

AUDIO INTERFACE

RUio1608SB-D

RUio0804-D

RUio16FLX-D

User Guide

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1. Introduction

1.1. About Symbols and Markings

Symbols and Markings	Description
 WARNING	This indicates a risk of serious injury or death.
 CAUTION	This indicates a risk of injury.
 NOTICE	This indicates a risk of product failure, damage or malfunction as well as data loss.
 NOTE	This indicates content regarding operation and use. Read this for your information.

1.2. Information

- You may not reproduce or modify any part or all of the software or this manual without permission.
- Do not use this product for any purpose that may infringe upon the rights of any third party including copyrights, as established by law in each country or region.
- Yamaha bears no responsibility for any infringement upon third party rights that may occur as a result of using this product.
- The illustrations and screens in this manual are for instructional purposes only.
- We bear no responsibility whatsoever for the effects or impacts of using the software or this manual.
- The company names and product names in this document are the trademarks or registered trademarks of their respective companies.
- Software may be revised and updated without prior notice.
- 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.
- In this manual, the term “supported devices” refers to devices that enable you to control the parameters of this product remotely. The term “supported digital mixers” refers to Dante-compatible “supported devices.”
- Unless otherwise specified, this manual uses screenshots from the RUio1608SB-D.

1.3. Intended User

This product is intended for people who can set up audio mixing systems, such as mixing engineers and operators.

1.4. Intended Usage

This product is used in audio mixing systems for halls, events, and broadcast production.

1.5. Available Documentation

Read This First (included with the product)

This document describes the product overview and safety precautions. The PDF file can be downloaded from the Yamaha Pro Audio website.

<https://www.yamahaproaudio.com/>

User guide for the RUio1608SB-D, RUio0804-D, and RUio16FLX-D (This manual)

This manual provides detailed explanations of the functions and operation methods of this product. It is available on the Yamaha Pro Audio website.

<https://www.yamahaproaudio.com/>

1.6. Firmware Updates

You can update the unit firmware to improve the operation, add functions, and correct possible malfunctions. Information on updating the firmware can be found on the following website:

<https://www.yamahaproaudio.com/>

For information on updating and setting up the unit, please refer to the firmware update guide available on the website.

1.7. Source Code Distribution

For three years after the final factory shipment, you may request from Yamaha the source code for any portions of the product which are licensed under the GNU General Public License / GNU Lesser General Public License / RealNetworks Public Source License by writing to the following address:

Marketing & Sales Group, PA Business Strategy Department,
Professional Solutions Division, Audio Products Business Unit, Yamaha Corporation
10-1 Nakazawa-cho, Chuo-ku, Hamamatsu City, Shizuoka Prefecture 430-8650, Japan

The source code will be provided at no charge; however, we may require you to reimburse Yamaha for the cost of delivering the source code to you. The source code can be downloaded by visiting the following URL:

<https://www.yamahaproaudio.com/>

- Note that we shall bear no responsibility whatsoever for any damage arising from changes (additions/deletions) made to the software for this product by a third party other than Yamaha (or party authorized by Yamaha).
- Note that re-use of source code released to the public domain by Yamaha is not guaranteed. Yamaha shall not bear any responsibility whatsoever for the source code.

2. About Dante

This product features Dante technology as a protocol to transmit audio signals. Dante is a network protocol developed by Audinate. It is designed to transmit multi-channel audio signals at various sampling and bit rates, as well as device control signals over a single Giga-bit Ethernet (GbE) network.

It also offers the following features:

- Under optimal conditions in a Giga-bit Ethernet environment, you could theoretically transmit 48 kHz/24-bit audio via up to 512 ins and 512 outs, for a total of 1,024 channels.
- Devices in the network can be detected and set automatically, and device names can be assigned as desired.
- Dante uses high accuracy network synchronization standards to achieve sample-accurate playback with extremely low latency and jitter.
- Dante supports redundant connections via primary and secondary circuits to defend against unforeseen difficulties.
- Connecting a computer to Dante network over Ethernet enables you to directly input or output audio signals without using any audio interface devices. (Please note that you need to use Dante Virtual Soundcard or Dante Via.)
- Audio can be transmitted between devices up to 100 m apart using a CAT5e network cable. However, the maximum practical distance may vary depending on the cable used.

Visit the Audinate website for more details on Dante:

<https://www.audinate.com/>

More information on Dante is also posted on the Yamaha Pro Audio website:

<https://www.yamahaproaudio.com/>

This product uses a Dante module provided by Audinate Pty. Ltd.

You can use Dante Controller to display information about the Dante module used in this product.

Visit the Audinate website for more information on the open-source software license applicable to each Dante module:

<https://www.audinate.com/legal/software-licensing/>

NOTE

If you are using a Dante network, do not use the network switch EEE function*:

The EEE function may deteriorate the clock synchronization performance and interrupt audio.

Therefore, please note the following:

- If you are using managed switches, turn off the EEE function on all ports used for Dante. Do not use any switch that does not allow the EEE function to be turned off.
 - If using unmanaged switches, do not use switches that support the EEE function. These switches cannot have the EEE function turned off.
- * EEE (Energy Efficient Ethernet) function: This technology reduces the power consumption of Ethernet devices when network traffic is low. It is also known as Green Ethernet or IEEE802.3az.

2.1. Dante Network Settings and Audio Routing

This product does not have a function that enables you to change Dante network settings, such as Sample Rate, Latency or Encoding. The Dante network settings will be controlled from Dante Controller or the supported digital mixers. For details on Dante network settings, refer to the corresponding owner's manual for the supported digital mixer.

The audio inputs to and outputs from multiple Dante devices can be freely routed within a Dante network. This means that you will need to make settings that specify the destination to which each channel's signal will be sent. Use Dante Controller to specify the Dante network and audio routing settings.

 NOTE

For information about Dante Controller operations and detailed settings, refer to the Dante Controller manual.

3. About Connections

3.1. Daisy Chain Network

There are two ways to connect this product to a Dante network: daisy-chain connection and star connection.

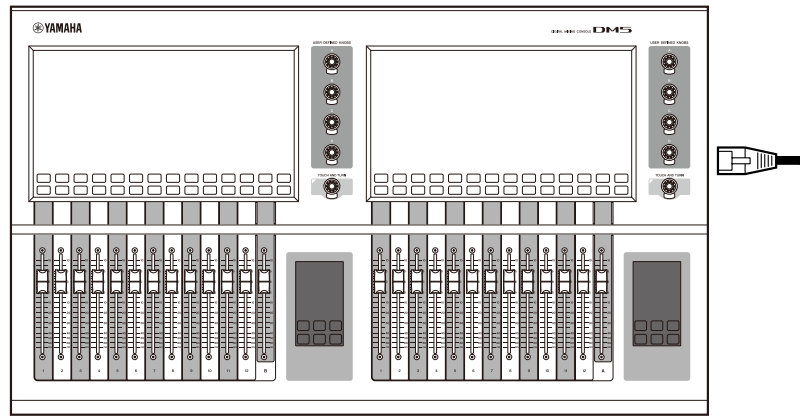
NOTE

A daisy chain connection is suitable for a simple system with a small number of devices.
Use a star network if a large number of devices are connected.

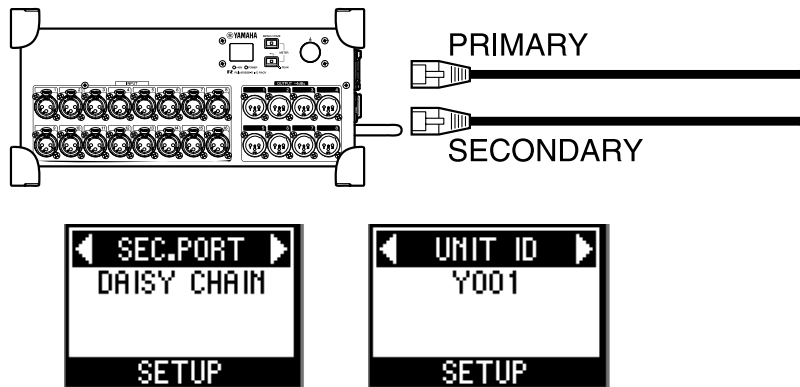
A daisy chain is a wiring scheme in which multiple devices are connected together in sequence. In this way, networking is simple and requires no network switches.

If you connect a large number of devices, you must set a higher latency value to avoid skipping audio that could be caused by an increased delay in signal transfer among the devices. Also, if a connection is broken in a daisy chain network, the signal flow is interrupted at that point and no signal will be transferred beyond that point.

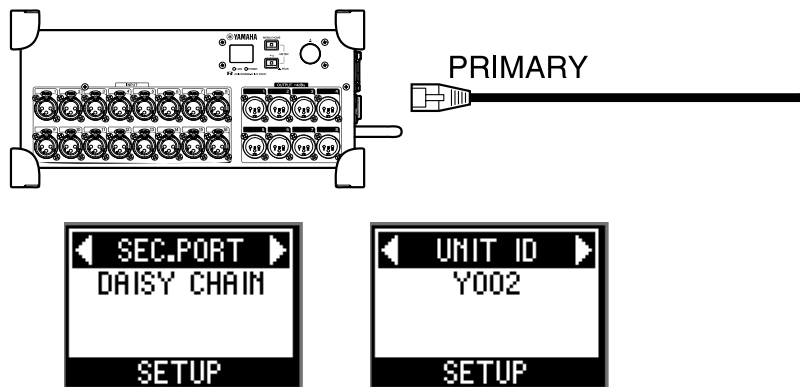
DM5



RUio1608SB-D (UNIT ID: Y001)



RUio1608SB-D (UNIT ID: Y002)


NOTE

This explanation uses an illustration of the RUio1608SB-D. The illustration can be replaced with that of the RUio0804-D or RUio16FLX-D.

3.2. Star Network

There are two ways to connect this product to a Dante network: daisy-chain connection and star connection.

 NOTE

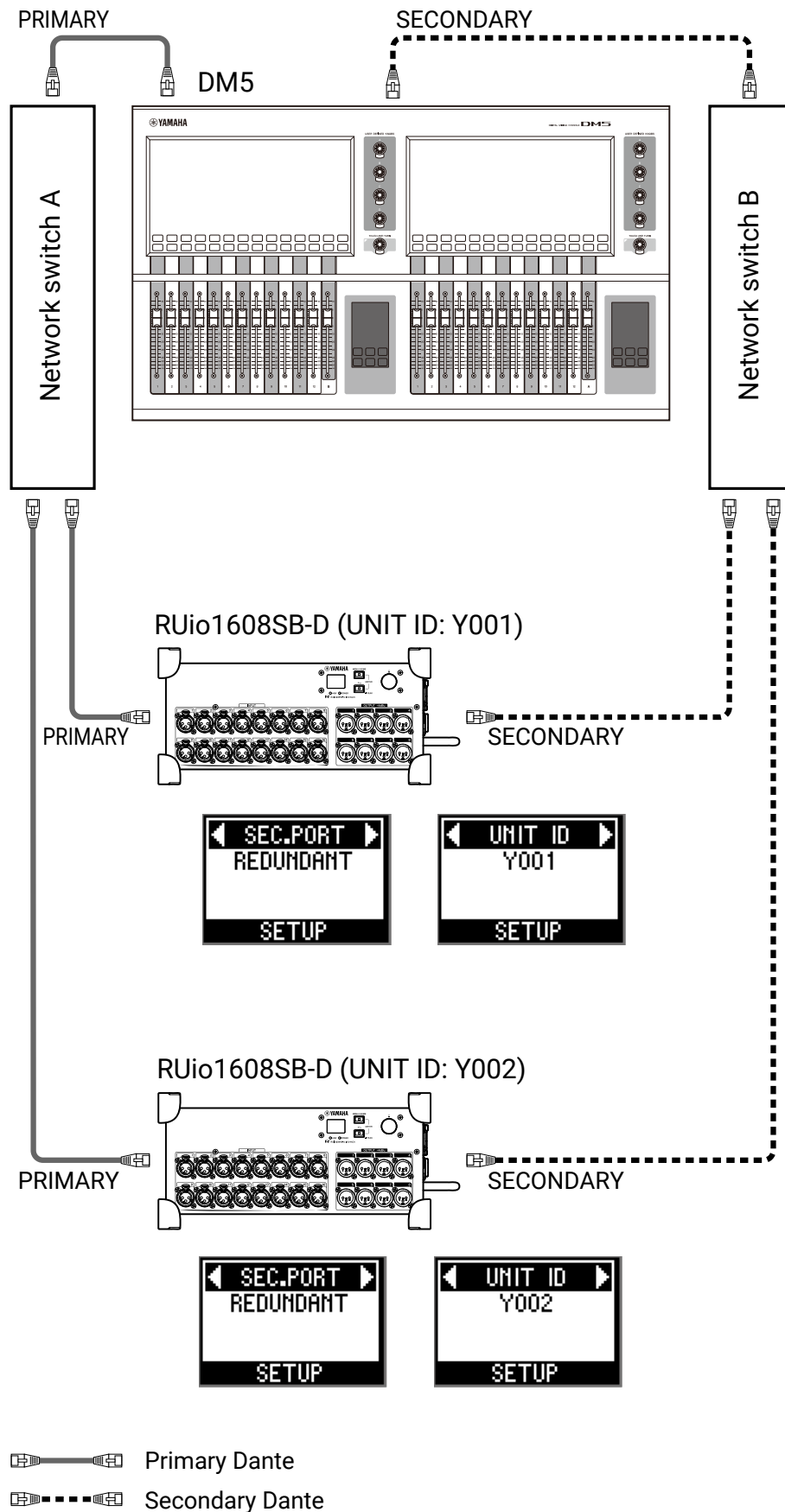
A daisy chain connection is suitable for a simple system with a small number of devices.
Use a star network if a large number of devices are connected.

In a star network, each device is connected to a central network switch. Using a GbE-compatible network switch enables you to configure a wide-band, large-scale network. We recommend a network switch that features various functions to control and monitor the network (such as QoS, the ability to assign priority to data flows - e.g., clock synchronization or audio transmission on certain data circuits.)

With this topology, it is common to configure a redundant network so that an unexpected network problem will not affect any audio or otherwise stable communications.

3.2.1. About redundant networks

A redundant network consists of two circuits, a primary circuit and a secondary circuit. Normally, the network operates on the primary circuit. However, if the primary connection is broken, the secondary circuit will automatically take over communications. Therefore, using a redundant network with a star topology would increase communication stability relative to a daisy chain network.



NOTE

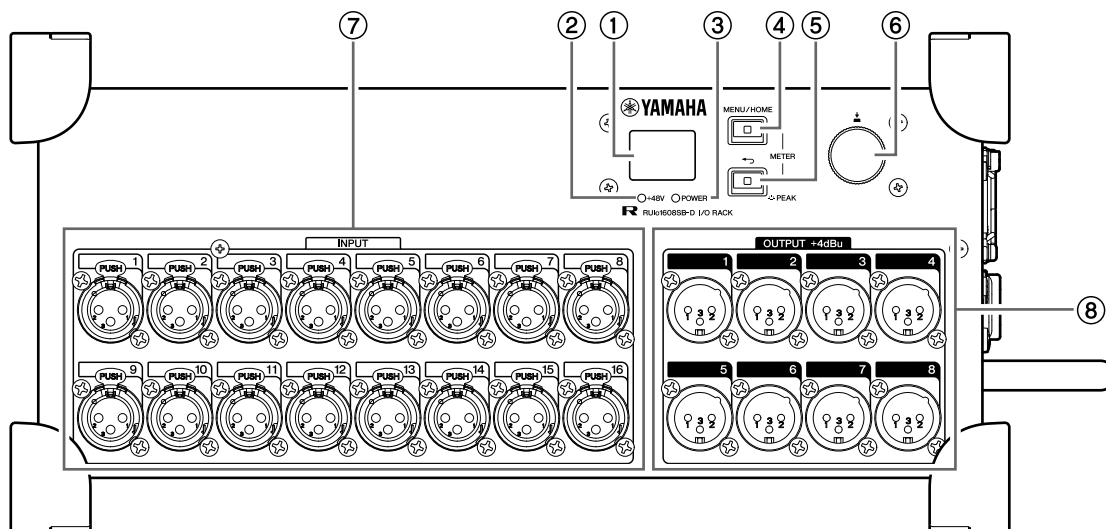
This explanation uses an illustration of the RUio1608SB-D. The illustration can be replaced with that of the RUio0804-D or RUio16FLX-D.

4. Names and Functions

In this manual, the names printed on the panel appear in square brackets (e.g., [INPUT]).

4.1. RUio1608SB-D

4.1.1. Front panel



① Display

The display shows information such as the parameter values for the head amp, or error and status indications.

② [+48V]

This indicator lights when +48 V phantom power is turned on for any of the INPUT channels. Phantom power for each INPUT channel can be switched on or off using the front-panel display of the unit or via a supported device. While phantom power that is set to on is temporarily turned off, the indicator changes from steady to blinking.

Related link(s)

[“+48V screen”](#)

[“Setting the INPUT Channel Parameters”](#)



WARNING

Make sure that all output controls on the digital mixing console are set to minimum when turning phantom power on or off. Sudden high level peaks caused by the switching operation can damage equipment as well as the hearing of those present.



NOTICE

To prevent malfunction and noise in this product and external devices, note the following when turning phantom power on or off.

- If phantom power is not required, you must turn it off.
- Before connecting a device (that does not support phantom power) to the [INPUT] or [FLEXIBLE I/O] (input) connectors, turn phantom power off.
- While phantom power is on, do not connect or disconnect cables to the [INPUT] or [FLEXIBLE I/O] (input) connectors.

- Make sure that all output controls are set to minimum when turning phantom power on or off.
- To prevent possible damage to speakers, make sure that power amplifiers and/or powered speakers are turned off when switching phantom power on or off.

NOTE

Phantom power to the entire device is always on. For instructions on how to temporarily turn off the phantom power, refer to the NOTE on the [“+48V screen”](#).

③ [POWER]

This indicator lights when the power to this product is on.

④ [MENU/HOME]

While the home screen is displayed, press this key to display the MENU TOP screen that enables you to select a menu. While a screen other than the home screen is displayed, press this key to display the home screen.

In addition, the following functions are available:

■ Displaying the METER screens and +48V screen

Press the [MENU/HOME] key and the [↩] (Back) / [PEAK] key (⑤) simultaneously to display the METER screens and the +48V screen.

Related link(s)

[“METER Screens / +48V Screen”](#)

■ Displaying a pop-up screen for setting or unlocking the panel lock

Press and hold the [MENU/HOME] key and the [↩] (Back) / [PEAK] key (⑤) simultaneously for more than three seconds to display a pop-up screen for setting or unlocking the panel lock.

