

AXR4T

AUDIO INTERFACE



Operation Manual

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Introduction

Message from the Development Team

Thank you for choosing the AXR4 Audio Interface.

The AXR4 is our flagship audio interface model, developed from the perspective of audio engineers for use in professional music production.

The “sound” is the most vital component for an audio interface. The microphone preamp acts as a core foundation in producing this sound. This preamp is based on an analog “AXR Preamplifier” perfecting a traditional, natural soundscape attained by the development team, and a digital “hybrid microphone preamp” that further evolves Yamaha’s proprietary modeling technology, VCM (Virtual Circuitry Modeling).

Analog I/O components use AD/DA circuits that support up to 32-bit integer resolutions and 384 kHz sample rate to capture and reproduce the rich aural sounds produced by performers and vocalists without a loss in quality.

The digital section faithfully recreates the Rupert Neve Designs® transformer circuit in addition to employing the renowned Silk processing models in Rupert Neve Designs’s microphone preamp. The Silk processing can be applied in two variations to match the atmosphere of the tune or the music source: Silk Blue for a vintage sound that produces a solid, powerful expression, and Silk Red offering rich, exuberant sound brimming with musicality. Silk processing helps produce graceful, defined sounds with an analog-like texture. The unique feeling of compression and saturation this introduces to a piece is unlike that found anywhere else.

Silk processing is incorporated to reproduce the feeling in an artist’s performance and the original, pure sound produced by an instrument at a level never heard before. To achieve this, circuits on board the AXR4 are tuned to an obsessive degree of precision in order to deliver a level of sound quality that is leaps and bounds beyond what conventional audio interfaces offer.

The AXR4 provides a rich array of I/O connectors in order to flexibly meet a broad range of requirements from professional audio engineers. Similarly, a full matrix mixer has been incorporated into the device to adequately meet a diverse set of monitoring and system-related requirements. The drivers processing these I/O signals have also undergone major improvements, providing both low latency and stable performance. As with the microphone preamp, SSPLL™ (Super Suppression PLL) is also provided in the form of an analog/digital hybrid type PLL architecture. By tuning jitters in the digital section with the analog section, super low jitter levels and high levels of stability are delivered, regardless of whether an internal or external clock source is used.

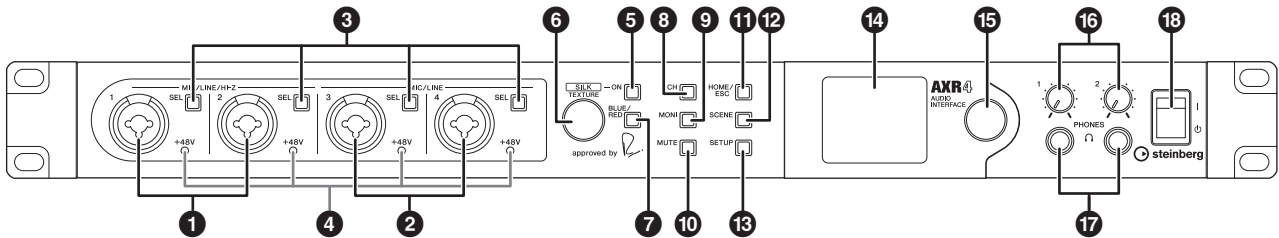
Beyond just hardware improvements, major usability improvements have been introduced into our packaged software applications, including a complete overhaul of Extension controlling AXR4 from Cubase.

There are no limits to human creativity. We sincerely hope that the AXR4 opens up the potential for new developments in the field of professional studio audio engineering, and it would give us the greatest pleasure to see this product usher forth a new level of musical production and cultural achievement.

The Steinberg Hardware Development Team

Panel Controls and Functions (Main Panel)

Front Panel



1 MIC/LINE/Hi-Z [1]/[2] jacks

For connecting to a microphone, digital instrument, electric guitar, or electric bass. This jack can be connected to both XLR-type and 1/4" phone-type plugs. Both balanced and unbalanced connections are supported when using a 1/4" phone-type LINE connection. Unbalanced connection is supported when using a 1/4" phone-type HI-Z connection.

2 MIC/LINE [3]/[4] jacks

For connecting to a microphone or digital instrument. This jack can be connected to both XLR-type and 1/4" phone-type plugs. The XLR-type plug is dedicated for microphone connection plug. Both balanced and unbalanced connections are supported when using a 1/4" phone-type LINE connection.

3 [SEL] keys

Dedicated selection keys to switch between MIC/LINE/Hi-Z [1]/[2], and MIC/LINE [3]/[4]. The ANALOG SETUP screen for the selected channel appears on the **14** display. This lights up green when selected.

NOTE

You can turn channel linking on and off by holding down a [SEL] key for MIC/LINE/Hi-Z [1]/[2] or MIC/LINE [3]/[4] and pressing the other [SEL] key (page 12). The channel that was pressed first lights up in green. The channel pressed afterwards flashes in green. The ANALOG SETUP screen for the channel flashing in green appears on the display. Press the [SEL] key on the side that is flashing in green to switch the channel selection to the side pressed.

4 [+48V] indicators

Lights up in red when the phantom power is turned on.

NOTICE

When connecting devices or when switching the routing structure, observe the following cautions to avoid damage and noise being introduced to the product and peripheral devices.

- Turn the phantom power off (page 23) when connecting a device that does not support phantom power to the MIC/LINE/Hi-Z [1]/[2] jack or the MIC/LINE [3]/[4] jack.
- Do not connect or disconnect cables to/from the MIC/LINE/Hi-Z [1]/[2] jacks or the MIC/LINE [3]/[4] jacks while the phantom power is on. The [+48V] indicator flashes for several seconds when phantom power is turned off. Wait until this indicator stops flashing before plugging in or taking out cables.
- Turn the phantom power on and off when the [MUTE] key on the front of the AXR4 device is on.
- Hi-Z and phantom power cannot be turned on at the same time.

5 SILK [ON] key

Turns Silk on and off for the channel selected with the [SEL] key. This lights up white when turned on.

Silk

Silk is an important transformer feature designed by Rupert Neve Designs. We made a faithful recreation of the Silk circuit using digital signal processing based on Yamaha's proprietary VCM (Virtual Circuitry Modeling) technology. Silk helps vividly accentuate individual audio parts.

6 SILK [TEXTURE] knob

Adjusts the harmonic content of the source audio.

7 SILK [BLUE/RED] key

Switches between BLUE acting on low frequency bands, and RED acting on high frequency bands.

8 [CH] (Channel) key

Displays the CH SETUP screen on the display. This lights up green when selected.

9 [MONI] (Monitor) key

Displays the MONITOR SETUP screen on the display. This lights up green when selected.

10 [MUTE] key

Mutes all output audio at once. This flashes red when muted.

11 [HOME/ESC] key

Returns to the previous display screen. Press this several times to eventually return to the HOME screen. You can also return to the HOME screen by holding this key down.

12 [SCENE] key

Displays the SCENE screen on the display. This lights up green when selected.

13 [SETUP] key

Displays the SYSTEM SETUP screen on the display. This lights up green when selected.

14 Display

Displays information needed to use and configure the AXR4 device.

15 Multi-function knob

Used to operate the screen in the display. Turn to move between items, and press in to select an item.

16 PHONES [1]/[2] knobs

Adjusts the output signal level for the PHONES [1]/[2] jack.

17 PHONES [1]/[2] jacks

For connecting headphones. Output signals for both the PHONES [1] jack and the PHONES [2] jack can be routed on the OUTPUT PATCH screen. This can also be set in the Cubase series-specific AXR Extension window ([page 56](#)), or the dspMixFx AXR Mixer window ([page 37](#)).

18 [⏻/⏻] (Standby/On) switch

Turns the product on (I) or puts it into standby mode (⏻).

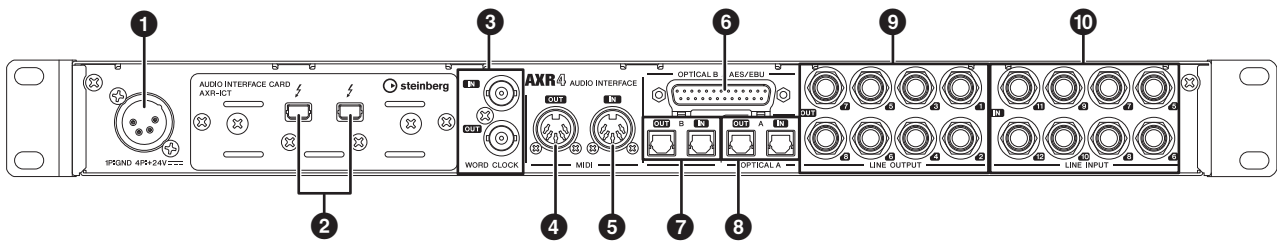
NOTICE

Even when the power is in the standby position (⏻), electricity is still flowing to the product. If you do not plan to use the product for a while, unplug the power cord from the outlet.

NOTE

Switching off to on quickly can cause malfunctions. After setting the [⏻/⏻] (standby/on) switch to standby, wait for about six seconds before setting it to on again.

Rear Panel



1 DC IN [24V]

For connecting to a power adaptor.

2 [⚡] (Thunderbolt2) connector

For connecting the AXR4T to a computer.

NOTICE

Follow the cautions described below when connecting to a computer. Data could be destroyed or lost if the computer or the product hangs. If the computer or the product hangs, either restart the application and the computer.

- A separate Thunderbolt2-certified cable is required. Prepare a cable that matches the connector on the computer and the Thunderbolt2 connector on the AXR4T device. Use an adaptor that converts the computer connector connection to a Thunderbolt2 standard connector if necessary.
- Ensure that the PHONES [1]/[2] knob and output level controls for any power amps or powered speakers connected to the AXR4 are set to the minimum before inserting or removing cables.
- Close down all computer applications before turning the power to the AXR4 device to standby (⏻) or inserting and removing cables.
- Wait six seconds or longer when turning the AXR4 device on (I) or in standby (⏻), and when inserting or removing cables.

3 WORD CLOCK [IN]/[OUT] jacks

For connecting external word clock signals. The WORD CLOCK [IN] jack terminates internally at 75Ω.

4 MIDI [OUT] jack

For connecting to the MIDI IN jack on MIDI devices. Outputs a MIDI signals sent from the computer.

5 MIDI [IN] jack

For connecting to the MIDI OUT jack on MIDI devices. Sends the MIDI signals received to the computer.

6 [AES/EBU] connector

For connecting to devices that input or output digital signals in the AES/EBU format. You can select between the [AES/EBU] connector and the 7 OPTICAL B [IN]/[OUT] connector for use. The jack and format in use can be set on the DIGITAL I/O MODE screen on the AXR4 device or on the Settings screen on the dspMixFx AXR (page 14).

NOTE

For more information on the pin arrangement for the [AES/EBU] connector, see page 73.

7 OPTICAL B [IN]/[OUT] connector

Supports both S/PDIF and ADAT formats. If you use the OPTICAL B [IN]/[OUT] connector, you can select whether to use the connector in S/PDIF format or ADAT format on the DIGITAL I/O MODE screen on the AXR4 device or on the Settings screen on the dspMixFx AXR.

8 OPTICAL A [IN]/[OUT] connector

Supports both S/PDIF and ADAT formats. You can select whether to use the OPTICAL B [IN]/[OUT] connector in S/PDIF format or ADAT format on the DIGITAL I/O MODE screen on the AXR4 device or on the Settings screen on the dspMixFx AXR.

9 LINE OUTPUT [1] – [8] jacks

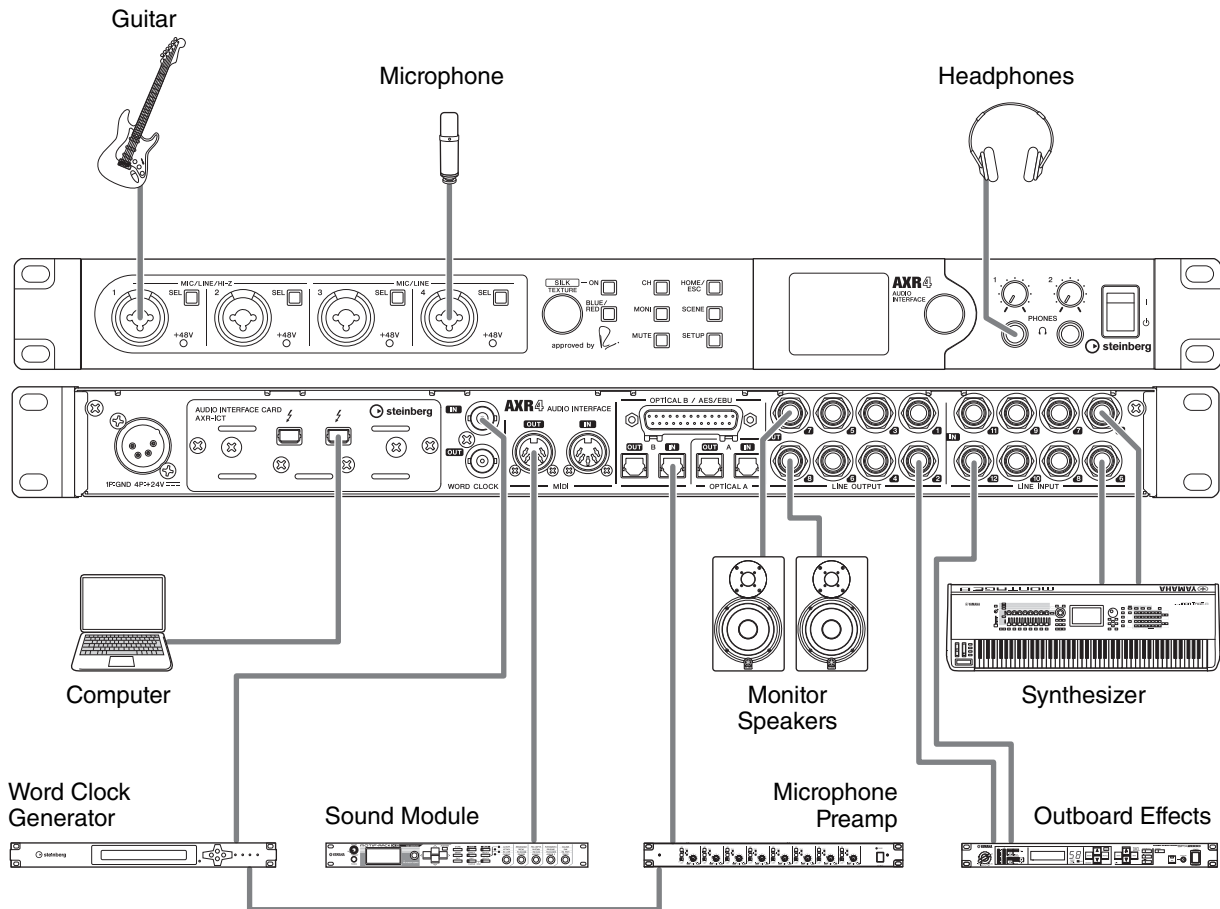
For connecting to external devices with line level signals. These jacks can be connected to 1/4" phone-type (balanced/unbalanced) plugs.

10 LINE INPUT [5] – [12] jacks

For connecting to digital instruments. These jacks can be connected to 1/4" phone-type (balanced/unbalanced) plugs.

Connection Example

Refer to the following connection example to connect speakers, microphones, or instruments.



Cautions for Rack-mounting

This product has been tested to function at a room temperature of 0 – 40°C. When mounting this product together with other devices into an EIA-standard rack, the product may not be able to deliver sufficient performance due to the increased temperature caused by the heat produced by other devices. Mount this product in a rack under the following conditions to ensure that heat does not build up.

- Leave at least 1U of space empty both above and below the product. Ensure that empty spaces are properly ventilated by installing a ventilation panel or allowing for open air exposure.
- Open up the rear of the rack and separate the rack from the wall by at least 10 cm to ensure proper ventilation. If this is not possible, install a commercially available fan kit or other such forced ventilation device. Note that when installing a fan kit, closing off

the rear of the rack may help improve heat loss. For more information, see the owner's manuals for your rack and fan kit.

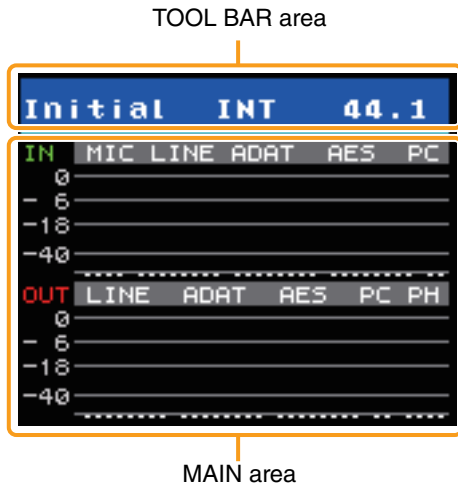
NOTICE

This product has been designed to support a LINE OUTPUT load impedance of 10kΩ or more. As a load impedance of less than 10kΩ can cause issues with heat generation, do not connect devices with an input impedance of less than 10kΩ.

Display

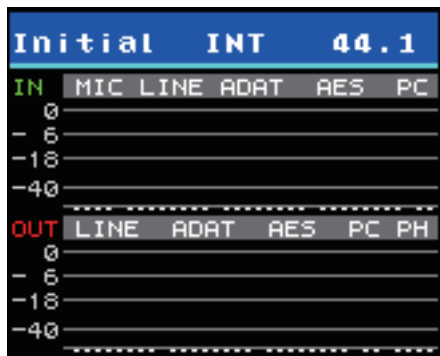
Screen Configuration

The display screen is split into the TOOL BAR area on the top, and the MAIN area on the bottom.



METER Screen

This screen is used to display input/output audio signal levels for the AXR4 device.



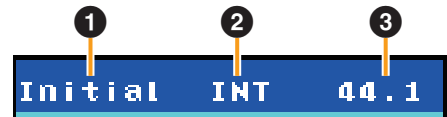
How to open the METER screen

Press the [HOME/ESC] key on the AXR4 device to open the METER screen.

NOTE

If a screen other than the METER screen is displayed for over a minute without any user interaction, the system will automatically return to display the METER screen.

TOOL BAR display area



1 Scene name

Displays the name of the most recent scene recalled.

2 Clock source

Displays the current clock source.

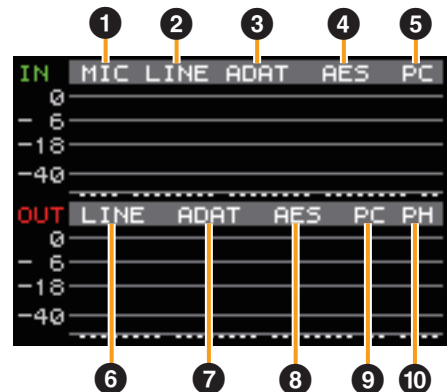
NOTE

The clock source name will flash when the word clock has not been synchronized.

3 Sample rate

Displays the sample rate in use by the AXR4 device.

MAIN display area



1 MIC IN meter

2 LINE IN meter

3 ADAT A or S/PDIF A IN meter

4 ADAT B or S/PDIF B or AES/EBU IN meter

5 Input meter from computer

- ⑥ LINE OUT meter
- ⑦ ADAT A or S/PDIF A OUT meter
- ⑧ ADAT B or S/PDIF B or AES/EBU OUT meter
- ⑨ Output meter to computer
- ⑩ PHONES OUT meter

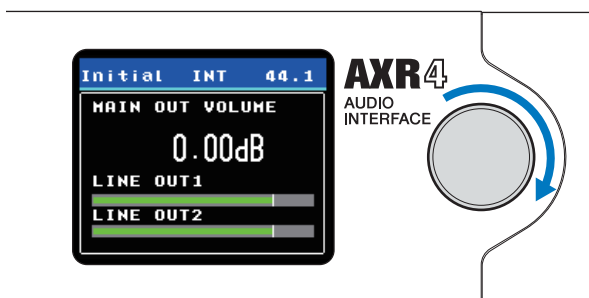
NOTE

- ③ ADAT A or S/PDIF A IN meter
- ④ ADAT B or S/PDIF B or AES/EBU IN meter
- ⑦ ADAT A or S/PDIF A OUT meter
- ⑧ ADAT B or S/PDIF B or AES/EBU OUT meter

Contents displayed for the above items will change depending on the Digital I/O mode and sample rate in use.

How to use the METER screen

1. Turn the multi-function knob to display the MAIN OUT VOLUME dialog.



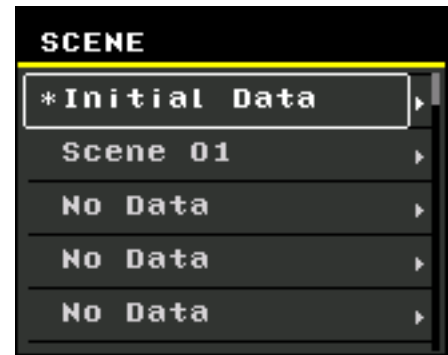
2. Turn the multi-function knob while the MAIN OUT VOLUME dialog is displayed to adjust the level of the mix bus being set by the MAIN OUT VOLUME setting.

NOTE

You can set the channels being set by the MAIN OUT VOLUME setting on the MAIN OUT SETUP screen ([page 20](#)).

