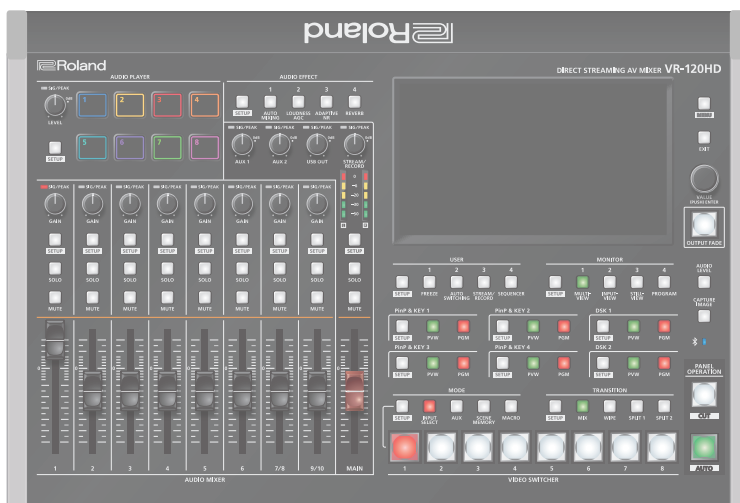


DIRECT STREAMING AV MIXER VR-120HD



Checking the Included Items

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

- ☐ VR-120HD unit
- ☐ AC adaptor
- ☐ Power cord
- ☐ Rack-mount angle (2)
- ☐ Rack-mount angle mounting screws (6)
- ☐ Startup Guide (this document)
- ☐ Leaflet "USING THE UNIT SAFELY"

Reference Manual

Details on operations and menu lists are provided in "Reference Manual".

1. Enter the following URL in your computer.
<https://proav.roland.com/manuals/>
2. Choose "VR-120HD" as the product name.



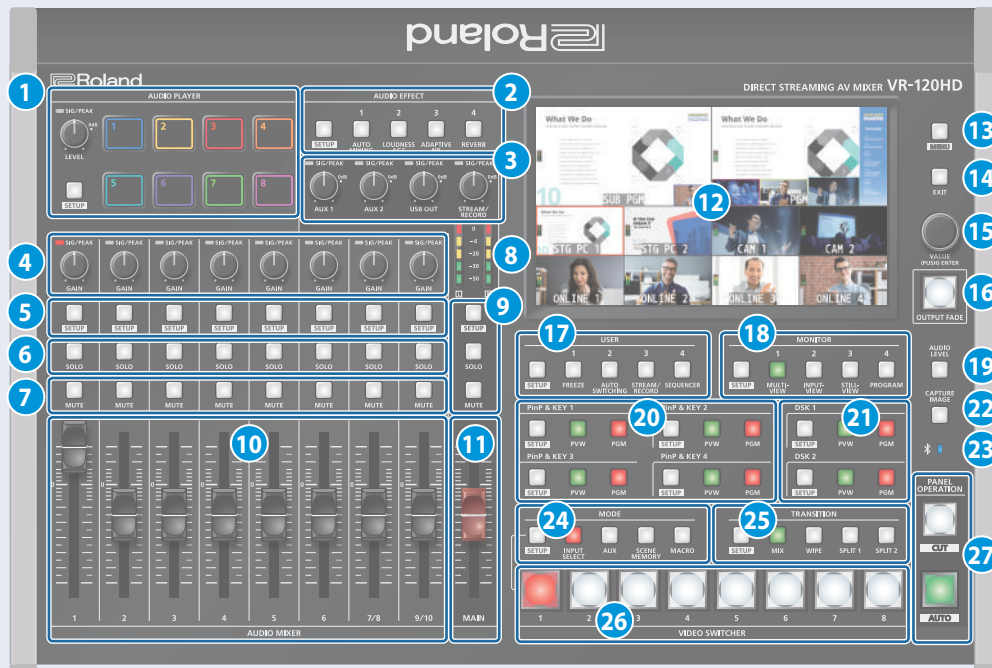
Before using the unit, ensure that its system program is at the most recent version. For information on available upgrades for the system program, see the Roland website (<https://proav.roland.com/>).