Related link(s)

[“Locking the Panel”](#)

[“Unlocking the Panel”](#)

■ Initializing the contrast/brightness settings

Press and hold the [MENU/HOME] key to initialize the contrast/brightness settings.

The Contrast/Brightness adjustment pop-up screen appears at the same time, allowing you to adjust the settings by turning the encoder with switch.

Related link(s)

[“Adjusting the Contrast and Brightness”](#)

■ Displaying the status of the unit

You can display the status of the unit.

You can change the light settings that indicate a normal or abnormal status as shown below.

Normal status

You can change the light color, and whether the light is on or off.

Light	Lights up blue.
	Lights up green.
Off	Not lit.

Abnormal status

You can select the settings below to adjust system response when a fatal error occurs (Error) or when an abnormality exists but you can continue using the unit (Caution).

Light	Error	Lights up red. (You cannot change the color.)
	Caution	Lights up orange. (You cannot change the color.)
Flash	Error	Red + Normal status setting (blue)
		Red + Normal status setting (green)
		Red + Normal status setting (not lit)
	Caution	Orange + Normal status setting (blue)
		Orange + Normal status setting (green)
		Orange + Normal status setting (not lit)
Abnormal status colors (red and orange): Off (Only the colors designated for the normal status light up.)	Error/Caution	Lights up in the color selected for normal status (blue)
		Lights up in the color selected for normal status (green)
		Not lit.

Related link(s)

[“Changing the \[MENU/HOME\] Key Setting for Normal Status”](#)

[“Changing the \[MENU/HOME\] Key Setting for Error Status”](#)

⑤ [↶] (Back) / [PEAK]

Press this key to display the previous screen. If the input level is -3 dBFS or higher in any of the INPUT channels, this key indicator lights up red.

Press and hold this key when a METER screen is displayed to clear PEAK HOLD.

** NOTE**

Press and hold this key and the [MENU/HOME] key simultaneously for more than three seconds to display a pop-up screen for setting or unlocking the panel lock. (See [“Locking the Panel”](#) and [“Unlocking the Panel”](#).)

⑥ Encoder with switch

By turning this encoder, you can select a menu or parameter. By pressing it, you can confirm a selection or switch the display.

Additionally, pressing and holding this encoder when the +48V screen is displayed will temporarily turn off the phantom power to the entire device while the button is pressed. Moreover, the message “+48V ACTIVE TEMPORARY OFF” will be displayed on the screen.

⑦ [INPUT] 1 to 16

These are balanced XLR 3-hole chassis input connectors that enable you to input analog signals to each channel. The rated input level range is from -60 dBu to +4 dBu. Phantom power (+48V) can be supplied to devices that require it via the input connectors.

⑧ [OUTPUT] 1 to 8

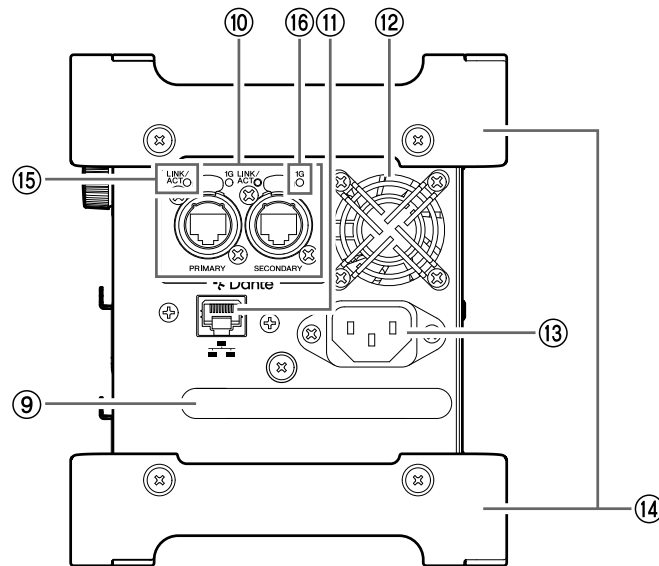
These are balanced XLR 3-pin chassis output connectors that enable you to output analog signals from each channel. The rated output level is +4 dBu.

Device Identify function

When the Device Identify function is used, the display and the [+48V] indicator will flash. At the same time, the [MENU/HOME] key and the [↶] (Back) / [PEAK] key will flash green.

For details, see “[Identifying This Product among the Devices in the Network](#)”.

4.1.2. Side panel



⑨ Handle

Grab this handle to lift this product.

⑩ Dante [PRIMARY] / [SECONDARY]

These etherCON (RJ-45) connectors can be connected to Dante devices using Ethernet cables (CAT5e or higher recommended).

If SECONDARY port (*) is set to DAISY CHAIN, the signal that is input from one connector is transmitted to the other connector.

If SECONDARY port (*) is set to REDUNDANT, the Dante [PRIMARY] connector is used for the primary connection and the Dante [SECONDARY] connector is used for the secondary (backup) connection. If the unit is unable to transmit signals through the Dante [PRIMARY] connector for some reason (e.g., due to damage or accidental removal of the cable, or a failed network switch), the Dante [SECONDARY] connector will automatically take over the connection. (* To display the SECONDARY port setting screen, first, display the MENU TOP screen, select SETUP, and then confirm your selection. Next, select SEC.PORT (SECONDARY PORT) from the SETUP menu, and then confirm your selection.)

Related link(s)

[“About Connections”](#)

[“SETUP menu”](#)



NOTE

- We recommend using RJ-45 plugs that are compatible with Neutrik etherCON CAT5e connectors. Standard RJ-45 plugs can also be used.
- Connect only Dante-compatible devices or Giga-bit Ethernet (GbE)-compatible devices (including a computer).
- If using a Dante network, do not use the EEE function of the network switch. The EEE function may deteriorate the clock synchronization performance and interrupt audio. For details, see NOTE titled “[About Dante](#)”.

⑪ Network connector

This RJ-45 connector allows the unit to be connected to a computer via an Ethernet cable (CAT5 or higher

recommended).

⑫ **Cooling vent**

This product is equipped with a cooling fan. This vent lets warm air escape from the unit. Do not block the vent with any object.

CAUTION

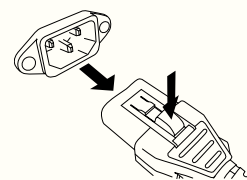
Do not block the ventilation ports on this product. To prevent internal temperature rise, this product has ventilation holes on the front/back (RUio0804-D, RUio16FLX-D) and sides (RUio1608SB-D). If the ventilation ports are blocked, heat will get trapped inside the product, which may cause malfunction or fire.

⑬ **AC IN connector**

Use this socket to connect the supplied power cord. First connect the AC power cord to this connector, and then insert the power cord plug into an AC outlet to turn on the power to the unit. Remove the power cord plug from the AC outlet to turn off the power to the unit.

CAUTION

Insert each cord plug all the way until it locks in place securely.
The supplied AC power cords feature a V-lock mechanism via a latch, which prevents the power cords from disconnecting accidentally.
To disconnect each power cord, remove it while pressing the latch on the plug.



NOTICE

After turning the unit off, wait at least six seconds before turning it on again. Do not turn power to the unit on and off in rapid succession. Doing so can cause it to malfunction.

⑭ **Protector**

This product can be stacked up to two levels. Stack this product on its protective part. Remove the protectors when rack mounting.

CAUTION

Do not use in unstable locations. Use this product in accordance with the “Safety Precautions” described in “Read This First”.

⑮ **[LINK/ACT]**

These indicators show the communication status of the Dante [PRIMARY] and Dante [SECONDARY] connectors respectively.

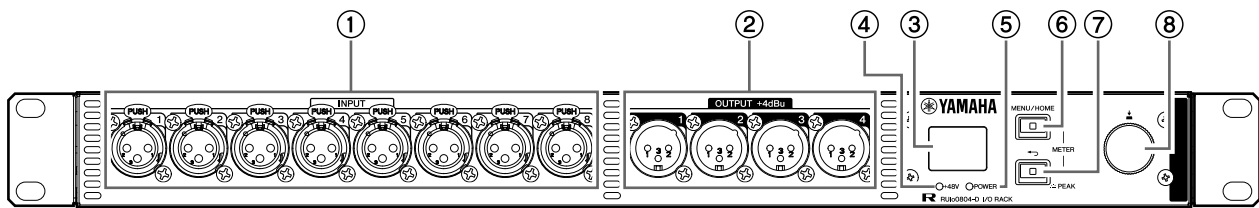
They flash fast if the Ethernet cables are connected properly.

⑯ **[1G]**

These indicators light when the Dante network is functioning as Giga-bit Ethernet.

4.2. RUio0804-D

4.2.1. Front panel



① [INPUT] 1 to 8

These are balanced XLR 3-hole chassis input connectors that enable you to input analog signals to each channel. The rated input level range is from -60 dBu to $+4$ dBu. Phantom power ($+48$ V) can be supplied to devices that require it via the input connectors.

② [OUTPUT] 1 to 4

These are balanced XLR 3-pin chassis output connectors that enable you to output analog signals from each channel. The rated output level is $+4$ dBu.

③ Display

The display shows information such as the parameter values for the head amp, or error and status indications.

④ [+48V]

This indicator lights when $+48$ V phantom power is turned on for any of the INPUT channels. Phantom power for each INPUT channel can be switched on or off using the front-panel display of the unit or via a supported device. While phantom power that is set to on is temporarily turned off, the indicator changes from steady to blinking.

Related link(s)

[“+48V screen”](#)

[“Setting the INPUT Channel Parameters”](#)



WARNING

Make sure that all output controls on the digital mixing console are set to minimum when turning phantom power on or off. Sudden high level peaks caused by the switching operation can damage equipment as well as the hearing of those present.



NOTICE

To prevent malfunction and noise in this product and external devices, note the following when turning phantom power on or off.

- If phantom power is not required, you must turn it off.
- Before connecting a device (that does not support phantom power) to the [INPUT] or [FLEXIBLE I/O] (input) connectors, turn phantom power off.
- While phantom power is on, do not connect or disconnect cables to the [INPUT] or [FLEXIBLE I/O] (input) connectors.
- Make sure that all output controls are set to minimum when turning phantom power on or off.
- To prevent possible damage to speakers, make sure that power amplifiers and/or powered speakers are turned off when switching phantom power on or off.

 NOTE

Phantom power to the entire device is always on. For instructions on how to temporarily turn off the phantom power, refer to the NOTE on the “+48V screen”.

⑤ [POWER]

This indicator lights when the power to this product is on.

⑥ [MENU/HOME]

While the home screen is displayed, press this key to display the MENU TOP screen that enables you to select a menu. While a screen other than the home screen is displayed, press this key to display the home screen.

In addition, the following functions are available:

■ Displaying the METER screens and +48V screen

Press the [MENU/HOME] key and the [↩] (Back) / [PEAK] key (⑦) simultaneously to display the METER screens and the +48V screen.

Related link(s)

[“METER Screens / +48V Screen”](#)

■ Displaying a pop-up screen for setting or unlocking the panel lock

Press and hold the [MENU/HOME] key and the [↩] (Back) / [PEAK] key (⑦) simultaneously for more than three seconds to display a pop-up screen for setting or unlocking the panel lock.

Related link(s)

[“Locking the Panel”](#)

[“Unlocking the Panel”](#)

■ Initializing the contrast/brightness settings

Press and hold the [MENU/HOME] key to initialize the contrast/brightness settings.

The Contrast/Brightness adjustment pop-up screen appears at the same time, allowing you to adjust the settings by turning the encoder with switch.

Related link(s)

[“Adjusting the Contrast and Brightness”](#)

■ Displaying the status of the unit

You can display the status of the unit.

You can change the light settings that indicate a normal or abnormal status as shown below.

Normal status

You can change the light color, and whether the light is on or off.

Light	Lights up blue.
	Lights up green.
Off	Not lit.

Abnormal status

You can select the settings below to adjust system response when a fatal error occurs (Error) or when an abnormality exists but you can continue using the unit (Caution).

Light	Error	Lights up red. (You cannot change the color.)
	Caution	Lights up orange. (You cannot change the color.)

Flash	Error	Red + Normal status setting (blue)
		Red + Normal status setting (green)
		Red + Normal status setting (not lit)
	Caution	Orange + Normal status setting (blue)
		Orange + Normal status setting (green)
		Orange + Normal status setting (not lit)
Abnormal status colors (red and orange): Off (Only the colors designated for the normal status light up.)	Error/Caution	Lights up in the color selected for normal status (blue)
		Lights up in the color selected for normal status (green)
		Not lit.

Related link(s)

[“Changing the \[MENU/HOME\] Key Setting for Normal Status”](#)

[“Changing the \[MENU/HOME\] Key Setting for Error Status”](#)

⑦ [↔] (Back) / [PEAK]

Press this key to display the previous screen. If the input level is -3 dBFS or higher in any of the INPUT channels, this key indicator lights up red.

Press and hold this key when a METER screen is displayed to clear PEAK HOLD.

NOTE

Press and hold this key and the [MENU/HOME] key simultaneously for more than three seconds to display a pop-up screen for setting or unlocking the panel lock. (See [“Locking the Panel”](#) and [“Unlocking the Panel”](#).)

⑧ Encoder with switch

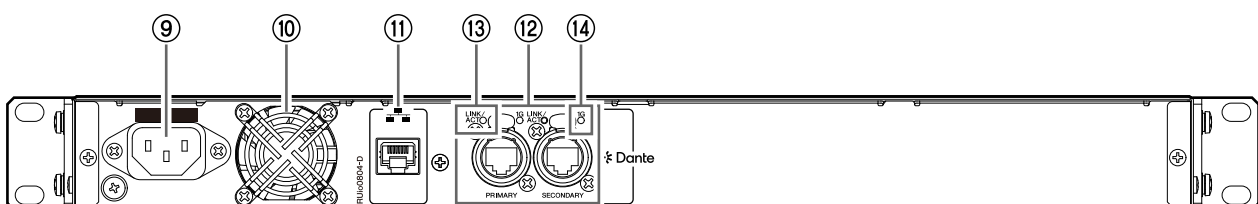
By turning this encoder, you can select a menu or parameter. By pressing it, you can confirm a selection or switch the display.

Additionally, pressing and holding this encoder when the +48V screen is displayed will temporarily turn off the phantom power to the entire device while the button is pressed. Moreover, the message “+48V ACTIVE TEMPORARY OFF” will be displayed on the screen.

Device Identify function

When the Device Identify function is used, the display and the [+48V] indicator will flash. At the same time, the [MENU/HOME] key and the [↔] (Back) / [PEAK] key will flash green.

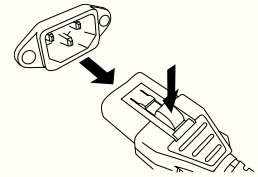
For details, see [“Identifying This Product among the Devices in the Network”](#).

4.2.2. Rear panel**⑨ AC IN connector**

Use this socket to connect the supplied power cord. First connect the AC power cord to this connector, and then insert the power cord plug into an AC outlet to turn on the power to the unit. Remove the power cord plug from the AC outlet to turn off the power to the unit.

CAUTION

Insert each cord plug all the way until it locks in place securely.
The supplied AC power cords feature a V-lock mechanism via a latch, which prevents the power cords from disconnecting accidentally.
To disconnect each power cord, remove it while pressing the latch on the plug.



NOTICE

After turning the unit off, wait at least six seconds before turning it on again. Do not turn power to the unit on and off in rapid succession. Doing so can cause it to malfunction.

⑩ Cooling vent

This product is equipped with a cooling fan. This vent lets warm air escape from the unit. Do not block the vent with any object.

CAUTION

Do not block the ventilation ports on this product. To prevent internal temperature rise, this product has ventilation holes on the front/back (RUio0804-D, RUio16FLX-D) and sides (RUio1608SB-D). If the ventilation ports are blocked, heat will get trapped inside the product, which may cause malfunction or fire.

⑪ Network connector

This RJ-45 connector allows the unit to be connected to a computer via an Ethernet cable (CAT5 or higher recommended).

⑫ Dante [PRIMARY] / [SECONDARY]

These etherCON (RJ-45) connectors can be connected to Dante devices using Ethernet cables (CAT5e or higher recommended).

If SECONDARY port (*) is set to DAISY CHAIN, the signal that is input from one connector is transmitted to the other connector.

If SECONDARY port (*) is set to REDUNDANT, the Dante [PRIMARY] connector is used for the primary connection and the Dante [SECONDARY] connector is used for the secondary (backup) connection. If the unit is unable to transmit signals through the Dante [PRIMARY] connector for some reason (e.g., due to damage or accidental removal of the cable, or a failed network switch), the Dante [SECONDARY] connector will automatically take over the connection. (* To display the SECONDARY port setting screen, first, display the MENU TOP screen, select SETUP, and then confirm your selection. Next, select SEC.PORT (SECONDARY PORT) from the SETUP menu, and then confirm your selection.)

Related link(s)

[“About Connections”](#)

[“SETUP menu”](#)

NOTE

- We recommend using RJ-45 plugs that are compatible with Neutrik etherCON CAT5e connectors. Standard RJ-45 plugs can also be used.
- Connect only Dante-compatible devices or Giga-bit Ethernet (GbE)-compatible devices (including a computer).
- If using a Dante network, do not use the EEE function of the network switch. The EEE function may deteriorate the clock synchronization performance and interrupt audio. For details, see NOTE titled "[About Dante](#)".

⑬ [LINK/ACT]

These indicators show the communication status of the Dante [PRIMARY] and Dante [SECONDARY] connectors respectively.

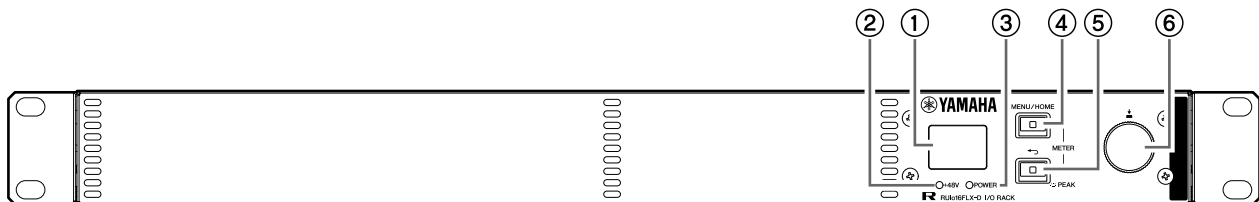
They flash fast if the Ethernet cables are connected properly.

