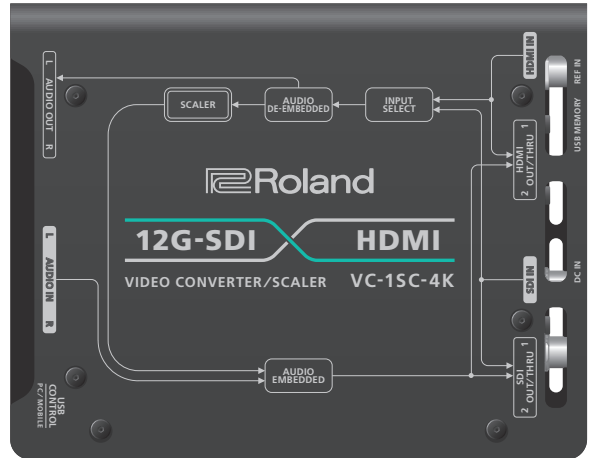


VC-1SC-4K

VIDEO CONVERTER/SCALER

Startup Guide



Checking the included items

Check that all of the included items are present. If any of the included items are missing, contact your dealer.

- | | |
|---|--|
| <input type="checkbox"/> VC-1SC-4K unit | <input type="checkbox"/> Spacer |
| <input type="checkbox"/> AC adaptor | <input type="checkbox"/> Startup Guide (this document) |
| <input type="checkbox"/> Power cord | <input type="checkbox"/> Leaflet "USING THE UNIT SAFELY" |
| <input type="checkbox"/> Rubber feet | |

To obtain the web manual

1. Visit the following website on your computer.

<https://proav.roland.com/manuals/>



2. Choose "VC-1SC-4K" as the product name.



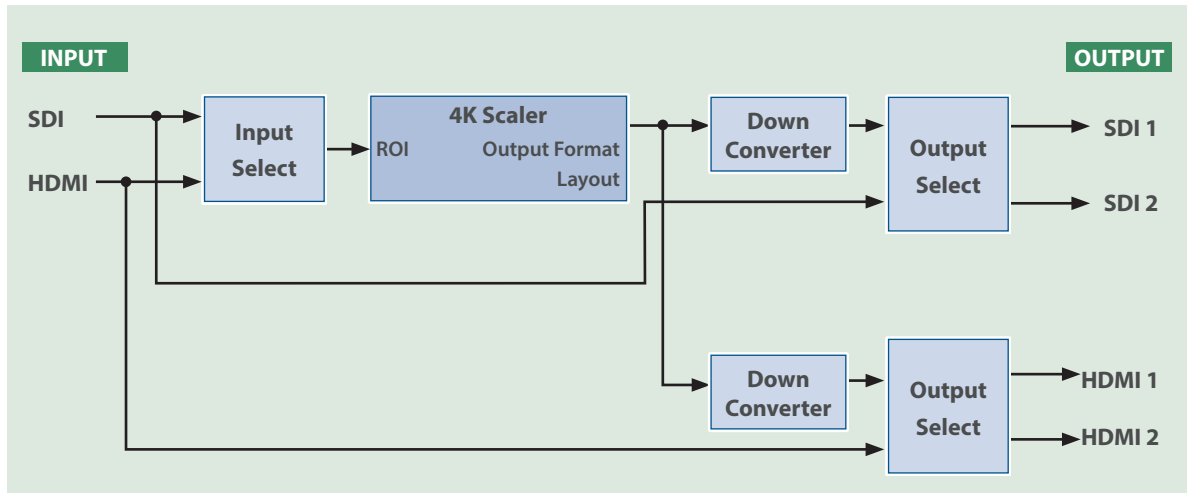
Before using this unit, carefully read "USING THE UNIT SAFELY" (p. 10) and "IMPORTANT NOTES" (p. 11). After reading, keep the document(s) where it will be available for immediate reference.

Overview of the VC-1SC-4K

This unit is a scaler that features SDI and HDMI inputs and outputs.

With this unit, you can convert signals between SDI and HDMI connectors, as well as convert between different formats including resolutions and frame rate.