SCENE Screen

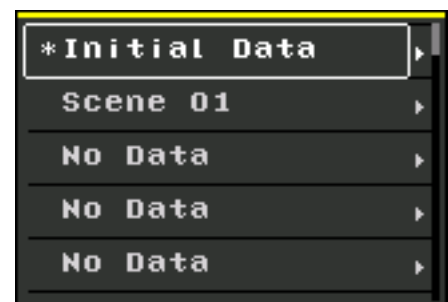
This screen is used to store and recall scenes.

**How to open the SCENE screen**

Press the [SCENE] key on the AXR4 device panel to open the SCENE screen.

MAIN display area

This area displays scenes in a list. An asterisk (*) will appear to the left of the most recently recalled scene.

**NOTE**

- Up to nine scenes can be recorded.
- The Initial Data scene is a scene used to restore mixer settings to the default factory settings.

How to use the SCENE screen

1. Turn the multi-function knob to focus on a scene name.
2. Press the multi-function knob to display the confirmation dialog.
3. Turn the multi-function knob to select an option.
4. Press the multi-function knob to execute.

Each option and the action performed are described below.

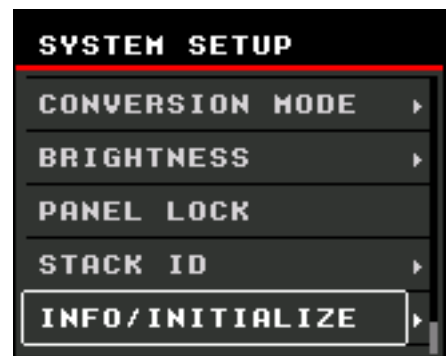
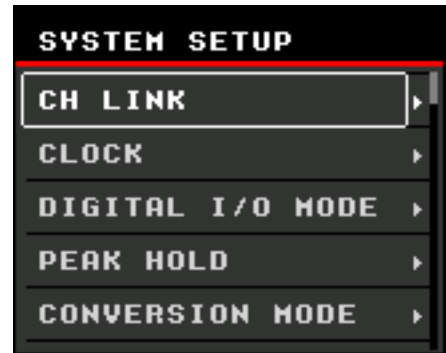
Option	Action performed
Cancel	Closes the dialog without performing an action
Store	Stores the current mixer settings to the selected scene NOTE <ul style="list-style-type: none"> • Scene names are automatically added in the form of "Scene XX" (where XX represents the list order). • Scene names can be set in "dspMixFx AXR" → "Menu" → "Scene" (page 43).
Recall	Recalls the selected scene

NOTE

If you press the [HOME/ESC] key while the confirmation dialog is displayed, the confirmation dialog will be closed without performing an action.

SYSTEM SETUP Screen

This screen is used to perform system setup for the AXR4 device.



How to open the SYSTEM SETUP screen

Press the [SETUP] key on the AXR4 device panel to open the SYSTEM SETUP screen.

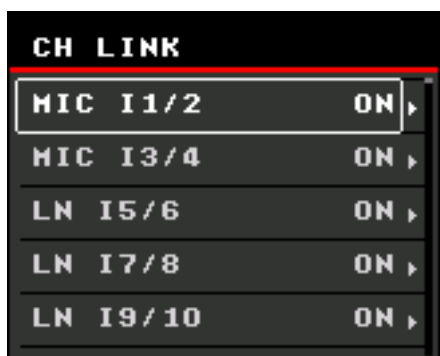
MAIN display area

This area displays options in a list.

CH LINK	For setting channel links for each channel on or off
CLOCK	For configuring word clock-related settings such as clock source and sample rate
DIGITAL I/O MODE	For configuring digital I/O mode settings for digital audio I/F A and B NOTE If the sample rate is set to 352.8k or 384k, this option will appear grayed out, and cannot be selected.
PEAK HOLD	For setting the peak level display for the level meter on or off
CONVERSION MODE	For setting the filter for the AD/DA converter
BRIGHTNESS	For setting the brightness of the display and LED colors
PANEL LOCK	For locking operations from panel switches and encoder
STACK ID	For assigning an ID to the AXR4 device to identify the device when multiple AXR4 devices are connected
INFO/INITIALIZE	For displaying information on this product, and resets settings to their defaults

CH LINK screen

This screen is used to set channel links for each channel on or off.

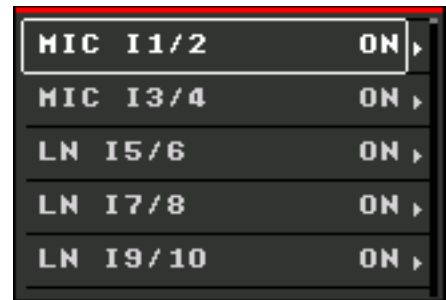


How to open the CH LINK screen

1. On the SYSTEM SETUP screen, turn the multi-function knob to select "CH LINK."
2. Press the multi-function knob to confirm.

MAIN display area

Channel names are displayed on the left. The on/off status of channel links is displayed on the right.



How to use the CH LINK screen

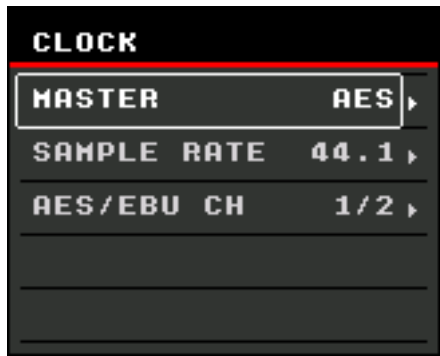
1. Turn the multi-function knob to select a channel pair.
2. Press the multi-function knob to display the settings dialog.



3. Turn the multi-function knob to select either "ON" or "OFF."
4. Press the multi-function knob to confirm.

CLOCK screen

This screen is used to configure word clock-related items such as clock source and sample rate.



How to open the CLOCK screen

1. On the SYSTEM SETUP screen, turn the multi-function knob to select "CLOCK."
2. Press the multi-function knob to confirm.

MAIN display area

This area displays options in a list.

MASTER	For setting the clock source
SAMPLE RATE	For configuring word clock-related settings such as clock source and sample rate
AES/EBU CH	For setting which channel in the AES/EBU should be the source channel when AES/EBU is set as the clock source

• MASTER

Allows you to set the clock source from the list.



Available options are as follows.

INTERNAL	The internal AXR4 clock
WCLK	External clock from the WORD CLOCK IN jack
ADAT A^{*1*3}	External clock from ADAT A
S/PDIF A^{*1}	External clock from S/PDIF A
ADAT B^{*2*3}	External clock from ADAT B
S/PDIF B^{*2}	External clock from S/PDIF B
AES/EBU^{*2}	External clock from AES/EBU

NOTE

*1 Either ADAT A or S/PDIF A will be displayed based on the digital I/O mode settings (page 15) configured.

*2 Either ADAT B, S/PDIF B, or AES/EBU will be displayed based on the digital I/O mode settings configured.

*3 If ADAT A or ADAT B is selected as the clock source, you must select an operating sample rate for the AXR4 matching the sample rate of the clock source.

NOTICE

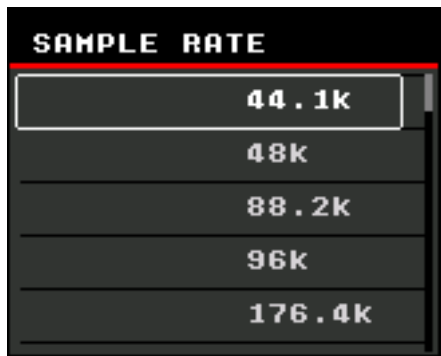
Changing word clock settings in this product or any digital audio system may result in system noise. To prevent damaging connected speakers, either turn off the power amp and other devices, or restrict their output before configuring word clock settings.

How to configure the MASTER

1. Navigate from the SYSTEM SETUP screen to the CLOCK screen, and then turn the multi-function knob to select "MASTER."
2. Press the multi-function knob to select.
3. When the MASTER screen appears, turn the multi-function knob to select a clock source.
4. Press the multi-function knob to confirm.

• SAMPLE RATE

Allows you to select an operating sample rate from the list.



There are eight sample rate options available, including, 44.1k, 48k, 88.2k, 96k, 176.4k, 192k, 352.8k, and 384k.

NOTE

Note that the 352.8k and 384k sample rate are only available when the clock master is set to "INTERNAL" or "WCLK."

For more information on what inputs and outputs are available for each sample rate, see the Operation Correspondence Table ([page 68](#)).

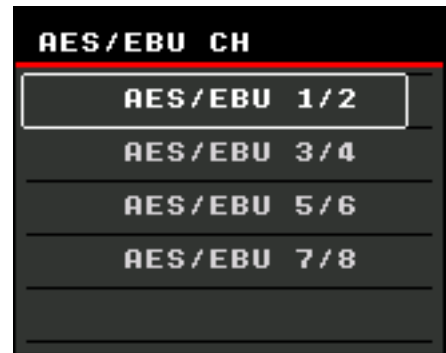
How to configure the SAMPLE RATE

1. Navigate from the SYSTEM SETUP screen to the CLOCK screen, and then turn the multi-function knob to select "SAMPLE RATE."
2. Press the multi-function knob to select.

3. When the SAMPLE RATE screen appears, turn the multi-function knob to select a sample rate.
4. Press the multi-function knob to confirm.

• AES/EBU CH

Allows you to set the channel in the AES/EBU from which the clock source is received when AES/EBU is set as the clock source.

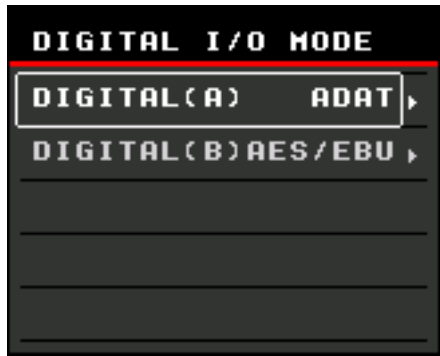


How to configure the AES/EBU CH

1. Navigate from the SYSTEM SETUP screen to the CLOCK screen, and then turn the multi-function knob to select "AES/EBU CH."
2. Press the multi-function knob to select.
3. When the AES/EBU CH screen appears, turn the multi-function knob to select a channel.
4. Press the multi-function knob to confirm.

DIGITAL I/O MODE screen

This screen is used to set whether to use the connector in S/PDIF format or ADAT format when using the OPTICAL A [IN]/[OUT] connector. Further, you can set whether the [AES/EBU] connector or the OPTICAL B [IN]/[OUT] connector is used, and if the OPTICAL B [IN]/[OUT] connector is used, you can set whether to use the connector in S/PDIF format or ADAT format.



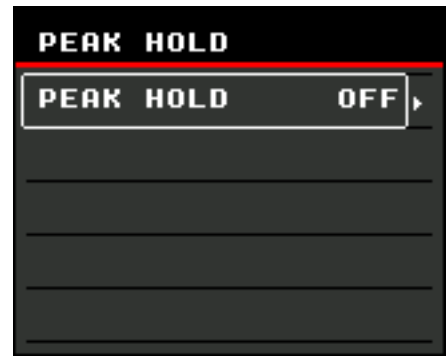
The three options available are ADAT, S/PDIF, and AES/EBU (DIGITAL(B) only).

How to configure the DIGITAL I/O MODE

1. On the SYSTEM SETUP screen, turn the multi-function knob to select "DIGITAL I/O MODE."
2. Press the multi-function knob to select.
3. When the DIGITAL I/O MODE screen appears, turn the multi-function knob to select either "DIGITAL(A)" or "DIGITAL(B)."
4. Press the multi-function knob to select.
5. When the DIGITAL(A) or DIGITAL(B) screen appears, turn the multi-function knob to select a format.
6. Press the multi-function knob to confirm.

PEAK HOLD screen

This screen sets the peak level display for the level meter on or off.



How to open the PEAK HOLD screen

1. On the SYSTEM SETUP screen, turn the multi-function knob to select "PEAK HOLD."
2. Press the multi-function knob to confirm.

How to use the PEAK HOLD screen

1. Press the multi-function knob to display the settings dialog.

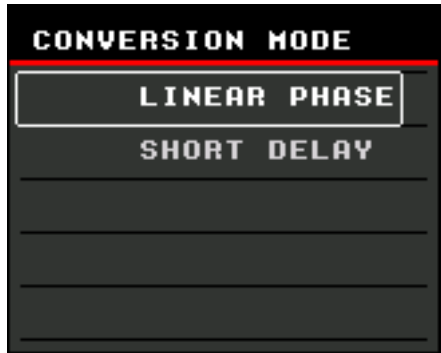


2. Turn the multi-function knob to select either "ON" or "OFF."
3. Press the multi-function knob to confirm.

CONVERSION MODE screen

This screen is used to set the filter for the AD/DA converter.

The AD/DA converter has two filter setting options available: LINEAR PHASE and SHORT DELAY. There are some sonic differences between the two filter settings. Select the one most suitable for your applications.



How to open the CONVERSION MODE screen

1. On the SYSTEM SETUP screen, turn the multi-function knob to select "CONVERSION MODE."
2. Press the multi-function knob to confirm.

How to use the CONVERSION MODE screen

1. Turn the multi-function knob to select either "LINEAR PHASE" or "SHORT DELAY."
2. Press the multi-function knob to confirm.

BRIGHTNESS screen

This screen is used to set the brightness of the display and LED colors.



Available options are as follows.

LCD	For setting the brightness of the AXR4 device display
LED(RED)	For setting the brightness of the red LED
LED(BLUE)	For setting the brightness of the blue LED
LED(WHITE)	For setting the brightness of the white LED
LED(GREEN)	For setting the brightness of the green LED

How to configure the BRIGHTNESS

1. On the SYSTEM SETUP screen, turn the multi-function knob to select "BRIGHTNESS."
2. Press the multi-function knob to select.
3. When the BRIGHTNESS screen appears, turn the multi-function knob to select an option.
4. Press the multi-function knob to select.
5. When the dialog screen appears, turn the multi-function knob to set a brightness value.
6. Press the multi-function knob to close the dialog screen.

PANEL LOCK screen

This screen is used to lock operations from panel switches and encoder. Attempting to use locked switches and encoder operations will display a message dialog screen for a set period of time.



How to configure PANEL LOCK

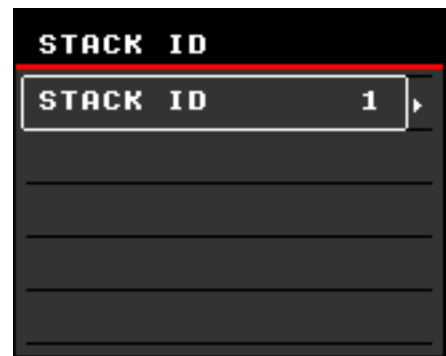
1. On the SYSTEM SETUP screen, turn the multi-function knob to select "PANEL LOCK."
2. Press the multi-function knob to confirm.

How to release configured PANEL LOCK

Press and hold down the [SETUP] key on the AXR4 device.

STACK ID screen

This screen is used to assign an ID to the AXR4 device to identify the device when multiple AXR4 devices are connected.



NOTE

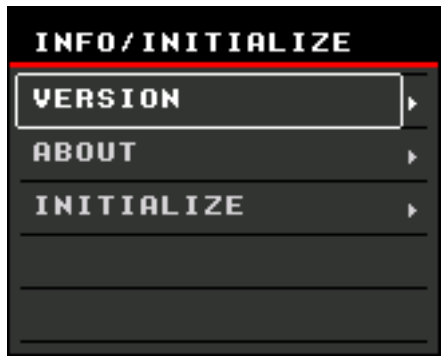
- Up to three AXR4 devices can be stacked. You cannot use four or more connected AXR4 devices together.
- You cannot use multiple connected AXR4 devices by duplicating the STACK ID.
- An assigned STACK ID will be applied after a power cycle.
- A STACK ID can only be set from the screen.

How to configure a STACK ID

1. On the SYSTEM SETUP screen, turn the multi-function knob to select "STACK ID."
2. Press the multi-function knob to select.
3. When the dialog screen appears, turn the multi-function knob to select a number from 1, 2 or 3.
4. Press the multi-function knob to confirm.
5. Set the [Φ /I] (standby/on) switch on the front panel of the AXR4 device into the standby position ([Φ]).
6. Set the [Φ /I] (standby/on) switch on the front panel of the AXR4 device into the [I] position.

INFO/INITIALIZE screen

This screen is used to display information pertinent to the AXR4 device such as firmware information. You can also restore settings value stored to the AXR4 device and scene records back to their default factory settings here.



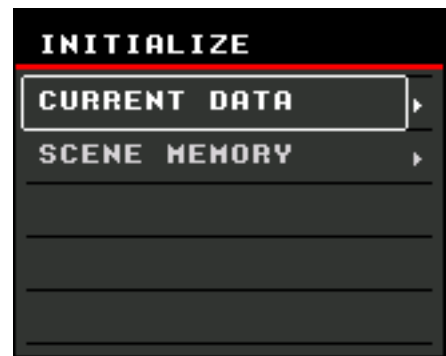
Available options, and the actions they perform, are as follows.

Option		Action performed
VERSION		Displays information pertinent to the AXR4 device such as firmware information
ABOUT		Displays information about the AXR4 device and information about the card slot on the rear of the AXR4 device
INITIALIZE	CURRENT DATA	Restores all current mixer settings and AXR4 device settings to their defaults
	SCENE MEMORY	Deletes all scenes stored to the AXR4 device

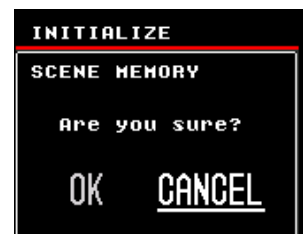
How to perform the INITIALIZE feature

1. Navigate from the SYSTEM SETUP screen to the INFO/INITIALIZE screen, and then turn the multi-function knob to select "INITIALIZE."
2. Press the multi-function knob to select.

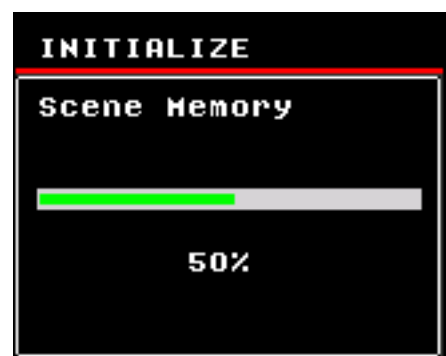
3. When the INITIALIZE screen appears, turn the multi-function knob to select either "CURRENT DATA" or "SCENE MEMORY."



4. Press the multi-function knob to display the settings dialog.



5. Turn the multi-function knob to select either "OK" or "CANCEL."
6. Press the multi-function knob to confirm. A progress bar will appear and the initialization process will begin.

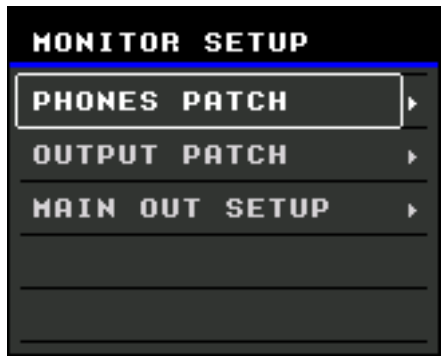


NOTE

If the initialization is performed with "CURRENT DATA" selected, the AXR4 device will restart automatically when the process is complete.

MONITOR SETUP Screen

This screen is used to configure monitor output settings.



How to open the MONITOR SETUP screen

Press the [MONI] key on the AXR4 device panel to open the MONITOR SETUP screen.

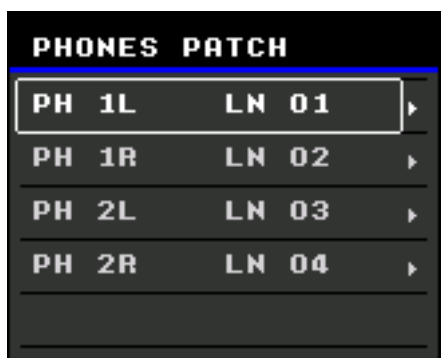
MAIN display area

This area displays options in a list.

PHONES PATCH	For setting the mix bus assigned to the PHONES jack
OUTPUT PATCH	For setting the mix bus assigned to the output jack
MAIN OUT SETUP	For setting the mix bus for which levels are controlled when turning the multi-function knob on the METER screen

PHONES PATCH screen

This screen is used to set the mix bus to be assigned to the output jack.

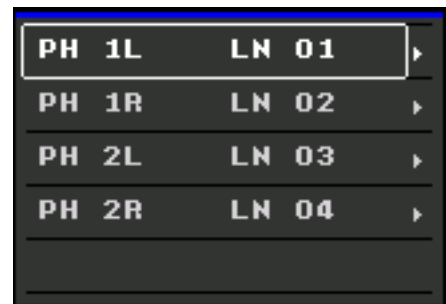


How to open the PHONES PATCH screen

1. On the MONITOR SETUP screen, turn the multi-function knob to select "PHONES PATCH."
2. Press the multi-function knob to confirm.

MAIN display area

The names of each output jack appear on the left, and the names of the currently set mix bus appear on the right.