⑭ [1G]

These indicators light when the Dante network is functioning as Giga-bit Ethernet.

4.3. RUio16FLX-D

4.3.1. Front panel



① Display

The display shows information such as the parameter values for the head amp, or error and status indications.

② [+48V]

This indicator lights when +48 V phantom power is turned on for any of the INPUT channels. Phantom power for each INPUT channel can be switched on or off using the front-panel display of the unit or via a supported device. While phantom power that is set to on is temporarily turned off, the indicator changes from steady to blinking.

Related link(s)

["+48V screen"](#)

["Setting the INPUT Channel Parameters"](#)



WARNING

Make sure that all output controls on the digital mixing console are set to minimum when turning phantom power on or off. Sudden high level peaks caused by the switching operation can damage equipment as well as the hearing of those present.



NOTICE

To prevent malfunction and noise in this product and external devices, note the following when turning phantom power on or off.

- If phantom power is not required, you must turn it off.

- Before connecting a device (that does not support phantom power) to the [INPUT] or [FLEXIBLE I/O] (input) connectors, turn phantom power off.
- While phantom power is on, do not connect or disconnect cables to the [INPUT] or [FLEXIBLE I/O] (input) connectors.
- Make sure that all output controls are set to minimum when turning phantom power on or off.
- To prevent possible damage to speakers, make sure that power amplifiers and/or powered speakers are turned off when switching phantom power on or off.

NOTE

Phantom power to the entire device is always on. For instructions on how to temporarily turn off the phantom power, refer to the NOTE on the ["+48V screen"](#).

③ [POWER]

This indicator lights when the power to this product is on.

④ [MENU/HOME]

While the home screen is displayed, press this key to display the MENU TOP screen that enables you to select a menu. While a screen other than the home screen is displayed, press this key to display the home screen.

In addition, the following functions are available:

■ Displaying the METER screens and +48V screen

Press the [MENU/HOME] key and the [] (Back) / [PEAK] key (⑤) simultaneously to display the METER screens and the +48V screen.

Related link(s)

["METER Screens / +48V Screen"](#)

■ Displaying a pop-up screen for setting or unlocking the panel lock

Press and hold the [MENU/HOME] key and the [] (Back) / [PEAK] key (⑤) simultaneously for more than three seconds to display a pop-up screen for setting or unlocking the panel lock.

Related link(s)

["Locking the Panel"](#)

["Unlocking the Panel"](#)

■ Initializing the contrast/brightness settings

Press and hold the [MENU/HOME] key to initialize the contrast/brightness settings.

The Contrast/Brightness adjustment pop-up screen appears at the same time, allowing you to adjust the settings by turning the encoder with switch.

Related link(s)

["Adjusting the Contrast and Brightness"](#)

■ Displaying the status of the unit

You can display the status of the unit.

You can change the light settings that indicate a normal or abnormal status as shown below.

Normal status

You can change the light color, and whether the light is on or off.

Light	Lights up blue.
	Lights up green.

Off	Not lit.
-----	----------

Abnormal status

You can select the settings below to adjust system response when a fatal error occurs (Error) or when an abnormality exists but you can continue using the unit (Caution).

Light	Error	Lights up red. (You cannot change the color.)
	Caution	Lights up orange. (You cannot change the color.)
Flash	Error	Red + Normal status setting (blue)
		Red + Normal status setting (green)
		Red + Normal status setting (not lit)
	Caution	Orange + Normal status setting (blue)
		Orange + Normal status setting (green)
		Orange + Normal status setting (not lit)
Abnormal status colors (red and orange): Off (Only the colors designated for the normal status light up.)	Error/Caution	Lights up in the color selected for normal status (blue)
		Lights up in the color selected for normal status (green)
		Not lit.

Related link(s)

[“Changing the \[MENU/HOME\] Key Setting for Normal Status”](#)

[“Changing the \[MENU/HOME\] Key Setting for Error Status”](#)

⑤ [↩] (Back) / [PEAK]

Press this key to display the previous screen. If the input level is -3 dBFS or higher in any of the INPUT channels, this key indicator lights up red.

Press and hold this key when a METER screen is displayed to clear PEAK HOLD.

NOTE

Press and hold this key and the [MENU/HOME] key simultaneously for more than three seconds to display a pop-up screen for setting or unlocking the panel lock. (See [“Locking the Panel”](#) and [“Unlocking the Panel”](#).)

⑥ Encoder with switch

By turning this encoder, you can select a menu or parameter. By pressing it, you can confirm a selection or switch the display.

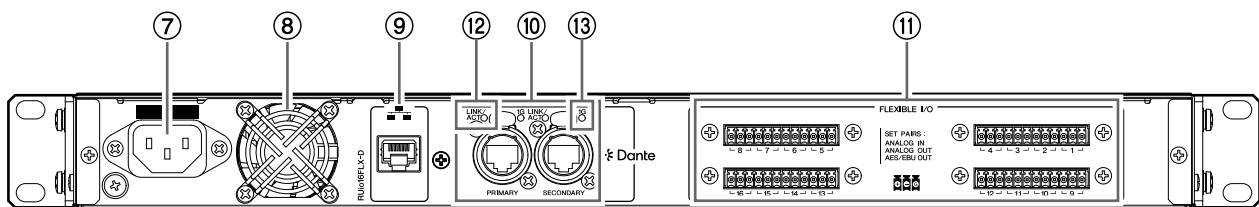
Additionally, pressing and holding this encoder when the +48V screen is displayed will temporarily turn off the phantom power to the entire device while the button is pressed. Moreover, the message “+48V ACTIVE TEMPORARY OFF” will be displayed on the screen.

Device Identify function

When the Device Identify function is used, the display and the [+48V] indicator will flash. At the same time, the [MENU/HOME] key and the [↩] (Back) / [PEAK] key will flash green.

For details, see [“Identifying This Product among the Devices in the Network”](#).

4.3.2. Rear panel

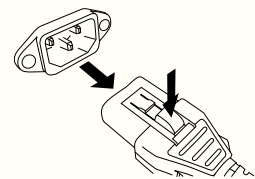


⑦ AC IN connector

Use this socket to connect the supplied power cord. First connect the AC power cord to this connector, and then insert the power cord plug into an AC outlet to turn on the power to the unit. Remove the power cord plug from the AC outlet to turn off the power to the unit.

⚠ CAUTION

Insert each cord plug all the way until it locks in place securely. The supplied AC power cords feature a V-lock mechanism via a latch, which prevents the power cords from disconnecting accidentally. To disconnect each power cord, remove it while pressing the latch on the plug.



ⓘ NOTICE

After turning the unit off, wait at least six seconds before turning it on again. Do not turn power to the unit on and off in rapid succession. Doing so can cause it to malfunction.

⑧ Cooling vent

This product is equipped with a cooling fan. This vent lets warm air escape from the unit. Do not block the vent with any object.

⚠ CAUTION

Do not block the ventilation ports on this product. To prevent internal temperature rise, this product has ventilation holes on the front/back (RUio0804-D, RUio16FLX-D) and sides (RUio1608SB-D). If the ventilation ports are blocked, heat will get trapped inside the product, which may cause malfunction or fire.

⑨ Network connector

This RJ-45 connector allows the unit to be connected to a computer via an Ethernet cable (CAT5 or higher recommended).

⑩ Dante [PRIMARY] / [SECONDARY]

These etherCON (RJ-45) connectors can be connected to Dante devices using Ethernet cables (CAT5e or higher recommended).

If SECONDARY port (*) is set to DAISY CHAIN, the signal that is input from one connector is transmitted to the other connector.

If SECONDARY port (*) is set to REDUNDANT, the Dante [PRIMARY] connector is used for the primary connection and the Dante [SECONDARY] connector is used for the secondary (backup) connection. If the unit is unable to transmit signals through the Dante [PRIMARY] connector for some reason (e.g., due to damage or accidental removal of the cable, or a failed network switch), the Dante [SECONDARY] connector will automatically take over

the connection.

(* To display the SECONDARY port setting screen, first, display the MENU TOP screen, select SETUP, and then confirm your selection. Next, select SEC.PORT (SECONDARY PORT) from the SETUP menu, and then confirm your selection.)

Related link(s)

[“About Connections”](#)

[“SETUP menu”](#)



NOTE

- We recommend using RJ-45 plugs that are compatible with Neutrik etherCON CAT5e connectors. Standard RJ-45 plugs can also be used.
- Connect only Dante-compatible devices or Giga-bit Ethernet (GbE)-compatible devices (including a computer).
- If using a Dante network, do not use the EEE function of the network switch. The EEE function may deteriorate the clock synchronization performance and interrupt audio. For details, see NOTE titled [“About Dante”](#).

⑪ [FLEXIBLE I/O] connector

These connectors can conveniently be switched between balanced analog input/output and AES/EBU format digital output. Connect line-level devices or microphones to the INPUT, and line-level devices to the OUTPUT. The INPUT has a built-in head amp and can also supply phantom power (+48V). For setup instructions, see [“F16 CONFIG”](#) in [“SETUP menu”](#). For installation instructions, see [“Installing Euroblock Plugs \(RUio16FLX-D\)”](#).

⑫ [LINK/ACT]

These indicators show the communication status of the Dante [PRIMARY] and Dante [SECONDARY] connectors respectively.

They flash fast if the Ethernet cables are connected properly.

⑬ [1G]

These indicators light when the Dante network is functioning as Giga-bit Ethernet.

5. Installation

5.1. Rack Mount Kit Installation (RUio1608SB-D)

You can attach the separately-sold Rack Mount Kit (RK-RUio1608SB) to the RUio1608SB-D and mount the unit in a rack or in an installed system.

The following items are included with the RK-RUio1608SB:

- Rack mount bracket L x 1
- Rack mount bracket R x 1
- Screws x 8

1. Check that the power to this product is turned off.



CAUTION

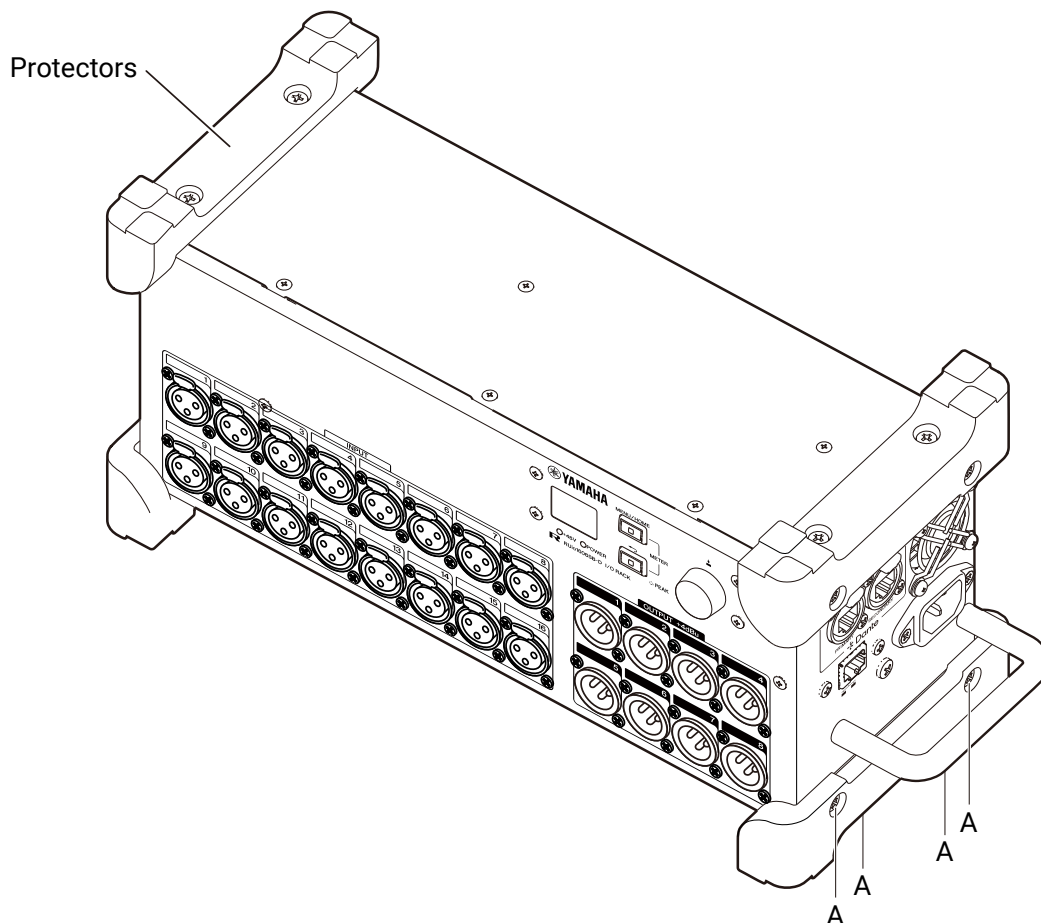
When installing the rack mount kit, always unplug the power cord from the outlet before starting work. Failing to do so can cause electric shock or malfunctions.

2. Remove the screws (A) on each protector and remove the protector.



NOTE

Keep the screws of the protector together with the protector after removing them.

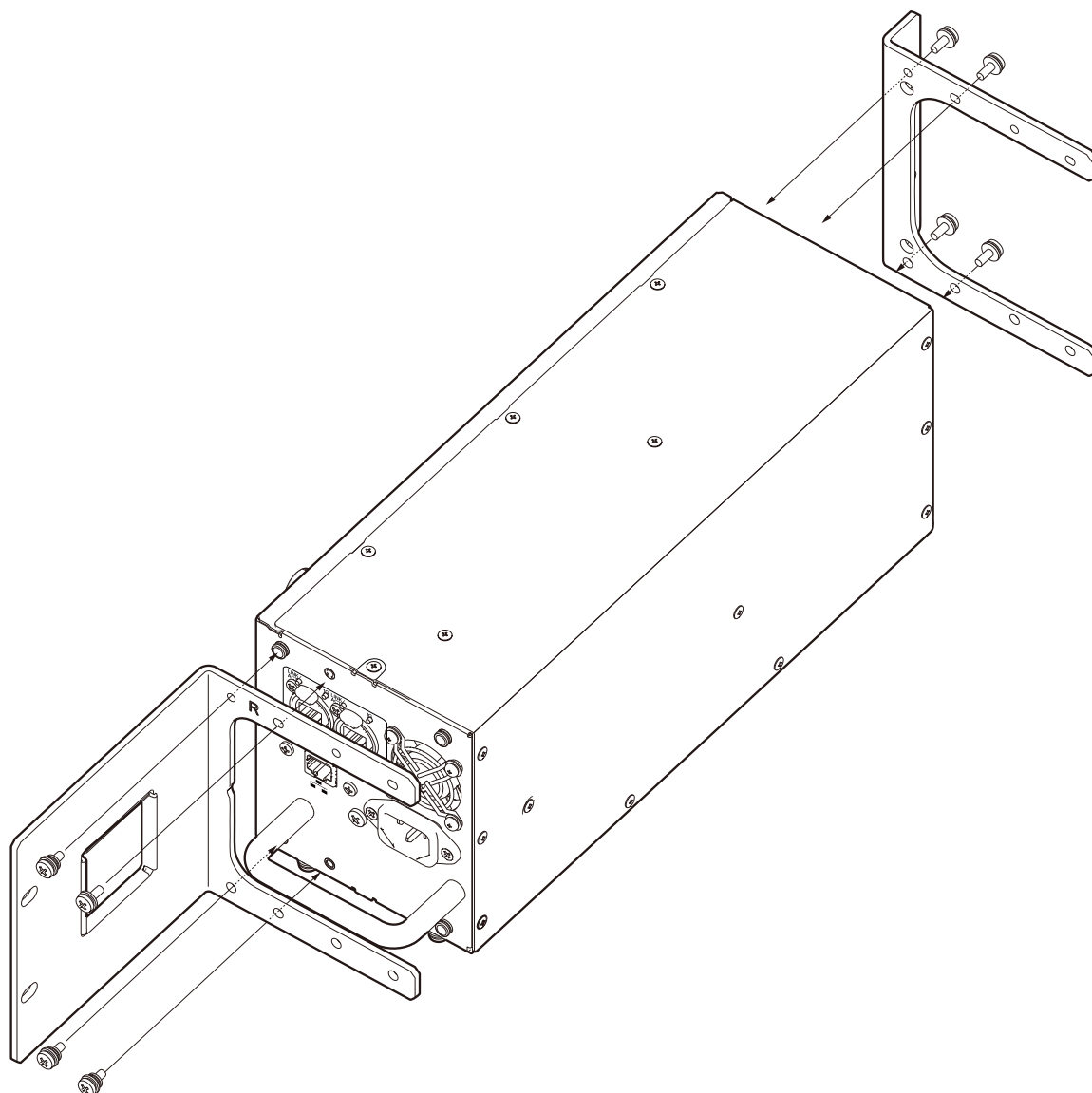


3. Attach the brackets using the screws included in the rack mount kit.

! NOTICE

When installing the rack mount kit, use the screws included with the rack mount kit. Using other screws may cause malfunctions.

Secure it with screws at the position shown in the figure below.