You can also use the dedicated app (VC-1SC-4K Remote) to extract a part of the video.



What you can do with the dedicated app

By using the dedicated app (VC-1SC-4K Remote) on your computer or smartphone, you can check the details on the input/output status, and make more detailed parameter settings for scaling.

The main features of the app are as shown below.

Checking the unit's status

This app lets you check the detailed status of the VC-1SC-4K, such as the input/output status, the operating mode and so forth.

More detailed settings that are unavailable on the unit

The app lets you configure certain parameters such as the detailed settings for scaling, video correction and so on.

Selecting ROIs (regions of interest) within a video

You can select specific areas within the input video for output.

Outputting test patterns

The app lets you output test patterns from the unit, which are useful for checking video devices.

Savings and managing settings (library)

You can save multiple settings with the app according to your needs, and recall them as necessary.

* For details on the dedicated app (VC-1SC-4K Remote), see the Roland website.

Setup methods

You can set up the VC-1SC-4K in the following ways, according to your needs.

NOTE

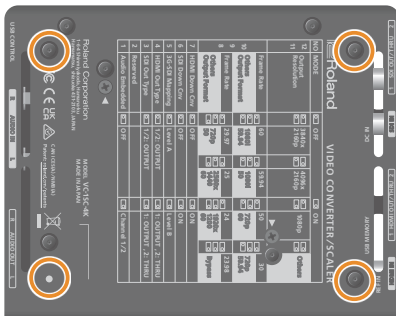
* When installing this unit, exercise care to avoid pinched fingers. Also, handle the unit carefully; do not drop it.

As a standalone unit

If you want to set up this unit by itself on a desk or table, attach the included rubber feet (four pieces). This prevents the surface of your desk or table from getting scratched, and also prevents the unit from sliding around.

1. Remove the rubber feet from the sheet.
2. Remove the double-sided tape from the rubber feet, and attach the feet to the four locations on the bottom of the unit.

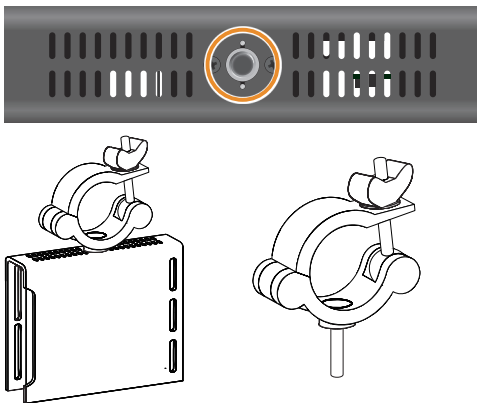
Attach the feet to the four locations indicated by the circles in the illustration below (one on the white dot, and three on the screws).



Using a clamp or other hardware to hold the unit in place

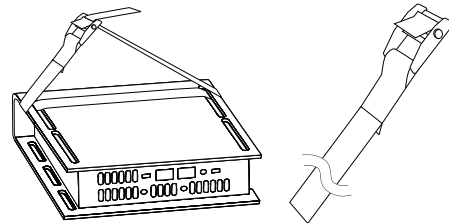
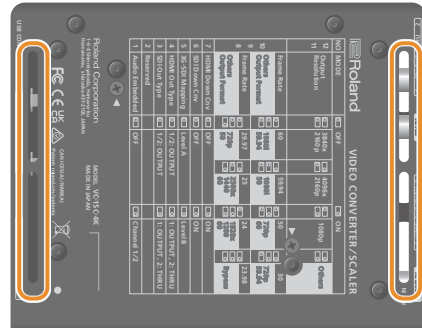
You can attach a clamp or similar hardware to the screw hole (M10) on the side of this unit when you want to clamp the unit onto a truss or other part.

Use the included plastic spacer between the clamp and this unit to prevent scratches as necessary.



Using a strap or other means to hold the unit in place

You can use the slits on the side of the case to attach a strap. Use them as required for your installation setup.



