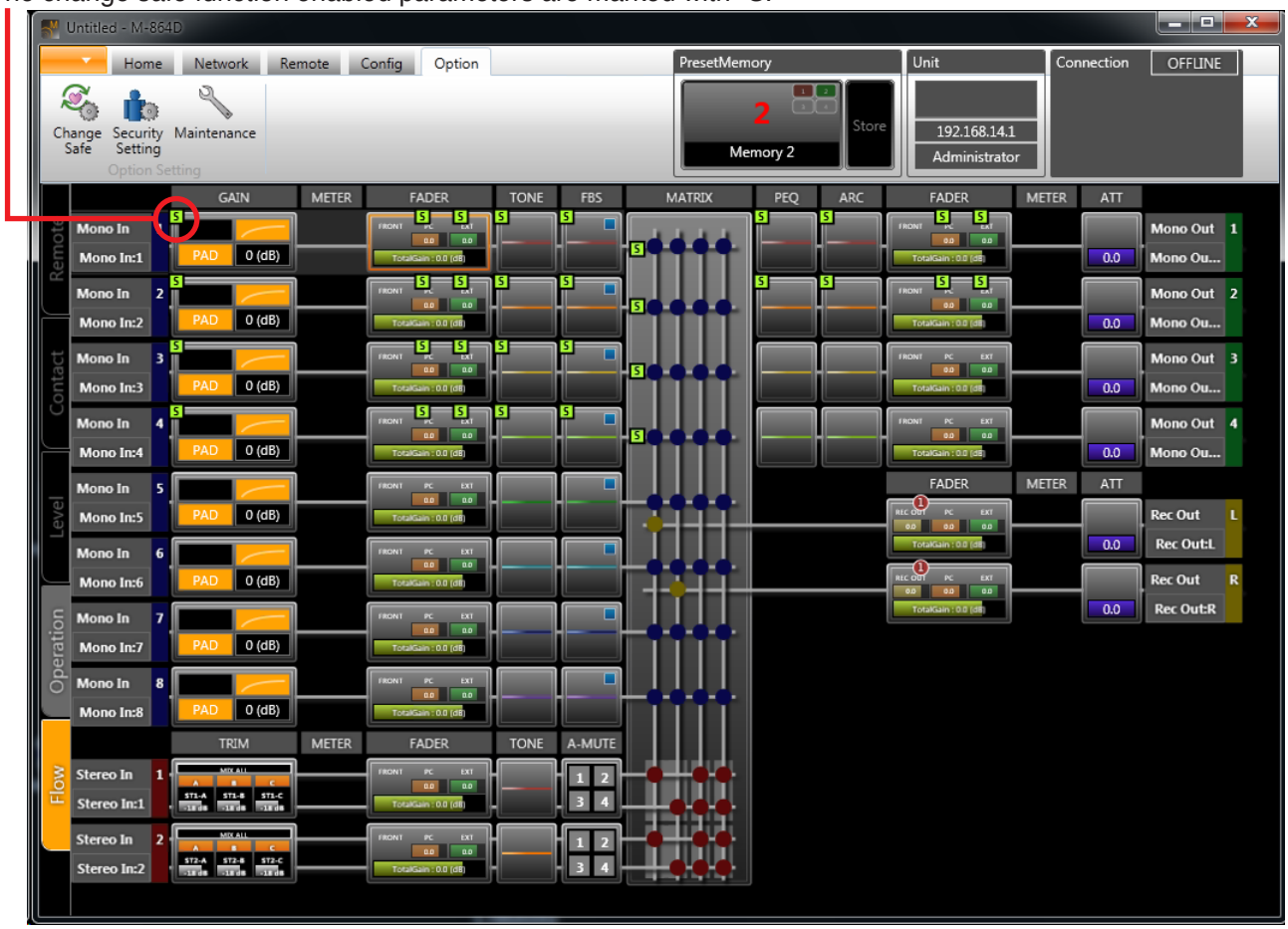
- Memory 2 (A,B, and C + D : 3-partition use pattern)

Change safe layer setting : 1 and 2



In the afternoon
Rooms A and B are continuously used while Rooms C and D are no more used separately but used as one large room after being connected together.

The screen below shows an example when the Preset memory for which change safe layer has been set is recalled.
The change safe function enabled parameters are marked with "S."