Precautions for Rack Mounting

Operation of this unit is guaranteed within a temperature range of 0 to 40°C. If you mount this unit along with other RUio unit(s) or other device(s) in an EIA standard rack, the heat from each device will raise the temperature inside the rack, which may prevent the unit from achieving full performance. When rack mounting the unit, always observe the following requirements to avoid heat buildup:

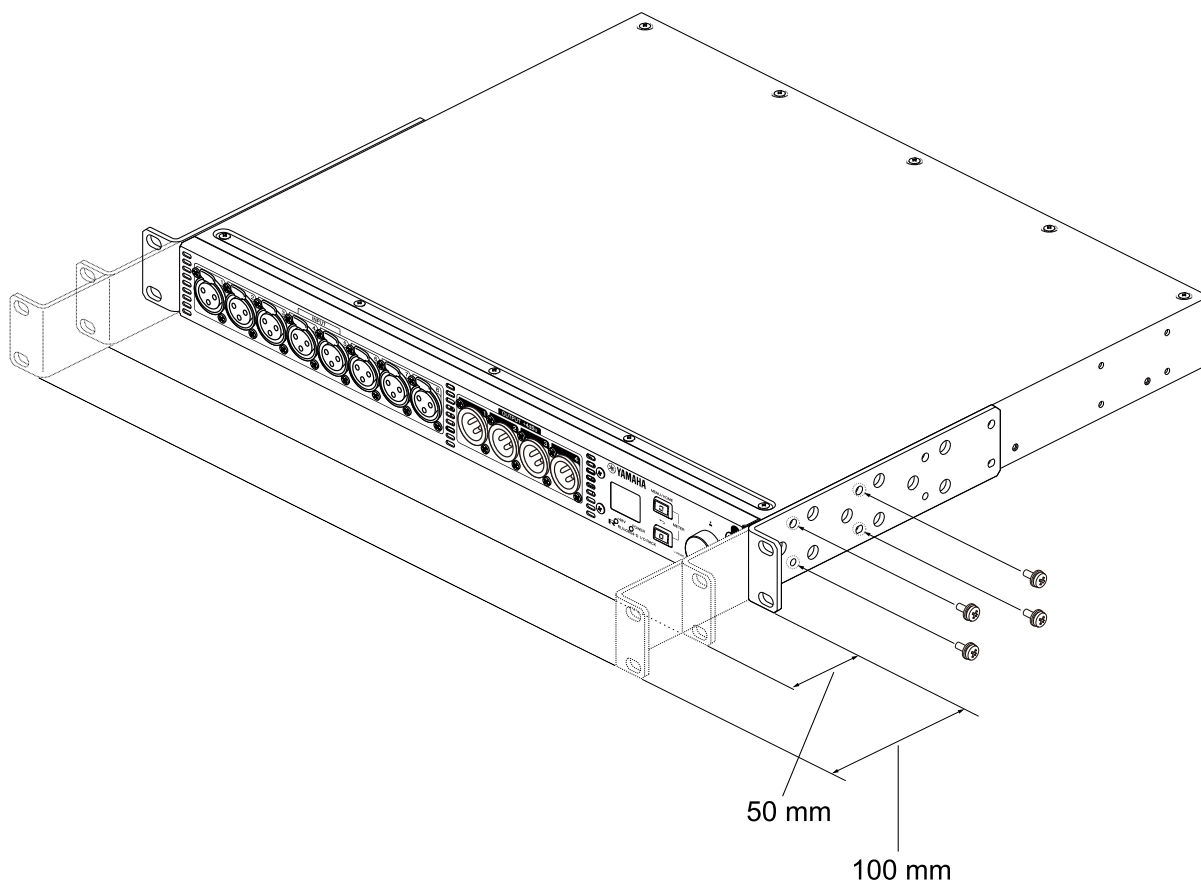
- If you are mounting three or more RUio1608SB-D, RUio0804-D, and RUio16FLX-D units in any combination without leaving any gaps between them, set the fan speed to HIGH.
- If multiple units are mounted in the same rack with their fan speeds set to LOW, leave 1U space between every two units. In addition, ensure sufficient ventilation by installing a ventilation panel in these spaces, or simply leave the open spaces uncovered.
- When mounting this unit in a rack with devices such as power amplifiers that tend to generate a

significant amount of heat, leave space between this unit and other devices. In addition, ensure sufficient ventilation by installing a ventilation panel in these spaces, or simply leave the open spaces uncovered.

- To ensure sufficient airflow, leave the rear of the rack open and position it at least 10 cm from walls, ceilings or other surfaces. If the rear of the rack cannot be left open, install a commercially-available fan kit or similar forced ventilation system to secure sufficient airflow. If you have installed a fan kit, there may be cases in which closing the rear of the rack will produce a greater cooling effect. For more information, see the instruction manual for the fan kit.

5.2. Regarding Recesses (RUio1608SB-D, RUio0804-D)

If you want to recess the front panel surface of this unit from the front edge of the rack, you can adjust the position of the rack mount brackets to recess the unit, as shown in the illustration below. You can recess the RUio1608SB-D unit by 50 mm, and the RUio0804-D unit by 50 mm or 100 mm.



In the same way, rack mount brackets can also be attached to the rear panel surface (RUio0804-D only).

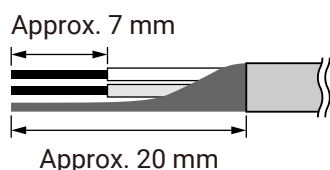
NOTE

When you install the brackets, use the same screws that you just removed.

5.3. Installing Euroblock Plugs (RUio16FLX-D)

For connection to the [FLEXIBLE I/O] connector, use the included Euroblock plug.

Preparation (Cable preparation)



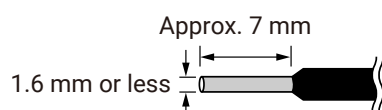
When connecting a cable to a Euroblock plug, strip the cable as shown in the illustration before wiring it. Furthermore, wiring in Euroblocks can lead to metal fatigue due to the weight and vibration of the cables, making them prone to breakage. Secure the cable to the tab on the Euroblock plug using the included cable ties. When rack-mounting, use cable ties or similar devices to bundle and secure the cables whenever possible.



CAUTION

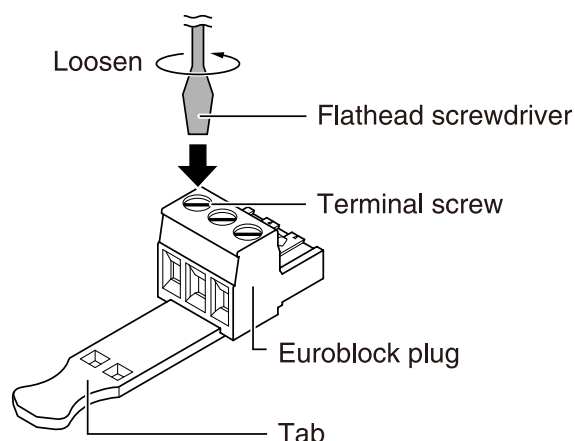
If using stranded wire, do not solder it.

For portable equipment where the cable is frequently connected and disconnected, we recommend using insulated ferrules. Use the following for the conductor portion of the ferrules.



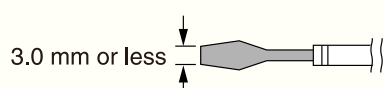
Installation method

1. Loosen the screws on the terminals.

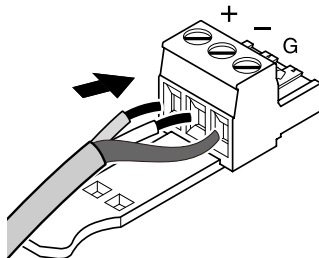


NOTE

Use a flathead screwdriver with a diameter of 3 mm or less.



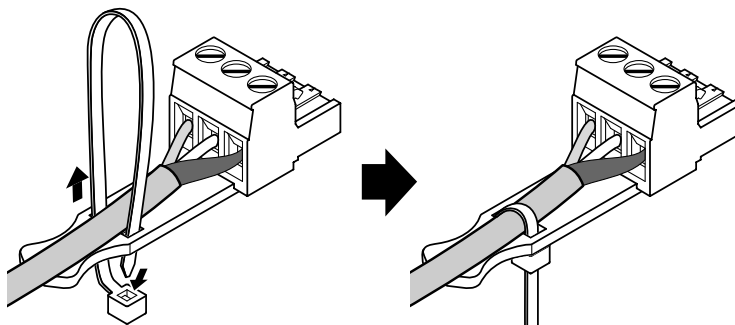
2. Plug in the cable.



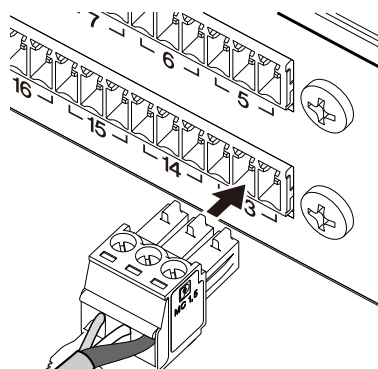
3. Tighten the terminal screws securely.

Pull the cable to make sure it does not come loose.

4. Secure the cable to the tab using the included cable ties.

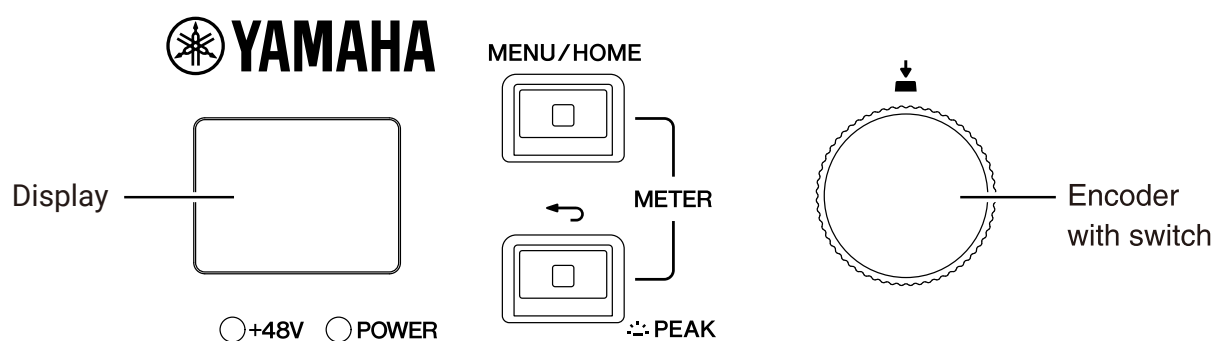


5. Attach the Euroblock plug into the [FLEXIBLE I/O] connector on the unit.



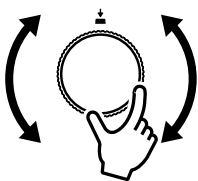
6. Basic Operations

6.1. Panel Operations



You can use the front panel display, [MENU/HOME] key, [←] (Back) / [PEAK] key, and the encoder with switch to set the various parameters.

Refer to the table below for information on basic operation.

Selecting an item	 Turn the encoder with switch. (The selected parameter is highlighted.)
Confirming the setting	 Press the encoder with switch.
Displaying the previous screen	 Press the [←] (Back) / [PEAK] key.

6.2. Error Display

6.2.1. Error popup screens

An error popup screen is displayed when an error occurs.

Example:



In addition, it is displayed when you select and confirm the ERROR icon (⚠) on the home screen.

Example:



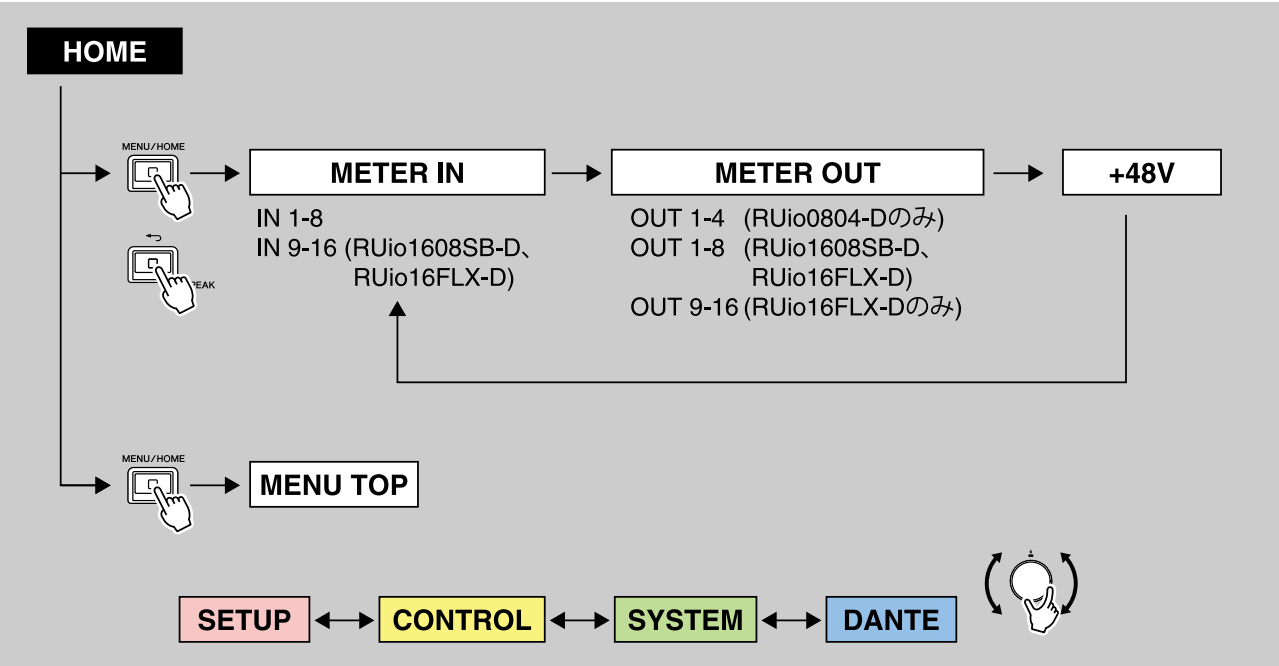
ERROR icon

When an error pop-up screen is displayed, press the encoder with switch or the [↶] (Back) / [PEAK] key to return to the previous screen.

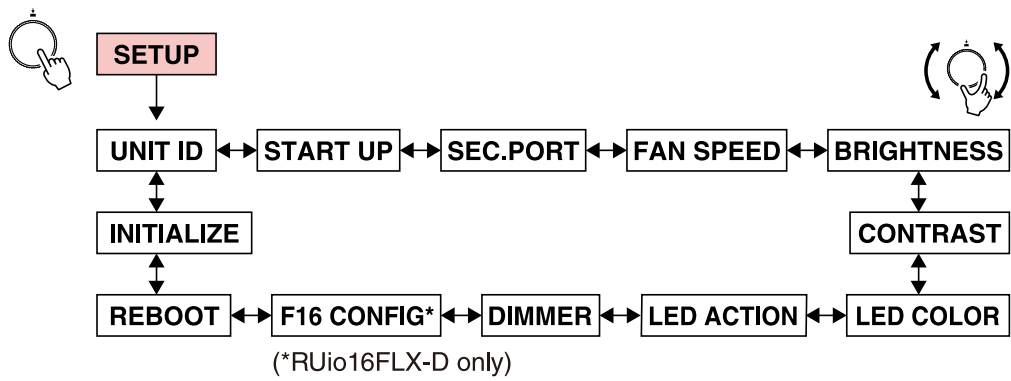
For a list of error messages, refer to "[Message List](#)".

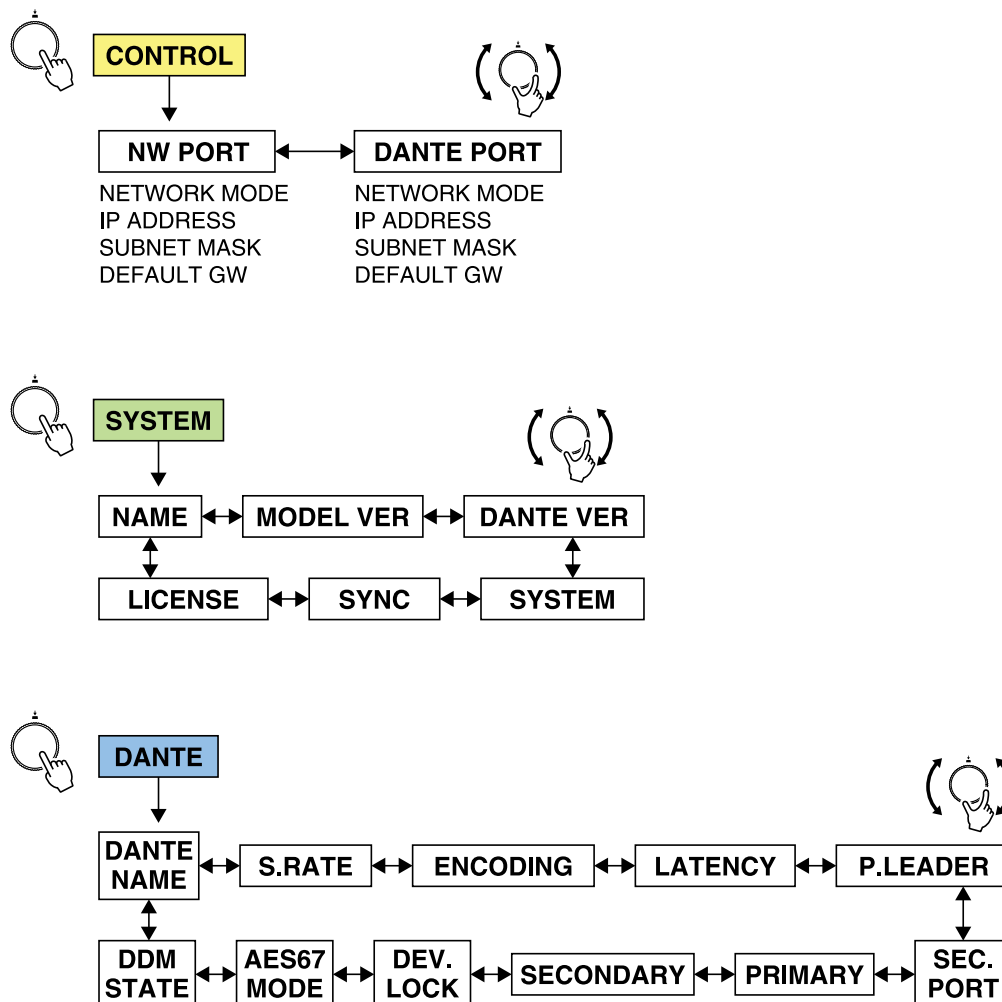
7. Screens

7.1. Screen Flow



7.1.1. Menu options on the MENU TOP screen





7.2. Home Screen

UNIT ID, product device label, and status bar are displayed here.



This screen is displayed when you turn on the power switch.

In addition, it is displayed when you press the [MENU/HOME] key while any other screen is displayed.

① UNIT ID

The upper row on the home screen displays the UNIT ID. The initial value is Y001. You can change this to a value between Y000 and Y07F. To set the UNIT ID, use the UNIT ID parameter in the SETUP menu. (See “[SETUP menu](#)”.) Changes to the UNIT ID are also reflected immediately in the device label (the last two digits of the first four characters).

② Device label

The middle row on the home screen displays part of the device label. The first five characters Y0##- (## represents the UNIT ID) and Yamaha- are not displayed. The initial value is up to 10 characters of the model number (e.g., RUio1608SB, RUio0804-D, or RUio16FLX-). The device label can be specified from Dante Controller. Assign the device label as follows.

- Do not change the first five characters Y0##- (that include the UNIT ID). Even if you try to change these

characters, they will automatically be corrected to Y0##-.

- You can use up to 31 characters total.

③ Status bar

The bottom row on the home screen displays the status bar, which uses icons to indicate the status of the product. Six types of icons are displayed. Turn the encoder with switch to select an icon, and then press the switch to confirm the selection to view the meaning of the icon.