Mounting onto a rack-mount tray (RAD-3)

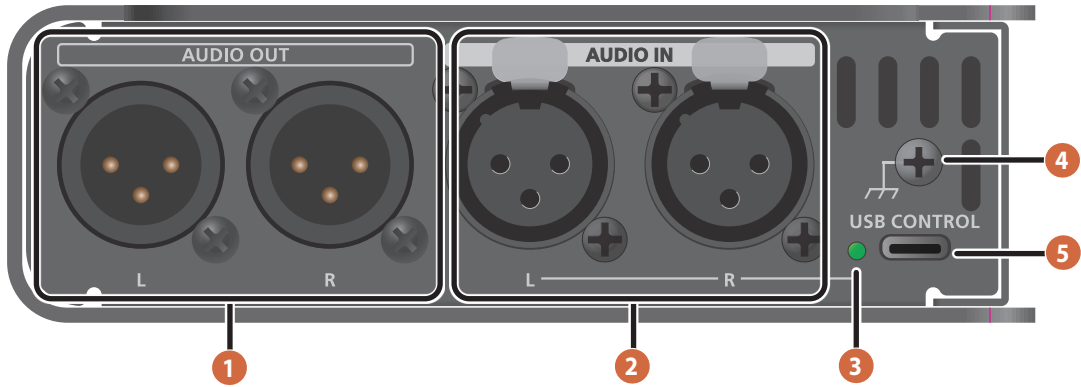
You can mount this unit onto a rack-mount tray (RAD-3, sold separately) that's specially designed for the VC-1 series.

Remove the mounting screws (indicated by triangular markings) on the bottom of this unit, and use the screws included with the RAD-3 to fasten the unit to the rack-mount tray.

Refer to the RAD-3 owner's manual for details on how to attach the unit.

Panel descriptions

Front panel



Pin assignment of AUDIO OUT jacks (XLR)



Pin assignment of AUDIO IN jacks (XLR)



1 AUDIO OUT connectors (XLR)

Use these jacks for audio output.

2 AUDIO IN connectors (XLR)

Use these jacks for audio input.

3 AUDIO IN indicator

This lights up green when a signal is received.

The indicator lights up red as a peak indicator when the input level is too high.

4 Ground terminal (earth)

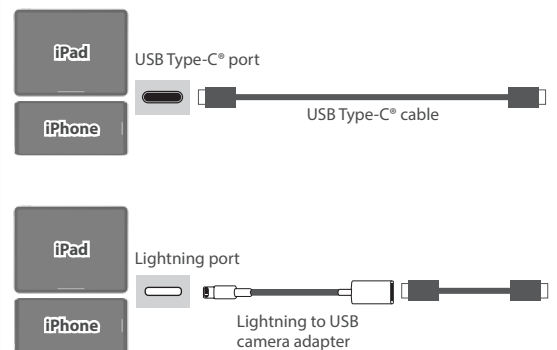
Connect this to an external earth or ground if necessary.

5 USB CONTROL port (USB Type-C®)

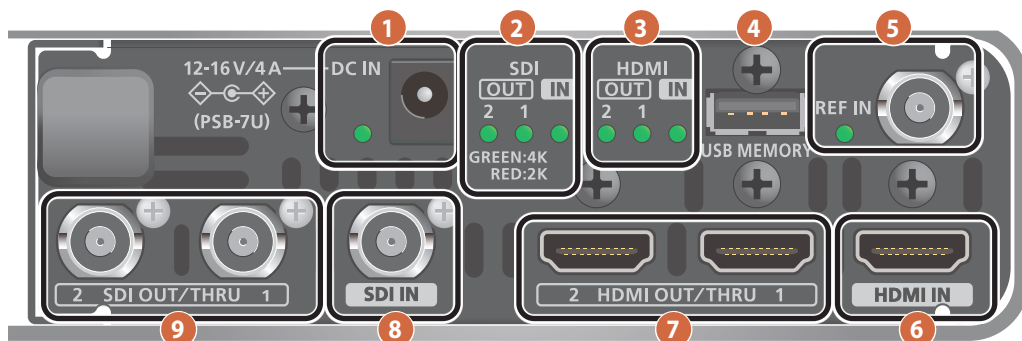
Connect a smartphone or computer here.