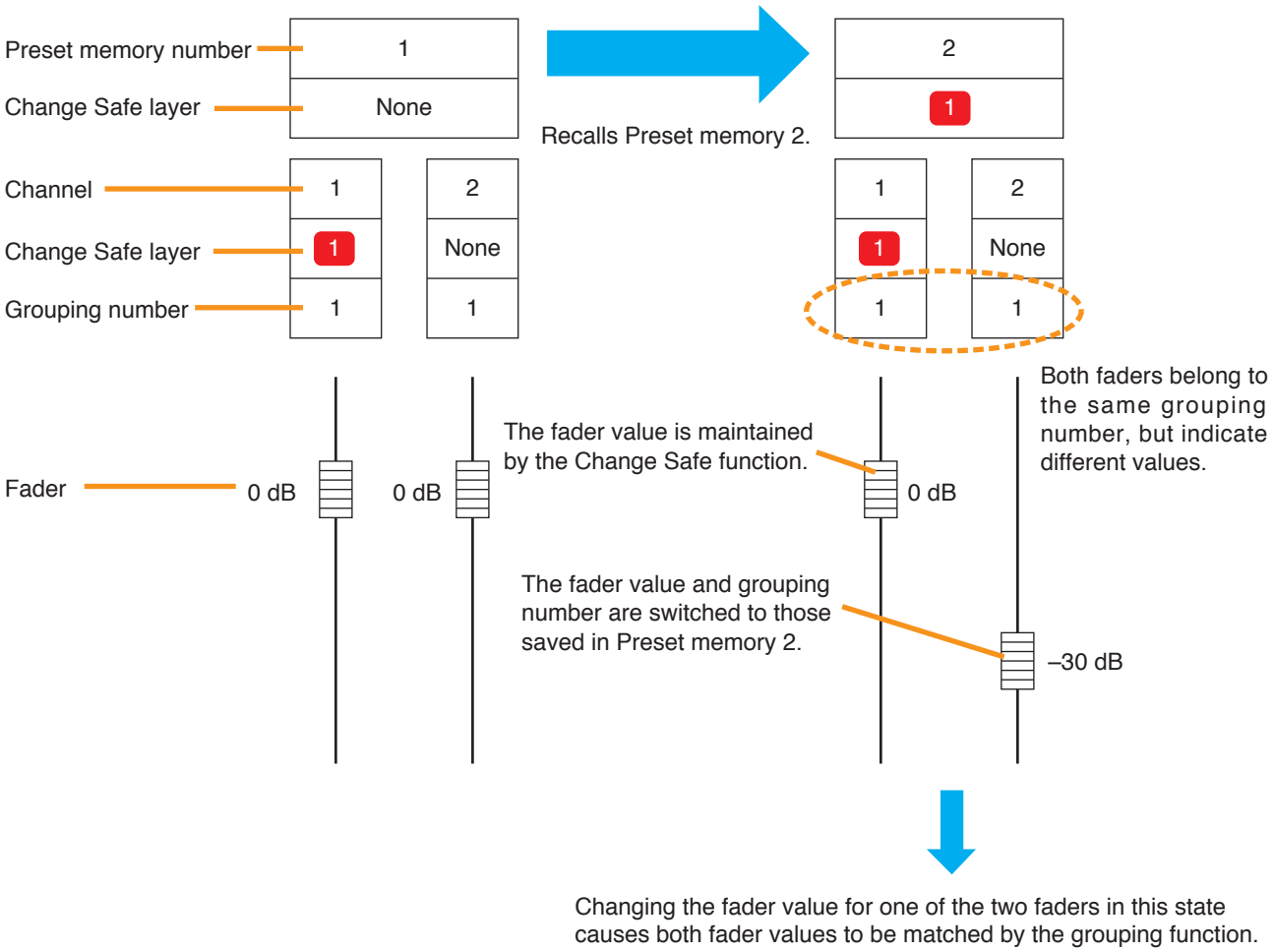
12.2.2. Settings and Usage

- Assign the input/output parameters and routing to be used in Room A to the Change safe layer 1.
- Assign the input/output parameters and routing to be used in Room B to the Change safe layer 2.
- Memory 1 is set for a pattern where Rooms A, B, C, and D are used independently.
  No Change safe layer has been set.
- Memory 2 is set for a pattern where Rooms A and B are used independently and Rooms C and D are used as one large room after being connected together.
  Set the Change safe layers 1 and 2 in advance.
- When switching from Memory 1 to Memory 2, the Change safe function allows the parameters for Rooms A and B assigned to the Change safe layers 1 and 2 to be retained without being affected by the parameters preset into Memory 2.
  Parameters for the fader and tone that have been changed depending on the talker's voice volume and tone during operations in Rooms A and B can be used continuously.

12.3. Cautions at the time of grouping

Caution should be taken when assigning the Change safe function to the faders, PEQs, and ARC equipped with grouping function.
If parameters set for the Change Safe and those not are grouped in the same grouping number, both set and unset parameter values may be different due to the Change Safe function. (Refer to the example as shown below.)
In such cases, review the settings according to usages, then cancel the grouping or assign the parameters belonging to the same grouping number to the same Change safe layer.

[Example when grouped faders indicate different values]

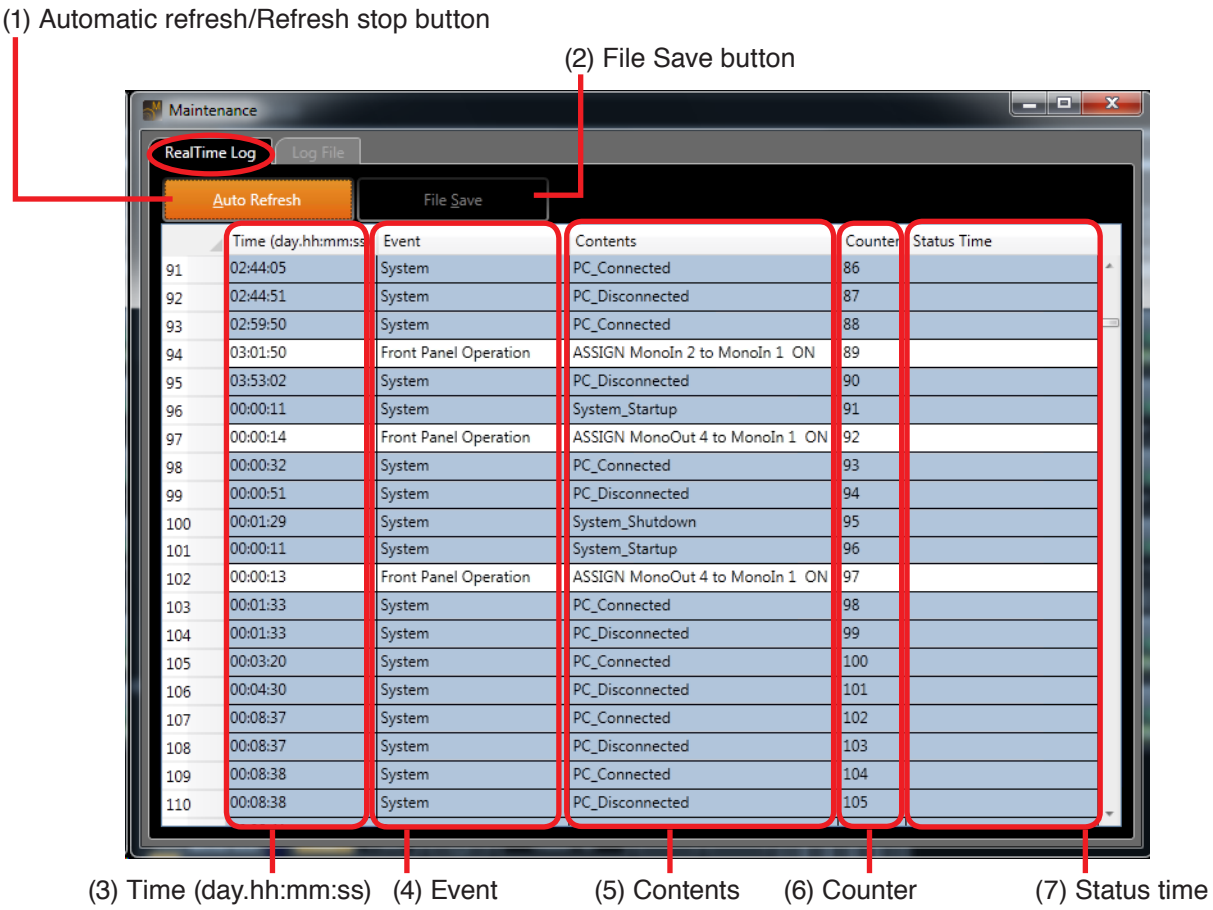


12.4. Maintenance Window

Select [Option → Maintenance] from the Menu view to display the Maintenance **window**.