How to use the PHONES PATCH screen

1. Turn the multi-function knob to select an output jack.
2. Press the multi-function knob to select.
3. When the list of available mix buses appears, turn the multi-function knob to select a mix bus.
4. Press the multi-function knob to confirm.

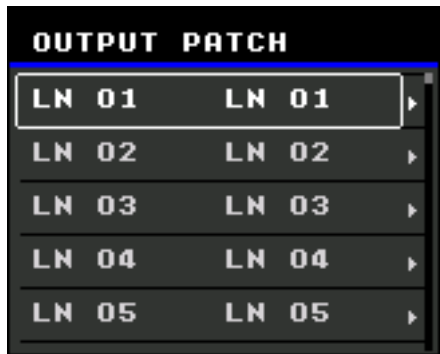


WARNING

To avoid loud sounds unintentionally coming through headphones, check that the headphone volume (PHONES [1]/[2] knob) is set to the minimum level before configuring output patch settings.

OUTPUT PATCH screen

This screen is used to set the mix bus to be assigned to the output jack.

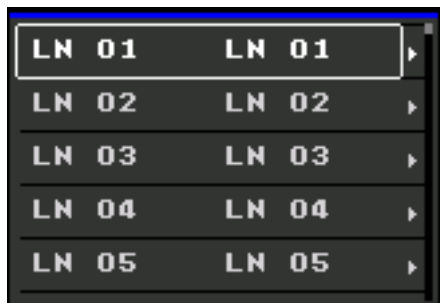


How to open the OUTPUT PATCH screen

1. On the MONITOR SETUP screen, turn the multi-function knob to select "OUTPUT PATCH."
2. Press the multi-function knob to confirm.

MAIN display area

The names of each output jack appear on the left, and the names of the currently set mix bus appear on the right.



How to use the OUTPUT PATCH screen

1. Turn the multi-function knob to select an output jack.
2. Press the multi-function knob to select.
3. When the list of available mix buses appears, turn the multi-function knob to select a mix bus.
4. Press the multi-function knob to confirm.

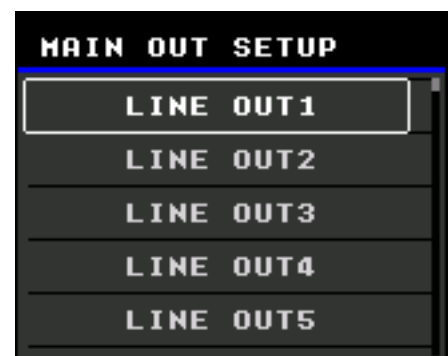


WARNING

To avoid loud sounds unintentionally coming through speakers and headphones, check that the volume of powered speakers, amps, and headphones (the PHONES [1]/[2] knob for the AXR4 device) is set to the minimum level before configuring output patch settings.

MAIN OUT SETUP screen

This screen is used to set the mix bus for which levels are controlled when turning the multi-function knob on the METER screen.

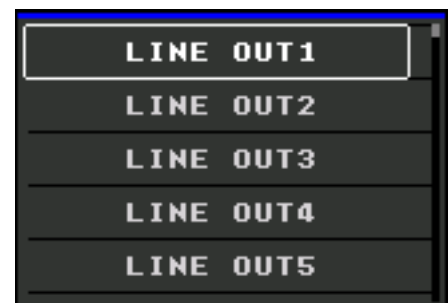


How to open the MAIN OUT SETUP screen

1. On the MONITOR SETUP screen, turn the multi-function knob to select "MAIN OUT SETUP."
2. Press the multi-function knob to confirm.

MAIN display area

This area displays a list of mix buses.



How to use the MAIN OUT SETUP screen

1. Turn the multi-function knob to select a mix bus.
2. Press the multi-function knob to confirm.

CH SETUP Screen

This screen is used to configure AXR4 hardware inputs.



How to open the CH SETUP screen

Press the [CH] key on the AXR4 device panel to open the CH SETUP screen.

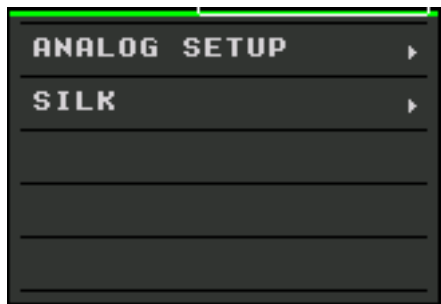
TOOL BAR display area

This area displays available hardware inputs.



MAIN display area

This area displays options in a list.



ANALOG SETUP	For configuring audio control components at the hardware inputs NOTE Options appearing on the following screen will vary depending on the channel selected.
SILK	For configuring SILK-related settings

ANALOG SETUP screen (MIC)

This screen is used to configure audio controls for signal inputs through the MIC/LINE/Hi-Z [1]/[2] jack and the MIC/LINE [3]/[4] jack.

How to open the ANALOG SETUP screen (MIC)

1. On the CH SETUP screen, turn the multi-function knob to select "TOOL BAR Display Area."
2. Press the multi-function knob to select.
3. When the list of available hardware inputs appears, turn the multi-function knob to select a hardware input from MIC IN1 to MIC IN4.
4. Press the multi-function knob to confirm.
5. On the CH SETUP screen, turn the multi-function knob to select "ANALOG SETUP."
6. Press the multi-function knob to confirm.

NOTE

When a screen other than the CH SETUP screen is in use, press the [SEL] key on the front of the AXR4 device to display the ANALOG SETUP screen for the channel corresponding to the [SEL] key.

MAIN display area

This area displays options in a list. The current setting value is displayed to the right of each field.

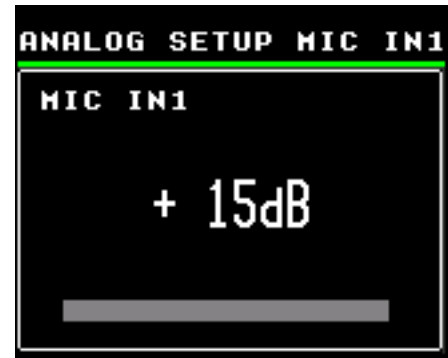


GAIN	For setting analog circuit input gain
PAD	For switching PAD on and off for analog circuits
+48V	For switching phantom power on and off for analog circuits
PHASE	For switching the input signal phase from positive to negative
HPF	For switching the high pass filter on and off
HPF (FREQ)	For changing the cutoff frequency for the high pass filter
HI-Z	For switching HI-Z on and off for analog circuits

NOTE

Display and dspMixFx AXR parameters are linked.

• GAIN



How to configure

1. On the ANALOG SETUP (MIC) screen, turn the multi-function knob to select "GAIN."
2. Press the multi-function knob to select.
3. When the dialog screen appears, turn the multi-function knob to select a value.

NOTE

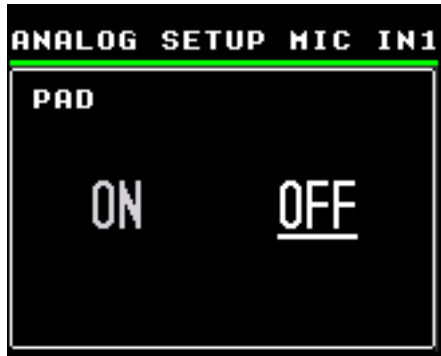
- The input meter will appear on the lower part of the settings dialog screen. Adjusting the audio while watching the meter allows you to adjust gain visually.
- If the PAD is already on, the screen will display the GAIN value damping -20(dB) in advance.



Settings details are as follows.

Setting range	+15(dB) to +68(dB)
Step	1(dB)

• PAD



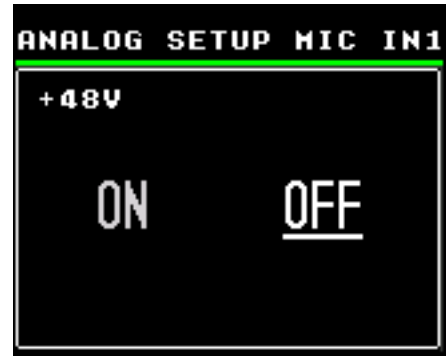
How to configure

1. On the ANALOG SETUP (MIC) screen, turn the multi-function knob to select "PAD."
2. Press the multi-function knob to select.
3. When the dialog appears, turn the multi-function knob to select either "ON" or "OFF."
4. Press the multi-function knob to confirm.

NOTE

Attenuation when PAD is on is 20(dB).

• +48V



NOTICE

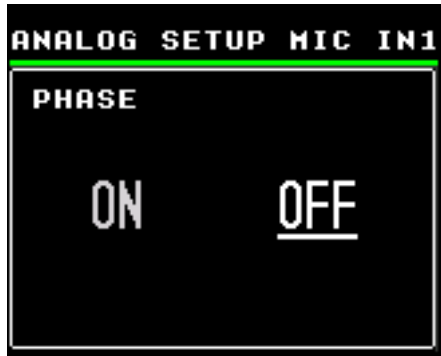
When connecting devices or when switching the routing structure, observe the following cautions to avoid damage and noise being introduced to the product and peripheral devices.

- Turn the phantom power off when connecting a device that does not support phantom power to the MIC/LINE/HI-Z [1]/[2] jack or the MIC/LINE [3]/[4] jack.
- Do not connect or disconnect cables to/from the MIC/LINE/HI-Z [1]/[2] jacks or the MIC/LINE [3]/[4] jacks while the phantom power is on. The [+48V] indicator will flash for several seconds when phantom power is turned off. Wait until this indicator stops flashing before plugging in or taking out cables.
- Turn the phantom power on and off when the [MUTE] key on the front of the AXR4 device is on.
- HI-Z and phantom power cannot be turned on at the same time.

How to configure

1. On the ANALOG SETUP (MIC) screen, turn the multi-function knob to select "+48V."
2. Press the multi-function knob to select.
3. When the dialog appears, turn the multi-function knob to select either "ON" or "OFF."
4. Press the multi-function knob to confirm.

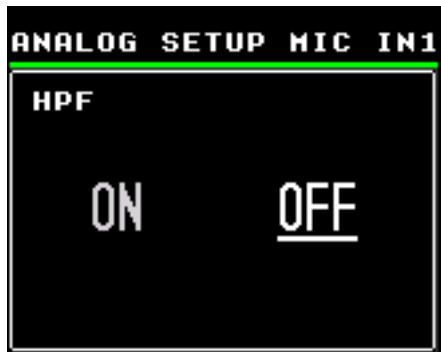
• PHASE



How to configure

1. On the ANALOG SETUP (MIC) screen, turn the multi-function knob to select "PHASE."
2. Press the multi-function knob to select.
3. When the dialog appears, turn the multi-function knob to select either "ON" or "OFF."
4. Press the multi-function knob to confirm.

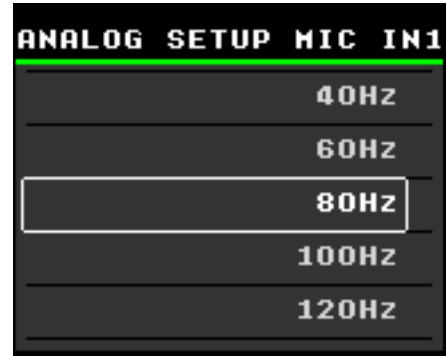
• HPF



How to configure

1. On the ANALOG SETUP (MIC) screen, turn the multi-function knob to select "HPF."
2. Press the multi-function knob to select.
3. When the dialog appears, turn the multi-function knob to select either "ON" or "OFF."
4. Press the multi-function knob to confirm.

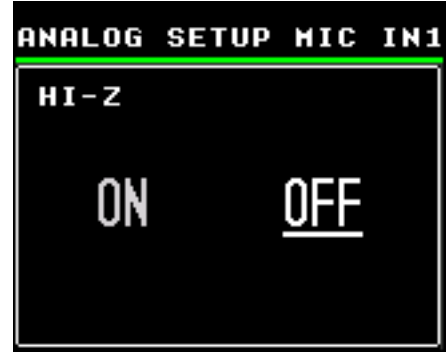
• HPF (FREQ)



How to configure

1. On the ANALOG SETUP (MIC) screen, turn the multi-function knob to select "HPF (FREQ)."
2. Press the multi-function knob to select.
3. When the screen appears, turn the multi-function knob to select a cutoff frequency.
4. Press the multi-function knob to confirm.

• HI-Z



How to configure

1. On the ANALOG SETUP (MIC) screen, turn the multi-function knob to select "HI-Z."
2. Press the multi-function knob to select.
3. When the dialog appears, turn the multi-function knob to select either "ON" or "OFF."
4. Press the multi-function knob to confirm.

ANALOG SETUP screen (LINE)

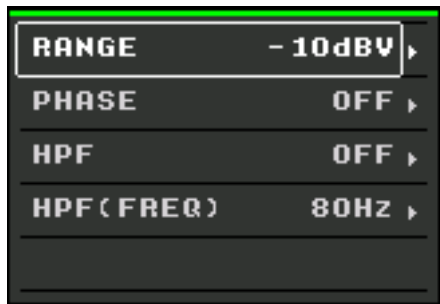
This screen is used to configure audio controls for signal inputs through the LINE INPUT [5] – [12] jacks.

How to open the ANALOG SETUP screen (LINE)

1. On the CH SETUP screen, turn the multi-function knob to select “TOOL BAR Display Area.”
2. Press the multi-function knob to select.
3. When the list of available hardware inputs appears, turn the multi-function knob to select a hardware input from LINE IN 5 to LINE IN 12.
4. Press the multi-function knob to confirm.
5. On the CH SETUP screen, turn the multi-function knob to select “ANALOG SETUP.”
6. Press the multi-function knob to confirm.

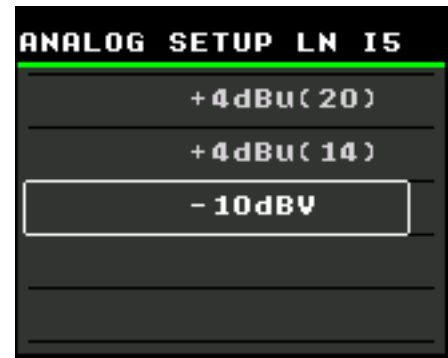
MAIN display area

This area displays options in a list. The current setting value is displayed to the right of each field.



RANGE	For setting the expected input signal level for analog circuits
PHASE	For switching the input signal phase from positive to negative
HPF	For switching the high pass filter on and off
HPF (FREQ)	For changing the cutoff frequency for the high pass filter

• RANGE



How to configure

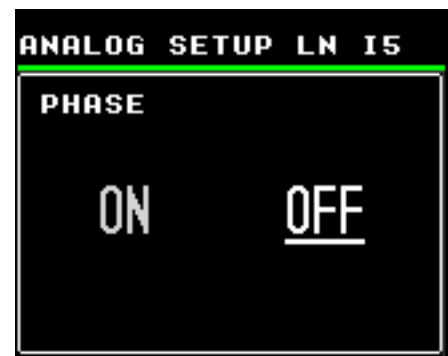
1. On the ANALOG SETUP (LINE) screen, turn the multi-function knob to select “RANGE.”
2. Press the multi-function knob to select.
3. When the screen appears, turn the multi-function knob to select either -10 dBV, +4 dBu (14 dB), or +4 dBu (20 dB).

NOTE

The number in the parentheses for +4 dBu (20) and +4 dBu (14) represents the headroom (dB).

4. Press the multi-function knob to confirm.

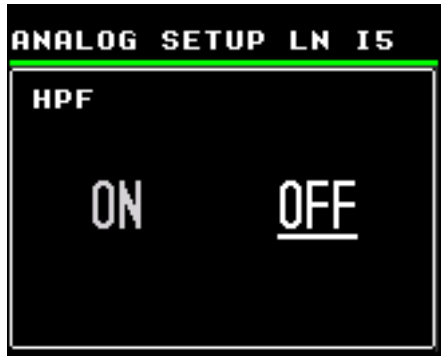
• PHASE



How to configure

1. On the ANALOG SETUP (LINE) screen, turn the multi-function knob to select “PHASE.”
2. Press the multi-function knob to select.
3. When the dialog appears, turn the multi-function knob to select either “ON” or “OFF.”
4. Press the multi-function knob to confirm.

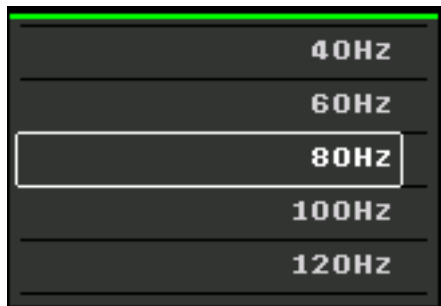
• HPF



How to configure

1. On the ANALOG SETUP (LINE) screen, turn the multi-function knob to select "HPF."
2. Press the multi-function knob to select.
3. When the dialog appears, turn the multi-function knob to select either "ON" or "OFF."
4. Press the multi-function knob to confirm.

• HPF (FREQ)



How to configure

1. On the ANALOG SETUP (LINE) screen, turn the multi-function knob to select "HPF (FREQ)."
2. Press the multi-function knob to select.
3. When the screen appears, turn the multi-function knob to select a cutoff frequency.
4. Press the multi-function knob to confirm.

SILK SETUP screen

This screen is used to configure Silk settings.

How to open the SILK SETUP screen

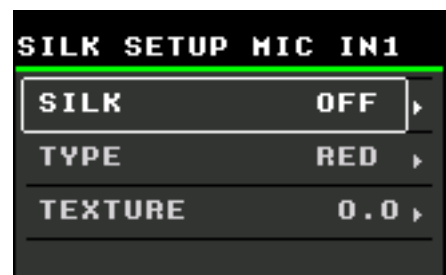
1. On the CH SETUP screen, turn the multi-function knob to select "TOOL BAR Display Area."
2. Press the multi-function knob to select.
3. When the list of available hardware inputs appears, turn the multi-function knob to select a hardware input from MIC IN 1 to MIC IN 4.
4. Press the multi-function knob to confirm.
5. On the CH SETUP screen, turn the multi-function knob to select "SILK."
6. Press the multi-function knob to confirm.

NOTE

To navigate to the SILK SETUP screen, use either the SILK [ON] key, the SILK [TEXTURE] knob, or the SILK [BLUE/RED] key on the front of the AXR4 device.

MAIN display area

This area displays options in a list. The current setting value is displayed to the right of each field.



SILK	Turns Silk on and off
TYPE	Changes the Silk type
TEXTURE	Adjusts the amount of Silk processing

• SILK



How to configure

1. On the SILK SETUP screen, turn the multi-function knob to select "SILK."
2. Press the multi-function knob to select.
3. When the dialog appears, turn the multi-function knob to select either "ON" or "OFF."
4. Press the multi-function knob to confirm.

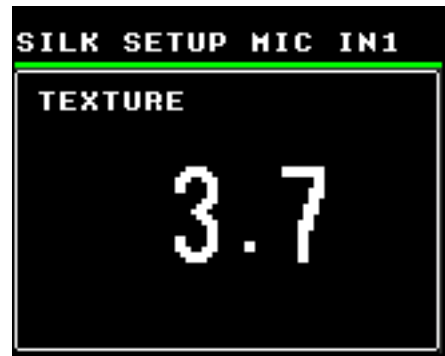
• TYPE



How to configure

1. On the SILK SETUP screen, turn the multi-function knob to select "TYPE."
2. Press the multi-function knob to select.
3. When the screen appears, turn the multi-function knob to select either "BLUE" or "RED."
4. Press the multi-function knob to confirm.

• TEXTURE



How to configure

1. On the SILK SETUP screen, turn the multi-function knob to select "TEXTURE."
2. Press the multi-function knob to select.
3. When the dialog screen appears, turn the multi-function knob to select a value.

Panel Controls and Functions (Software)

Audio Drivers

Types of Audio Drivers

Steinberg AXR4 2TR

Select this when playing/recording OS audio and iTunes and other non-DAW application audio. One stereo line is available for playback and recording channels.

Yamaha Steinberg Thunderbolt

Select this when playing/recording DAW application audio.

Yamaha Steinberg Thunderbolt (High Precision)

Select this when processing at 32-bit integer resolutions between Cubase and the driver.

NOTE

When “Yamaha Steinberg Thunderbolt (High Precision)” is selected, Cubase will exclusively use the driver. “Yamaha Steinberg Thunderbolt” is not available for use by other applications. “Steinberg AXR4 2TR” can be used by other applications.

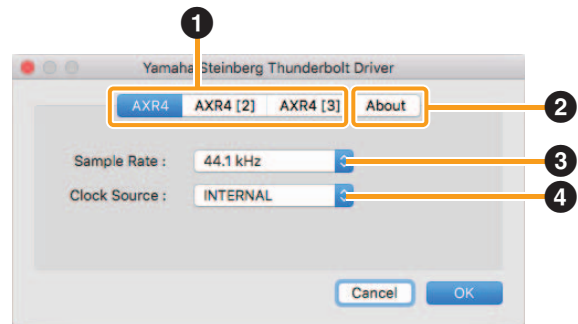
Settings Window

Sample rate and clock source settings can be configured in the Control Panel.