* Do not use a USB cable that is designed only for charging a device. Charge-only cables cannot transmit data.

Connecting an iPhone or iPad

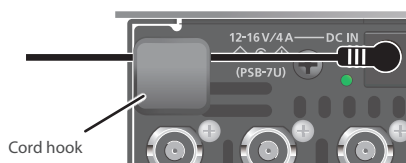


Rear panel

**1 DC IN jack and indicator**

Connect the included AC adaptor to this jack.
The indicator shows the power status.

* Use the cord hook to secure the cord of the AC adaptor as shown in the illustration.

**2 SDI IN/OUT indicators**

The indicator status changes according to the input/output video.

3 HDMI IN/OUT indicators

The indicator status changes according to the input/output video.

4 USB MEMORY port

Connect a USB flash drive here. This is used to update the system program and so forth.

5 REF IN connector and indicator

Use this when inputting analog synchronization signals.
Supports black burst, bi-level and tri-level synchronization signals.

The indicator lights up according to the input status.

6 HDMI IN connector

Used for inputting video up to 4K.

7 HDMI OUT/THRU (1, 2) connectors

Outputs the video signal input from the HDMI IN connector as well as the converted video.

8 SDI IN connector

Used for inputting video up to 4K.

9 SDI OUT/THRU (1, 2) connectors

Outputs the video signal input from the SDI IN connector as well as the converted video.

MEMO

Refer to "Indicator color and status of this unit" (p. 7) for more on the indicator colors and lit/blinking states.

Using an external battery

You can also connect an external battery to DC IN jack.

NOTE

Check whether this unit's power supply jack matches the wiring of the external battery that you're using. Use caution, as connecting an external battery with different wiring may cause a malfunction.

Pin arrangement of DC IN jack

**Setting**

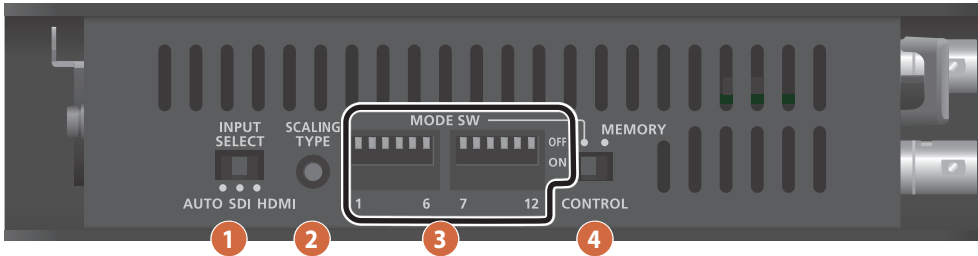
1. Set the [CONTROL] switch to "MEMORY".
2. Configure the warning display voltage and shutdown voltage in the dedicated app (VC-1SC-4K Remote).

NOTE

When using an external battery, make sure to set the cutoff voltage in order to use the battery safely and in a stable manner.

* For details on the dedicated app (VC-1SC-4K Remote), see the Roland website.

Side panel



1 [INPUT SELECT] switch

Selects the jack to use for video input.

- * Refer to “[INPUT SELECT] switch” (p. 8).
- * If you find it hard to operate the switch, use a pen with a thin tip or similar tool.

2 [SCALING TYPE] button

The screen aspect ratio (scaling) switches each time you press this button.

- * Refer to “[SCALING TYPE] button” (p. 8).
- * If you find it hard to press the switch, use a pen with a thin tip or similar tool.

3 [MODE SW] (1–6, 7–12) switches

These switches are for selecting the parameters (audio input setting, downconversion, output frame rate, etc.) for each function.

- * For more on the parameters, refer to “Functions and settings of each switch” (p. 8).
- * If you find it hard to operate the switches, use a pen with a thin tip or similar tool.

4 [CONTROL] switch

Switches between external control methods.

- * Refer to “[CONTROL] switch” (p. 8).

Turning the power on/off

The VC-15C-4K can operate using an AC adaptor or with an external battery.