NOTE

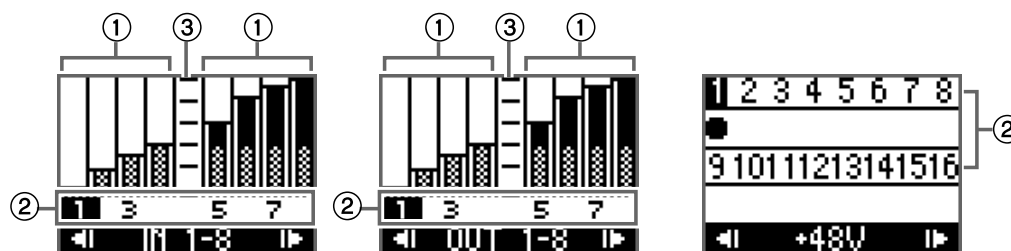
Either the PANEL LOCK icon or REMOTE ONLY icon appears in the same location. If both are enabled, the PANEL LOCK icon will be displayed.

Icons appear on the status bar under the following status:

Icon	Status	Remarks
 ERROR	An error has occurred.	The [MENU/HOME] key lights up/flashes simultaneously with the display of the icon. This setting can be changed. See “Changing the [MENU/HOME] Key Setting for Error Status” and “Changing the [MENU/HOME] Key Setting for Normal Status” .
 INFORMATION	There is a notification.	
 PANEL LOCK	Panel Lock has been enabled.	• If panel lock is enabled and REMOTE ONLY is specified, the PANEL LOCK icon will take priority to appear. • To defeat the panel lock state, press and hold the [MENU/ HOME] and [↩] (Back) / [PEAK] keys simultaneously for three seconds.
 REMOTE ONLY	The HA parameters are set to read-only.	• This setting is typically used to control parameters only from supported devices, such as a mixing console. • Enable or disable this setting from a supported device. • Even if REMOTE ONLY is enabled, you can modify the settings in the SETUP menu.
 MUTE	Muted (all ports together).	You can change the mute setting at start up in START UP mode. See “SETUP menu” or “Changing the Mute Setting at Start UP” .
 DAISY CHAIN	The SECONDARY port has been set to DAISY CHAIN.	You can change this setting to REDUNDANT using the SEC.PORT (SECONDARY PORT) parameter. See “SETUP menu” .

7.3. METER Screens / +48V Screen

The METER screens consist of the IN and OUT screens. Each screen displays a level meter. On the +48V screen, you can turn phantom power (+48V) on or off for each channel.



① Level meter

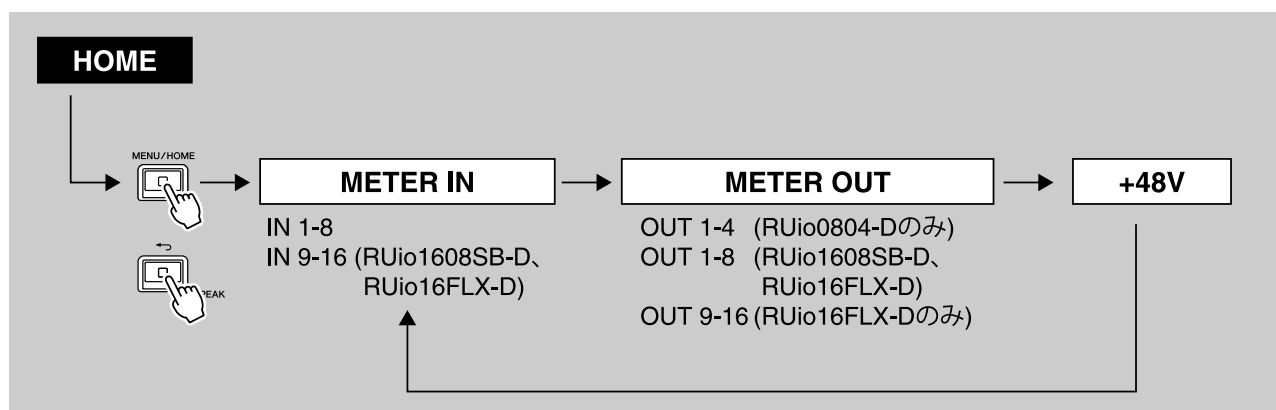
This area displays the level meter for each channel.

② Channel number

You can select the channel number by turning the encoder with switch. The selected channel number is highlighted.

③ Scale

From the top, the values are 0, -6, -12, -18, -24, and -40 dB.



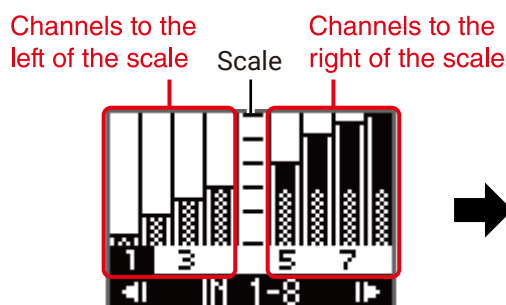
When the home screen is displayed, repeatedly press the [MENU/HOME] key and the [↩] (Back) / [PEAK] key simultaneously to cycle through the METER IN, METER OUT, and +48V screens.

NOTE

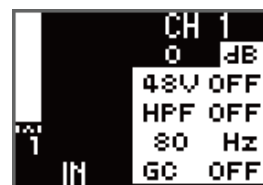
- On the RUio1608SB-D, each press of the [MENU/HOME] key and the [↩] (Back) / [PEAK] key simultaneously cycles the display through the IN 1-8, IN 9-16, OUT 1-8, and +48V screens.
- On the RUio0804-D, each press of the [MENU/HOME] key and the [↩] (Back) / [PEAK] key simultaneously cycles the display through the IN 1-8, OUT 1-4, and +48V screens.
- On the RUio16FLX-D, each press of the [MENU/HOME] key and the [↩] (Back) / [PEAK] key simultaneously cycles the display through the IN 1-8, IN 9-16, OUT 1-8, OUT 9-16, and +48V screens.
- When selecting a channel number by turning the encoder with switch, keep turning it to move to the next screen.

7.3.1. METER IN

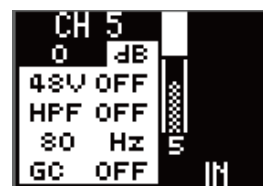
If you select a channel number and then confirm the selection on the METER IN screen, the parameter edit screen will be displayed. You can set the HA gain, +48V ON/OFF, HPF ON/OFF, HPF cutoff frequency, and GC (Gain Compensation) ON/OFF.



An example of selecting one of the channels to the left of the center scale



An example of selecting one of the channels to the right of the center scale

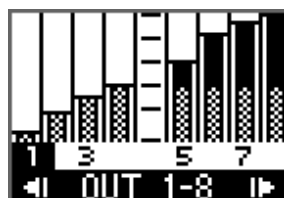


Related link(s)

["Setting the INPUT Channel Parameters"](#)

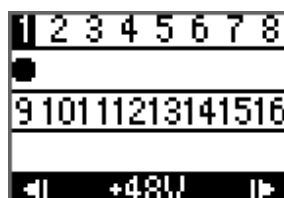
7.3.2. METER OUT

Parameters cannot be edited on the METER OUT screen.



7.3.3. +48V screen

On the +48V screen, once you select/confirm a channel number,  appears below the channel number, and the phantom power (+48V) for the selected channel number is turned on. If phantom power is turned on in any of the INPUT channels, the [+48V] indicator on the front panel lights up.



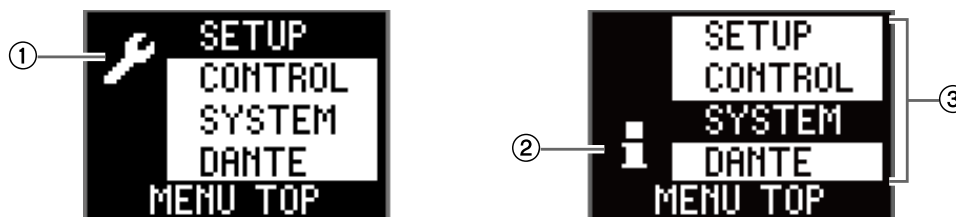
Pressing the encoder with switch again causes  to disappear and turns off the phantom power. If this setting is turned off for all INPUT channels, the [+48V] indicator turns off.

NOTE

- Phantom power to the entire device is always on.
- Pressing and holding the encoder with switch when the +48V screen is displayed will temporarily turn off the phantom power to the entire device while the button is pressed. Moreover, the message "+48V ACTIVE TEMPORARY OFF" will be displayed on the screen. If any channel has phantom power turned on at that time, the [+48V] indicator will change from steady light to flashing.
- If the phantom power is temporarily turned off while a supported device is connected, the screen indicates that the phantom power to the device is off.

7.4. MENU TOP Screen

This screen enables you to select a menu.



① SETUP icon

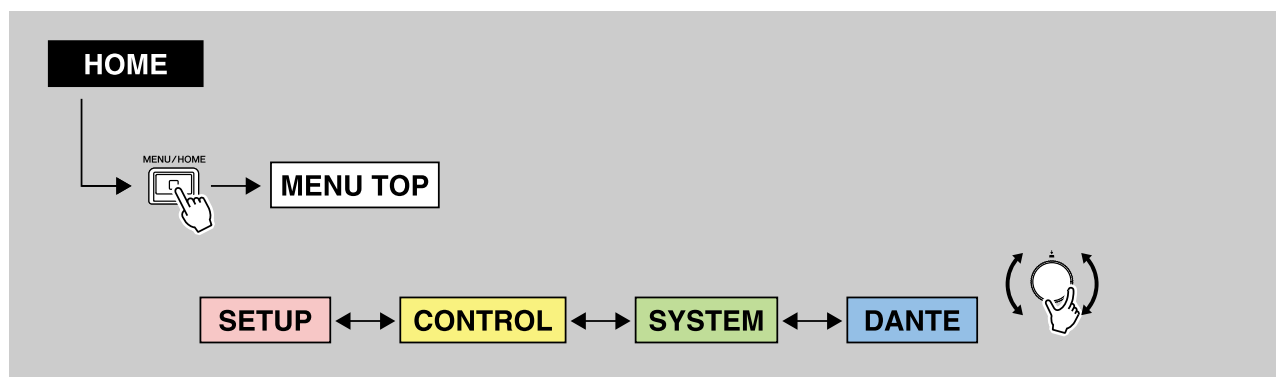
This icon appears when the SETUP menu or CONTROL menu is selected. Both menus enable you to make settings.

② Information icon

This icon appears when the SYSTEM menu or DANTE menu is selected. Both menus enable you to view information.

③ Menu

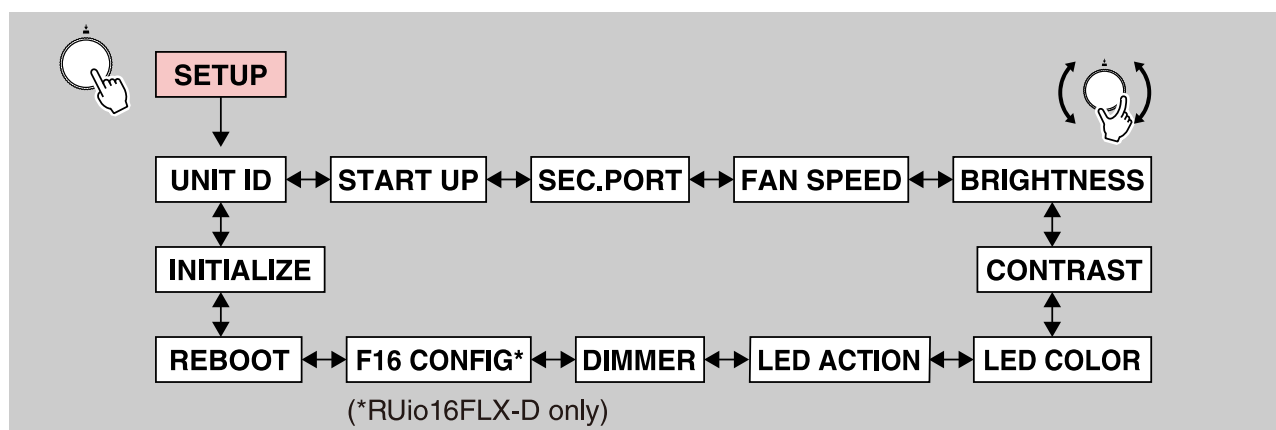
This area displays menu options. You can choose SETUP, CONTROL, SYSTEM, or DANTE.



While the home screen is displayed, press the [MENU/HOME] key to display the MENU TOP screen. Turn the encoder with switch to select a menu option, and then press it to confirm.

7.4.1. SETUP menu

This shows the current values for various setup parameters on this unit.



While the SETUP screen is displayed, turn the encoder with switch to select a parameter, and then press it to confirm.

The following table provides a description of the items and parameters that can be selected, and the values that

can be set.

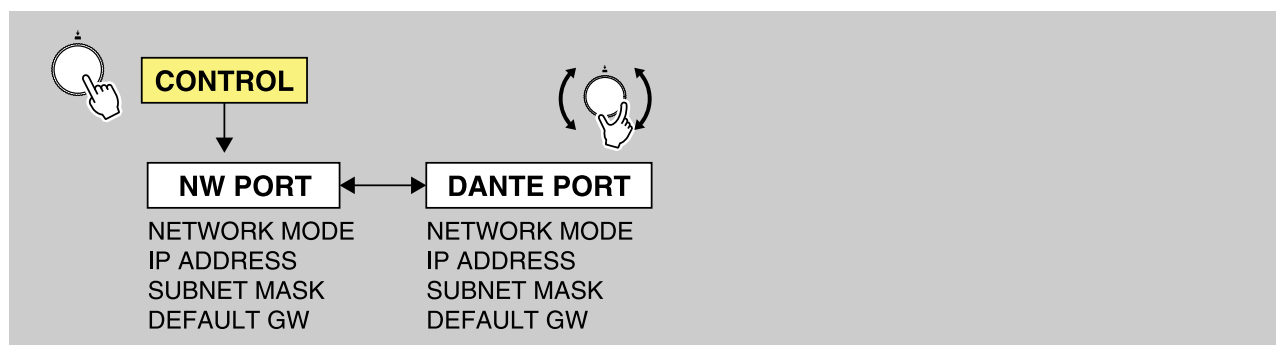
Item	Description	Setting value (* represents the default value.)
UNIT ID	Specifies the unit ID.	Y000(0) to Y07F(127) Y001*
START UP	Specifies how the HA parameters will be applied at start up (START UP mode). This setting will be applied the next time the unit starts up. To control the HA parameters from a supported device, select REFRESH with MUTE. In this way, you can prevent inadvertently outputting unmuted audio, since the audio inputs and outputs will be muted until the supported device sends out the parameter settings. REFRESH with MUTE: The unit starts up with the initialized HA parameters. The inputs and outputs will be muted until you finish setting the HA parameters from the supported device. RESUME w/o MUTE: The unit starts up in the state it was in prior to the most recent power-off. The inputs and outputs will not be muted. REFRESH w/o MUTE: The unit starts up with the initialized HA parameters. The initial values are the same as for REFRESH with MUTE. However, the inputs and outputs will not be muted.	REFRESH with MUTE*, RESUME w/o MUTE, REFRESH w/o MUTE
SEC.PORT (SECONDARY PORT)	Specifies the operating mode of the SECONDARY port.	DAISY CHAIN*, REDUNDANT
FAN SPEED	Specifies the rotation speed of the fan.	LOW*, HIGH
BRIGHTNESS	Specifies the brightness of the display, [MENU/HOME] key, and [↩] (Back) / [PEAK] key. Press and hold the [MENU/HOME] key to initialize the contrast/brightness settings. The Contrast/Brightness adjustment pop-up screen appears at the same time, allowing you to adjust the settings by turning the encoder with switch.	0 to 20 20*
CONTRAST	Specifies the display contrast. Press and hold the [MENU/HOME] key to initialize the contrast/brightness settings. The Contrast/Brightness adjustment pop-up screen appears at the same time, allowing you to adjust the settings by turning the encoder with switch.	0 to 20 10*
LED COLOR	Specifies the display color of the [MENU/HOME] key.	OFF, GREEN*, BLUE

Item	Description	Setting value (* represents the default value.)
LED ACTION	Specifies the error indicator displayed on the [MENU/HOME] key.	OFF, BLINK, ON*
DIMMER	Specifies the time until the backlight turns off. (When DIMMER is enabled, the display brightness is a maximum of 10. If the setting value is 10 or less, that value will be displayed.)	10 sec, 30 sec*, 1 min, 3 min, 30 min, NEVER
F16 CONFIG (RUio16FLX-D only)	Configures the INPUT, OUTPUT, and AES OUT port allocation for the RUio16FLX-D. When you change the INPUT value, the OUTPUT value will automatically change. When you set a value for OUTPUT, the remaining value will be assigned to AES OUT. Once the allocation is confirmed, a confirmation message appears. Pressing [OK] will restart the RUio16FLX-D.	INPUT: 16*, OUTPUT: 0*, AES OUT: 0* • The total allocation for INPUT, OUTPUT, and AES OUT is limited to 16. • The values can be changed in increments of two channels, and even numbers can be allocated.
REBOOT	Displays the confirmation for restarting.	RESTART THE SYSTEM
INITIALIZE	Specifies the type of memory that you want to initialize. Select the memory, and then press the encoder with switch. A confirmation message appears. Press [OK] to perform the initialization. FACTORY PRESET: Reverts this product to factory settings. CURRENT PARAMETERS: Initializes the HA parameters. DANTE SETTINGS: Initializes the Dante settings.  NOTE For instructions, see “Performing Initialization”.	FACTORY PRESET*, CURRENT PARAMETERS, DANTE SETTINGS

7.4.2. CONTROL menu

You can view and edit the settings for the two Ethernet ports on the unit.

You can control this product from R Remote or ProVisionaire by using the NW PORT (network port) and/or DANTE PORT (Dante port) for communications. You can use the NW PORT (network port) and DANTE PORT (Dante port) simultaneously when you want to handle the Dante circuit and control circuit separately.



While the CONTROL screen is displayed, turn the encoder with switch to select a parameter, and then press it to confirm.

NOTE

- Make sure that the network addresses of the NW PORT and DANTE PORT are unique. If you set them to the same address, an error message will appear.
- Make sure that the network addresses of the NW PORT and Dante PRIMARY/SECONDARY are unique. If you set them to the same address, an error message will appear.
- Do not set two or more values to DEFAULT GATEWAY. If you set two or more values, only one will be accepted as valid.