How to open the window

- Select the “Applications” folder → “Yamaha Steinberg Thunderbolt Control Panel”
- From the menu in the Cubase series, select “Studio” → “Studio Setup” → “Yamaha Steinberg Thunderbolt” or “Yamaha Steinberg Thunderbolt (High Precision)” → “Control Panel” → “Open Config App”

Window configuration



① Device selection tabs

Used to switch to the AXR4T which you want to configure settings for in the Control Panel when multiple AXR4Ts are connected together in a stack.

② [About] tab

Displays version and copyright information.

③ Sample Rate

Used to change the sample rate ([page 14](#)).

NOTE

You can also change the sample rate in “Applications” → “Utilities” → “Audio MIDI Settings”

④ Clock Source

Used to set the clock source ([page 13](#)).

Audio driver settings (dialog after launching Cubase)

The dialog box will appear immediately after launching Cubase, prompting you to select an audio driver.

When using the AXR4, select either “Yamaha Steinberg Thunderbolt” or “Yamaha Steinberg Thunderbolt (High Precision)”

How to change the buffer size

You can change the buffer size in the settings window for each application (DAW software, etc.).

1. From the Cubase series menu, select “Studio” → “Studio Setup”

NOTE

The open method of the settings window will vary depending on the application.

2. In the “Yamaha Steinberg Thunderbolt” or “Yamaha Steinberg Thunderbolt (High Precision)” menu on the left of the window, click “Control Panel” to change the buffer size.

dspMixFx AXR

This software is used to operate the DSP mixer and DSP effects installed on the AXR4 device.

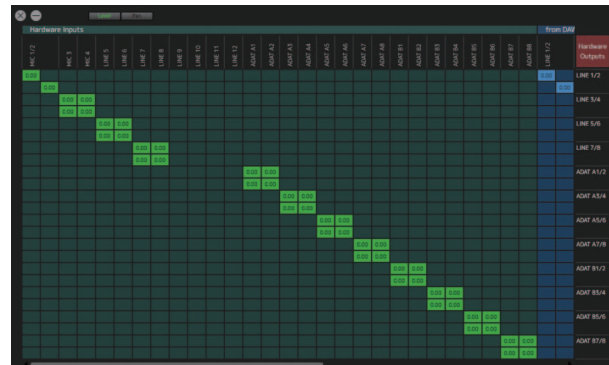
Window Examples and How to Open the Window

Window configuration

dspMixFx AXR is composed of five windows including the Mixer window.



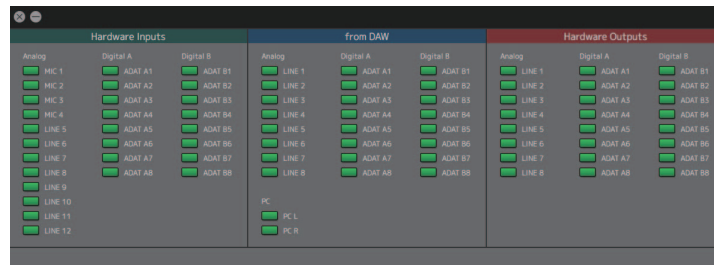
Mixer window



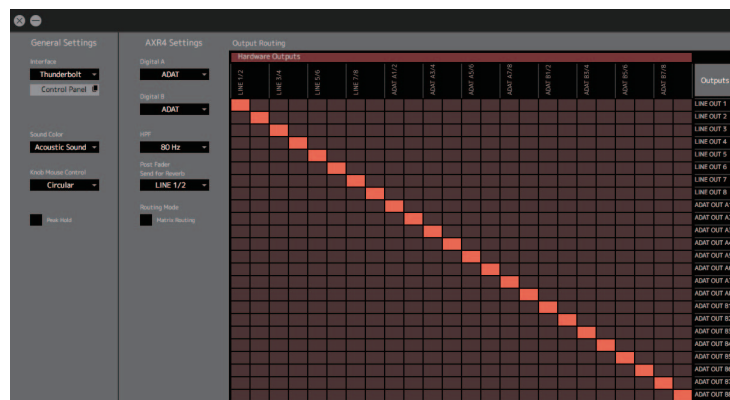
Matrix Mixer window



Meter window



Show/Hide Channels window



Settings window

NOTE

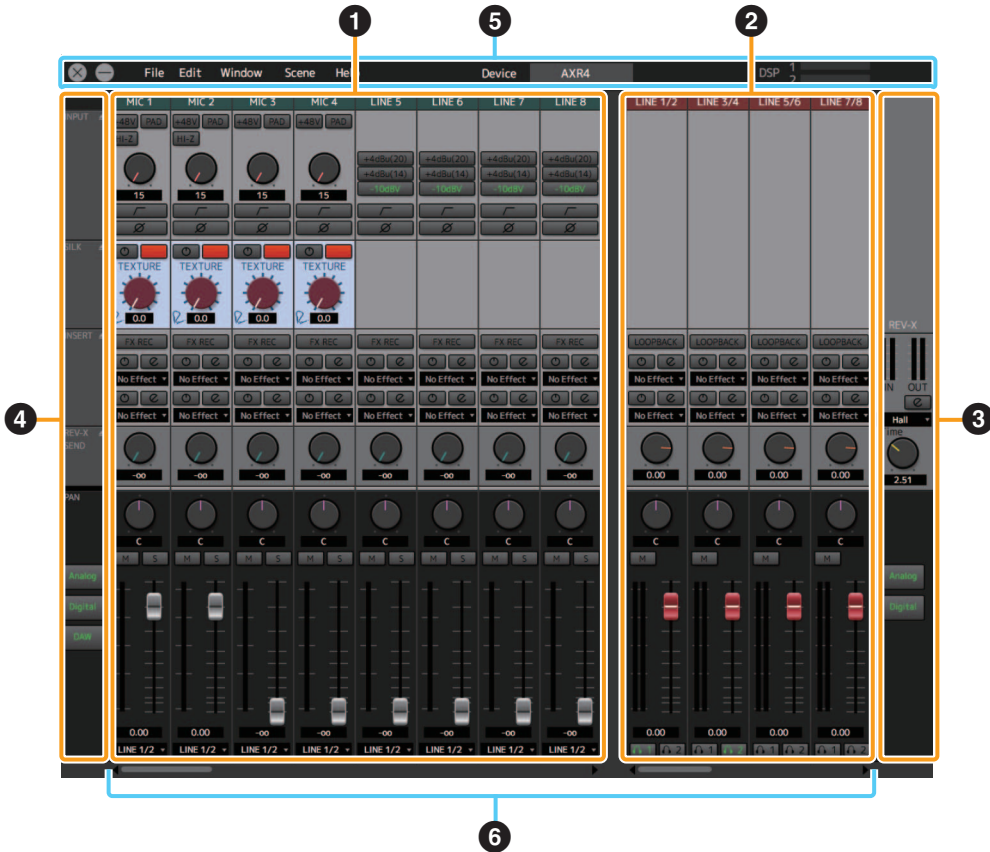
Click the bottom right edge of the window and drag it diagonally to adjust the size of the window while expanding and contracting the size of the items displayed.

How to open dspMixFx AXR

“Applications” → “dspMixFx AXR”

Mixer Window

This window is used to control the mixer.



❶ Input Channels area ([page 32](#))

❷ Output Channels area ([page 36](#))

❸ Right side bar ([page 38](#))

❹ Left side bar ([page 39](#))

❺ Menu ([page 42](#))

❻ Scroll bar

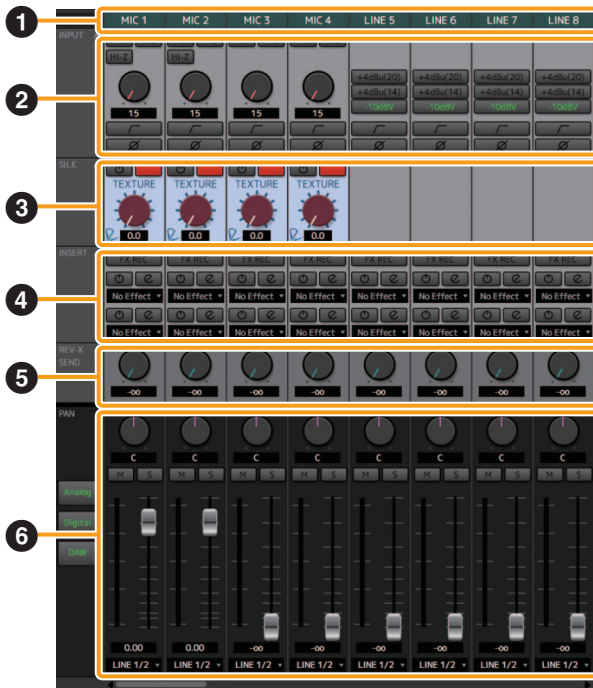
NOTE

Contents displayed on the Mixer window can be changed by performing the following actions.

- Move the scroll bar to display input channels and output channels outside the display area.
- Click the top or bottom edge of the Mixer window and drag it up and down to change the window size without changing the mixer size.
- Click the upper right edge of the Mixer window and drag it diagonally to scale the mixer along with the window size.
- Click the right edge of the Mixer window and drag it left and right to increase or decrease the number of channels displayed in the input channels area.

Input Channels Area

This area is used to configure input channel settings. If you are unable to display all channels due to the window size, use the scroll bar to display the intended channels. You can switch between stereo and mono for all input channels. You can select which channels to display using filtering settings. Some functions allow you to select either to display all details or to show a reduced display.



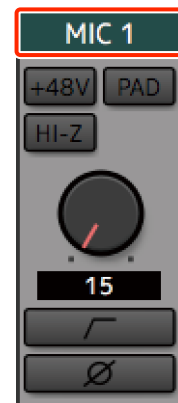
- 1 Channel label ([page 32](#))
- 2 Input Settings area
- 3 SILK ([page 34](#))
- 4 Insert FX ([page 34](#))
- 5 Reverb Send ([page 34](#))
- 6 PAN/FADER area ([page 37](#))

NOTE

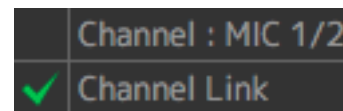
- In the input channels area and the output channels area, you can select to display all functions (Display All) or to display designated functions only (Reduced Display) ([page 39](#)).
- Not all channels will be displayed in the input channels area on the initial window shown when launching dspMixFx AXR. Either move the display using the scroll bar, or increase the window width to display hidden channels.

Channel label

*Red box section



This displays the channel name. Double click this to rename the channel name. Channel labels can be up to eight characters long. While holding down the <control> key, click on the channel label to display a menu.



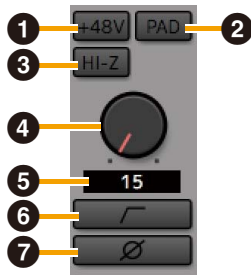
Channel name

Click this to reset the channel name back to its initial setting.

Channel Link

Click this on a mono channel to link the channel to the adjacent channel. Click this on a stereo channel to convert a stereo channel into two mono channels. A tick will appear to indicate linked channels.

Input Settings area — Head amp



1 [+48V] button

Turns the phantom power on and off.

NOTICE

When connecting devices or when switching the routing structure, observe the following cautions to avoid damage and noise being introduced to the product and peripheral devices.

- Turn the phantom power off when connecting a device that does not support phantom power to the MIC/LINE/HI-Z [1]/[2] jack or the MIC/LINE [3]/[4] jack.
- Do not connect or disconnect cables to/from the MIC/LINE/HI-Z [1]/[2] jacks or the MIC/LINE [3]/[4] jacks while the phantom power is on. The [+48V] indicator will flash for several seconds when phantom power is turned off. Wait until this indicator stops flashing before plugging in or taking out cables.
- Turn the phantom power on and off when the [MUTE] key on the front of the AXR4 device is on.
- HI-Z and phantom power cannot be turned on at the same time.

2 [PAD] button

Switches the PAD on and off.

3 [HI-Z] button (CH1 and CH2 Only)

Switches the HI-Z on and off.

NOTE

Attenuation when PAD is on is 20 (dB).

4 Input Gain control knob

Adjusts the input gain.

5 Input Gain value

Used to display and edit the current input gain.

6 High Pass Filter button

Switches the high pass filter on and off.

7 [φ] button

Switches phase inversion on and off.

When channels are stereo linked, the [φ] button will appear for both left and right channels.

NOTE

- Double click the input gain control knob to minimize input gain.
- You can also control the input gain control knob with the mouse wheel.
- Double click the input gain value to enter a gain value directly.

Input Settings area — Line



1 [+4dBu(20)] button

Sets the required input level to +4 dBu (20).

2 [+4dBu(14)] button

Sets the required input level to +4 dBu (14).

NOTE

The number in the parentheses for +4 dBu (20) and +4 dBu (14) represents the headroom (dB).

3 [-10dBV] button

Sets the required input level to -10 dBV.

4 High Pass Filter button

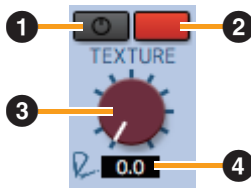
Switches the high pass filter on and off.

5 [φ] button

Switches phase inversion on and off.

When channels are stereo linked, the [φ] button will appear for both left and right channels.

SILK (Display all)



1 SILK button

Switches the Silk function on and off.

2 BLUE/RED button

Changes between BLUE and RED.

3 TEXTURE control knob

Adjusts the amount of Silk of TEXTURE applied.

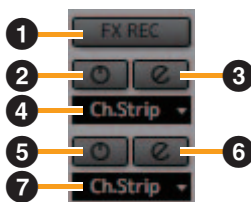
4 TEXTURE value

Used to display and edit TEXTURE value.

NOTE

- Double click the TEXTURE control knob to minimize input gain.
- You can also control the TEXTURE control knob with the mouse wheel.
- Double click the TEXTURE value to enter a texture value directly.

Insert FX (Display all)



1 FX REC button

Used to select between pre-effect/post-effect.

2 FX Bypass button (SLOT 1)

Bypass switch for the inserted effect.

3 FX Edit button (SLOT 1)

Configures inserted effect settings.

4 Select FX (SLOT 1)

Used to select an effect and display the currently selected effect.

5 FX Bypass button (SLOT 2)

Bypass switch for the inserted effect.

6 FX Edit button (SLOT 2)

Configures inserted effect settings.

7 Select FX (SLOT 2)

Used to select an effect and display the currently selected effect.

Reverb Send (Display all)



1 Reverb Send knob

Controls the reverb send amount.

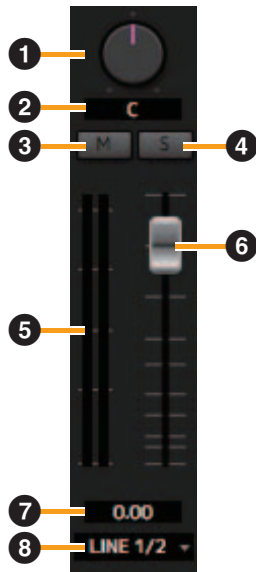
2 Reverb Send amount

Used to display and edit the reverb send amount.

NOTE

- Double click the Reverb Send knob to minimize the reverb send amount.
- You can also control the Reverb Send knob with the mouse wheel.
- Double click the Reverb Send value to enter a reverb send value directly.

PAN/FADER area



- 1 PAN knob**
Adjusts the degree of pan applied.
- 2 PAN value**
Used to display and edit the pan value.
- 3 MUTE button**
Switches the mute feature on and off.
- 4 SOLO button**
Switches the solo function on and off.
- 5 Level meter**
Displays the input level.
- 6 Send Level control fader**
Adjusts send levels.
- 7 Send Level**
Used to display and edit the send level.
- 8 Mix Bus (Send Destination)**
Used to display and select mix buses.

How to use the Mix Bus (Send Destination) option and the drop down menu



Click the mix bus (send destination) to display a list of mix buses available for routing. Click a mix bus from the list displayed for routing.

NOTE

- Double click the PAN knob to center the pan.
- You can also control the PAN knob with the mouse wheel.
- Double click the PAN value to enter a pan value directly.
- While holding down the <shift> key on your computer, drag the send level control fader to allow for finer fader level control based on the dragging amount.
- Double click the send level to enter a send value directly.
- Each input channel has its own pan value and the send level for each mix bus. Reselecting a mix bus (send destination) changes fader and PAN knob displays based on the PAN value and send level set for the selected mix bus.

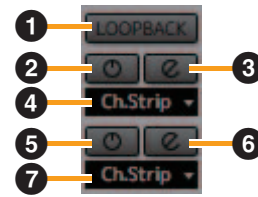
Output Channels Area

This area is used to configure output channel settings. This area is fixed to display four channels (eight stereo channels), regardless of window size. You can switch between stereo and mono for all input channels. Scroll to display the intended channel. You can select which channels to display using filtering settings.



- ❶ Insert FX ([page 36](#))
- ❷ Reverb Return ([page 37](#))
- ❸ PAN/FADER area ([page 37](#))

Insert FX (Display all)



- ❶ **[LOOPBACK] button**
Switches the function to return channel audio signals back to computer system sounds on and off.
- ❷ **FX Bypass button (SLOT 1)**
Bypass switch for the inserted effect.
- ❸ **FX Edit button (SLOT 1)**
Configures inserted effect settings.
- ❹ **Select FX (SLOT 1)**
Used to select an effect and display the currently selected effect.
- ❺ **FX Bypass button (SLOT 2)**
Bypass switch for the inserted effect.
- ❻ **FX Edit button (SLOT 2)**
Configures inserted effect settings.
- ❼ **Select FX (SLOT 2)**
Used to select an effect and display the currently selected effect.

Reverb Return (Display all)



1 Reverb Return knob

Adjusts the reverb return amount.

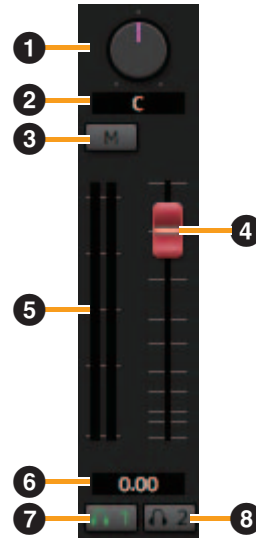
2 Reverb Return amount

Used to display and edit the reverb return amount.

NOTE

- Double click the Reverb Return knob to minimize the return amount.
- You can also control the Reverb Return knob with the mouse wheel.
- Double click the Reverb Return value to enter a reverb return value directly.

PAN/FADER area



1 PAN knob

Adjusts the degree of pan applied.

2 PAN value

Used to display and edit the pan value.

3 MUTE button

Turns the MUTE on and off.

4 Output Level control fader

Adjusts output levels.

5 Level meter

Displays output levels.

6 Output Level

Used to display and edit the output level.

7 Headphone 1 button

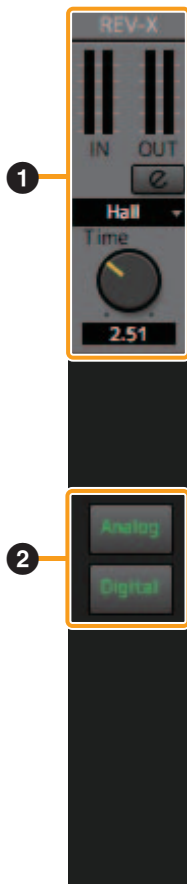
Outputs to headphone 1.

8 Headphone 2 button

Outputs to headphone 2.

Right Side Bar

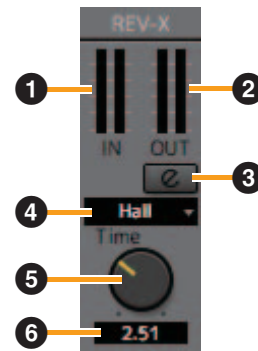
This is used to open and close, and show and hide areas on the channel strip, and configure REV-X settings.



❶ REV-X ([page 38](#))

❷ Filtering buttons ([page 38](#))

REV-X



❶ INPUT meter

Displays reverb input signal levels.

❷ OUTPUT meter

Displays reverb output signal levels.

❸ Reverb Edit button

Opens the reverb advanced settings window.

❹ Select Reverb Type

Selects a reverb type.

❺ Reverb Time settings knob

Adjusts the reverb time.

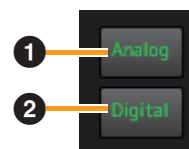
❻ Reverb Time setting value

Used to display and edit the current reverb time.

NOTE

- Double click the Reverb Time settings knob to minimize the reverb time.
- You can also control the Reverb Time settings knob with the mouse wheel.
- Double click the Reverb Time setting value to enter a reverb time directly.

Filtering buttons



❶ [Analog] button

Shows/hides analog output channels.

❷ [Digital] button

Shows/hides digital output channels (ADAT, S/PDIF, AES/EBU).

Left Side Bar

This is used to switch between display all/ reduced display, or to show/hide functions in the input channels area and the output channels area.



1 Switch between Display all/ Reduced display ([page 39](#))

2 Filtering buttons ([page 40](#))

Switch between Display all/ Reduced display



1 INPUT

Switches between display all/reduced display for input settings.

2 SILK

Switches between display all/reduced display for Silk settings.

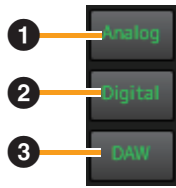
3 INSERT

Switches between display all/reduced display for inserts effect settings.