- * To prevent malfunction and equipment failure, always turn down the volume, and turn off all the units before making any connections.
- * Before turning the unit on/off, always be sure to turn the volume down. Even with the volume turned down, you might hear some sound when switching the unit on/off. However, this is normal and does not indicate a malfunction.

Turning the power on

1. Connect external devices.

Connect your video camera or other devices to this unit. To prevent malfunction and equipment failure, turn off all the devices before making any connections.

2. Connect the AC adaptor or external battery plug to the DC IN jack.

The unit turns on when power is supplied from the AC adaptor or an external battery.

3. Turn on the external devices.

Turn on the external devices that are connected to this unit.

Turning the power off

1. Turn off the external devices.

Turn off the external devices that are connected to this unit.

2. Remove the AC adaptor or external battery plug from the DC IN jack.

Basic operations

Indicator color and status of this unit

Indicator	Lit color	Explanation
DC IN	Lit green	The unit is being supplied power from an external battery and the voltage is sufficiently higher than the shutdown voltage set in the dedicated app (VC-1SC-4K Remote)
	Lit red	Power is being supplied from an AC adaptor
	Blinking green	Power is being supplied from an external battery * The indicator blinks faster as the voltage gets lower. When the voltage falls below the shutdown voltage value set using the dedicated app (VC-1SC-4K Remote), this unit turns off.
SDI IN	Lit green	4K
	Lit red	2K
	Blinking red	No video signal is input to the SDI IN (or an unsupported signal is input)
HDMI IN	Lit green	4K
	Lit red	2K
	Blinking red	No video signal is input to the HDMI IN (or an unsupported signal is input)
	Alternately blinking blue and green	A HDCP copy-protected video signal is being input at 4K resolution or greater
	Alternately blinking blue and red	A HDCP copy-protected video signal is being input at less than 4K resolution
SDI OUT	Lit green	4K
	Lit red	2K
	Blinking green	Signal cannot be output normally (when the output setting is 4K)
	Blinking red	Signal cannot be output normally (when the output setting is less than 4K)
HDMI OUT	Lit green	4K
	Lit red	2K
	Blinking green	Signal cannot be output normally (when the output setting is 4K)
	Blinking red	Signal cannot be output normally (when the output setting is less than 4K)
REF IN	Lit green	The unit is operating in sync with an external synchronization signal input to REF IN
	Blinking green	An unsupported REF IN synchronization signal is being input
	Unlit	No synchronization signal being input to REF IN * When there is no synchronization signal input to REF IN, the unit operates using an internal reference signal.
AUDIO IN	Lit green	Input exceeds -24 dB
	Lit red	Input exceeds -6 dB

English

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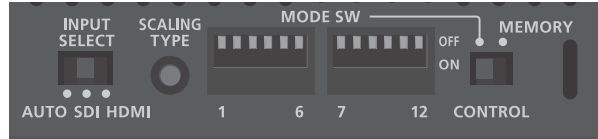
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Functions and settings of each switch

Use the respective switches on the side panel to configure the functions.



[CONTROL] switch

Switches between external control methods.

Value	Explanation
MODE SW	Operates according to the settings of MODE SW 1–12.
MEMORY	Operates according to the internal memory settings of this unit. Use the dedicated app to configure the memory settings. Refer to “What you can do with the dedicated app” (p. 2) for more on the dedicated app.

[INPUT SELECT] switch

Selects the connector to use for video input. The indicator for the currently selected connector blinks or lights up.

For details, refer to “Indicator color and status of this unit” (p. 7).

Value	Explanation
AUTO	Automatically selects the connector to which a supported signal is input.
SDI	Selects SDI IN for the input connector.
HDMI	Selects HDMI IN for the input connector.

[SCALING TYPE] button

Each time this button is pressed, the screen aspect ratio (scaling) switches as follows.

Full→Letterbox→Crop→1:1→Full

Value	Explanation
Full	Always displays the picture expanded to full screen, irrespective of the aspect ratio of the input video.
Letterbox	Scales the input video so that the entire image can be viewed, while keeping the aspect ratio unchanged.
Crop	Scales the video so that there are no black bars in the output video, while maintaining the aspect ratio. Video extending beyond the borders is cut off.
1:1	The video is displayed at the same input resolution without being scaled.