12.4.1. Maintenance window (when the Real Time Log tab is selected)

Log data saved into the unit and newly issued log data can be retrieved and viewed in real time by starting the automatic refresh function while connected to the M-864D unit.
Displayed log data can be saved in a CSV file through the operation of the [File Save] button.



	Time (day.hh:mm:ss	Event	Contents	Counter	Status Time
91	02:44:05	System	PC_Connected	86	
92	02:44:51	System	PC_Disconnected	87	
93	02:59:50	System	PC_Connected	88	
94	03:01:50	Front Panel Operation	ASSIGN MonoIn 2 to MonoIn 1 ON	89	
95	03:53:02	System	PC_Disconnected	90	
96	00:00:11	System	System_Startup	91	
97	00:00:14	Front Panel Operation	ASSIGN MonoOut 4 to MonoIn 1 ON	92	
98	00:00:32	System	PC_Connected	93	
99	00:00:51	System	PC_Disconnected	94	
100	00:01:29	System	System_Shutdown	95	
101	00:00:11	System	System_Startup	96	
102	00:00:13	Front Panel Operation	ASSIGN MonoOut 4 to MonoIn 1 ON	97	
103	00:01:33	System	PC_Connected	98	
104	00:01:33	System	PC_Disconnected	99	
105	00:03:20	System	PC_Connected	100	
106	00:04:30	System	PC_Disconnected	101	
107	00:08:37	System	PC_Connected	102	
108	00:08:37	System	PC_Disconnected	103	
109	00:08:38	System	PC_Connected	104	
110	00:08:38	System	PC_Disconnected	105	

1. Automatic refresh/Refresh stop button
Starts or stops the real time log update while connected to the M-864D unit.

2. File Save button
Stores log data in a CSV file while in refresh stop mode.

3. Time (day.hh:mm:ss)
Displays the lapse time after the M-864D has been powered on.
- Display example when the lapse time is less than one day
  [03:22:11] → 3 hours 22 minutes and 11 seconds
- Display example when the lapse time is one day or more
  [12.11:02:32] → 12 days 11 hours 2 minutes and 32 seconds

4. Event
Displays event types when operation through the front panel, contact inputs, or the ZM Remote controller operation is made. (Refer to the table on the next page.)

5. Contents
Displays the contents of the event. (Refer to the table on the next page.)

6. Counter
Displays the serial numbers to be recorded into the M-864D unit.

7. Status Time
Displays the receipt time of the log.
Note: Displays the time of PC's internal clock when receiving log data while the PC and M-864D are online.

Tip
Newly retrieved log data is automatically scrolled on the screen when the latest data is kept displayed in automatic refresh mode enabled in the Real time log tab.

[Event type and Contents]

Event type	Contents			
Front panel operation	LOW CUT	Input channel	OFF/ON	
	FBS	Input channel	OFF/ON	
	MONO	Input channel	OFF/ON	
	TONE	Input channel		
	GAIN	Input channel		
	TRIM	Input source		
	ARC	Output channel	Enable/Disable	
	RECOUT	Output channel		
	ASSIGN	Input channel	OFF/ON	Output channel
	FADER	Input and Output channel	Fader value -60 dB or more/under -60 dB	
	PRESET	Preset number	LOAD/STORE	
	LOCK	OFF/ON		
Contact input	Contact input number	OFF/ON		
ZM Remote controller operation	Remote controller address	Button number, Volume	LED lit	
External control protocol[*1]	Receiving data (Max. 18 bytes)			
External control command	Reception/Send type	Receiving/Sending data (Max. 17 bytes)		
Automute operation	Monaural input channel[*2]			
System	System Startup/ Reset			
	PC connection/ disconnection			
	Local ON/OFF			

[*1] Only the data of which command is correctly configured is saved in the operation log for the External control protocol. When receiving the data exceeding 18 bytes in length, only the commands 80H through FFH are saved.
Data length and data itself contained in the command configuration are not saved.

(Example)
Receiving data (25 bytes): 9203000001 9203000101 9203000201 9203000301 9203000401
Data saved in the log file: 9292929292

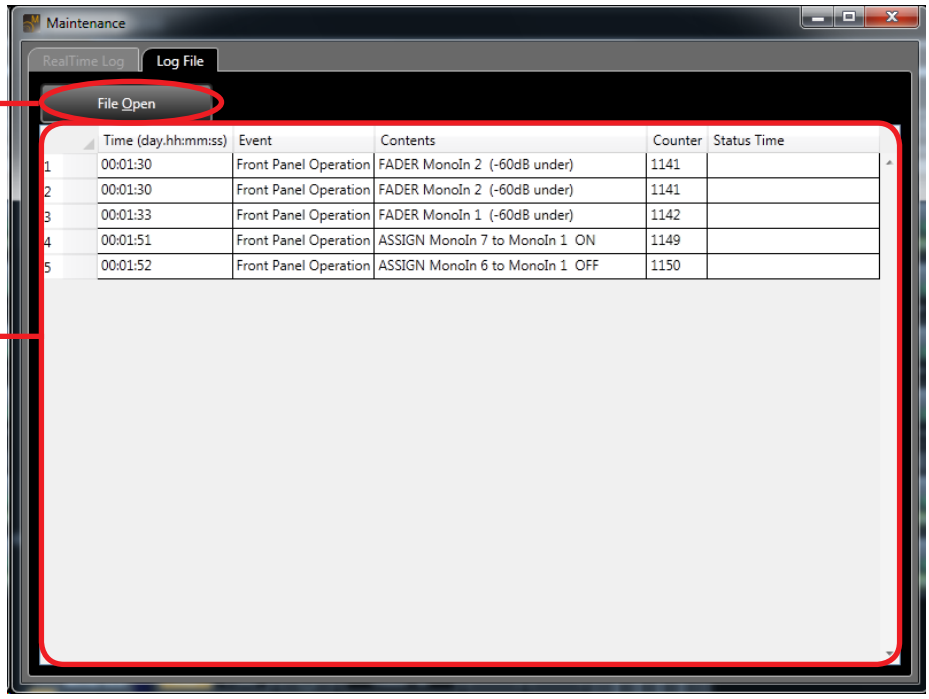
[*2] Triggered channel

12.4.2. Maintenance window (when the Log File tab is selected)

It is possible to open and view the CSV file of the saved log data.
Selecting the file after clicking the [File Open] button causes the log data contents to be displayed on the screen.