4 REV-X SEND

Switches between display all/reduced display for reverb send and reverb return settings.

Filtering buttons



1 [Analog] button

Shows/hides analog input channels (MIC and LINE channels for hardware inputs).

2 [Digital] button

Shows/hides digital input channels (ADAT, S/PDIF, AES/EBU channels for hardware inputs).

3 [DAW] button

Shows/hides DAW input channels.

Relational Tables

Information on available operations by channel type, and display all mode and reduced display mode correspondence is provided in the tables below.

Item			Description	HARDWARE								DAW	
				ANALOG						DIGITAL			
				1 – 2 CH		3 – 4 CH		5 – 12 CH		13 CH onwards		All CH	
				Display all	Reduced display	Display all	Reduced display	Display all	Reduced display	Display all	Reduced display	Display all	Reduced display
Settings area	Input	+48V	Turns phantom power on/off	●	●	●	●	--	--	--	--	--	--
		PAD	Switches PAD on/off	●	●	●	●	--	--	--	--	--	--
		HI-Z	Switches HI-Z settings on/off	●	--	--	--	--	--	--	--	--	--
		Gain knob	Adjusts input gain	●	--	●	--	--	--	--	--	--	--
		Gain value Input	Adjusts input gain value	●	●	●	●	--	--	--	--	--	--
		Change gain	Changes input gain	--	--	--	--	●	--	--	--	--	--
		HPF	Switches high pass filter on/off	●	--	●	--	●	--	--	--	--	--
		PHASE	Used for PHASE settings	●	--	●	--	●	--	--	--	--	--
	SILK	ON/OFF	Switches SILK on/off	●	●	●	●	--	--	--	--	--	--
		BLUE/RED	Changes between BLUE/RED	●	●	●	●	--	--	--	--	--	--
		TEXTURE knob	Used for setting TEXTURE knob	●	--	●	--	--	--	--	--	--	--
		TEXTURE value input	Used to set TEXTURE value	●	●	●	●	--	--	--	--	--	--
	Insert FX	FX REC	Used for a recording with effects applied	●	--	●	--	●	--	●	--	--	--
		FX Bypass (*1)	Bypass the inserted effect	●	--	●	--	●	--	●	--	--	--
		FX Edit (*1)	Displays the effect settings window	●	--	●	--	●	--	●	--	--	--
		Select effect (*1)	Used to select the effect to insert	●	●	●	●	●	●	●	●	--	--
	Reverb Send	Send amount knob	Adjusts reverb send amount	●	--	●	--	●	--	●	--	●	--
		Send amount value input	Used to input reverb send amount value	●	●	●	●	●	●	●	●	●	●
PAN/ FADER area	PAN (*2)		Used for PAN settings	●	●	●	●	●	●	●	●	●	●
	MUTE		Switches MUTE on/off	●	●	●	●	●	●	●	●	●	●
	SOLO		Switches SOLO on/off	●	●	●	●	●	●	●	●	●	●
	Fader+ value input		Adjusts send level	●	●	●	●	●	●	●	●	●	●
	Meter		Displays input level	●	●	●	●	●	●	●	●	●	●

Channel-specific settings

*1 Can be inserted into two slots

*2 Unavailable when the output channel is configured for mono

Item			Description	All CH	
				Display all	Reduced display
Settings area	LOOPBACK		Switches loopback to PC on/off	●	--
	Insert FX	ON/OFF (*1)	Switches effect on/off	●	--
		Edit FX (*1)	Displays the effect settings window	●	--
		Select effect (*1)	Used to select the effect to insert	●	●
	Reverb Return	Return amount knob	Reverb return amount control knob	●	--
		Return amount input	Used to input reverb return amount	●	●
PAN/FADER area	PAN (*2)		Used for pan settings	●	●
	MUTE		Switches MUTE on/off	●	●
	SOLO		Switches SOLO on/off	●	●
	Fader+ value input		Adjusts output level	●	●
	Meter		Displays output level	●	●
	Headphone		Switches headphone monitor on/off	●	●

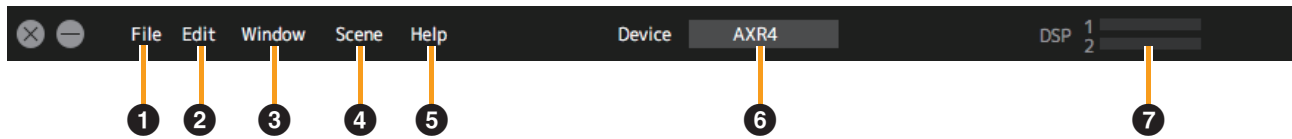
Channel-specific settings

*1 Can be inserted into two slots

*2 Unavailable when configured for mono

Menu

For further information on menu items, see descriptions on each function.



1 File (page 42)

Used to open and save sessions.

2 Edit (page 42)

Used to configure system-wide settings at once.

3 Window (page 43)

Used to open each window.

4 Scene (page 43)

Used to store and recall AXR4 device scenes.

5 Help (page 44)

Used to open the Operation Manual, and information relating to the AXR4 device.

6 Device (page 44)

Used to select and display devices controlled with dspMixFx AXR.

7 DSP (page 44)

Displays the DSP resource use rate.

How to use the menu

Click to display menu items. Scroll the mouse over the menu items displayed to display sub-menu items.

NOTE

Arrows (→) shown when describing menu items in this Owner's Manual are used to refer to the user mousing over menu items to display sub-menu items.

File

This menu is used to open and saves sessions.

Open

Opens saved sessions.

Save

Overwrites the current settings.

NOTE

When multiple AXR4s are connected in a stack, this will save settings data for up to three AXR4s in a single file.

Save As

Opens a dialog box used to set the session save destination folder and the session file name.

Edit

This menu is used to configure system-wide settings at once.

Disable Insert FX

Disables all inserted effects.

Show Hidden Channels

Disables all filtering setting for the channels.

Pairing → Mono

Sets all non-hardware input channels to mono.

Pairing → Stereo

Sets all non-hardware input channels to stereo.

Set Default → Channel Names

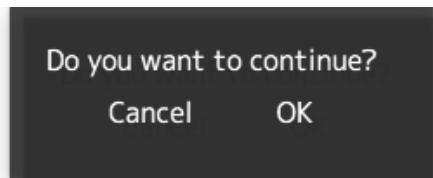
Sets all channel names to their default settings.

Set Default → Routing

Sets DAW outputs directly to hardware output audio routing without mixing at nominal levels.

NOTE

A confirmation dialog box will appear before each setting is applied.



Window

This menu is used to open each window.

Meter

Opens the Meter window.

Matrix Mixer

Opens the Matrix window.

Show/Hide Channels

Opens the Channel List window.

Settings

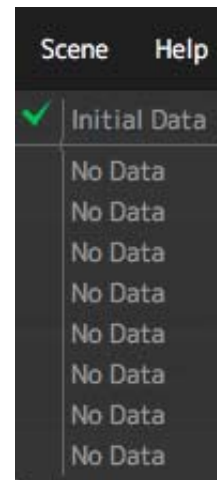
Opens the Settings window.

NOTE

If the corresponding window is already open the window will be brought to the front.

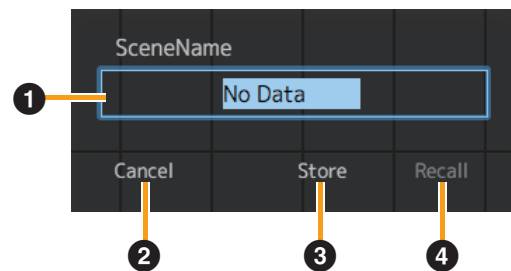
Scene

This menu is used to store and recall AXR4 device scenes.



Select and click on a scene from the list to display the Scene dialog box.

Scene dialog box



1 Edit Scene Name box

Displays the selected scene name. Here you can edit the scene name to be stored.

2 [Cancel] button

Cancels the storing or recalling of a scene.

3 [Store] button

Stores the scene with the currently set scene name.

4 [Recall] button

Recalls the scene selected.

Help

This menu is used to open the Operation Manual, and information relating to the AXR4 device.

Help

Opens the Operation Manual (this document).

About

Displays information about the AXR4 device.

Device

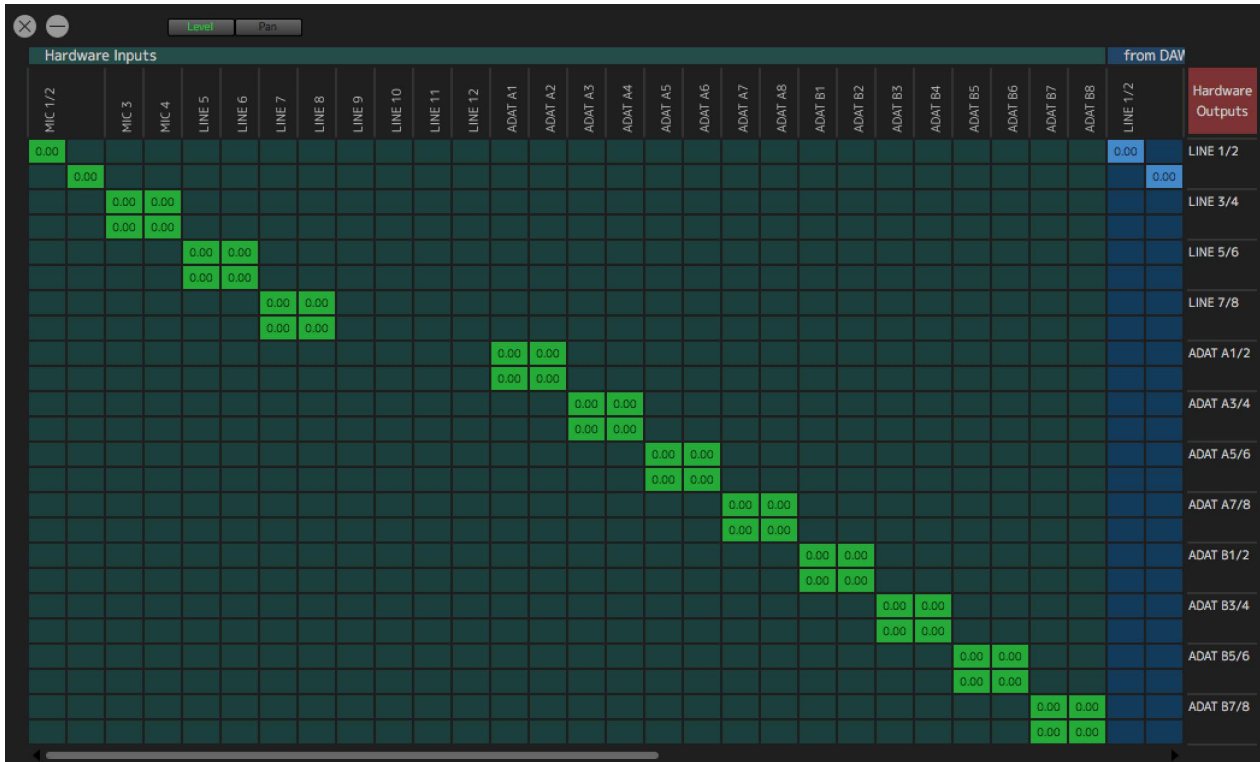
This menu is used to select and display devices controlled with dspMixFx AXR. When a device is selected, the AXR4T to be edited will be changed on all windows other than the Meter window.

DSP

This displays the DSP resource use rate. The number of effects available for use is intended as a guide. This will appear for each of the two DSPs installed.

Matrix Mixer Window

This window is used for signal routing.



How to open the window

“Window” menu → “Matrix Mixer”

Matrix Mixer display

The Matrix Mixer window is composed of two areas, an area for routing inputs to a mix bus, and an area for routing DAW or PC/Mac system sounds to a mix bus. Hardware inputs and DAW inputs are displayed in the horizontal direction. Mix buses are displayed in the vertical direction. Constituting units on the window are referred to as the grid.

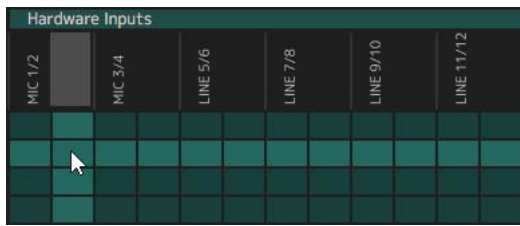
NOTE

- While channel name changes made in the “Channel Label” field on the Mixer window will also apply to the Matrix Mixer, channel names cannot be edited in the Matrix Mixer.
- Items that cannot fit into the computer screen's display frame can be viewed using the scroll bar at the bottom of the Matrix Mixer window. Use the scroll bar to move the display horizontally.

How to use the grid

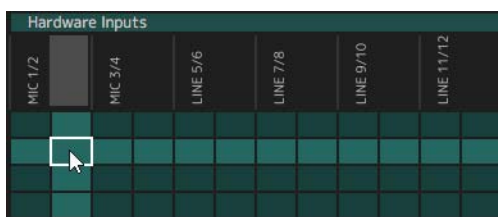
Mouse over

Used to highlight vertical and horizontal lines, including the grid area itself.



Click

Used to select an area on the grid.

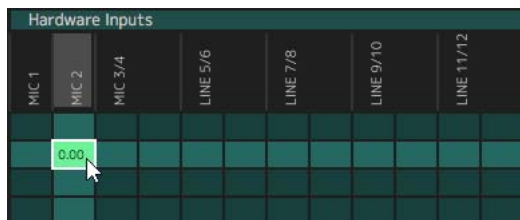


NOTE

When selected, the grid cell will appear highlighted with a white frame.

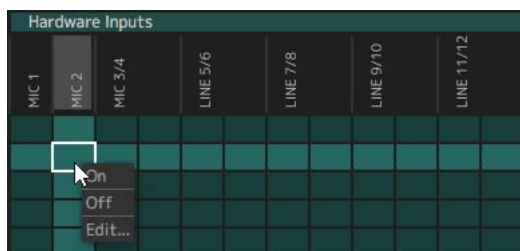
Double click

Used to turn nominal level routing on. Also used to turn routing off for the grid already routed.



<control> key + click

Used to select a grid cell and displays the settings menu for the cell.



On

Turns nominal level routing on.

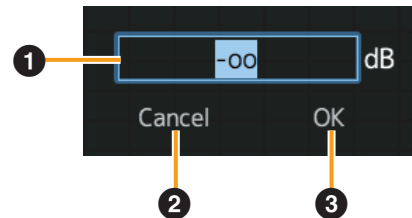
Off

Turns routing off.

Edit...

Opens the settings dialog box.

Settings dialog



1 Send amount

Used to display and edit the send amount.

2 [Cancel] button

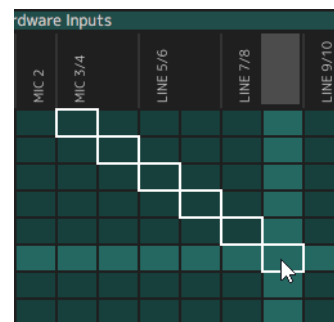
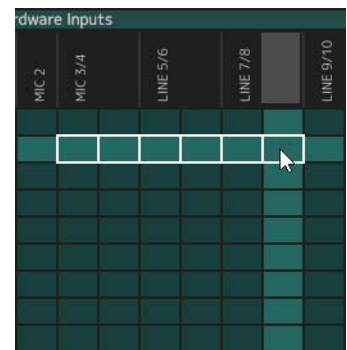
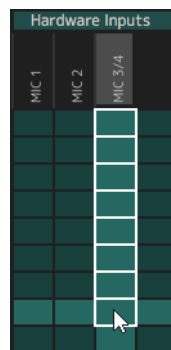
Cancels configured settings.

3 [OK] button

Applies configured settings.

<shift> key + drag

Used to select multiple grid cells in a vertical, horizontal or diagonal dragging direction.

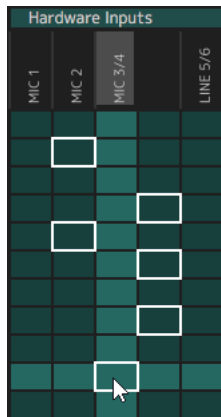


NOTE

When multiple grid cells are selected, hold down the <control> key and click to display the settings menu and set the routing point for all selected cells.

<command> key + left click

Used to select multiple individual grid cells by clicking on grid cells while holding down the <command> key. Click the grid area selected to deselect selected cells.

**NOTE**

When multiple grid cells are selected, hold down the <control> key and click to display the settings menu and set the routing point for all selected cells.

<control> key + mouse wheel

Used to change the level and degree of pan applied.

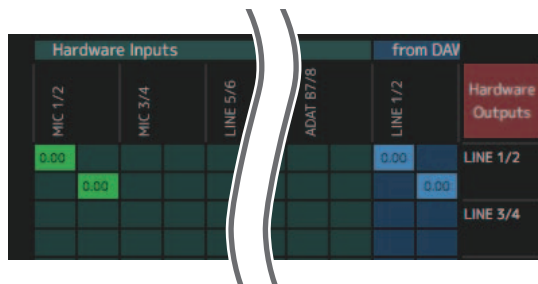
- Rotate mouse wheel forwards: Send amount increases, PAN shifts to right
- Rotate mouse wheel backwards: Send amount decreases, PAN shifts to left

NOTE

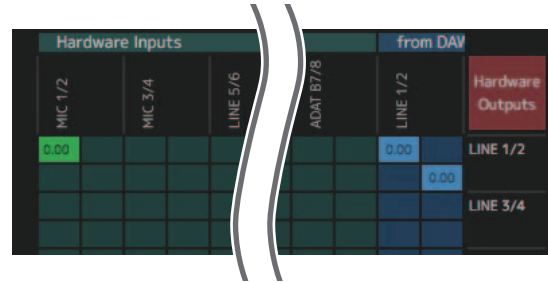
Mono is used as the unit for Matrix Mixer display items and settings.

As such, the following settings may be applied automatically under certain circumstances.

- Grid is turned on/off based on the pan settings applied.
For example, if a stereo-configured MIC 1/2 input is routed to a LINE 1/2 hardware output, the following will occur.



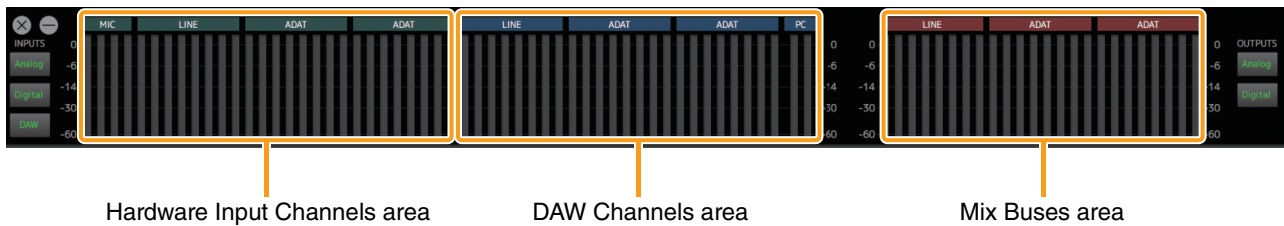
If the pan setting is moved to the leftmost in this state, the signal being sent to the right will stop and the equivalent grid area on the right will automatically be turned off.



- When a fader bottoms out on the Mixer window, the corresponding grid will be turned off.

Meter Window

This window is used to display all meters.



How to open the window

“Window” menu → “Meter”

Display when multiple devices are connected

When multiple AXR4 devices are connected, the devices will be displayed from the top in ascending order based on the STACK ID assigned to each AXR4.

Hardware Input Channels area

This area displays hardware input channel meters. These meters are displayed in the order of (from left) MIC, LINE, Digital A and Digital B.

DAW Channels area

This area displays DAW input signal meters. These meters are displayed in the order of (from left) LINE, Digital A, Digital B and PC.

Mix Buses area

This area displays mix bus meters. These meters are displayed in the order of (from left) LINE, Digital A and Digital B.

NOTE

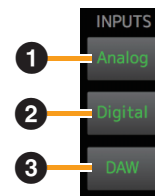
The relationship between level meter colors and sound volume is as follows.

Color	Sound volume
Green	$-\infty$ – -14 [dB]
Yellow	-14 – -3 [dB]
Red	Over

Filtering display channels

You can show/hide items on the Meter window.

INPUTS



1 [Analog] button

Shows/hides analog input meters (MIC and LINE channels for hardware inputs).

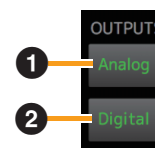
2 [Digital] button

Shows/hides digital input meters (ADAT, S/PDIF, AES/EBU channels for hardware inputs).

3 [DAW] button

Shows/hides meters for signals sent to the AXR4 device from a computer.