You can check the system program version by Pressing the [MENU] button → "System" → "Version".

Before using this unit, carefully read "USING THE UNIT SAFELY" and "IMPORTANT NOTES" (the leaflet "USING THE UNIT SAFELY" and the Startup Guide (p. 8)). After reading, keep the document(s) where it will be available for immediate reference.

Panel Descriptions

Top Panel



1 AUDIO PLAYER

This section lets you assign sound sources such as background music, sound effects and so on to the pads and then play them back.

* You can use an audio file (WAV format) stored on a USB flash drive or an SD card as the source.

[LEVEL] knob

Adjusts the playback volume of the sound source.

SIG/PEAK indicator

These indicators light up when audio output is detected.

Lit red	Excessive volume (0 dB and above)
Lit yellow	Appropriate volume (-20 to -1 dB)
Lit green	Insufficient volume (-50 to -21 dB)

[SETUP] button

Shows the setup screen in the display.

Pads [1]–[8]

Press a pad to play back the assigned sound source.

2 AUDIO EFFECT

[1]–[4] buttons

Press to turn the audio effects on/off. You can also assign different functions to each button.

[SETUP] button

Shows the setup screen in the display.

3 [AUX 1], [AUX 2] knobs

Adjusts the volume of the AUX bus output.

[USB OUT] knob

Adjusts the volume of the USB output.

[STREAM/RECORD] knob

Adjusts the volume of streaming/recording.

SIG/PEAK indicators

These indicators light up when audio output is detected.

Lit red	Excessive volume (0 dB and above)
Lit yellow	Appropriate volume (-20 to -1 dB)
Lit green	Insufficient volume (-50 to -21 dB)

4 [GAIN] knobs

Adjust the gain (sensitivity) of the audio that is being input from the AUDIO IN 1–9/10 jacks.

SIG/PEAK indicators

These indicators light up when audio input is detected.

Lit red	Excessive volume (0 dB and above)
Lit yellow	Appropriate volume (-20 to -1 dB)
Lit green	Insufficient volume (-50 to -21 dB)

5 [SETUP] buttons

Shows the setup screen in the display.

6 [SOLO] buttons

Press these buttons to allow only the audio of the selected input channels to be output. When this is turned on (the button lights up) for a channel, you can monitor the pre-fader audio for that channel through headphones.

7 [MUTE] buttons

Press these buttons to mute (silence) the audio of the selected input channels.

8 Level meters

Shows the main output level.

9 [SETUP] button, [SOLO] button, [MUTE] button

These buttons are for the main output.

10 [1]–[9/10] faders

These adjust the input volume for each channel.

11 [MAIN] fader

Adjusts the output volume.

12 Display (Touch Panel)

Shows the status of the input/output video and of streaming/recording, as well as the parameters and menus.

13 [MENU] button

Switches the menu screen between visible and hidden.

14 [EXIT] button

Exits a menu level or cancels an operation.

15 [VALUE/CURSOR] knob

Turn	Selects the menu parameters and edits their values.
Press	Confirms the menu item you selected or the value that you edited.

16 [OUTPUT FADE] button

The final output video and audio fade in/out.

Lit	Fade-out completed
Blink	Fading-in/out
Unlit	Normal output

* The settings described above are the factory defaults. You can assign different functions to the [OUTPUT FADE] button.

17 USER**[1]–[4] buttons**

These buttons execute pre-assigned functions.

With the factory settings, the buttons are assigned as follows.

Button	Explanation
USER [1]	FREEZE Turns the freeze function (freeze the input video) on/off.
USER [2]	AUTO SWITCHING Turns the auto switching function (used to automatically switch between videos) on/off.
USER [3]	STREAM/RECORD Shows the STREAM/RECORD setup screen in the display.
USER [4]	SEQUENCER Turns the sequencer function on/off.

[SETUP] button

Shows the setup screen in the display.

18 MONITOR**[1]–[4] buttons**

Switches between video signals to monitor on the built-in display (monitor).