[File Open] button

Log display area



12.5. User Level and Prohibition Settings

The M-864D PC Software can limit operable items depending on user level.

12.1.1. What is user level?

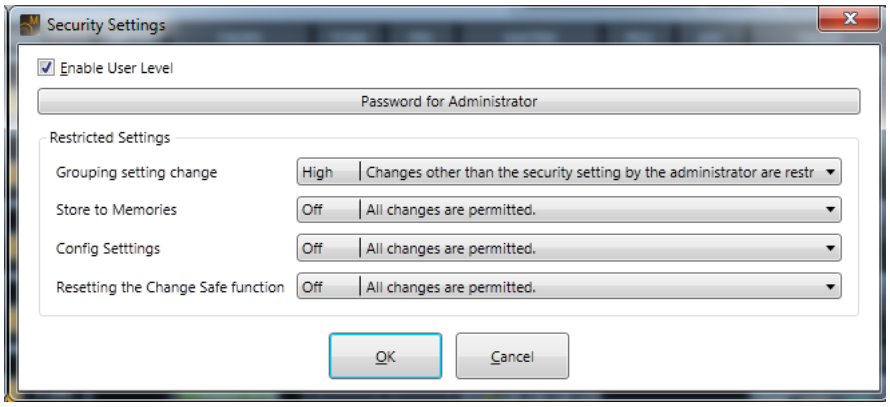
User level refers to the authorization classification for restricting items of operation.
The following 2 user levels can be set and used for M-864D PC Software:

Administrator: The user level is automatically set to “Administrator” if the user level has not been designated. Also, logging on as an “Administrator” on the logon screen sets the user level to “Administrator.”

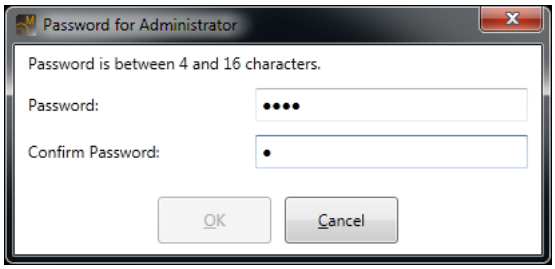
Operator: The user level is set to “Operator” if not logged on as an “Administrator” on the logon screen.

12.1.2. Enabling user level

Select [Option → Security Setting] in the Menu view to display the Security Settings screen.



Place a checkmark in the “Enable User Level” checkbox.
The Administrator Password Settings dialog is displayed.



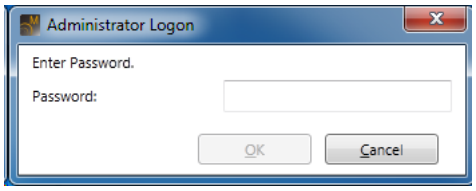
Enter the password in the “Password” and “Confirm Password” fields, then click the [OK] button.
The password must be 4 – 16 alphanumeric characters in length. The entry is case-sensitive.

Important

If the password is lost or forgotten, it will become impossible to logon in Administrator mode, thus limiting setting changes. Therefore, take extreme care in administration of the password.

12.1.3. Logging on with user level enabled

If the user level is enabled for the current settings file, the following logon screen will be displayed the next time that settings file is opened:



When logging on as an Administrator, enter the preset password and click the [OK] button.
If the above dialog is closed without entering the password, the user will be logged on as an operator.
The user level is indicated in the Unit view.

If logged on as administrator: 

If logged on as an operator: 

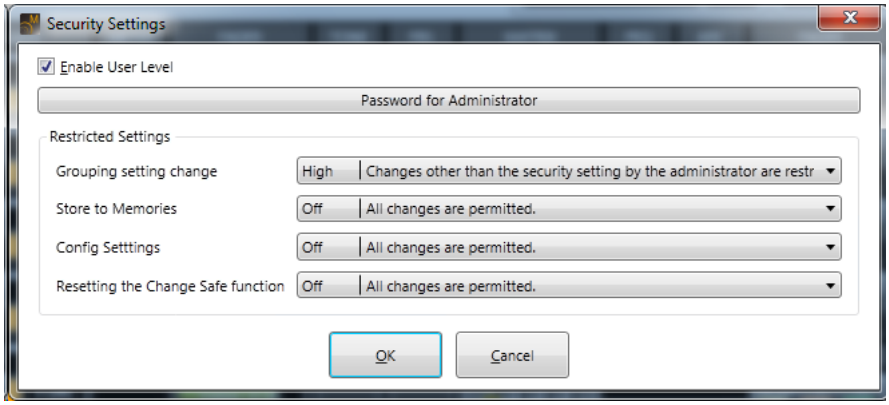
12.1.4. Prohibitable operations

The following operations can be prohibited depending on user level:
• Group settings and setting cancellation
• Preset Memory Storage (All Preset Memory storage operations are prohibited.)
• Configuration settings
• Change Safe function setting change

Note
The Prohibition Settings stop M-864D PC Software operation. Operations by external equipment cannot be prohibited.

12.1.5. Prohibition settings

Select [Option → Security Setting] from the Menu view to display the Security Settings screen.



Select the prohibition level from the pull-down menu for each prohibition settings item.
One of 4 different prohibition levels can be set for each item.

Restriction level	Content
Off	Sets no restriction on write to box.
Low	Restricts the operator from changing the parameters set in the box.
Mid	Restricts the operator from changing all settings in the box.
High	Restricts the administrator from changing the parameters set in the box, and the operator from changing all settings in the box.

12.1.6. Box write protection

Changes to function box parameters can be prohibited for each box.
Select [Home → Box Protect] from the Menu view with the box selected in the Flow view.
As with the prohibition settings on the previous page, 4 different prohibition levels (Off, Low, Mid and High) can be set.
A key mark is displayed for write-protected boxes.



13. GLOSSARY

13.1. Associated Equipment

13.1.1. ZM Remote controller

The ZM Remote controller is a wall-mounted remote control panel designed for use with the M-864D.
Four models are available: ZM-9011, ZM-9012, ZM-9013, and ZM-9014.
It communicates using the RS-485 communications protocol.
Up to 16 units can be connected to a single M-864D.

13.2. System Basic Terms

13.2.1. Channel type

There are 4 types of channels: Monaural input (MONO INPUT), Stereo input (STEREO INPUT), Monaural output (OUTPUT), and Recording output (REC OUT).

13.2.2. Fader type

Following 4 types of faders are available.