OUTPUTS



1 [Analog] button

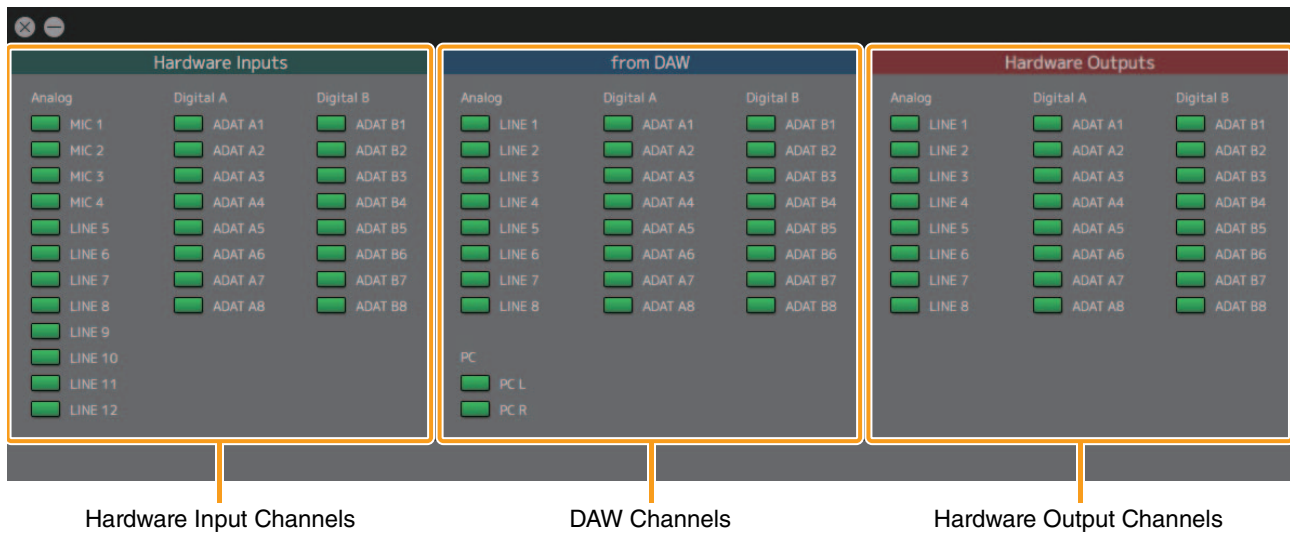
Shows/hides analog output meters.

2 [Digital] button

Shows/hides digital output meters (ADAT, S/PDIF, AES/EBU).

Show/Hide Channels Window

This window is used to show/hide each channel.

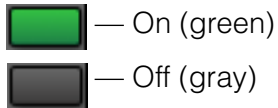


How to open the window

“Window” menu → “Show/Hide Channels”

How to use the Show/Hide Channels window

Turn boxes with a signal name on (green) or off (gray) to show/hide the corresponding channel.

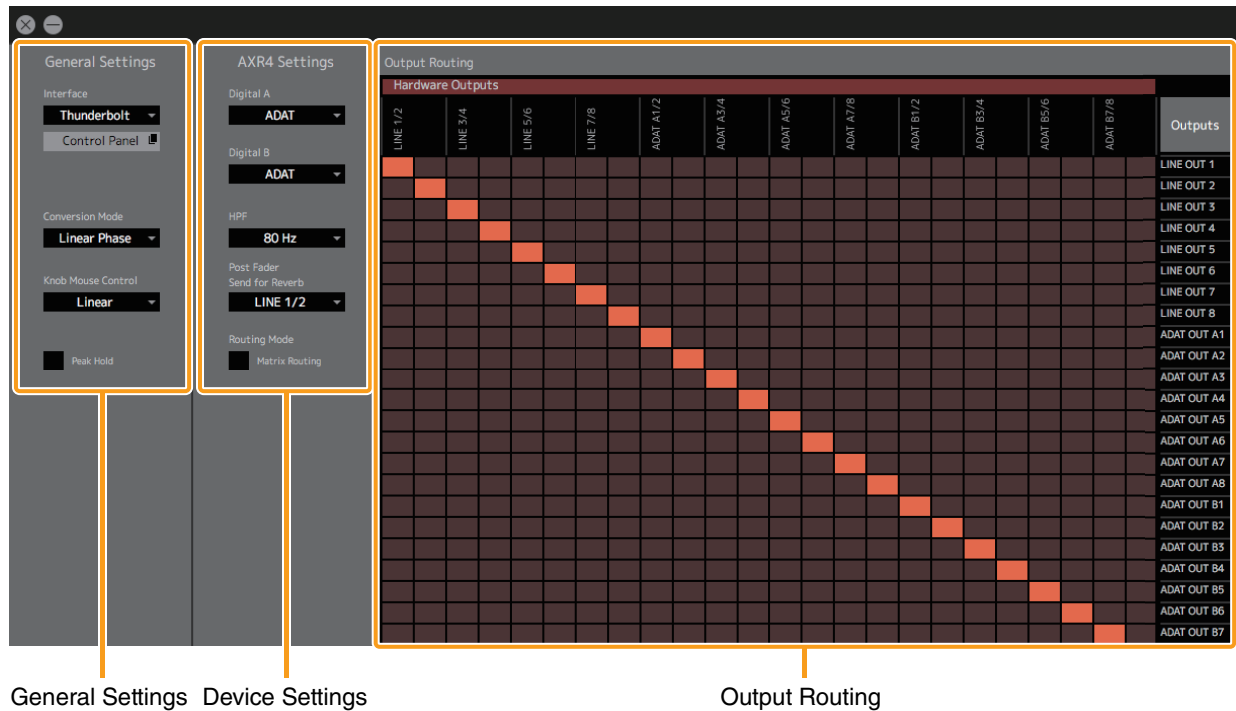


NOTE

Clicking a stereo linked channel will also show/hide the other stereo linked channel.

Settings Window

This window is used to configure general settings and device-specific settings.

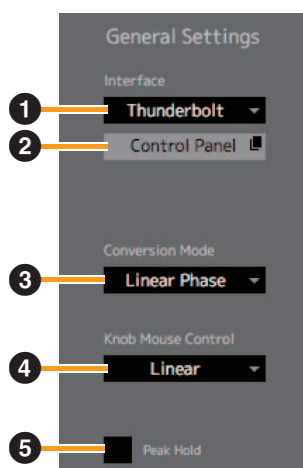


How to open the window

“Window” menu → “Settings”

General Settings

This area is used to configure general system settings.



1 Interface

Used to select the interface standard connecting the AXR4 with the computer.

2 [Control Panel] button

Opens the driver control panel for the interface selected.

3 Conversion Mode

Used to display and edit AD/DA converter filter settings. The AD/DA converter has two filter setting options available: LINEAR PHASE and SHORT DELAY. There are some sonic differences between the two filter settings. Select the one most suitable for your applications.

NOTE

This will appear as “-” if Conversion Mode settings vary between devices when connected in a stack.

4 Knob Mouse Control

Used to select the means of controlling dspMixFx AXR knobs with the mouse.

NOTE

The relationship between each setting and the corresponding knob action is described below.

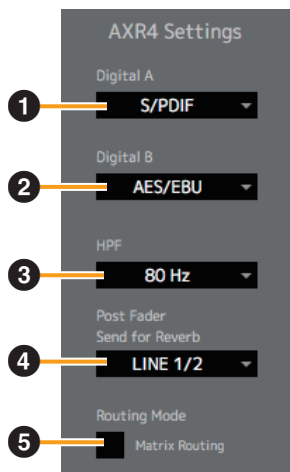
Setting	Knob control method
Linear	Move the mouse left and right as though drawing a line
Circular	Move the mouse left and right as though drawing an arc

5 Peak Hold

Turns the peak hold function on and off.

Device Settings

This area is used to configure device-specific settings. Devices appearing in Device Settings will change based on interface changes made in General Settings, and devices selected on the Mixer window.



1 Digital A

Used to select the Digital I/O used for Digital A.

2 Digital B

Used to select the Digital I/O used for Digital B.

3 HPF

Used to select the frequency of the high pass filter for analog input from 40 Hz, 60 Hz, 80 Hz, 100 Hz and 120 Hz.

4 Post Fader Send for Reverb

Used to select which mix bus post fader to send for reverb.

NOTE

These settings will be applied at once to all mix buses selected in the Post Fader Send for Reverb field in relation to all input channels. When "USER" is selected from the Post Fader Send for Reverb options, individual settings may be applied using the following procedure.

- 1 On the Mixer window, click the "mix bus (send destination)" option for an input channel, and then click on a mix bus to select it.
- 2 While holding down the <control> key, click the "mix bus (send destination)" option for the same input channel in step 1, and then click Post Fader Send for Reverb.

5 Routing Mode

Turns the Matrix Routing on or off.

NOTE

The relationship between turning Matrix Routing on and off, and the resulting action, is described below.

Routing Mode status	Resulting action
On	Selecting a send destination for a channel on the Mixer window will not affect other channels, allowing different send destinations to be selected for each individual channel
Off	Selecting a send destination for a channel on the Mixer window will set the send destination for other channels to the same send destination

Output Routing

This area is used to configure routing settings from mix buses to output connector. Output connector will appear from top to bottom to the right of Output Routing, and mix buses will appear from left to right above Output Routing. Mono is used as the unit for settings.

NOTE

- Mix bus name changes made on the Mixer window will also apply to Output Routing. Mix bus names cannot be changed on the Output Routing window.
- A single bus can be assigned to multiple output connector. Multiple buses cannot be assigned to a single output connector.
- Use the mouse to click to configure the routing setting.

Building a Monitoring Environment

This section describes the process used to build a monitoring environment for a vocalist and an engineer when recording vocals.

The example used in this section assumes the following.

- Computer and AXR4 settings have been complete. Monitor speakers have been connected to the AXR4 and have been set to an appropriate volume.
- A vocal recording mix balance has been established on the DAW.
- If the DAW has a direct monitoring function, it has been turned off.

NOTICE

Follow the cautions described below to avoid damage and noise being introduced to the product and peripheral devices when connecting devices.

- Turn the phantom power off ([page 23](#)) when connecting a device that does not support phantom power to the MIC/LINE/HI-Z [1]/[2] jack or the MIC/LINE [3]/[4] jack.
- Do not connect or disconnect cables to/from the MIC/LINE/HI-Z [1]/[2] jacks or the MIC/LINE [3]/[4] jacks while the phantom power is on. The [+48V] indicator will flash for several seconds when phantom power is turned off. Wait until this indicator stops flashing before plugging in or taking out cables.
- Turn the phantom power on and off when the [MUTE] key on the front of the AXR4 device is on.
- Set the routing when the [MUTE] key on the front of the AXR4 device is on.

Connecting devices to the AXR4 device

1. Connect a microphone to the AXR4 device.
2. Connect headphone 1 (engineer headphones) to the AXR4 device.
3. Connect headphone 2 (vocalist headphones) to the AXR4 device.

Configuring settings on the Matrix Mixer window

4. On the Matrix Mixer window ([page 45](#)), double click each corresponding grid cell to route input from the microphone to the LINE 1/2 output bus and the LINE 3/4 output bus.

Hardware Inputs							
MIC 1	MIC 2	MIC 3	MIC 4	LINE 5	LINE 6	LINE 7	LINE 8
0.00							
0.00							
0.00							
0.00							

5. On the Matrix Mixer window ([page 45](#)), double click each corresponding grid cell to route input from the DAW to the LINE 1/2 output bus and the LINE 3/4 output bus.

from DAW					
ADAT B7	ADAT B8	LINE 1/2	LINE 3/4	LINE 5/6	LINE 7/8
		0.00			
			0.00		
		0.00			
			0.00		

NOTE

Move the scroll bar at the bottom of the Matrix Mixer window to the right to display inputs from DAW.

Configuring settings on the Settings window (Output Routing)

6. Use Output Routing ([page 52](#)) to set LINE 1/2 output bus outputs destination to jacks connected with the monitor speakers.

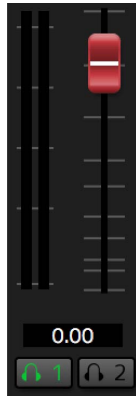
Output Routing											
Hardware Outputs											Outputs
LINE 1/2	LINE 3/4	LINE 5/6	LINE 7/8	S/P OUT AL	AES 1/2	AES 3/4	AES 5/6	AES 7/8			
											LINE OUT 1
											LINE OUT 2
											LINE OUT 3
											LINE OUT 4
											LINE OUT 5
											LINE OUT 6
											LINE OUT 7
											LINE OUT 8
											S/P OUT AL
											S/P OUT AR
											AES OUT 1
											AES OUT 2
											AES OUT 3

Configuring settings on the DAW

7. Set the output from the DAW to the AXR4.

Configuring settings on the Mixer window

8. Set MIC 1 channel settings (gain, phantom power, high pass filter, effects, etc.).
9. Turn the LINE 1/2 output headphone 1 on.

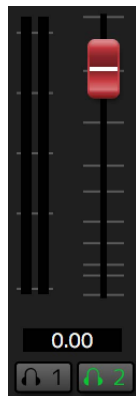


10. Set the MIC 1 channel and DAW channel mix bus (send destination) to LINE 1/2.
11. Adjust MIC 1 channel faders, DAW channel faders, LINE 1/2 output faders and the headphone 1 knob controls to create a mix balance to be used by the sound engineer.

NOTE

dspMixFx AXR changes the input channels displayed based on the mix bus (send destination) selection made here. Check that the currently selected mix bus (send destination) is the one intended for use before controlling input channels.

12. Turn the LINE 3/4 output headphone 2 on.



13. Set the MIC 1 channel and DAW channel mix bus (send destination) to LINE 3/4.
14. Adjust MIC 1 channel faders, DAW channel faders, LINE 3/4 output faders and the headphone 2 knob controls to create a mix balance to be used by the sound engineer.

TIPS

If the vocalist makes requests about specific parts in the audio, return to the DAW to make the necessary changes. Some DAWs allow a vocal-specific monitor mix to be set separate from the original mix.

When using Cubase, this can be achieved by combining studio functions, audio connections and the Mix Console. For more information, see the Cubase Operation Manual.

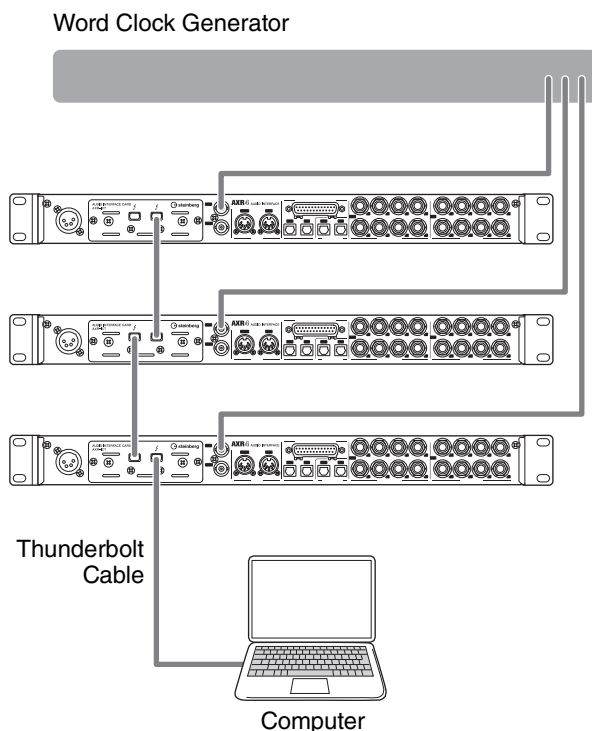
Stacking the AXR4T

Up to three AXR4Ts can be stacked in a daisy-chain connection using Thunderbolt cables. When multiple AXR4Ts are connected, each AXR4T will be identified using their STACK ID. Stacked AXR4Ts must be synchronized. Provide a common external clock via WCLK, ADAT, S/PDIF or AES/EBU.

Connection example

NOTE

- You will also need Thunderbolt2-certified cables to connect AXR4Ts in a daisy-chain connection.
- In the example, an external word clock generator is connected to synchronize audio signals over multiple AXR4Ts.
- Your computer maybe equipped with multiple Thunderbolt2-certified compatible cable jacks; however, you will need to connect one AXR4T to a Thunderbolt2-certified compatible cable jack and then connect the other AXR4Ts through a daisy-chain.
- STACK IDs are set on the SYSTEM SETUP window ([page 17](#)).



How to connect

1. Set the [⏻/I] (standby/on) switch on the front panel of each AXR4T device into the standby position ([⏻]).
2. Use Thunderbolt2-certified cables to connect the AXR4Ts to the computer.

3. Turn on (I) the AXR4Ts.
4. Turn on the computer.

How to configure settings in dspMixFx AXR

When connected in a stack, the system will recognize up to three AXR4Ts. Select the device to be operated on the dspMixFx AXR when performing actual operations.

Select the device to be operated in “Device” on the menu bar on the Mixer window ([page 42](#)).

Monitoring when AXR4Ts are connected in a stack

To monitor input signals without latency from an additional AXR4T using headphones or monitor speakers connected to the first AXR4T in a stack, you will need to establish an independent monitoring connection in addition to the Thunderbolt connection. This example describes the process used to connect two AXR4Ts using an ADAT connection.

1. Make sure that the computer is off, and that the [⏻/I] (standby/on) switch on the AXR4T device is in the standby position ([⏻] position).
2. Use an ADAT cable to connect the OPTICAL A [OUT] connector on the second AXR4T ([page 7](#)) to the OPTICAL A [IN] connector on the first AXR4T.
3. Turn on (I) all AXR4Ts.
4. Boot up the computer.
5. In dspMixFx AXR, set Digital Port A for all AXR4Ts to “ADAT” ([page 51](#)).
6. In dspMixFx AXR, set the signal to be monitored on the second AXR4T to the OPTICAL A connector ([page 51](#)).

Configuring AXR4 Settings in Cubase (AXR Extension)

Window Configuration

Using AXR Extension allows you to operate AXR4 devices connected to a computer with a dedicated Cubase window. A “dedicated Cubase window” for configuring hardware input and output settings, and a “hardware setup” window for configuring general settings are available.

Dedicated Cubase Window

How to open the dedicated Cubase window

NOTE

The dedicated Cubase window will appear under the following conditions.

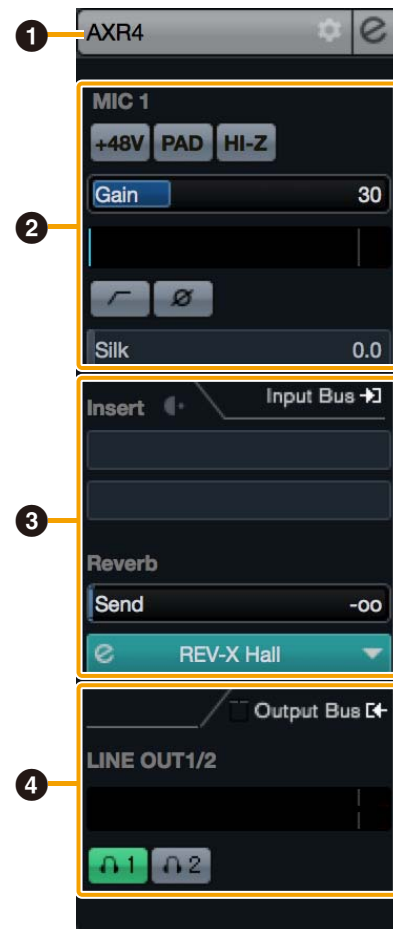
- The AXR Extension has been installed correctly.
- A version or grade of Cubase that supports the AXR Extension is used.
- The audio track in the Cubase project uses a mono or stereo bus.
- If the audio track in the Cubase project uses a stereo bus, it consists of a pair of even and odd numbered channels.

1. Create an audio track in the Cubase project that meets the conditions described above.
2. Click the audio track created to select it.
3. Double click the AXR4 tab label displayed in the inspector window on the left side of the Cubase project window to open the dedicated Cubase window.

The dedicated Cubase window fulfills two roles: editing parameters and displaying the signal flow.

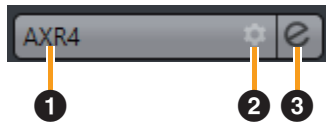
Edit parameters function

The edit parameters function is used to control hardware input/headphone assignments for the connected AXR4 device from the audio track selected in the Cubase project.



- 1 Header area ([page 57](#))
- 2 Hardware Inputs Settings area ([page 57](#))
- 3 Effect Settings area ([page 58](#))
- 4 Outputs area ([page 58](#))

Header area



1 Inspector tab label

Displays the model name in use.

2 Hardware setup button

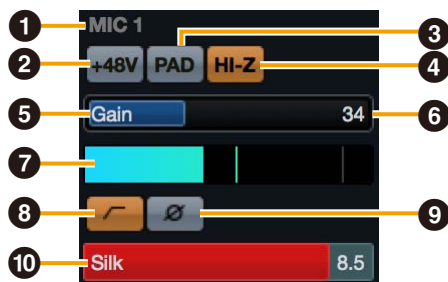
Opens the Studio Setup dialog in Cubase

3 Inspector tab button

Opens dspMixFx AXR

Hardware Inputs Settings area

This area is used to set parameters related to AXR4 inputs.



1 Port name

Displays the name of the port.

2 [+48V] button

Turns the phantom power on and off.

3 [PAD] button

Switches the PAD on and off.

NOTE

Attenuation when PAD is on is 20 (dB).

4 [HI-Z] button

Switches the HI-Z on and off.

5 Gain slider

Sets the gain amount.

6 Gain amount

Displays the gain amount.

7 Input meter

Displays input levels.

NOTE

The right side of the input meter will be displayed in red when clipping occurs. Click this to stop this display.