◆ NW PORT (Network port)

Network port is used for the control circuit. For more information on communications, see section (3) of “[Communication method](#)”.

The following table provides a description of the items and parameters that can be selected, and the values that can be set.

Item	Description	Setting value (* represents the default value.)
NETWORK MODE	Selects the IP address setting mode for the network port. This IP address is used when remotely controlling the unit from a computer, or when updating the firmware.	DHCP, STATIC IP*
IP ADDRESS	Specifies the IP address for the network port (when STATIC IP is specified).	192.168.0.2* In the case of DHCP, the current value is shown.
SUBNET MASK	Specifies the SUBNET MASK for the network port (when STATIC IP is specified).	255.255.255.0* In the case of DHCP, the current value is shown.
DEFAULT GW	Specifies the DEFAULT GATEWAY for the network port (when STATIC IP is specified).	192.168.0.1* In the case of DHCP, the current value is shown.

◆ DANTE PORT (Dante port)

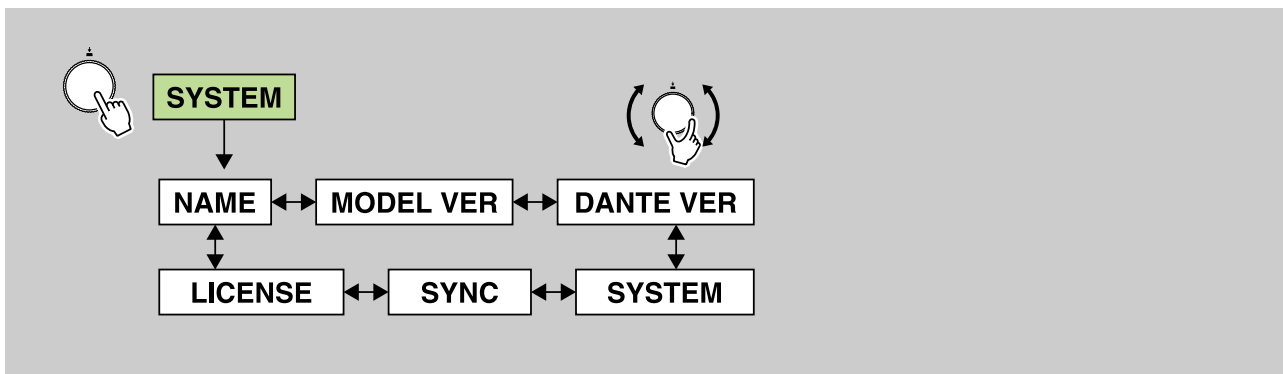
Dante port is used for the control circuit. For more information on communications, see section (2) of “[Communication method](#)”.

The following table provides a description of the items and parameters that can be selected, and the values that can be set.

Item	Description	Setting value (* represents the default value.)
NETWORK MODE	Selects the IP address setting mode for the Dante port. This IP address is used when remotely controlling the unit from a computer, or when updating the firmware.	DHCP*, STATIC IP
IP ADDRESS	Specifies the IP address for the Dante ports (when STATIC IP is specified).	(Determined by DHCP or Link Local)*
SUBNET MASK	Specifies the SUBNET MASK for the Dante port (when STATIC IP is specified).	(Determined by DHCP or Link Local)*
DEFAULT GW	Specifies the DEFAULT GATEWAY for the Dante port (when STATIC IP is specified).	(Determined by DHCP or Link Local)*

7.4.3. SYSTEM menu

This menu displays the unit version number, the SYSTEM/SYNC status, and other information.



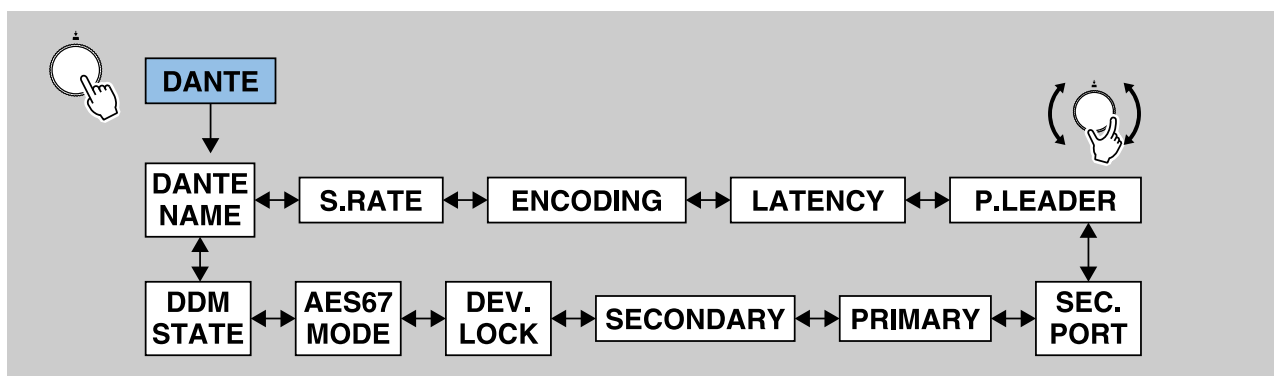
While the SYSTEM screen is displayed, turn the encoder with switch to select a parameter.

The screen displays the following items. Settings cannot be changed on this product.

Item	Description
NAME	Indicates the Dante device label.
MODEL VER	Indicates the firmware version of this product.
DANTE VER	Indicates the Dante versions. (Dante firmware version, FPGA version, Yamaha software version)
SYSTEM	Indicates the system status of this product. For details on the messages, see "SYSTEM messages" .
SYNC	Indicates the synchronization status of this product. For details on the messages, see "SYNC messages" .
LICENSE	Indicates the open-source license. Press the encoder with switch to select the license text. When you have selected a license text, you can scroll through the license text by turning the encoder with switch.

7.4.4. DANTE Menu

This menu displays information for Dante-related settings.



On the DANTE screen, turn the encoder with switch to select a parameter.

The screen displays the following items. Settings cannot be changed on this product.

Item	Description
DANTE NAME	Indicates the Dante device label. The device label can be specified from Dante Controller. Follow the instructions below: - Do not modify the first five characters, which are Y0##- (## represents the UNIT ID). Even if you try to change these characters, they will automatically be corrected to Y0##-. - You can use up to 31 characters total.
S.RATE (SAMPLE RATE)	Indicates the sampling frequency (Fs) and Pull-Up/Down status.
ENCODING	Indicates the bit depth. Supports 24-bit and 32-bit. The default value is 24-bit. You can modify the setting from Dante Controller.
LATENCY	Indicates the latency value. Supports 0.25 ms, 0.5 ms, 1.0 ms, 2.0 ms, and 5.0 ms. (If the unit belongs to a DDM domain, you can additionally select from 10 ms, 20 ms, and 40 ms.) The initial value is 1.0 ms. You can modify the setting from Dante Controller.
P.LEADER (PREFERRED LEADER)	Indicates the PREFERRED LEADER status (ON/OFF). (If the unit belongs to a DDM domain, a "-" (hyphen) appears.)
SEC.PORT (SECONDARY PORT)	Indicates the operating mode setting for the SECONDARY port.
PRIMARY	Indicates the link status and speed, and IP address for the PRIMARY port.
SECONDARY	Indicates the link status and speed, and IP address for the SECONDARY port.
DEV.LOCK	Indicates the DANTE DEVICE LOCK status (ON/OFF).
AES67 MODE	Indicates the AES67 MODE status (ENABLE/DISABLE).

Item	Description
DDM STATE	Indicates whether the unit belongs to a DDM domain, and the status of Controller Permissions. • - (no DDM connection) • READ/WRITE • READ ONLY • DISCONNECT (when the unit belongs to a DDM domain, but is not connected to DDM)

8. Operations

8.1. Adjusting the Contrast and Brightness

You can adjust the display contrast (CONTRAST) and the brightness (BRIGHTNESS) of the display, [MENU/HOME] key, and [↩] (Back) / [PEAK] key by following one of two methods as described below.

8.1.1. How to press and hold the [MENU/HOME] key

1. Press and hold the [MENU/HOME] key. (You can do so on any screen.)

The Contrast/Brightness adjustment popup screen is displayed, and an editable parameter is highlighted. Additionally, CONTRAST and BRIGHTNESS will be reset to their initial values. (CONTRAST: 10, BRIGHTNESS: 20)

2. While continuing to press and hold the [MENU/HOME] (Back) key, press the encoder with switch to select the CONTRAST or BRIGHTNESS parameter.

Pressing the encoder with switch repeatedly will change the parameter selection.



3. While continuing to press and hold the [MENU/HOME] key, turn the encoder with switch to modify the parameter value.

Turn the encoder with switch to the left to reduce the value, and turn it to the right to increase the value. The parameter value is immediately modified.

8.1.2. Using BRIGHTNESS and CONTRAST in the SETUP menu

1. While the MENU TOP screen is displayed, turn the encoder with switch to select SETUP, and then press it to confirm.

2. In the SETUP menu, turn the encoder with switch to select BRIGHTNESS or CONTRAST, and then press it to confirm.



3. Turn the encoder with switch to select a value, and then press it to confirm.

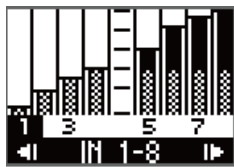
Related link(s)

["SETUP menu"](#)

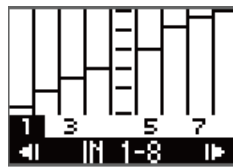
8.2. Clearing the PEAK HOLD

The PEAK HOLD setting is always on.

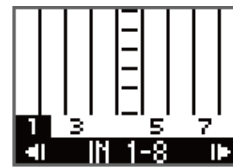
While a METER screen is displayed, press and hold the [↩] (Back) / [PEAK] key to clear the peak indication being held for all ports.



When the meters are moving



When the meters are not moving, but only the PEAK HOLD bar is displayed



When PEAK HOLD is cleared

8.3. Locking the Panel

You can lock the panel to prevent parameter changes due to accidental operation. Even when panel lock is enabled, you can still control parameters from supported devices.

While the unit is operating, press and hold the [MENU/HOME] key and [↩] (Back) / [PEAK] key simultaneously for more than 3 seconds.

The message "FRONT PANEL LOCKED" appears. In addition, the PANEL LOCK icon appears on the status bar of the home screen.



PANEL LOCK icon

NOTE

- This state will be maintained even if the power is turned off and then turned back on.
 - If you turn the power off while the panel is locked to perform a forced initialization*, the panel lock will be disabled.
- * This is one of the methods by which to initialize the unit.
To initialize the unit, while pressing and holding the [MENU/HOME] key and [↩] (Back) / [PEAK] key simultaneously, turn the power on. See "[Performing a forced initialization](#)".

8.4. Unlocking the Panel

While the panel is locked, press and hold the [MENU/HOME] and [↩] (Back) / [PEAK] keys simultaneously for 3 seconds or more.

The message "FRONT PANEL UNLOCKED" appears, and the panel is unlocked. In addition, the PANEL LOCK icon disappears from the home screen.

Related link(s)

["Home Screen"](#)

8.5. Changing the [MENU/HOME] Key Setting for Normal Status

You can modify the light on/off and color settings for the color bar indicator that indicates a normal status. For details on each setting, see [MENU/HOME] in [“Names and Functions”](#).

1. While the MENU TOP screen is displayed, turn the encoder with switch to select SETUP, and then press it to confirm.
2. In the SETUP menu, turn the encoder with switch to select LED COLOR, and then press it to confirm.



3. Turn the encoder with switch to select OFF (not lit), GREEN (lit), or BLUE (lit), and then press it to confirm.

Related link(s)
[“SETUP menu”](#)

8.6. Changing the [MENU/HOME] Key Setting for Error Status

You can modify the light on/flash/off settings for the color bar indicator that indicates an error or warning. For details on each setting, see [MENU/HOME] in [“Names and Functions”](#).

1. While the MENU TOP screen is displayed, turn the encoder with switch to select SETUP, and then press it to confirm.
2. In the SETUP menu, turn the encoder with switch to select LED ACTION, and then press it to confirm.



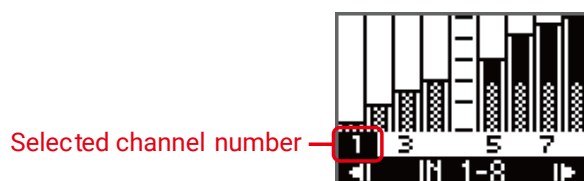
3. Turn the encoder with switch to select OFF (not lit), BLINK, or ON (lit), and then press it to confirm.

Related link(s)
[“SETUP menu”](#)

8.7. Setting the INPUT Channel Parameters

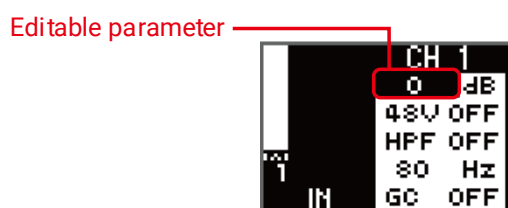
You can set the HA gain value (0 dB to +64 dB), +48V (phantom power) ON/OFF, HPF ON/OFF, HPF cutoff frequency (20.0 Hz to 600 Hz), and GC (Gain Compensation) ON/OFF.

1. While the **METER IN** screen is displayed, turn the encoder with switch to select a channel number.



2. Press the encoder with switch to display the parameter edit screen.

An editable parameter is highlighted.



NOTE

Press the [] (Back) / [PEAK] key on the parameter edit screen to return to the METER IN screen.

3. Press the encoder with switch repeatedly to highlight the parameter you want to edit, and then turn the encoder to modify the parameter value.

The parameter value is immediately modified.

NOTE

- Press the [] (Back) / [PEAK] key to return to the METER IN screen.
- If you confirm the change to the GC setting from OFF to ON, the HA gain value for the corresponding channel will be used as the compensation gain value. On the other hand, if you confirm the change to the GC setting from ON to OFF, the compensation gain value will be used as the HA gain value.

4. When you finish setting the parameters, press the [] (Back) / [PEAK] key to return to the METER IN screen.

Related link(s)

[“METER IN”](#)

9. Changing the Mute Setting at Start Up

When you first start up and use this product after purchasing it, the inputs and outputs will be muted until the unit receives HA parameter settings.

NOTE

The message "SYNCHRONIZING WITH CONSOLE OR CONTROLLER" appears on the screen (see "[SYNC messages](#)"). In addition, the MUTE icon () appears on the home screen.

This is because START UP mode is set to REFRESH with MUTE by default.



You can change the mute setting at start up in START UP mode.

1. While the MENU TOP screen is displayed, turn the encoder with switch to select **SETUP**, and then press it to confirm.
2. In the **SETUP** menu, turn the encoder with switch to select **START UP** (START UP mode), and then press it to confirm.
3. Turn the encoder with switch to select **REFRESH with MUTE**, **RESUME w/o MUTE**, or **REFRESH w/o MUTE**.

9.1. REFRESH with MUTE (Initial Setting)

The unit starts up with the initialized HA parameters. The inputs and outputs will be muted until the unit receives HA parameter settings from the supported device.

NOTE

To control the HA parameters from the supported device, select this option to prevent inadvertently outputting unmuted audio until the settings are received.

9.2. RESUME w/o MUTE

The unit starts up in the state it was in prior to the most recent power-off. The inputs and outputs will not be muted.

9.3. REFRESH w/o MUTE

The unit starts up with the initialized HA parameters. The initial values are the same as for REFRESH with MUTE. However, the inputs and outputs will not be muted.

Related link(s)

["SETUP menu"](#)

10. Performing Initialization

10.1. Initializing the Unit (Restoring the Factory Settings)

There are two methods by which to restore the factory settings.

■ Performing a forced initialization

If an error occurs in the unit's internal memory and you become unable to operate the unit, follow the steps below.

1. Turn off the power to the unit.

2. Turn on the power while pressing and holding the [MENU/HOME] and [↶] (Back) / [PEAK] keys simultaneously, and then wait until the home screen is displayed (in about 20 seconds) while you continue to hold down the two keys.

The message "FACTORY INITIALIZE ACCEPTED!" appears, and the initialization process of this unit begins.



NOTE

If you perform a forced initialization while the panel is locked, the panel will be unlocked.

3. When the message "INITIALIZE DONE. REBOOT?" appears, turn the encoder with switch to select OK, and then press it to confirm. The unit reboots.

NOTE

After the initialization is complete, be sure to select OK to reboot the unit before starting to use it.

■ Selecting FACTORY PRESET on screen

1. While the MENU TOP screen is displayed, turn the encoder with switch to select SETUP, and then press it to confirm.

2. In the SETUP menu, turn the encoder with switch to select INITIALIZE, and then press it to confirm.

3. Turn the encoder with switch to select FACTORY PRESET.



4. When the message "FACTORY PRESET INITIALIZE?" appears, turn the encoder with switch to select OK, and then press it to confirm.

The initialization process begins.

 NOTE

If you turn the encoder with switch to select CANCEL, and then press it to confirm, the initialization process will not begin, and the previous screen will be displayed.

5. When the message “INITIALIZE DONE. REBOOT?” appears, turn the encoder with switch to select OK, and then press it to confirm. The unit reboots.

 NOTE

After the initialization is complete, be sure to select OK to reboot the unit before starting to use it.

Related link(s)

[“SETUP menu”](#)

10.2. Initializing the Current Parameters

Follow the steps below to reset the HA parameter values to the factory settings.

1. While the MENU TOP screen is displayed, turn the encoder with switch to select SETUP, and then press it to confirm.
2. In the SETUP menu, turn the encoder with switch to select INITIALIZE, and then press it to confirm.
3. Turn the encoder with switch to select CURRENT PARAMETERS.



4. When the message “CURRENT PARAMETERS INITIALIZE?” appears, turn the encoder with switch to select OK, and then press it to confirm.

Initialization of the HA parameter values begins.

 NOTE

If you turn the encoder with switch to select CANCEL, and then press it to confirm, the initialization process will not begin, and the previous screen will be displayed.

Related link(s)

[“SETUP menu”](#)

10.3. Initializing the Dante Settings

Follow the steps below to reset the Dante parameter values to the factory settings.

1. While the MENU TOP screen is displayed, turn the encoder with switch to select **SETUP**, and then press it to confirm.
2. In the **SETUP** menu, turn the encoder with switch to select **INITIALIZE**, and then press it to confirm.
3. Turn the encoder with switch to select **DANTE SETTINGS**.



4. When the message “DANTE SETTINGS INITIALIZE?” appears, turn the encoder with switch to select **OK**, and then press it to confirm.