Fader type	Fader name	Remarks
FRONT FADER	FRONT fader	Unit's front panel-mounted fader
PC VOL.	PC VOL. fader	To be controlled by the setting software and external control protocol
EXT VOL.	EXT VOL. fader	To be controlled by the ZM Remote controller and contact control
REC OUT VOL.	REC OUT VOL. fader	Unit's front panel-mounted volume control

The table below shows each fader assignment.

Fader name	Monaural input	Stereo input	Monaural output	Recording output
FRONT fader	✓	✓	✓	
PC VOL. fader	✓	✓	✓	✓
EXT VOL. fader	✓	✓	✓	✓
REC OUT VOL. fader				✓

13.2.3. Fader configuration setting

It is possible to set "enable" or "disable" individually for each fader type of each individual channel. This setting cannot be stored in the preset memory.

13.2.4. Stereo input source

Refers to each input signal applied to the A, B, C, and F (ST-2 only) terminals of the Stereo input channel.

13.2.5. Monaural summing function

A function that mixes the stereo input signals and converts the mixed signals into monaural signal.
This function is effective only for assignment to Monaural outputs 1 and 2.

13.2.6. Contact input/output settings, ZM Remote controller settings

Functions are assigned and set to the contact input/output and, ZM Remote controller's function button and volume control.
These settings cannot be stored in the preset memory.

13.3. PC Software Screen

13.3.1. Flow view

Displays the M-864D's signal processing flow, and is used to perform advanced settings of each individual signal processing function.

13.3.2. Operation view

Displays the signal processing flow vertically like the M-864D's front panel configuration, and is used to perform advanced settings of each individual signal processing function.

13.3.3. Floating (window) state

A state that a window is being displayed independently of the Main screen window.

13.3.4. Box

Refers to the box expressing each signal processing function in the Flow view and Operation view. The Box is also termed as Function box.

13.3.5. Detail setting panel

A screen used to perform detailed parameter settings for the signal processing function box.
This screen is displayed in the pop-up sub-view.

13.3.6. Pop-up sub-view

A window that pops up on the screen and is used to perform detailed settings.
It displays the Detail Settings panel of the selected box.

13.4. Signal Processing Function

13.4.1. Gain box

A box provided in the Monaural input circuit.
It has each parameter for the Phantom power, PAD, Low cut filter, and Gain.

13.4.2. LCF (Low cut filter)

A filter that attenuates the frequency range lower than a cut off frequency for the Monaural input. A combination of the filter on the analog circuit section and HPF (high-pass filter) on the digital signal processing section realizes the LCF internally.

13.4.3. Trim box

A box provided in the Stereo input circuit. It has Stereo input source change function and performs input trim control for each source.
The front panel-mounted input (ST2-F) of Stereo input 2 is excluded for the settings on this trim box.

13.4.4. Fader box

Consists of the following 3 types of faders connected in series in each channel: FRONT fader (REC OUT VOL. for the recording output), PC VOL. fader, and EXT. VOL. fader.

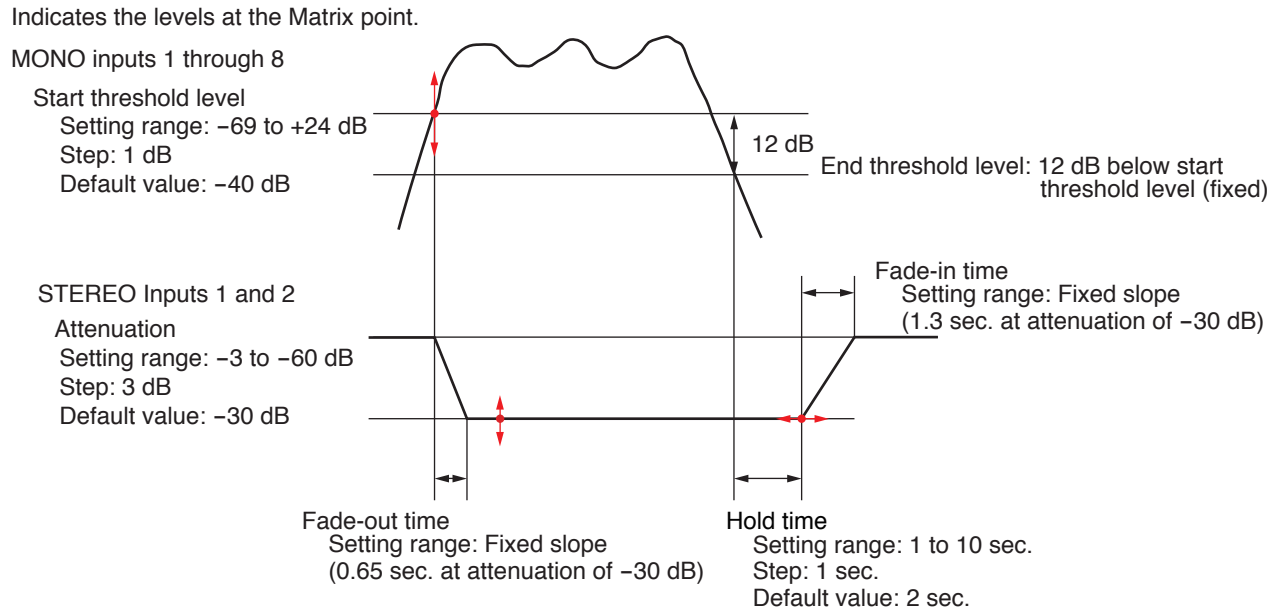
13.4.5. Tone box

A signal processing box that filters 3 bands (BASS, MID, and TREBLE) for the input channel.

13.4.6. Automatic mute function

A function that enables announcement broadcast to be heard clearly by attenuating the BGM level when the announcement is made during BGM broadcast. Automatic mute function operates at the Stereo input's Matrix crosspoint by means of each monaural input signal that works as a trigger for each output channel.
The figure below shows the operation of the Automatic mute function, and the meaning and setting range of each parameter.

[Reference diagram of AUTO MUTE]



13.4.7. FBS

Refers to the Feedback suppressor (FBS) function. Performs dynamic mode operation to suppress acoustic feedback in real time when it occurs.

13.4.8. FBS filter point guard function

A function that individually guards the created filter point. It prevents the existing filter point from being overwritten by the dynamic filter to be created subsequently. Gain and Q of the guarded filter point can be changed.

13.4.9. PEQ box

A signal processing box that performs 5-point PEQ filtering for the output channel.

13.4.10. ARC

ARC stands for Automatic Resonance Control.
ARC is a function that automatically creates a sound field compensation filter (ARC filter) to improve sound clarity.