8 HPF button

Switches the high pass filter on and off.

9 [φ] button (shows L, R when stereo is selected)

Switches phase inversion on and off.

10 SILK controller

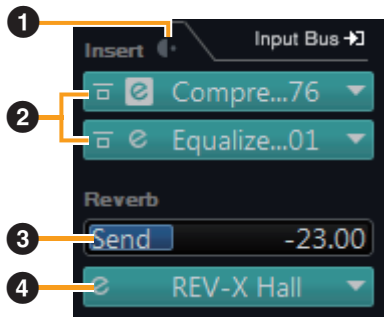
Configures Silk settings.



1	SILK On/Off button	Sets Silk on and off
2	SILK Type button	Sets the Silk type (BLUE/RED)
3	SILK Texture slider	Sets the amount of Silk processing with a mouse
4	SILK Texture text	Sets the amount of Silk processing from a computer keyboard inputs

Effect Settings area

This area is used to set parameters related to AXR4 input/output port effects.

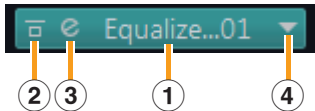


1 Pre/Post Switch button

Used to select the insertion point for the effect.

2 InsFx controller

Sets parameters related to insert effects.



①	Effect Name area	Displays the names of applied effect
②	Effect Bypass button	Allows you to bypass the effect
③	Effect Edit button	Displays the Effect Edit window
④	Effect Type button	Displays a list of effect types to choose from

3 Reverb Send slider

Sets the reverb send amount.

4 Reverb controller

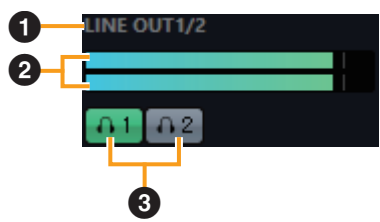
Sets the reverb.



①	Reverb Name area	Displays the selected REV-X type
②	Reverb Edit button	Displays the Reverb Edit window
③	Reverb Type button	Displays a list of reverb types to choose from

Outputs area

This area is used to set parameters related to hardware outputs.



1 Name label

Displays the name of the hardware output.

2 Output meter

Displays meters for hardware mix buses connected to hardware outputs.

3 Headphone Patch button 1/2

Patches headphones to hardware mix buses connected to hardware outputs.

Signal flow function



1 DAW signal guide indicators

Displays the positions of input buses in a signal flow.

NOTE

To make a recording with effects applied, make sure to set the “Pre/Post Switch button” to “Pre.”

Hardware Setup

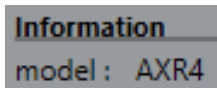
The hardware setup is displayed in Studio Setup dialog in Cubase. This displays information on the hardware setup, and allows you to configure general hardware settings and Cubase-linked function settings.

How to open Studio Setup

On the top of the Cubase window, click “Studio” → “Studio Setup”
Alternatively, click “Hardware Setup window” in the “Header area” of “Dedicated Cubase window”

The hardware setup has three areas: an information area, a parameter settings area, and a DAW-linked function settings area.

Information area

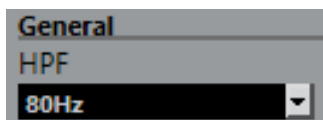


model

Displays the name of the device.

Parameter settings area

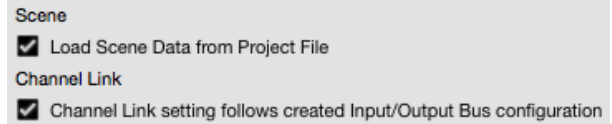
This area is used to configure AXR4 device settings.



HPF

Used to select the HPF cutoff frequency.

DAW-linked function settings area



Scene

Automatically applies scene information to the AXR4 device when loading a Cubase project file containing AXR4 scene data.

NOTICE

Data saved to the AXR4 device will be overwritten.

Channel Link

Automatically configures stereo links based on the bus configuration in use.

Plug-ins

Equalizer 601



Equalizer 601 emulates the distortion characteristics found in analog equalizers used in the 70s. This provides the audio with a musical drive and saturated distortion effect. This plug-in can be used in both mono or stereo modes based on the channel configuration of the audio track.

Equalizer 601 is a six-band parametric equalizer. It consists of two shelving filters (low pass and high pass) and four peak filters (1 to 4 mid pass).

How to open the window

From dspMixFx AXR

“Mixer window” → “FX Edit button” ([page 34](#))

From the dedicated Cubase series window

“Effect Settings area” → “InsFx controller” → “Effect Edit button” ([page 58](#))

General settings

Global parameters appear on the left side of the plug-ins panel.

The following parameters are available.

1 DRIVE/CLEAN

Switches the equalizer type. The DRIVE equalizer applies distortion to give a greater sense of analog sound. The CLEAN equalizer does not apply distortion, leaving a clear audio track unique to digital audio processing.

2 INPUT

Adjusts input levels.

3 Peak Meter

Displays plug-in output levels. Only one peak meter will appear when in mono mode.

4 OUTPUT

Adjusts the output gain.

EQ settings

You can set the EQ on the right side of the plug-ins panel.



The following parameters are available.

1 Q

Use the “Q” parameter to set the filter type when both low and high frequency band filters are in use. In the low frequency band filter, two high pass filters and two low shelving filters are provided. In the high frequency band filter, two low pass filters and two high shelving filters are provided. When in the mid frequency band filter, the “Q” parameter sets the frequency response curve width.

2 F

Controls the center frequency of filters in each frequency band.

3 G

Controls filter gain in each frequency band.

4 Filter On/Off

The lowermost button switches filters for the corresponding frequency band on and off.

5 FLAT

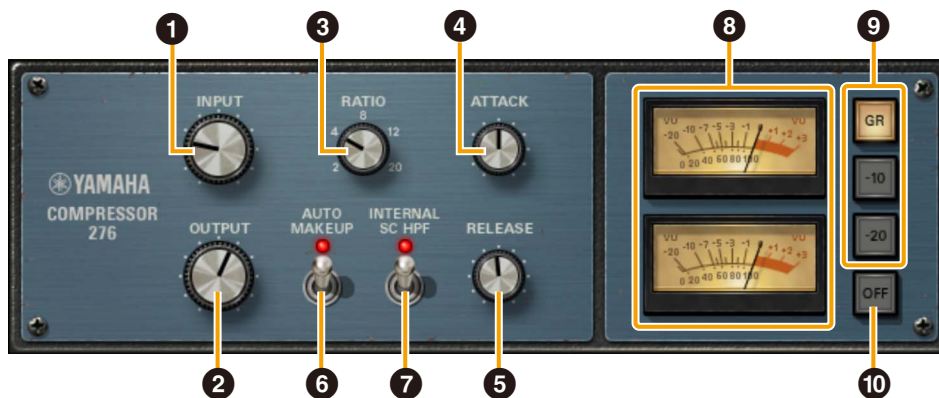
When turning the FLAT button on, parameters are set as follows.

- Turns the gain for each frequency band to 0 dB
- Sets low pass filters as low shelving filters
- Sets high pass filters as high shelving filters

The section on the upper part of the plug-ins panel displays the frequency response curve for all frequency bands.

- To change the filter frequency and gain, click and drag a point on the curve display.
- To change the Q value, while hold down the <shift> key, click and drag a curve point.
- Use the zoom controls on the right of the frequency response curve to zoom in and out vertically.

Compressor 276



Compressor 276 emulates the characteristics of an analog compressor used to apply standard audio effects in a recording studio. This results in a more solid sound, making it ideal for drum and bass sounds.

This plug-in can be used in both mono or stereo modes based on the channel configuration of the audio track. The following parameters are available.

How to open the window

From dspMixFx AXR

“Mixer window” → “FX Edit button” ([page 34](#))

From the dedicated Cubase series window

“Effect Settings area” → “InsFx controller” → “Effect Edit button” ([page 58](#))

1 INPUT

Adjusts input levels. The compressor will come into effect when input levels exceed the threshold value.

2 OUTPUT

Adjusts the output gain.

3 RATIO

Adjusts the ratio. Set this to 2, 4, or 8 to compress dynamic ranges. Set this to 12 or 20 to use this as a limiter on peak values.

4 ATTACK

Sets the waiting time before the Compressor 276 responds to signals above threshold levels. Increasing the ATTACK time extends the unprocessed signal (attack) amount passed through.

5 RELEASE

Sets the time for the gain to return to its original level when the signal drops below threshold levels.

6 AUTO MAKEUP

Turn this on to automatically adjust the output gain reduction amount applied by plug-ins to restrict the level of variation in output levels.

7 INTERNAL SC HPF

Turn this on to reduce low frequency compression and increase low frequency output levels.

8 VU Meters

Displays signal levels. Only one VU meter will appear when in mono mode.

9 GR/-10/-20

These buttons on the right of the VU meters assign a level to 0 VU on the meter to adjust VU meter levels, or to display the gain reduction amount.

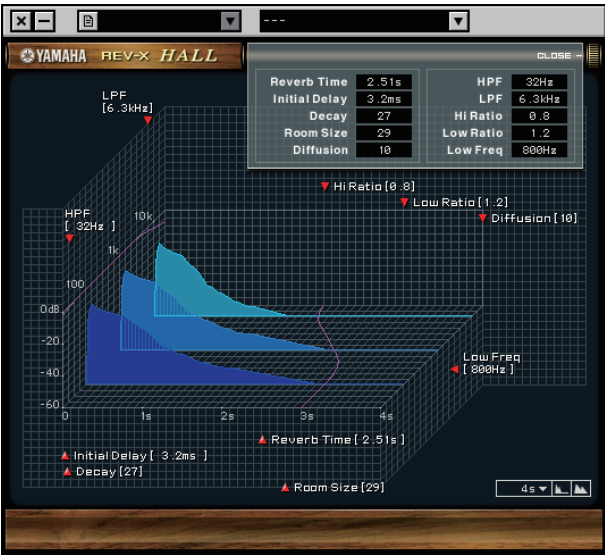
10 OFF

Turns the VU meters off.

REV-X

REV-X is a digital reverb effect developed by Yamaha for pro audio applications. One REV-X effect is included in the AXR4 device. Input signals can be sent to the REV-X effect. The REV-X effect is applied only to monitor signals. Three types of REV-X are available: Hall, Room, and Plate. The hardware REV-X equipped with the product and the REV-X of the plug-in version have the same feature set. However, the [OUTPUT] and [MIX] functions at the bottom of the window are only available in the VST Plug-in version. When using REV-X on Cubase series programs, you can share the settings between the built-in REV-X and REV-X of the plug-in version as a preset file. When using the built-in REV-X on Cubase series programs, turn on the [Direct Monitoring] setting in the program. Also, when assigning REV-X of the VST Plug-in version to the effect slot on Cubase series programs, select it from the [Reverb] category (in the case of the default settings). The built-in REV-X is equipped with an “FX Bus” which is used for sending the signal from DAW software to REV-X. For example, to send the recorded audio data to REV-X, you can check the sound with REV-X, which is used for monitoring during the recording.

Example window



How to open the window

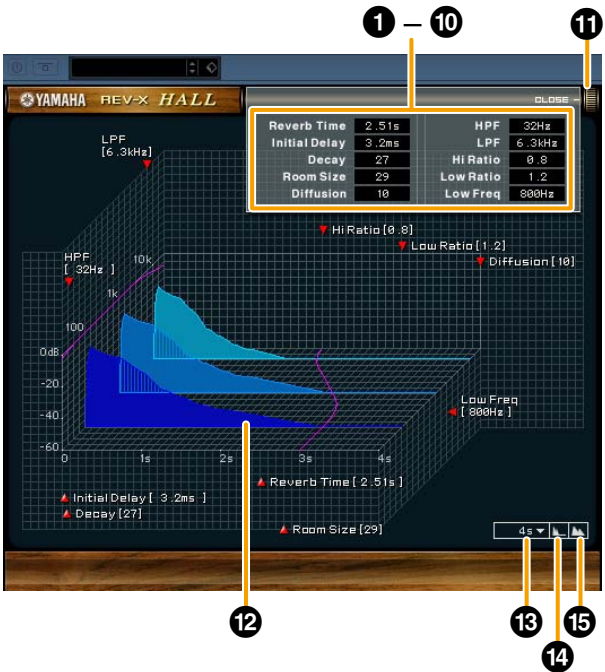
From dspMixFx AXR

“Mixer window” → “Reverb Edit button”
(page 38)

From the dedicated Cubase series window

“Effect Settings area” → “Reverb Controller”
→ “Reverb Edit button” (page 58)

REV-X window



This description of the REV-X window uses the Hall type as an example.

1 Reverb Time

Adjusts the reverb time.
This parameter links to Room Size. The adjustable range varies depending on the REV-X type.

Range by REV-X Type

Hall	0.103 sec – 31.0 sec
Room	0.152 sec – 45.3 sec
Plate	0.176 sec – 52.0 sec

2 Initial Delay

Adjusts the time that elapses between the direct, original sound and the initial reflections that follow it.

Range: 0.1 msec – 200.0 msec

3 Decay

Adjusts the characteristic of the envelope from the moment the reverberation starts to the moment it attenuates and stops.

Range: 0 – 63

4 Room Size

Adjusts the size of the simulated room. This parameter links to Reverb Time.

Range: 0 – 31

5 Diffusion

Adjusts the spread of the reverberation.

Range: 0 – 10

6 HPF

Adjusts the cutoff frequency of the high pass filter.

Range: 20 Hz – 8.0 kHz

7 LPF

Adjusts the cutoff frequency of the low pass filter.

Range: 1.0 kHz – 20.0 kHz

8 Hi Ratio

Adjusts the duration of reverberation in the high frequency range by using a ratio relative to the Reverb Time.

When you set this parameter to 1.0, the actual specified Reverb Time is fully applied to the sound. The lower the value, the shorter the duration of reverberation in the high frequency range.

Range: 0.1 – 1.0

9 Low Ratio

Adjusts the duration of reverberation in the low frequency range by using a ratio relative to the Reverb Time.

When you set this parameter to 1.0, the actual specified Reverb Time is fully applied to the sound. The lower the value, the shorter the duration of reverberation in the low frequency range.

Range: 0.1 – 1.4

10 Low Freq

Adjusts the frequency of the Low Ratio.

Range: 22.0 Hz – 18.0 kHz

11 OPEN/CLOSE

Opens and closes the window for adjusting the reverb settings.

12 Graph

Indicates the characteristics of reverberation. The vertical axis indicates the signal level, the horizontal axis indicates the time, and the Z-axis indicates the frequency. You can adjust the characteristics of reverberation by dragging the handles in the graph.

13 Time Axis Setting

Select the display range of the time (horizontal axis) on the graph.

Display range: 500 msec – 50 sec

14 Zoom Out

Zooms out the display range of the time (horizontal axis) on the graph.

15 Zoom In

Zooms in the display range of the time (horizontal axis) on the graph.

Software Functions

- You can reset certain parameters to their default values by holding the <command> key while you click on the appropriate knobs, sliders, and faders.
- You can adjust the parameters more finely by holding the <shift> key while you drag on the appropriate knobs, sliders, and faders.

Sweet Spot Morphing Channel Strip

The Sweet Spot Morphing Channel Strip (“Channel Strip” for short) is a multi-effect that combines compressor and equalizer. Advanced sound engineering know-how is condensed into a number of convenient presets.

The Channel Strip equipped with the product can be assigned to monitor signals only, or to both monitor signals and recorded signals. The hardware Channel Strip equipped with the product and the Channel Strip of the plug-in version have the same feature set. When using Channel Strip on Cubase series programs, you can share the settings between the built-in Channel Strip and Channel Strip of the plug-in version as a preset file. When using the built-in Channel Strip on Cubase series programs, turn on the [Direct Monitoring] setting in the program. Also, when assigning Channel Strip of the VST Plug-in version to the effect slot on Cubase series programs, select it from the [Dynamics] category (in the case of the default settings).

Example window



How to open the window

From dspMixFx AXR

“Mixer window” → “FX Edit button” ([page 34](#))

From the dedicated Cubase series window

“Effect Settings area” → “InsFx controller” → “Effect Edit button” ([page 58](#))

Features common to Compressor and Equalizer



1 Morph

Adjusts the parameter of the Sweet Spot Data.

By turning this knob, you can simultaneously adjust the compressor and equalizer settings which are set to five points around this knob. When you set the knob between two adjacent points, the compressor and equalizer settings will be set to an intermediate value.

2 Sweet Spot Data

Used to select the Sweet Spot Data.

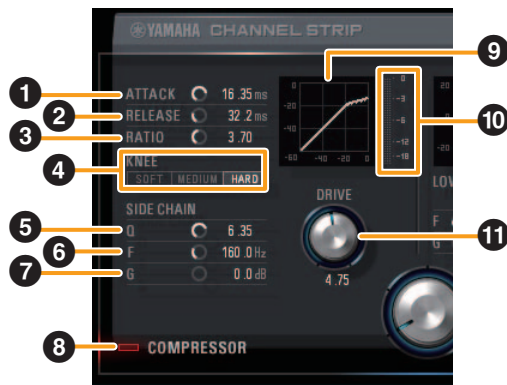
3 TOTAL GAIN

Adjusts the total gain of the Channel Strip.
Range: -18.0 dB – +18.0 dB

4 Level Meter

Displays the output level of the Channel Strip.

Compressor



1 ATTACK

Adjusts the attack time of the compressor.
Range: 0.092 msec – 80.00 msec

2 RELEASE

Adjusts the release time of the compressor.
Range: 9.3 msec – 999.0 msec

3 RATIO

Adjusts the ratio of the compressor.
Range: 1.00 – ∞

4 KNEE

Used to select the knee type of the compressor.

Knee type	Description
SOFT	Produces the most gradual change.
MEDIUM	Results in a setting midway between SOFT and HARD.
HARD	Produces the sharpest change.

5 SIDE CHAIN Q

Adjusts the band width of the side chain filter.
Range: 0.50 – 16.00

6 SIDE CHAIN F

Adjusts the center frequency of the side chain filter.
Range: 20.0 Hz – 20.0 kHz

7 SIDE CHAIN G

Adjusts the gain of the side chain filter.
Range: -18.0 dB – +18.0 dB

8 COMPRESSOR On/Off

Turns the compressor on (lit) and off (dark).

9 Compressor Curve

Indicates the approximate compressor response.

The vertical axis indicates the output signal level, and the horizontal axis indicates the input signal level.

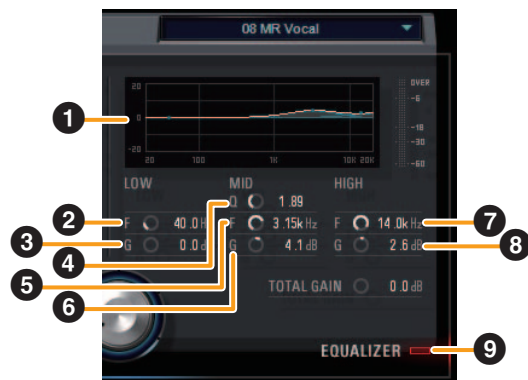
10 Gain Reduction Meter

Displays the gain reduction amount of the compressor.

11 DRIVE

Adjusts the degree to which the compressor is applied.
The higher the value, the greater the effect.
Range: 0.00 – 10.00

Equalizer



1 Equalizer Curve

Indicates the characteristics of the 3-band equalizer.

The vertical axis indicates the gain, and the horizontal axis indicates the frequency. You can adjust LOW, MID, and HIGH by dragging each handle in the graph.

2 LOW F

Adjusts the center frequency of the low band.
Range: 20.0 Hz – 1.00 kHz

3 LOW G

Adjusts the gain of the low band.
Range: -18.0 dB – +18.0 dB

4 MID Q

Adjusts the band width of the middle band.
Range: 0.50 – 16.00

5 MID F

Adjusts the center frequency of the middle band.
Range: 20.0 Hz – 20.0 kHz

6 MID G

Adjusts the gain of the middle band.
Range: -18.0 dB – +18.0 dB

7 HIGH F

Adjusts the center frequency of the high band.
Range: 500.0 Hz – 20.0 kHz

8 HIGH G

Adjusts the gain of the high band.
Range: -18.0 dB – +18.0 dB

9 EQUALIZER On/Off

Turns the equalizer on (lit) and off (dark).

Operation Correspondence Table

Maximum number of I/O channels by sample rate for each digital format

	ADAT	S/PDIF	AES/EBU
44.1/48 kHz	8	2	8
88.2/96 kHz	4	2	8
176.4/192 kHz	2	2	8
352.8/384 kHz	0	0	0

Resource restrictions by sample rate

	VCM	Ch.Strip		REV-X
		Mono	Stereo	
44.1 kHz – 96 kHz	4	16	8	1
176.4/192 kHz	2	8	4	1
352.8/384 kHz	0	0	0	0

Troubleshooting

■ When an error message appears

- See the list of error messages ([page 74](#)).