Initialization of the Dante settings begins.



NOTE

If you turn the encoder with switch to select **CANCEL**, and then press it to confirm, the initialization process will not begin, and the previous screen will be displayed.

Related link(s)

[“SETUP menu”](#)

10.4. Factory-set Initial Values

The following table provides the factory-set initial values.

Parameter		Initial value	
SETUP	UNIT ID	Y001	
	START UP (START UP Mode)	REFRESH with MUTE	
	SEC.PORT (SECONDARY PORT)	DAISY CHAIN	
	FAN SPEED	LOW	
	BRIGHTNESS	20	
	CONTRAST	10	
	LED COLOR	GREEN	
	LED ACTION	ON	
	DIMMER	30 sec	
	F16 CONFIG (RUio16FLX-D only)	IN: 16, OUT: 0, AES: 0	
CONTROL	NW PORT	NETWORK MODE	STATIC IP
		IP ADDRESS	192.168.0.2
		SUBNET MASK	255.255.255.0
		DEFAULT GW	192.168.0.1
CONTROL	DANTE PORT	NETWORK MODE	DHCP
		IP ADDRESS	(determined by DHCP or Link Local)
		SUBNET MASK	(determined by DHCP or Link Local)
		DEFAULT GW	(determined by DHCP or Link Local)
HA parameter		HA Gain	0 dB
		+48V	OFF
		HPF	OFF, 80 Hz
		GC (GAIN COMPENSATION)	OFF, 0 dB

Parameter		Initial value
Dante settings	Sample Rate	96 kHz (follower), Pull-up/down = None ^{*1}
	Latency	1.0 msec
	Encoding	PCM 24-bit
	Dante Redundancy	Switched
	IP Address	Auto
	Device Label	Y001-Yamaha-RUio1608SB-D-nnnnnn ^{*2} Y001-Yamaha-RUio0804-D-nnnnnn ^{*2} Y001-Yamaha-RUio16FLX-D-nnnnnn ^{*2}
	Channel Label	<Channel number>
	AES67 Mode	Disabled
	Device Lock	Unlock

^{*1} The default setting of the Sample Rate is 96 kHz. Please be careful when using this product in combination with devices that do not support 96 kHz (such as CL or QL series).

^{*2} "nnnnnn" represents the lowest six digits of the Dante Primary MAC Address.

11. Operations from the External Device

11.1. Specifying the Device Label

The device label can be specified from Dante Controller.



Device label

The middle row on the home screen displays part of the device label. The first five characters Y0##- (## represents the UNIT ID) are not displayed.

Assign the device label as follows.

- Do not modify the first five characters, which are Y0##- (Y0## represents the UNIT ID). Even if you try to change these characters, they will automatically be corrected to Y0##-.
- You can use up to 31 characters total.

11.2. Identifying This Product among the Devices in the Network

To identify this product among multiple devices in the network, issue a Device Identify command from a supported device or Dante Controller.

Issuing the command from a supported device

If the Device Identify command is issued from a supported device, the front panel display and [+48V] key of the unit will flash only while you are touching the mixer or pressing the mouse in R Remote. At the same time, the [MENU/HOME] key and the [↩] (Back) / [PEAK] key will flash green.

Issuing the command from Dante Controller

If the Device Identify command is issued from Dante Controller, the front panel display and [+48V] key of the unit will flash green for ten seconds. At the same time, the [MENU/HOME] key and the [↩] (Back) / [PEAK] key will flash green.

11.3. Turning Remote Only On/Off

The Remote Only function disables parameter editing from the front panel of this product to prevent unintentional changes to parameter values.

This function is always off when this product starts up.

NOTE

- You can still edit the SETUP menu items (SETUP and CONTROL) even when Remote Only is On.
- You can still adjust parameters from a supported device even when Remote Only is On.

To turn it On

Set it to On from the supported device when this product and the device are synchronized. Even if the connection to the supported device is lost while the Remote Only function is On, the function will remain turned On. When Remote Only is On, the REMOTE ONLY icon appears on the home screen of this product.



REMOTE ONLY icon

To turn it Off

Disable the function from the supported device, or turn the power to this product off and then on again. When Remote Only is turned Off, the REMOTE ONLY icon disappears.

11.4. Control from an External Device

Connecting this product to a supported device enables you to control this product remotely. The display of the supported device that is connected to this product indicates the model name and UNIT ID of this product. For information on connecting a supported device to this product, and monitoring and controlling the unit from the device, please refer to the owner's manual for the corresponding supported device.

11.4.1. Parameters that you can monitor and control

"*" (asterisk) indicates a parameter that applies to With Recall. The With Recall function applies the HA parameters stored in the mixing console to this product when a scene is recalled on the console.

Parameter	Description
HA Gain*	Adjusts the gain in the range of 0 dB to +64 dB in 1 dB units.
+48V ON/OFF*	Turns +48V phantom power ON or OFF for each channel.
HPF ON/OFF*	Turns the high pass filter ON or OFF.
HPF Cutoff Frequency*	Adjusts the cutoff frequency of the high pass filter (12 dB/Oct.) in the range of 20 Hz to 600 Hz in 60 steps.
GC ON/OFF*	Turns the Gain Compensation ON or OFF.
REMOTE ONLY ON/OFF	Turns Remote Only on/off.
Analog input level meter	Indicates a level meter for each analog input channel.
Analog output level meter	Indicates a level meter for each analog output channel.
Digital output level meter (RUio16FLX-D only)	Indicates a level meter for each digital output channel.
Firmware version	Indicates the firmware version.
Device Identify command	Identifies the target unit among multiple devices in a Network.
[SYSTEM] / [SYNC] status indication and messages	Provides notifications via [SYSTEM] / [SYNC] status indication and messages.

11.4.2. Communication method

Three communication methods are available to control the parameters of this product.

Communication method	Connector used to control the parameters	Details
(1) Superimposing a control signal onto a Dante audio signal <Dante>	Dante [PRIMARY] connector, Dante [SECONDARY] connector	- A single unit of this product can be controlled from up to four controllers. - Redundancy supported.
(2) Using the Dante [PRIMARY] connector via network communications <Monitor, remote>	Dante [PRIMARY] connector	- A single unit of this product can be controlled from up to six controllers. - Redundancy not supported.  NOTE If the Dante PRIMARY address is not used, make sure that the NETWORK MODE, and the IP ADDRESS subnet for the DANTE PORT, match the address settings for external device control on the controllers.
(3) Using the network connector via network communications <Monitor, remote>	Network connector	- A single unit of this product can be controlled from up to six controllers. - Redundancy not supported.

12. Reference

12.1. Message List

The front panel displays various messages such as SYSTEM, SYNC, errors, warnings, information, and confirmations.

12.1.1. SYSTEM messages

The status display shown in the SYSTEM messages indicates the operating status of this product.



NOTE

- If the ID is blank in the table below, only the message will appear on the display.

ID	Display on This Product	Display on R Remote	Description	Possible Solution
	NORMAL	---	Operating normally.	---
E00-003	DANTE MODULE ERROR!	DANTE module error!	An error has occurred in the Dante module.	Restart this unit.
E00-004	ILLEGAL MAC ADDRESS! (CONTACT US)	Illegal MAC Address!	Because the MAC Address setting has been damaged, communication is not possible.	Contact your Yamaha dealer.
E00-005	UNIT FAN HAS MALFUNCTIONED! (CONTACT US)	Unit Fan has Malfunctioned!	The cooling fan has stopped.	Check to see if there is anything stuck in the fan. If this does not solve the problem, contact your Yamaha dealer.
E00-006	MEMORY ERROR!	Memory Error.	Failed to read from non-volatile memory.	Information that was saved during the previous operation was lost. You must configure the settings again.
E00-009	VERSION MISMATCH WITH DANTE MODULE!	Version mismatch.	The unit's firmware and the Dante firmware are not compatible. This unit's firmware and the supported digital mixer's firmware are not compatible.	Acquire compatible versions.
E00-010	DANTE AUDIO RESOURCE OVERFLOW!	DANTE audio resource overflow.	The number of Dante flows has exceeded the limit.	Re-configure the Dante audio routing, for example by eliminating unneeded routings, or by using multicast rather than unicast to improve the efficiency.

12.1.2. SYNC messages

The status display shown in the SYNC messages indicates the Dante network status.

NOTE

- If the ID is blank in the table below, only the message will appear on the display.

ID	Message	Description	Explanation or possible solution
	NORMAL	Functioning correctly as a word clock follower.	This indicates that the device is a word clock follower.
	DANTE WORDCLOCK LEADER	Functioning correctly as the word clock leader.	This indicates that the device is the word clock leader.
	SYNCHRONIZING WITH CONSOLE OR CONTROLLER	Currently processing synchronization within the Dante network.	Wait until startup or synchronization is completed. It may take up to 45 seconds for this to be completed.
E01-003	WRONG WORDCLOCK!	The word clock setting is incorrect.	On the supported digital mixer or in Dante Controller, set the clock leader and the sampling frequency correctly.
E01-004	DANTE PORT DOES NOT HAVE CONNECTION!	The Dante network is not connected.	Check whether an Ethernet cable might be disconnected or broken.
E01-005	DANTE CONNECTION ERROR!	Other Dante devices cannot be found because the Dante network connections are incorrect.	Check whether the Ethernet cable connections are correct.
E01-006	DANTE IS NOT WORKING BY GIGA BIT!	A device that does not support Giga-bit Ethernet is connected.	If you are transferring audio via Dante, use devices that support Giga-bit Ethernet.
E01-007	DANTE IS WORKING AT SECONDARY!	In the case of a redundant network, communication is occurring via the Dante [SECONDARY] connector.	Check the circuit that is connected to the Dante [PRIMARY] connector.
E01-008	ERROR OCCURRED AT SECONDARY PORT!	In the case of a redundant network, a problem has occurred in the circuit that is connected to the Dante [SECONDARY] connector.	Check the circuit that is connected to the Dante [SECONDARY] connector.
E01-010	DANTE IS NOT WORKING BY GIGA BIT!	Functioning as the word clock leader. A device that does not support Giga-bit Ethernet is connected.	This indicates that the device is the word clock leader. If you are transferring audio via Dante, use devices that support Giga-bit Ethernet.

ID	Message	Description	Explanation or possible solution
E01-011	DANTE IS WORKING AT SECONDARY!	Functioning as the word clock leader. In the case of a redundant network, communication is occurring via the Dante [SECONDARY] connector.	This indicates that the device is the word clock leader. Check the circuit that is connected to the Dante [PRIMARY] connector.
E01-012	ERROR OCCURRED AT SECONDARY PORT!	Functioning as the word clock leader. In the case of a redundant network, a problem has occurred in the circuit that is connected to the Dante [SECONDARY] connector.	This indicates that the device is the word clock leader. Check the circuit that is connected to the Dante [SECONDARY] connector.

12.1.3. Error messages

Message	Description	Possible Solution
HAAD HARD ERROR!	A problem with HAAD was detected.	If the problem persists, contact your Yamaha dealer.

12.1.4. Warning messages

Message	Description	Possible Solution
DANTE DEVICE LOCK IS ENABLED!	You may have attempted to change this unit's UNIT ID or a Dante setting such as SECONDARY PORT while Dante Device Lock was enabled.	Use Dante Controller to release Dante Device Lock.
DANTE DDM LOCAL POLICY IS READ ONLY!	You may have attempted to change this unit's UNIT ID or a Dante setting such as SECONDARY PORT while Local Policy in DDM was set to Read Only.	Use the DDM setting application to cancel Read Only for Local Policy.
IP ADDRESS DUPLICATED	The same IP addresses exist on the network. (This message is not supported in V1.0.)	Resolve the IP address conflict.
SAME NET ADDR! (NW PORT & DNT PORT ***)	There is a network address conflict between the network port and the Dante port.	Resolve the network address conflict.
SAME NET ADDR! (NW PORT & DNT PRI ***)	There is a network address conflict between the network port and the PRIMARY port.	Resolve the network address conflict.
SAME NET ADDR! (NW PORT & DNT SEC ***)	There is a network address conflict between the network port and the SECONDARY port.	Resolve the network address conflict.
SAME NET ADDR! (DNT PORT & NW PORT ***)	There is a network address conflict between the Dante port and the network port.	Resolve the network address conflict.

Message	Description	Possible Solution
SAME NET ADDR! (DNT PORT & DNT PRI ***)	There is a network address conflict between the Dante port and the PRIMARY port.	Resolve the network address conflict.
SAME NET ADDR! (DNT PORT & DNT SEC ***)	There is a network address conflict between the Dante port and the SECONDARY port.	Resolve the network address conflict.

“***” represents the conflicting network address.

12.1.5. Information messages

Message	Description
FRONT PANEL LOCKED	Panel Lock has been enabled.
FRONT PANEL UNLOCKED	Panel Lock is now disabled.
REMOTE ONLY LOCAL CONTROL IS DISABLED	The parameters for the INPUT/OUTPUT channels are read-only.
AUDIO MUTED NO SYNC WITH MIXER OR APP	Muted.
DAISY CHAIN SECONDARY PORT	The SECONDARY port has been set to DAISY CHAIN.
FACTORY INITIALIZE ACCEPTED!	Initialization of the unit (restoring the factory settings) has begun.
+48V ACTIVE TEMPORARY OFF	The phantom power is temporarily off.

12.1.6. Confirmation messages

Message	Description
FACTORY PRESET INITIALIZE?	Initialize the unit (restore the factory settings)?
INITIALIZE DONE. REBOOT?	Finished initializing the unit (restoring the factory settings). Restart the unit?
CURRENT PARAMETERS INITIALIZE?	Start HA initialization?
DANTE SETTINGS INITIALIZE?	Start initializing the Dante settings?
RESTART THE SYSTEM?	Restart the unit?

12.2. General Specifications

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.

	RUio1608SB-D	RUio0804-D	RUio16FLX-D
Number of Analog Inputs	16	8	16
Number of Analog Outputs	8	4	16
AES/EBU Output	0	0	16

		RUio1608SB-D	RUio0804-D	RUio16FLX-D
Sampling Frequency		44.1 kHz / 48 kHz / 88.2 kHz / 96 kHz $\pm$ 200 ppm +4.1667%, +0.1%, -0.1%, -4.0% $\pm$ 200 ppm		
Signal Delay		Less than 1.7 ms@Fs=96 kHz, 2.0 ms@Fs=48 kHz Analog INPUT to analog OUTPUT of this product via DM5 over Dante Dante Receive Latency set to 0.25 ms		
Power Requirements		100–240 V, 50 Hz/60 Hz		
Power Consumption		40 W	30 W	45 W
Heat Dissipation		35 kcal/h	26 kcal/h	39 kcal/h
Dimensions	W × H × D	374 × 170 × 145 mm	480 × 44 × 369 mm	
Weight		3.5 kg	3.7 kg	4.0 kg
NC value ^{*1}	Fan Speed LOW	20	20	20
	Fan Speed HIGH	25	25	25
Approximate Munsell value of exterior color		N5 (RUio0804-D, RUio16FLX-D: Front Panel only)		
Operating Temperature Range		0 °C to 40 °C		
Storage Temperature Range		-20 °C to 60 °C		
Included Accessories		Read This First × 1, Power cord × 1 ^{*2} , 3-Pin Euroblock plugs × 16 (only for RUio16FLX-D), Cable ties × 16 (only for RUio16FLX-D)		

*1 Measurement position: 1 m from the front of the unit

*2 Multiple AC power cords which have different kinds of plug shapes may be included depending on the region.

12.3. Audio Characteristics

During the measurement, the output impedance of the signal generator is 150 Ω . The output load impedance is 10 k Ω . Where specifications for the RUio1608SB-D differ from the RUio0804-D, this manual places specifications that apply only to the RUio0804-D in curly brackets { }.

12.3.1. Frequency response

Fs=96 kHz or Fs=48 kHz @20 Hz–20 kHz, reference to the nominal output level @1 kHz

RUio1608SB-D, RUio0804-D

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 1–16 {1–8}	OUTPUT 1–8 {1–4}	10 k Ω	GAIN: +64 dB	–1.5	0.0	0.5	dB

RUio16FLX-D

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 1–16	OUTPUT 1–16	10 k Ω	GAIN: +64 dB	–1.5	0.0	0.5	dB

12.3.2. Total harmonic distortion

Fs=96 kHz or Fs=48 kHz

RUio1608SB-D, RUio0804-D

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 1–16 {1–8}	OUTPUT 1–8 {1–4}	10 k Ω	+4 dBu@20 Hz–20 kHz, GAIN: +64 dB			0.15	%
INPUT 1–16 {1–8}	OUTPUT 1–8 {1–4}	10 k Ω	+4 dBu@20 Hz–20 kHz, GAIN: 0 dB			0.05	%

* Total harmonic distortion was measured using an 80 kHz, 48 dB/octave low pass filter.

RUio16FLX-D

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 1–16	OUTPUT 1–16	10 k Ω	+4 dBu@20 Hz–20 kHz, GAIN: +64 dB			0.15	%
INPUT 1–16	OUTPUT 1–16	10 k Ω	+4 dBu@20 Hz–20 kHz, GAIN: 0 dB			0.05	%

* Total harmonic distortion was measured using an 80 kHz, 48 dB/octave low pass filter.

12.3.3. Hum & Noise

Fs=96 kHz or Fs=48 kHz

RUio1608SB-D, RUio0804-D

EIN=Equivalent Input Noise

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 1–16 {1–8}	OUTPUT 1–8 {1–4}	10 kΩ	Rs=150 Ω, GAIN: +64 dB		–128 EIN		dBu
					–64		dBu
INPUT 1–16 {1–8}	OUTPUT 1–8 {1–4}	10 kΩ	Rs=150 Ω, GAIN: 0 dB		–85	–83	dBu
All Inputs	OUTPUT 1–8 {1–4}	10 kΩ	Rs=150 Ω, GAIN: 0 dB Main fader at nominal level and all INPUT 1–16 {1–8} in faders at nominal level. Measured with DM5 (or DM5 Compact) through Dante.			–71 {–74}	dBu
-	OUTPUT 1–8 {1–4}	10 kΩ	Residual output noise, Main stereo channel off.		–90	–88	dBu

* Hum & noise levels were measured using an A-weight filter.