13.4.11. Channel On/Off function

A function that allows On/Off of the channel itself for each channel.

13.4.12. Fader bypass On/Off function

A function that performs EXT VOL. fader's bypass for each Preset memory. It operates only for the enabled fader in the Fader configuration.
The gain value of the bypassed fader becomes 0 dB.
The operation from the ZM Remote controller can be disconnected for each Preset memory.

13.4.13. Grouping (Box grouping)

A function that interlocks the grouping target parameter of the same kind of box assigned the same group.

13.4.14. Fader disablement

The fader set to "Disable" in the Fader setting will not be displayed on the screen, disabling the gain change through fader operation.
The gain value of the disabled fader is fixed to 0 dB.

13.4.15. Stereo L (left) /R (right) inputs interlock

The Stereo input function box has its L (left) and R (right) assigned the same setting.

13.5. System Function

13.5.1. System lock

A function that prohibits the lock target items from being operated on the front panel.
Front panel's system lock key operation remains available.
Use the front panel-mounted system lock key or PC to select "Enable" or "Disable."
For the volume value of the front panel-mounted fader, the value at the time of being locked is retained.

13.5.2. Remote

A state that some sort of operations by the PC, external control device, or ZM Remote controller is enabled.

13.5.3. Local/Unlocal

Local is the state that operation of the unit’s front panel-mounted switches and faders, and their set values are enabled. Conversely, Unlocal is the state that they are disabled.
Local or Unlocal setting is selected by a PC.
In the case of Unlocal setting, the values of the unit’s FRONT faders are fixed to 0 dB regardless of their knob positions. (The same operation as the bypass operation)

13.5.4. Change safe

A function that prevents the parameters to which Change safe is set on the Change safe layer from being recalled when the Preset memory is changed.

13.5.5. Change safe layer

Refers to 4 layers that designate unchanged parameters.
It is possible to set the same parameters redundantly to the multiple layers.

13.5.6. User level

Authorization class that restricts access to the operable items.
There are 2 user levels: “Administrator” and “Operator.”

13.5.7. Restriction setting (Security setting)

A function that restricts users from changing the setting on the PC. Perform this restriction setting to the item that is allowed to be restricted on the PC.
Restriction level can be selected from the following 4 levels according to the user level.

Restriction level	Content
Off	Sets no restriction on write to box.
Low	Restricts the operator from changing the parameters set in the box.
Mid	Restricts the operator from changing all settings in the box.
High	Restricts the administrator from changing the parameters set in the box, and the operator from changing all settings in the box.

Note
Operation by way of the contact, ZM Remote controller, and external control device cannot be restricted.

13.5.8. Box write protect (Box protect)

A function that prohibits users from changing the box parameter on the PC.
Set this function for each signal processing box on the PC.
Restriction level can be selected from the following 4 levels according to the user level.

Restriction level	Content
Off	Sets no restriction on write to box.
Low	Restricts the operator from changing the parameters set in the box.
Mid	Restricts the operator from changing all settings in the box.
High	Restricts the administrator from changing the parameters set in the box, and the operator from changing all settings in the box.

Note
Operation by way of the contact, ZM Remote controller, and external control device cannot be restricted.

13.5.9. Preset

Refers to the Preset memory.

13.5.10. During editing (Edit state)

A state that even a part of the parameters to be stored in the Preset memory is currently being changed.

13.5.11. Preset resume function

A function that resumes the editing after power-on even if power is turned off while editing is in progress not completing the store into a specific Preset memory.

13.6. Communication Related Terms

13.6.1. Online state

A state that the PC and target M-864D are communicating with each other.
"When in online mode" is a state that the M-864D is in online state.

13.6.2. Offline state

A state that the PC and target M-864D are not communicating with each other.
"When in offline mode" is a state that the M-864D is in offline state.

13.6.3. Preset interlock function

A function that performs Preset memory switching control in synchronization with the M-864D or DP-SP3 that functions as a Master.

13.6.4. External control protocol

Refers to the External control function by way of TCP/IP.
The M-864D operates as a server. It receives the command from the client and changes internal parameters.

13.6.5. External command send function

Refers to the External command send function by way of TCP/IP.
The M-864D operates as a client. It sends the command to the external server.
It is a command send function to control an external device from the M-864D.
Activate this function by means of a contact input or the ZM Remote controller's button.

13.7. Contact Control, ZM Remote Controller Control, and External Control Functions

13.7.1. Preset load

Refers to the Preset recall function.

13.7.2. Stereo input source select

[When in Mix All mode]
Operates as ON/OFF function of the individual sources.

[When in Select mode]
Operates as source switching select function.

13.7.3. Remote contact output

A function that can remotely control the M-864D's contact output from the ZM Remote controller and external control.

13.7.4. Fader tally

A function that provides contact output when the gain value of the FRONT fader exceeds the threshold level.

13.7.5. Channel select function (provided only with the ZM-9014)

A function that selects the EXT VOL. channel to be assigned to the ZM-9014's volume control.
Assign this function to the button on the same ZM-9014.

13.7.6. Crosspoint select function (provided only with the ZM-9014)

A function that selects the Matrix crosspoint to be assigned to the ZM-9014's volume control.
Assign this function to the button on the same ZM-9014.

13.8. Maintenance Function

13.8.1. Setting file

A file in which the setting data for a single M-864D is stored.
The file extension is "m8d."

13.8.2. Operation log

Refers to the operation history of the M-864D unit.
Up to 2000 logs can be accumulated inside the M-864D.

14. SPECIFICATIONS

14.1. Software Specification

14.1.1. Preset Memory

16 memories

14.2. Setting Items, Setting Ranges, and Default Settings

14.2.1. Unit data

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Unit Name	20 alphanumeric characters			✓	×
IP Address	IPv4	192.168.14.1		✓	×
Subnet Mask	IPv4	255.255.255.0		✓	×
Default Gateway	IPv4	0.0.0.0		✓	×
External Control port number	3000 to 49151	3000	+1: Level meter	×	×

14.2.2. Channel data

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Unit Name	20 alphanumeric characters	Example: Mono In: 1, Stereo In: 1, Mono Out: 1, Rec out: L		✓	×

14.2.3. Signal processing box

[Gain settings]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Phantom Power	ON, OFF	OFF		✓	✓
PAD	PAD OFF, PAD ON	PAD ON		✓	✓
LCF ON/OFF	ON, OFF	ON		✓	✓
LCF Cutoff Frequency	20 to 20 k (Hz), 1/24 octave steps	100		✓	✓
LCF Slope	12 dB/oct (fixed)	–		–	–
Gain Volume	PAD OFF: +15 to +60 (dB), 1 dB steps PAD ON: 0 to +18 (dB), 1 dB steps	PAD OFF: +15 (dB) PAD ON: 0 (dB)		✓	✓