MODE SW 1

Configures the audio input (embedded audio).

Value	Explanation
OFF	The AUDIO IN connectors are not used.
ON	The input for the AUDIO IN connectors is inputted to the SDI OUT and HDMI OUT audio channels 1 and 2.

MODE SW 3

Configures the SDI OUT type.

Value	Explanation
OFF	Outputs scaled video from SDI OUT 1 and 2.
ON	The scaled video (scaled output) is output from SDI OUT 1, and the video input from SDI IN is passed through SDI OUT 2 for output.

MODE SW 4

Configures the HDMI OUT type.

Value	Explanation
OFF	Outputs scaled video from HDMI OUT 1 and 2.
ON	The scaled video (scaled output) is output from HDMI OUT 1, and the video input from HDMI IN is passed through HDMI OUT 2 for output.

MODE SW 5

Configures the mapping of the 3G-SDI output.

Value	Explanation
OFF	Level A
ON	Level B

MODE SW 6

Specifies whether SDI downconversion is used.

Value	Explanation
OFF	Downconversion OFF
ON	Downconversion ON

MODE SW 7

Specifies whether HDMI downconversion is used.

Value	Explanation
OFF	Downconversion OFF
ON	Downconversion ON

MODE SW 8/9/10

Specifies the output frame rate.

MODE SW 8	MODE SW 9	MODE SW 10	Explanation
OFF	OFF	OFF	60 Hz
OFF	OFF	ON	59.94 Hz
OFF	ON	OFF	50 Hz
OFF	ON	ON	30 Hz
ON	OFF	OFF	29.97 Hz
ON	OFF	ON	25 Hz
ON	ON	OFF	24 Hz
ON	ON	ON	23.98 Hz

When MODE SW 11 and 12 are on, these switches set the output resolution and frame rate.

MODE SW 8	MODE SW 9	MODE SW 10	Explanation
OFF	OFF	OFF	1080i/59.94 Hz
OFF	OFF	ON	1080i/50 Hz
OFF	ON	OFF	720p/60 Hz
OFF	ON	ON	720p/59.94 Hz
ON	OFF	OFF	720p/50 Hz
ON	OFF	ON	2560 × 1440/60 Hz
ON	ON	OFF	1920 × 1200/60 Hz
ON	ON	ON	Bypass: The video signal is output at the same resolution as the input resolution.

MODE SW 11/12

Sets the output resolution.

MODE SW 11	MODE SW 12	Explanation
OFF	OFF	3840 × 2160p
OFF	ON	4096 × 2160p
ON	OFF	1080p
ON	ON	Others: Sets the resolution and frame rate according to MODE SW 8–10.

USING THE UNIT SAFELY

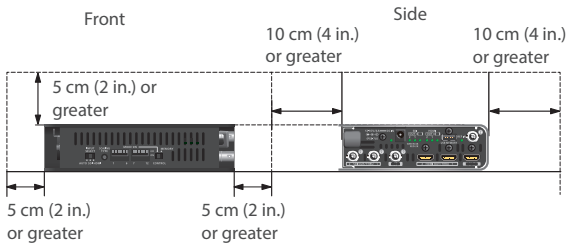
WARNING

Secure a sufficient amount of space at the setup location

Since this unit normally emits a slight amount of heat, make sure to secure sufficient space around it, as shown below.



- * Do not block the cooling vent. If the cooling vent is blocked, the internal temperature will rise, and the heat might cause malfunctions.



Use only the supplied AC adaptor and the correct voltage

Be sure to use only the AC adaptor supplied with the unit. Also, make sure the line voltage at the installation matches the input voltage specified on the AC adaptor's body. Other AC adaptors may use a different polarity, or be designed for a different voltage, so their use could result in damage, malfunction, or electric shock.



WARNING

Use only the supplied power cord

Use only the attached power cord. Also, the supplied power cord must not be used with any other device.