■ No sound, or sound is played at low volumes

AXR4 settings, connections with external devices

- Is the cable connecting to the external device disconnected?
- Is AXR4 receiving signal input from the external device?
- Has the volume of the sound source and the playback device been raised?
- Has the gain been set to an appropriate level?
- Is the phantom power turned on when connecting a condenser microphone?
- Are electric guitars and other such instruments connected directly to a HI-Z-compatible input jack, and has the HI-Z switch been turned on?
- Has the channel mute feature been turned off?
- Have channel faders/levels been raised?
- Are the PHONES jack output level and output signal settings, or the MAIN OUT settings correct?
- Are speakers and headphone connected properly?
- Have amplifiers and other external devices been turned on?
- Is the volume balance for the monitor speakers and other devices correct?
- Are the same word clock settings used for the AXR4 and external devices?

Computer settings

- Has the application volume been raised?
- Are driver settings correct?

■ Sound distortion

AXR4 settings, connections with external devices

- Has the audio data been recorded at an appropriate level?
- Has the gain been set to an appropriate level?
- Is the PAD turned on if incoming signals are at high levels?
- Has the [DRIVE] control on the compressor been raised to the limit?
- Has the gain control on the equalizer been raised to the limit?
- Have I/O channel faders/levels been raised to an excessive degree?
- Are word clock settings correct for both the AXR4 and external devices?

Computer settings

- Has the audio data been recorded at an appropriate level?

■ Noise occurs

AXR4 settings, connections with external devices

- Is the MAIN OUT VOLUME setting on the AXR4 too low?
Minimize the volume of the monitor speakers (powered speakers) before raising the MAIN OUT VOLUME. Then, try readjusting the volume of the monitor speakers.
- Is there any potential source of noise such as an inverter near a cable connecting an external device?
Remove the source of noise away from the cable.
- Is the cable connecting to the external device disconnected?
- Are the same word clock settings used for the AXR4 and external devices?

Connecting to a computer

- Is the cable damaged?
- Is there any potential source of noise such as an inverter near the cable?
Remove the source of noise away from the cable.
- Is an appropriate number of devices in use?
Depending on the computer specifications, using too many devices may introduce noise.

Computer settings

- Does your computer satisfy the system requirements?
- Is the driver buffer size setting appropriate?
- Is the sample rate appropriate?
Depending on the computer specifications, a sample rate that is too high may introduce noise.
- Issues with recording and playback may occur if the speed of the internal HDD in your computer is too slow.
- Try increasing your computer's memory.
- Are there any applications running in the background?
Applications running in the background may destabilize driver performance and introduce noise. Try closing any applications that are running at the same time.
- Does the "Audio Format is Unmixable" message appear in the driver control panel?
Close the application, and then click the [Revert to Mixable] button on the control panel.

- **Slow computer performance**
- **Large load appearing on the computer's CPU meter/activity monitor**
- **Performances are slow to render**
- **The number of tracks that can be used for recording/playback is limited**

Connecting to a computer

- Is an appropriate number of devices in use?
Try reducing the number of devices connected to the computer.

Computer settings

- Does your computer satisfy the system requirements?
- Try increasing the driver buffer size.

■ Audio playback is off-pitch

Product settings, connections with external devices

- Is the device used as the word clock master functioning in a stable manner?

■ Cannot see the device connected to the computer in DAW software and other applications

Connecting to a computer

- Are four or more AXR4s connected together?
Reduce the number of connected devices to three or less.
- Are duplicate STACK IDs in use?
Change the STACK ID so that it does not repeat.
- Has the Thunderbolt cable been connected properly, and has the product been turned on?
Try removing and reinserting the cable.
- If a Thunderbolt device other than the AXR4T is connected to the computer, try connecting only the one AXR4T to the computer.
- Even if your computer is equipped with multiple Thunderbolt2-certified compatible cable jacks, you will need to connect one AXR4T to a Thunderbolt2-certified compatible cable jack and then connect the other AXR4Ts through a daisy-chain.

Computer settings

- Check that the correct version of TOOLS for AXR4 has been installed.
- Is “Yamaha Steinberg Thunderbolt (High Precision)” used with Cubase?
When “Yamaha Steinberg Thunderbolt (High Precision)” is selected, Cubase will exclusively use a driver. “Yamaha Steinberg Thunderbolt” is not available for use by other applications. “Steinberg AXR4 2TR” can be used by other applications.
- Try restarting your computer.

■ MIDI data/program changes are not sent and received

Supported device, external device, computer settings

- Is the correct MIDI port selected in the application (DAW software, etc.)?
- Do the channels used for sending and receiving on the transmitting device match the channels set in the application (DAW software, etc.)?
- Are MIDI settings on the transmitting device correct?
- Has the transmitting device been turned on?

■ Cooperation functions with Cubase do not work

Connecting to a computer

- Has the AXR4 been connected to a computer with the proper cable?

Computer settings

- Has TOOLS for AXR4 been installed?
- Does the version or grade of Cubase in use support cooperation functions with AXR4?

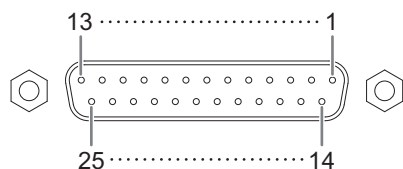
Technical Specifications

MIC/LINE INPUT 1-4 (Balanced)	
Frequency Response	+0.1/-0.1dB, 10Hz to 22kHz @48kHz +0.1/-0.2dB, 10Hz to 44kHz @96kHz +0.1/-0.5dB, 10Hz to 88kHz @192kHz +0.1/-3dB, 10Hz to 100kHz @384kHz
Dynamic Range	119dB, A-Weighted
THD+N	0.0004%, 1kHz, 22Hz/20kHz BPF
Maximum Input Level	+24dBu
Input Impedance	3.3k Ohm
Gain Range	+15dB – +68dB
Pad	-20dB
HI-Z INPUT 1, 2 (Unbalanced)	
Maximum Input Level	+10dBV
Input Impedance	1M Ohm
Gain Range	+15dB – +68dB
Pad	-20dB
LINE INPUT 5-12 (Balanced)	
Frequency Response	+0.1/-0.1dB, 10Hz to 22kHz @48kHz +0.1/-0.2dB, 10Hz to 44kHz @96kHz +0.1/-0.5dB, 10Hz to 88kHz @192kHz +0.1/-3dB, 10Hz to 130kHz @384kHz
Dynamic Range	119dB, A-Weighted
THD+N	0.0006%, 1kHz, 22Hz/20kHz BPF
Maximum Input Level	+24dBu
Input Impedance	20k Ohm
Input Level Select	+4dBu (20dB Headroom), +4dBu (14dB Headroom), -10dBV Selectable
LINE OUTPUT 1-8 (Balanced)	
Frequency Response	+0.1/-0.1dB, 10Hz to 21kHz @48kHz +0.1/-0.3dB, 10Hz to 43kHz @96kHz +0.1/-1dB, 10Hz to 83kHz @192kHz +0.1/-3dB, 10Hz to 120kHz @384kHz
Dynamic Range	117dB, A-Weighted
THD+N	0.0006%, 1kHz, 22Hz/22kHz BPF
Maximum Output Level	+18dBu
Output Impedance	75 Ohm
Digital A I/O Interface	
ADAT	ADAT, Optical, 24-bit
S/PDIF	IEC-60958, Optical, 24-bit

Digital B I/O Interface	
ADAT	ADAT, Optical, 24-bit
S/PDIF	IEC-60958, Optical, 24-bit
AES/EBU	AES/EBU Professional use, RS422, 24-bit
PHONES 1, 2	
Maximum Output Level	75mW+75mW, 40 Ohm
Thunderbolt	
Specification	Thunderbolt 2, 32-bit, 44.1kHz/48kHz/88.2kHz/96kHz/176.4kHz/192kHz/352.8kHz/384kHz
MIDI	
MIDI IN, OUT	DIN 5pin
WORD CLOCK	
WORD CLOCK IN, OUT	TTL/75 ohm
XLR INPUT	
Polarity	1: Ground, 2: Hot (+), 3: Cold (-)

*The contents of this manual apply to the latest specifications as of the publishing date. To obtain the latest manual, access the Yamaha website then download the manual file.

■ [AES/EBU] Connector



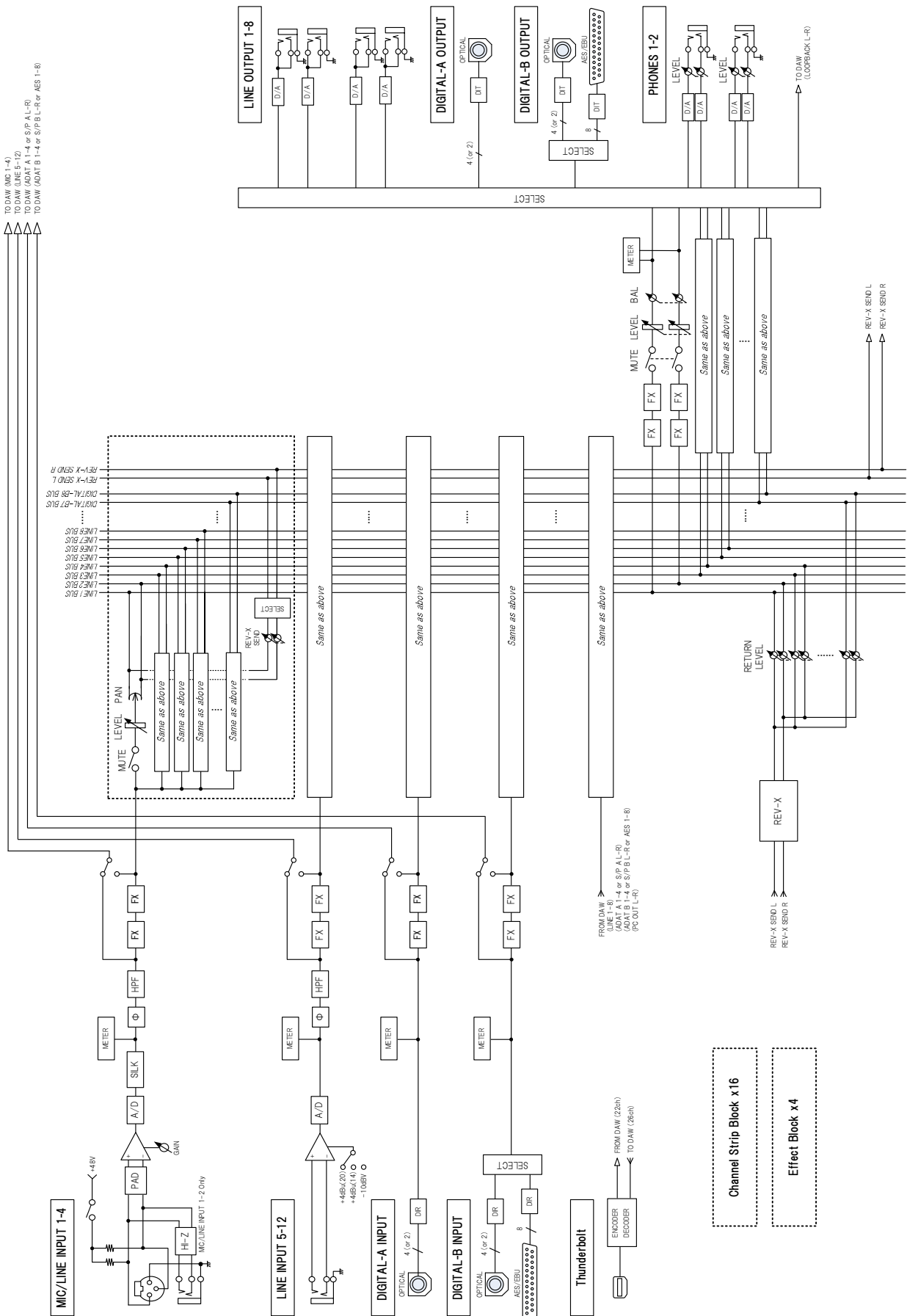
Signal		Data In Ch				Data Out Ch				Open	GND
		1-2	3-4	5-6	7-8	1-2	3-4	5-6	7-8		
		9-10	11-12	13-14	15-16	9-10	11-12	13-14	15-16		
Pin	Hot	1	2	3	4	5	6	7	8	9, 11	10, 12, 13, 22, 23, 24, 25
	Cold	14	15	16	17	18	19	20	21		

Error Messages

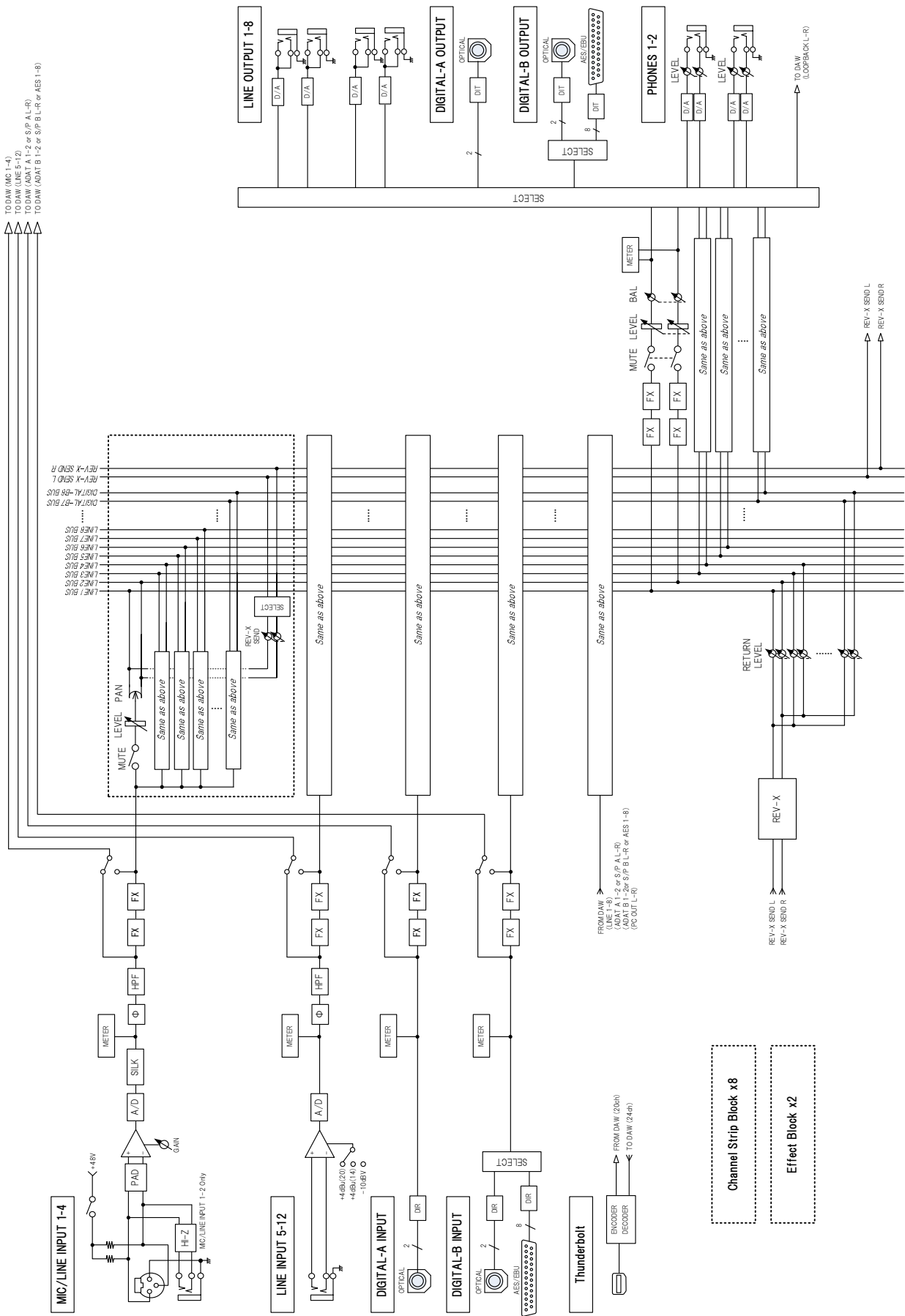
Error Message	Display Area	Cause	Solution
Too Many Devices	Driver (Control Panel)	Four or more AXR4s are connected to the computer	Reduce the number of connected devices to three or less
	dspMixFx AXR		
Duplicated STACK ID	Display	Duplicate STACK IDs are in use	Change the STACK ID so that it does not repeat
	Driver (Control Panel)		
	dspMixFx AXR		
Sync Error	Display	Cannot synchronize the AXR4s connected to the computer	Power on/standby, remove and reinsert the Thunderbolt cable
	Driver (Control Panel)		
Sample Rate Mismatch	Driver (Control Panel)	The driver cannot set the same sample rate when multiple AXR4s are connected because each AXR4 uses a different clock source	Set the same clock source for all AXR4s
Turn off +48V or HI-Z	Display	You have attempted to turn on the phantom power and HI-Z at the same time	None (Use one or the other)
	dspMixFx AXR		
	AXR Extension (Dedicated Cubase Window)		
Insufficient DSP Resources	dspMixFx AXR	Insufficient DSP resources. Cannot insert effect	Reduce the number of inserted effects
	AXR Extension (Dedicated Cubase Window)		
Audio Format is Unmixable	Driver (Control Panel)	Cubase was not properly exited from when running in 32-bit resolution.	Click the [Revert to Mixable] button that appears next to the error message (if you cannot record or playback audio properly in the application after closing Cubase)

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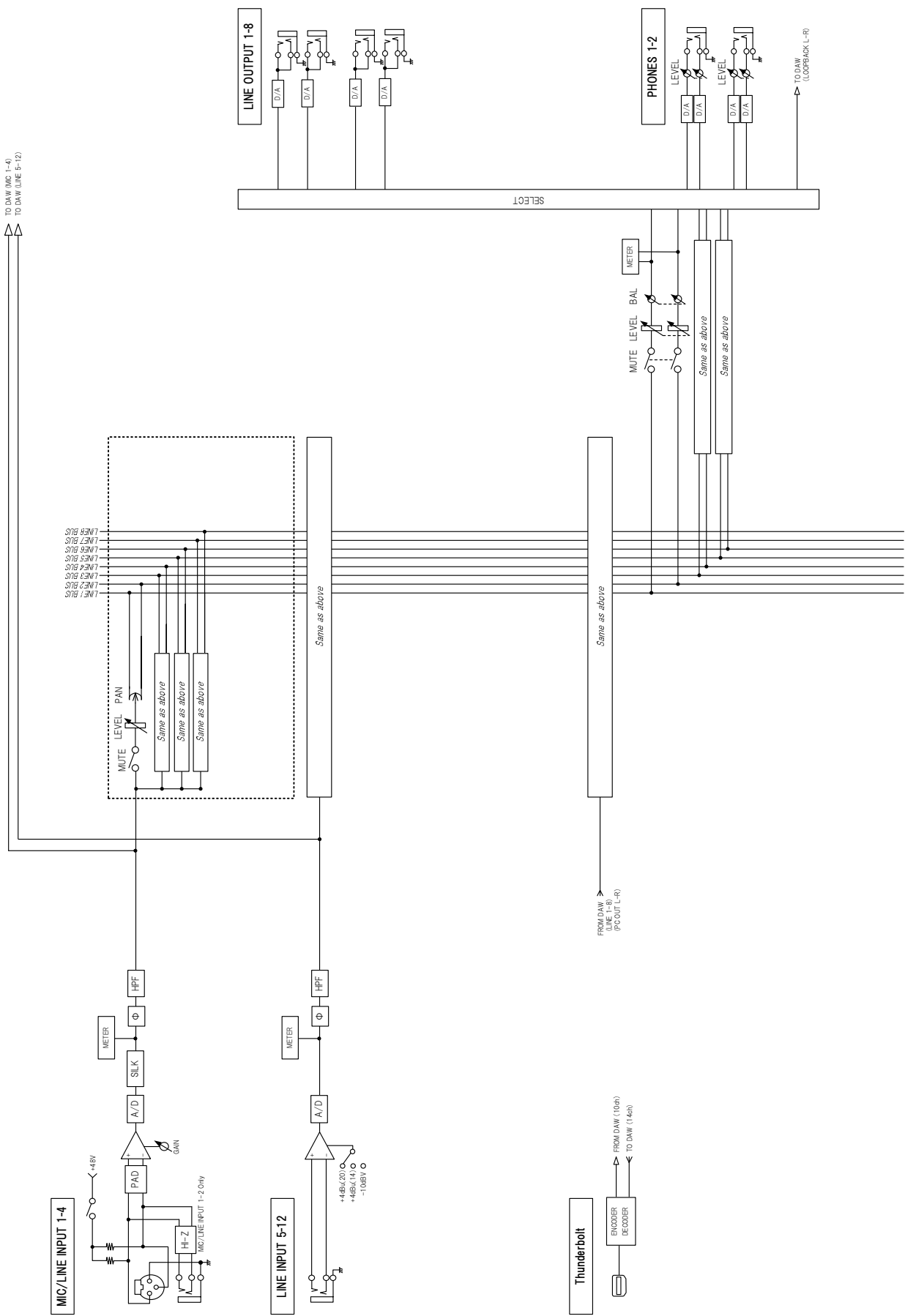




AXR4T Mixer Block Diagram 88.2kHz/96kHz



AXR4T Mixer Block Diagram 176.4kHz/192kHz



AXR4T Mixer Block Diagram 352.8kHz/384kHz

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Steinberg Website
<http://www.steinberg.net/>

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