[Trim settings]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Line Input Mode	Mix All, Select	Mix All		✓	✓
ST Line Source Name	20 alphanumeric characters	Example: ST1-A, ST2-B	ST input A, B, C Name change disabled for Input F	✓	×
ST Line Source Select	A, B, C	All selected	F (provided only with ST2) always enabled.	✓	✓
Trim Volume	–Inf., –54 to 0 (dB), 1 dB steps	–18		✓	✓

[Fader settings]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
FADER	–	–	Front-mounted fader	–	–
REC OUT VOL.	–Inf., –44 to +10 (dB), 1 dB steps	0		✓	✓
PC VOL.	–Inf., –69.5 to +10 (dB), 0.5 dB steps	Input volume: 0, Output volume: 0		✓	✓
EXT VOL.	–Inf., –69 to +10 (dB), 1 dB steps	Input volume: 0, Output volume: 0		✓	✓
EXT VOL. bypass ON/OFF	ON, OFF	OFF		✓	✓
REC OUT VOL. Grouping No.	None, 1	1		✓	✓
PC VOL. Grouping No.	Input: None, 1 – 10, Output: None, 1 – 6	None		✓	✓
EXT VOL. Grouping No.	Input: None, 1 – 10, Output: None, 1 – 6	None		✓	✓

[Tone settings]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Gain (BASS, MID, TREBLE)	–15 to +15 (dB), 1 dB steps (M-864D), 0.1 dB steps (PC)	0		✓	✓
Center Frequency (BASS)	20 to 500 (Hz), 1/24 octave steps	80	Low Shelving filter	✓	✓
Center Frequency (MID)	20 to 20 k (Hz), 1/24 octave steps	800	PEQ	✓	✓
Center Frequency (TREBLE)	6 k to 20 k (Hz), 1/24 octave steps	11.8 k	High Shelving filter	✓	✓
Q (MID)	0.267 to 69.249 (96 points)	1.8		✓	✓

[Feedback suppressor (FBS) settings]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Dynamic Mode ON/OFF	ON, OFF	OFF		✓	✓
Filter Guard ON/OFF	ON, OFF	OFF		✓	✓
Gain	–15 to 0 (dB) 0.1 dB steps	0	Automatically set in Dynamic mode	–	✓
Center Frequency	20 to 20 k (Hz), 1/24 octave steps	1 k	Automatically set in Dynamic mode	–	✓
Q	0.267 to 69.249 (96 points)	4.318	Automatically set in Dynamic mode	–	✓
Filter ON/OFF	ON, OFF	OFF	Automatically set in Dynamic mode	–	✓

[Graph indication range of FBS and ARC]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Graph Indication Range (Frequency: Min.)	20 to 19.9 k (Hz)	20	Max. value is always kept greater than min. value.	✓	×
Graph Indication Range (Frequency: Max.)	21 to 20.0 k (Hz)	20.0 k		✓	×
Graph Indication Range (Amplitude: Top)	–119 to +120	6	Top value is always kept greater than bottom value.	✓	×
Graph Indication Range (Amplitude: Bottom)	–120 to +119	–24		✓	×
Graph Indication Range (Amplitude: Step)	1 to 20 (dB), 1 dB steps	3		✓	×

[AUTO MUTE settings]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
AUTO MUTE ON/OFF	ON, OFF	OFF		✓	✓
Start Threshold Level	–69 to +24 (dB), 1 dB steps	–40		✓	✓
End Threshold Level	12 (dB) below Start Threshold Level (fixed)	–		–	–
Matrix Crosspoint Attenuation	–3 to –60 (dB), 3 dB steps	–30		✓	✓
Hold Time	1 to 10 (sec), 1 sec steps	2		✓	✓
Fade-out Time	0.65 (sec) at attenuation of –30 dB (fixed slope)	–		–	–
Fade-in Time	1.30 (sec) at attenuation of –30 dB (fixed slope)	–		–	–

[Matrix settings]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Mono Input 1 – 8: Assign	Mono Output 1 – 4: ON, OFF	ON		✓	✓
Mono Input 1 – 8: Crosspoint Gain	–Inf., –69 to 0 (dB), 1 dB steps	0 dB		✓	✓
ST Input 1 – 2: Assign	Mono Output 1 – 4: ON, OFF	ON		✓	✓
ST Input 1 – 2: Crosspoint Gain	–Inf., –69 to 0 (dB), 1 dB steps	0 dB		✓	✓
ST Input MONO ON/OFF	ON, OFF	OFF		✓	✓
MONO OUT 1 – 4	ON, OFF	1: ON (Rec Out L) 2: ON (Rec Out R) 3, 4: OFF		✓	✓

[PEQ settings]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Gain	–15 to +15 (dB), 0.1 dB steps	0		✓	✓
Center Frequency	20 to 20 k (Hz), 1/24 octave steps	80, 200, 500, 2 k, 10 k	PEQ	✓	✓
Q	0.267 to 69.249 (96 points)	4.318		✓	✓
Filter ON/OFF	ON, OFF	ON		✓	✓
PEQ Box Grouping No.	None, 1 – 4	None		✓	✓

[ARC settings]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Gain	–15 to +15 (dB), 0.1 dB steps	0		✓	✓
Center Frequency	20 to 20 k (Hz), 3 significant digits	100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250		✓	✓
Q	0.267 to 69.249 (96 points)	4.318		✓	✓
Filter ON/OFF	ON, OFF	ON		✓	✓
BOX ON/OFF	ON, OFF	ON		✓	✓
ARC Grouping No.	None, 1 – 4	None		✓	✓
Start Frequency	20 to 16 k (Hz), 1/3 octave steps	100		✓	✓
Stop Frequency	25 to 20 k (Hz), 1/3 octave steps	5000		✓	✓
Sweep Time	Automatic setting : 1 to 59 (sec), 1 sec steps, Manual setting : 5 to 55 (sec), 5 sec steps	10		✓	✓
Output Level Adjust	–24 to +24 (dB), 1 dB steps	0		✓	✓

[Attenuator setting]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
ATT	Mono Output: –42 to 0 (dB), 6 dB steps Recording Output: –36 to 0 (dB), 6 dB steps	0		✓	✓