Keep small items out of the reach of children

To prevent accidental ingestion of the parts listed below, always keep them out of the reach of small children.



- Included Parts
Washer, Rubber feet
- Removable Parts
Screw

Handle the ground terminal carefully

If you remove the screw from the ground terminal, be sure to replace it; don't leave it lying around where it could accidentally be swallowed by small children. When refastening the screw, make that it is firmly fastened, so it won't come loose.



Take care not to get burned

The top surface may become hot, so take care to avoid burns.



IMPORTANT NOTES

Placement

- Depending on the material and temperature of the surface on which you place the unit, its rubber feet may discolor or mar the surface.

Repairs and Data

- Before sending the unit away for repairs, be sure to make a backup of the data stored within it; or you may prefer to write down the needed information. Although we will do our utmost to preserve the data stored in your unit when we carry out repairs, in some cases, such as when the memory section is physically damaged, restoration of the stored content may be impossible. Roland assumes no liability concerning the restoration of any stored content that has been lost.

Additional Precautions

- Any data stored within the unit can be lost as the result of equipment failure, incorrect operation, etc. To protect yourself against the irretrievable loss of data, be sure to make a backup of the data stored within it; or you may prefer to write down the needed information.
- Roland assumes no liability concerning the restoration of any stored content that has been lost.
- Place the AC adaptor so the side with the indicator faces upwards. The indicator will light when you plug the AC adaptor into an AC outlet.

Using External Memories

- Please observe the following precautions when handling external memory devices. Also, make sure to carefully observe all the precautions that were supplied with the external memory device.
 - Do not remove the device while reading/writing is in progress.
 - To prevent damage from static electricity, discharge all static electricity from your person before handling the device.

Intellectual Property Right

- This Product uses the Source Code of μ T-Kernel under T-License 2.0 granted by the T-Engine Forum (www.tron.org).
- This product is using the open source software. For the source code and license documentation of the open source software, please confirm the following website:
<https://proav.roland.com/global/support/>
- The terms HDMI, HDMI High-Definition Multimedia Interface, HDMI Trade dress and the HDMI Logos are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.
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Main specifications

Audio

Processing	24 bits, 48 kHz	
Formats	SDI	Linear PCM, 24 bits, 48 kHz, 16 ch (SMPTE 299 M)
	HDMI	Linear PCM, 24 bits, 48 kHz, 8 ch

Connectors

Input Connectors	SDI IN	BNC type
	HDMI IN	HDMI type A
	AUDIO IN	XLR type x 1 (L/R)
	REF IN	BNC type
Output Connectors	SDI OUT/THRU 1, 2	BNC type x 2
	HDMI OUT/THRU 1, 2	HDMI type A x 2
	AUDIO OUT	XLR type x 1 (L/R)
Other Connectors	USB MEMORY	USB A (for USB flash drive)
	USB CONTROL	USB Type-C (R) (compatible with the dedicated app)

Audio Input/Output Characteristics

Input Level	AUDIO IN	+4 dBu (Maximum: +24 dBu)
Input Impedance	AUDIO IN	20k Ω
Output Level	AUDIO OUT	+4 dBu (Maximum: +24 dBu)
Output Impedance	AUDIO OUT	600 Ω

Other

Power Supply	AC Adaptor, External power supply (12–16 V)
Current Draw	4 A
Power Consumption	48 W
Operation Temperature	+0 to +40 degrees Celsius +32 to +104 degrees Fahrenheit
Dimensions	136 (W) x 172 (D) x 42 (H) mm 5–11/32 (W) x 6–3/4 (D) x 16–5/8 (H) inches
Weight (excluding Accessories)	710 g 1 lbs 9 oz
Accessories	Startup Guide Leaflet "USING THE UNIT SAFELY" AC adaptor Power cord Rubber feet Spacer

* 0 dBu = 0.775 Vrms

* This product is a Class A digital device under FCC part 15.

* The terms HDMI, HDMI High-Definition Multimedia Interface, HDMI Trade dress and the HDMI Logos are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.

* This document explains the specifications of the product at the time that the document was issued. For the latest information, refer to the Roland website.