RUio16FLX-D

EIN=Equivalent Input Noise

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 1–16	OUTPUT 1–16	10 kΩ	Rs=150 Ω, GAIN: +64 dB		–128 EIN		dBu
					–64		dBu
INPUT 1–16	OUTPUT 1–16	10 kΩ	Rs=150 Ω, GAIN: 0 dB		–85	–83	dBu
All Inputs	OUTPUT 1–16	10 kΩ	Rs=150 Ω, GAIN: 0 dB Main fader at nominal level and all INPUT 1–16 in faders at nominal level. Measured with DM5 (or DM5 Compact) through Dante.			–71	dBu
-	OUTPUT 1–16	10 kΩ	Residual output noise, Main stereo channel off.		–90	–88	dBu

* Hum & noise levels were measured using an A-weight filter.

12.3.4. Dynamic range

Fs=96 kHz or Fs=48 kHz

RUio1608SB-D, RUio0804-D

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 1–16 {1–8}	OUTPUT 1–8 {1–4}	10 kΩ	AD+DA, GAIN: 0 dB		109		dB
-	OUTPUT 1–8 {1–4}	10 kΩ	DA Converter		114		dB

* Dynamic range was measured using an A-weight filter.

RUio16FLX-D

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 1–16	OUTPUT 1–16	10 kΩ	AD+DA, GAIN: 0 dB		109		dB
-	OUTPUT 1–16	10 kΩ	DA Converter		114		dB

* Dynamic range was measured using an A-weight filter.

12.3.5. Crosstalk (@1 kHz)

RUio1608SB-D, RUio0804-D

From/To	To/From	Conditions	Min.	Typ.	Max.	Unit
INPUT N	INPUT (N-1) or (N+1)	INPUT 1–16 {1–8}, adjacent inputs, GAIN: 0 dB			-100	dB
OUTPUT N	OUTPUT (N-1) or (N+1)	OUTPUT 1–8 {1–4}, input to output			-100	dB

* Crosstalk was measured using a 22 kHz, 48 dB/octave filter.

RUio16FLX-D

From/To	To/From	Conditions	Min.	Typ.	Max.	Unit
INPUT N	INPUT (N-1) or (N+1)	INPUT 1–16, adjacent inputs, GAIN: 0 dB			-100	dB
OUTPUT N	OUTPUT (N-1) or (N+1)	OUTPUT 1–16, input to output			-100	dB

* Crosstalk was measured using a 22 kHz, 48 dB/octave filter.

12.4. Analog Input Standards *3 *4

Input Terminal	GAIN	Actual Load Impedance	For Use with Nominal	Input Level			Connector
				Sensitivity *1	Nominal	Max. before clip	
INPUT 1–16 {1–8}	+64 dB	10 kΩ	50–600 Ω Mics 600 Ω Lines	–80 dBu (0.078 mV)	–60 dBu (0.775 mV)	–40 dBu (7.75 mV)	XLR 3-hole chassis (Balanced) *2
	0 dB			–16 dBu (123 mV)	+4 dBu (1.23 V)	+24 dBu (12.3 V)	Euroblock (3.5 mm pitch) (Balanced) *5

*1 Sensitivity is the minimum level needed to output +4 dBu (1.23 V) or the specified level when the gain is set to maximum. (All faders and level controls are set to maximum.)

*2 1=GND, 2=HOT, 3=COLD

*3 0 dBu = 0.775 Vrms

*4 +48V DC (phantom power) is supplied to INPUT XLR type connectors via each individual software-controlled switch.

*5 Only RUio16FLX-D

12.5. Analog Output Standards *2

RUio1608SB-D, RUio0804-D

Output Terminal	Actual Source Impedance	For Use with Nominal	Output Level *3		Connector
			Nominal	Max. before clip	
OUTPUT 1–8 {1–4}	75 Ω	10 kΩ Lines	+4 dBu (1.23 V)	+24 dBu (12.3 V)	XLR 3-pin chassis (Balanced) *1

*1 1=GND, 2=HOT, 3=COLD

*2 0 dBu = 0.775 Vrms

*3 You can change the output level for the OUTPUT 1–8 {1–4} connectors. Contact your Yamaha dealer.

RUio16FLX-D

Output Terminal	Actual Source Impedance	For Use with Nominal	Output Level *3		Connector
			Nominal	Max. before clip	
OUTPUT 1–16	75 Ω	10 kΩ Lines	+4 dBu (1.23 V)	+24 dBu (12.3 V)	Euroblock (3.5 mm pitch) (Balanced)

*2 0 dBu = 0.775 Vrms

*3 You can change the output level for the OUTPUT 1–16 connectors. Contact your Yamaha dealer.

12.6. Digital I/O Standards

Terminal	Format	Data length	Level	Audio	Connector
Dante PRIMARY/ SECONDARY	Dante	24-bit / 32-bit	1000BASE-T	16ch TX / 8ch RX ^{*2} 8ch TX / 4ch RX ^{*3} 16ch TX / RX ^{*4}	EtherCON CAT5e ^{*1}
AES/EBU ^{*4}	AES/EBU Professional use	24-bit	RS-422	16ch output	Euroblock (3.5 mm pitch) (Balanced) ^{*4}

*1 CAT5e or higher cables are recommended for connections.

*2 RUio1608SB-D

*3 RUio0804-D

*4 RUio16FLX-D

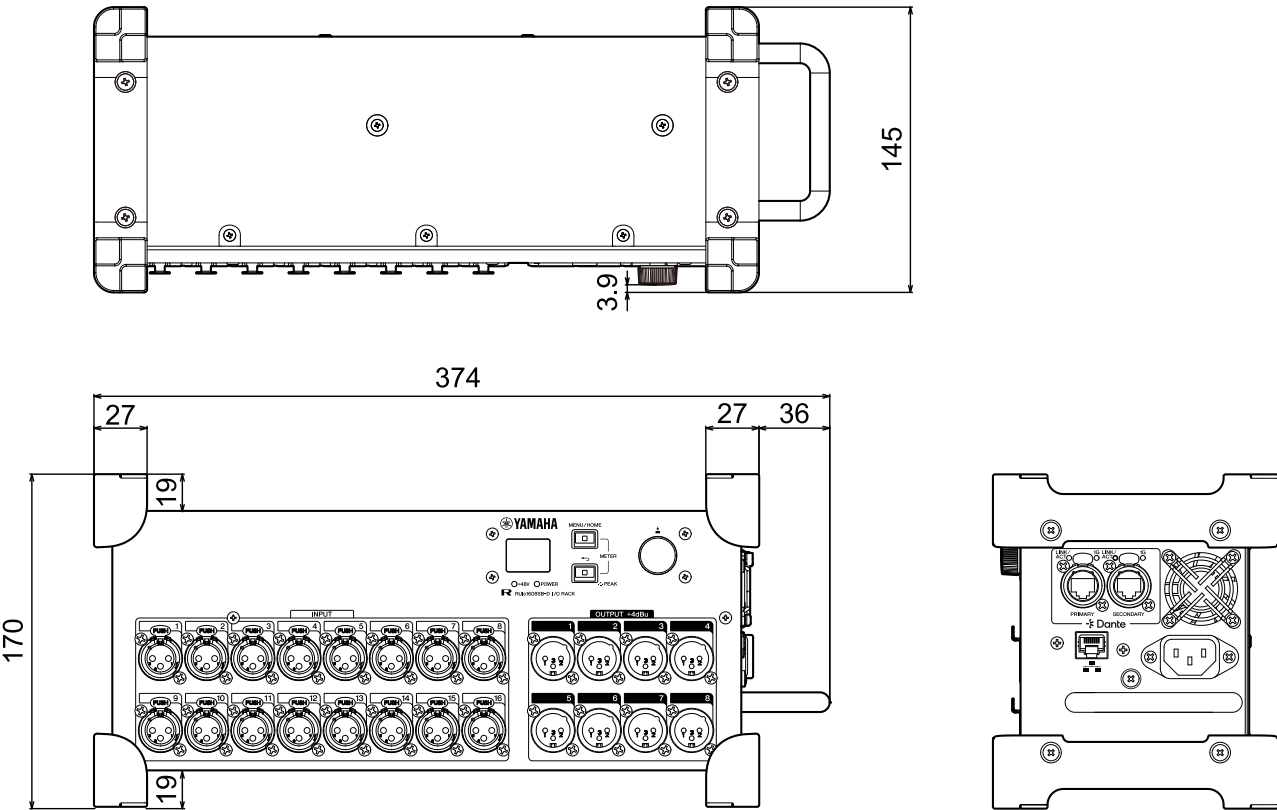
12.7. Control I/O Standards

Terminal	Format	Level	Connector
NETWORK	IEEE802.3	1000BASE-T/100BASE-TX	RJ-45 ^{*1}

*1 CAT5e or higher cables are recommended for connections.

12.8. Dimensions

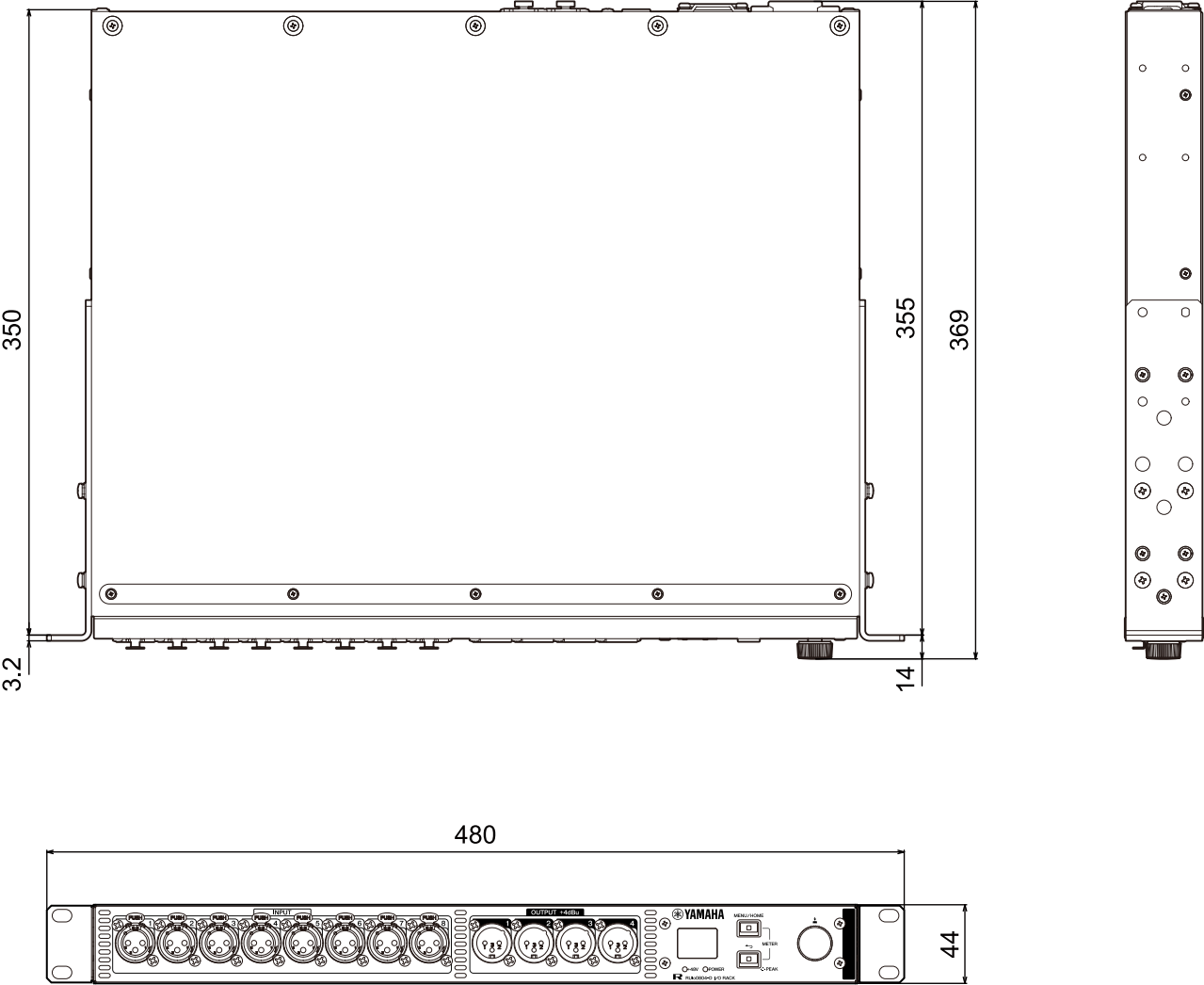
12.8.1. RUio1608SB-D



Approximate Munsell value of exterior color: N5

Unit: mm

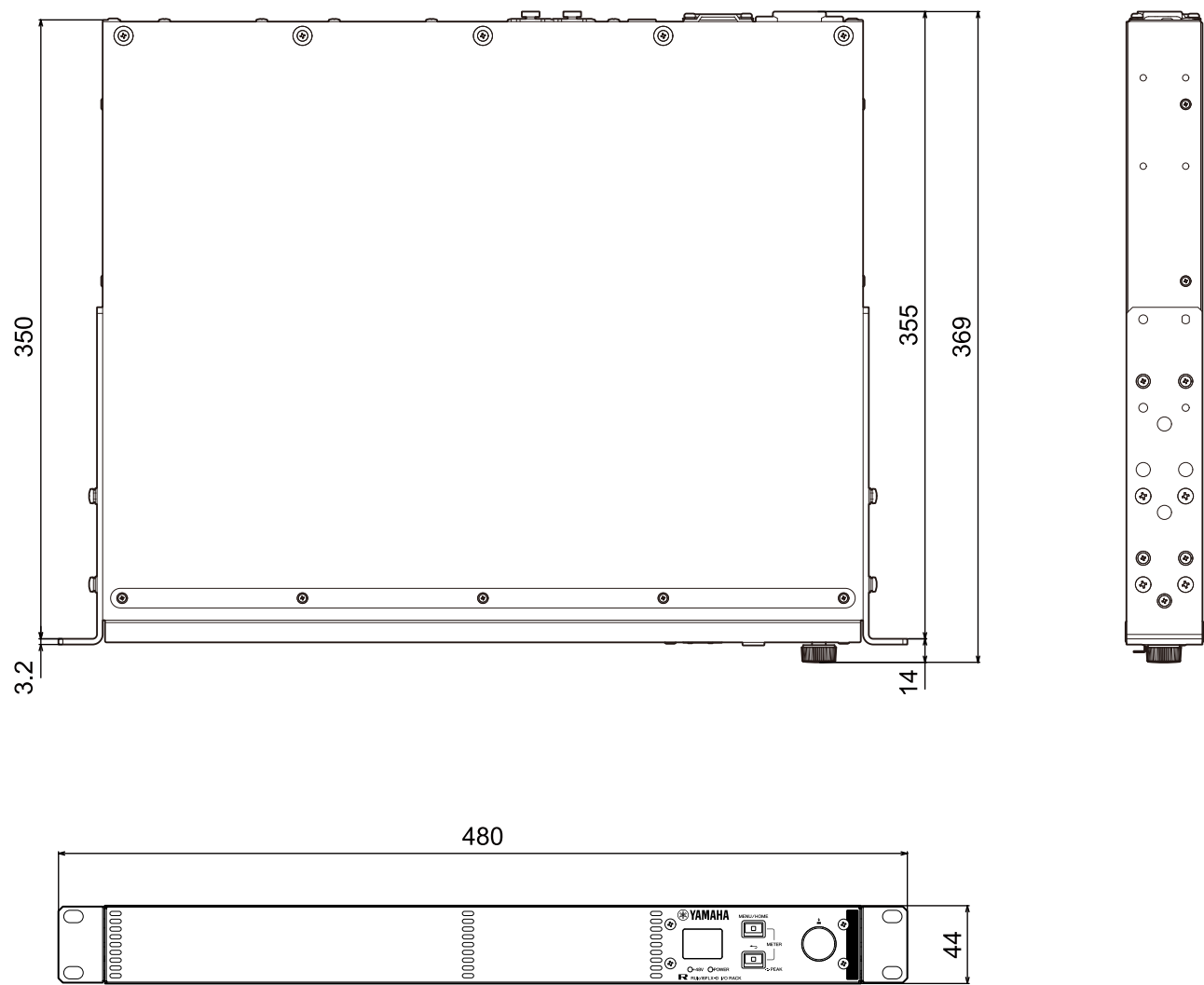
12.8.2. RUio0804-D



Approximate Munsell value of exterior color: N5 (Front Panel only)

Unit: mm

12.8.3. RUio16FLX-D



Approximate Munsell value of exterior color: N5 (Front Panel only)

Unit: mm

12.9. Troubleshooting

The Yamaha Pro Audio website provides a FAQ (frequently asked questions and answers).

<https://www.yamahaproaudio.com/>

Symptom	Cause	Possible Solution
The power won't turn on. The [POWER] indicator does not light.	The power cable is connected improperly.	Connect the power cable properly (see the AC IN connector section in "Names and Functions").
The unit is not receiving an input signal.	The cables are not connected properly.	Connect the cables properly.
	The internal head amplifier gain is not set to an appropriate level.	Set the internal head amplifier gain to an appropriate level.
	START UP mode is set to REFRESH with MUTE, but the supported device has not started up.	Start the supported device to send the settings to this product.
The input level is too low.	A condenser microphone is connected.	Turn phantom power for the corresponding channel(s) ON.
	The internal head amplifier gain is not set to an appropriate level.	Set the internal head amplifier gain to an appropriate level.
No sound is heard.	The cables are not connected properly.	Connect the cables properly.
	START UP mode is set to REFRESH with MUTE, but the supported device has not started up.	Start the supported device to send the settings to this product.
	The Dante settings for this product are not synchronized with those for the supported device.	If you are using a supported digital mixer, set CONSOLE ID to #1 to synchronize the settings. If you are using other supported devices, use Dante Controller to synchronize the settings.
The head amp cannot be controlled.	This product has not been mounted on the RACK of the supported device.	Mount this product on the RACK of the supported device.
Adjusting the internal head amp gain does not change the audio level.	GC (Gain Compensation) is turned on.	If you are not using GC (Gain Compensation), turn it off.
Dante Controller does not recognize this product.	An incorrect value has been assigned to the IP address for Dante.	Initialize this product.

Symptom	Cause	Possible Solution
R Remote does not recognize this product.	The UNIT ID setting conflicts with another R series unit.	Specify a unique UNIT ID for each device.
	The IP address setting is incorrect. Alternatively, the network is connected incorrectly.	Review the network settings. Make sure that they are set to the same subnet. If SECONDARY PORT is set to REDUNDANT, check whether the unit is connected via the Dante [PRIMARY] connector.
The [POWER] indicator is lit, but nothing appears in the display.	A malfunction may have occurred.	Contact your Yamaha dealer.
Keys, switches, or encoder operations do not work.	Panel Lock is enabled.	Defeat Panel Lock.