14.2.4. External control settings

[Contact input]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
None	–	–		✓	×
Channel On/Off	Position: Mono Input, ST Input, Mono Output, Rec Out Channel/Contact: 1 – 8, L/R (Settable number depends on channel kind) Control: Make, Pulse	Mono Input 1, Make		✓	×
EXT VOL. Gain Up/ Down	Position: Mono Input, ST Input, Mono Output, Rec Out Channel/Contact: 1 – 8, L/R (Settable number depends on channel kind)	Mono Input 1	Gain, 1 dB Up/Down	✓	×
ST Line Source Select	Position: ST1, ST2 Parameter: A, B, C	ST1, A		✓	×
Preset Memory Load	Preset No.: 1 – 16	The same number as terminal number		✓	×
Remote Command	Command No.:1 – 32	The same number as terminal number		✓	×

[Contact output]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Break	–	–		✓	×
Make	–	–		✓	×
Channel On/Off	Position: Mono Input, ST Input, Mono Output, Rec Out Channel/Contact: 1 – 8 (Settable number depends on channel kind)	Mono Input 1		✓	×
ST Line Source Select	Position: ST1, ST2 Parameter: A, B, C	ST1, A		✓	×
Preset Memory Load	Preset No.: 1 – 16	The same number as terminal number		✓	×
Contact Through Out	Contact Input No.: 1 – 8	1		✓	×
Remote Switched Out	Output Control Signal: Momentary, Latch	Momentary		✓	×
Fader Tally	Position: Mono Input, ST Input, Mono Output Channel/Contact: 1 – 8 (Settable number depends on channel kind) Control: Make, Pulse	Mono Input 1, Make	Threshold Value: “1” Fader Scale (About –60 dB) Fixed	✓	×

[ZM Remote controller settings]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
None	–	–	Button, Volume	×	×
Channel On/Off	Position: Mono Input, ST Input, Mono Output, Rec Out Channel/Contact: 1 – 8 (Settable number depends on channel kind)	Mono Input 1	Button	×	×
EXT VOL. Gain Up/Down	Position: Mono Input, ST Input, Mono Output, Rec Out Channel/Contact: 1 – 8 (Settable number depends on channel kind)	Mono Input 1	[ZM-9011/9013/9014] Button: Gain, 1 dB Up/Down [ZM-9012/9014] Volume: Gain	×	×
ST Line Source Select	Input Channel: ST1, ST2 Source Selection: A, B, C	ST1, A	Button	×	×
Matrix Crosspoint Assign ON/OFF	Input Source: Mono Input, ST Input Input Channel: 1 – 8 (Settable number depends on input channel kind) Output Source: Mono Output Output Channel: 1 – 4 (Settable number depends on output channel kind)	Mono Input 1 to Mono Output 1	Button	×	×
Matrix Crosspoint Gain Up/Down	Input Source: Mono Input, ST Input Input Channel: 1 – 8 (Settable number depends on input channel kind) Output Source: Mono Output Output Channel: 1 – 4 (Settable number depends on output channel kind)	Mono Input 1 to Mono Output 1	[ZM-9011/9013/9014] Button: Gain, 1 dB Up/Down [ZM-9012/9014] Volume: Gain	×	×

[ZM Remote controller settings]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Preset Memory Load	Preset No.: 1 – 16	The same number as button number	Button	×	×
Remote Switched Out	Contact Out No.: 1 – 8	The same number as button number	Button	×	×
Remote Command	Command No.: 1 – 32	The same number as terminal number	Button	×	×
EXT VOL. GainCS	Position: Mono Input, ST Input, Mono Output, Rec Out Channel/Contact: 1 – 8 (Settable number depends on channel kind)	Mono Input 1	[ZM-9014] Button: Channel select Volume: Gain	×	×
Matrix Crosspoint GainCS	Input Source: Mono Input, ST Input Input Channel: 1 – 8 (Settable number depends on input channel kind) Output Source: Mono Output Output Channel: 1 – 4 (Settable number depends on output channel kind)	Mono Input 1 – Mono Output 1	[ZM-9014] Button: Crosspoint select Volume: Gain	×	×

[External Command send function]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Control Target Device Name	20 alphanumeric characters	None		×	×
Control Target Device IP address	IPv4	None		×	×
Connection Port No.	1025 to 65535	None		×	×
Command Name	20 alphanumeric characters	None		×	×
Command Parameter Name	20 alphanumeric characters	None		×	×
Command Parameter Data	Max. 20 bytes Hexadecimal Notation: 0 – 9, A – F	None		×	×
Command Parameter Length	0 to 20	0		×	×
Send Interval	0 to 3000 ms, 100ms step	100		×	×

14.2.5. Configuration settings

[Fader setting]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Enable/Disable of FRONT FADER, PC VOL., EXT VOL., REC OUT VOL.	Enable, Disable	Enable		×	×

[Unit lock settings]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Lock ON/OFF	ON, OFF	OFF		✓	×
Lock-targeted Items • Preset Load • Preset Store • LOW CUT • FBS • MONO • TONE • GAIN, TRIM • ARC • REC OUT • ASSIGN • FADER	Lock, Unlock	Lock		×	×

[Preset memory settings]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Preset Name	20 alphanumeric characters	Example: Memory 1		✓	×
Cross Fade Time	0 – 10 (sec), 0.5 sec steps	0		✓	×
Primary Reference Preset Memory	Resume, Memory 1 – 16	Resume		✓	×
Preset Master M-864D/DP-SP3	IPv4	None		×	×

14.2.6. Optional settings

[Change safe settings]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Enable/Disable of Change safe function	Enable, Disable	Disable		×	×
Layer settings 1 – 4	GAIN, TRIM, PC VOL., EXT VOL., TONE, FBS, PEQ, ARC, MATRIX ASSIGN	None		×	×
Memory settings	None Change safe layer: 1 to 4 (permits multiple selection)	None		×	×

[Enable/Disable of User Level]

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Enable/Disable of User Level	Enable, Disable	Disable		×	×
Grouping setting	Off, Low, Mid, High	Off		×	×
Store to Preset Memories	Off, Low, Mid, High	Off		×	×
Config settings	Off, Low, Mid, High	Off		×	×
Change Safe settings	Off, Low, Mid, High	Off		×	×
Password for Administrator	4 – 16 alphanumerical characters	None		×	×

14.2.7. Volatile data*

Setting Item	Setting Range	Default Setting	Remarks	Online Setting	Storable in Preset Memory
Local Setting	Local, Unlocal	Local		✓	×

* These data will be erased when the unit's power is turned off.