Button	Explanation
MONITOR [1]	MULTI-VIEW The final output video, preview output video and the videos allocated to the VIDEO SWITCHER [1]–[8] buttons are shown in sections of the display.
MONITOR [2]	INPUT-VIEW The input video from the HDMI IN and SDI IN connectors and other sources are shown as 16 separate sections on the screen.
MONITOR [3]	STILL-VIEW Shows the loaded still images in 16 separate sections on the screen.

Button	Explanation
MONITOR [4]	PROGRAM Shows the final output video.

* The settings described above are the factory defaults. You can also assign different functions to each button.

[SETUP] button

Shows the setup screen in the display.

19 [AUDIO LEVEL] button

Shows the audio level screen in the display.

20 PinP & KEY 1–4

This uses PinP and KEY 1–4 layers to composite video using PinP, or picture-in-picture.

[SETUP] buttons

Shows the setup screen in the display.

[PVW] buttons

Turns the inset screen preview output on/off.

[PGM] buttons

Turns PinP composition on/off.

21 DSK 1, 2

This uses DSK layer 1, 2 to composite video using a downstream keyer.

[SETUP] buttons

Shows the setup screen in the display.

[PVW] buttons

Turns the preview output of the DSK compositing result on/off.

[PGM] buttons

Turns DSK composition on/off.

22 [CAPTURE IMAGE] button

Turns the still image capture mode on/off.

23 (Bluetooth®) indicator

Shows the Bluetooth connection status.

Lit	Connected
Unlit	Bluetooth off
Blinking rapidly	Pairing is in progress
Blinking	Waiting for connection

You can input audio from an audio device that uses Bluetooth, or use dedicated software on your computer or iPad to remotely control the VR-120HD.

24 MODE

The functions of the VIDEO SWITCHER [1]–[8] buttons change according to the mode you select when pressing the buttons.

[SETUP] button

Shows the setup screen in the display.

[INPUT SELECT] button

Use the VIDEO SWITCHER [1]–[8] buttons to select the video source to send to the PGM bus or the PVW bus.

[AUX] button

Use the VIDEO SWITCHER [1]–[8] buttons to select the video signal to send to the AUX bus.

[SCENE MEMORY] button

Use the VIDEO SWITCHER [1]–[8] buttons to recall the scene memories (which contains the registered settings for video, audio and so on). Long-press the VIDEO SWITCHER [1]–[8] buttons to register the current settings in a scene memory.

[MACRO] button

This switches the function of the VIDEO SWITCHER [1]–[8] buttons to execute macros (a series of recorded operations).

25 TRANSITION

Selects the video transition effects.

[SETUP] button

Shows the setup screen in the display.

[MIX] button

The two videos are mixed as the transition occurs.

[WIPE] button

The next video moves across to replace the original video.

[SPLIT 1] button, [SPLIT 2] button

Here's how to composite two videos in dividing the screen into left/right or upper/lower.

26 VIDEO SWITCHER [1]–[8] buttons

The buttons change functions depending on the mode that's selected.

27 PANEL OPERATION

[CUT] button, [AUTO] button

These buttons determine what happens when switching between videos or else they switch between videos, depending on the operation mode.

There are two operation modes for switching between videos: "Dissolve" and "PGM/PST".

Operation mode	Explanation						
Dissolve (factory setting)	This mode selects the video to output and immediately outputs it to the PGM bus. Press the [CUT] or [AUTO] button to select what happens when you switch between videos (the buttons light up green when pressed).						
	<table><tr><th>Button to operate</th><th>Action taken when pressed</th></tr><tr><td rowspan="2">VIDEO SWITCHER [1]–[8] buttons</td><td> When [CUT] button is lit up green The video switches instantly. </td></tr><tr><td> When [AUTO] button is lit up green A switch (transition) effect is applied, and the video switches automatically. </td></tr></table>	Button to operate	Action taken when pressed	VIDEO SWITCHER [1]–[8] buttons	When [CUT] button is lit up green The video switches instantly.	When [AUTO] button is lit up green A switch (transition) effect is applied, and the video switches automatically.	
	Button to operate	Action taken when pressed					
	VIDEO SWITCHER [1]–[8] buttons	When [CUT] button is lit up green The video switches instantly.					
When [AUTO] button is lit up green A switch (transition) effect is applied, and the video switches automatically.							
	* During the transition effect, the selected VIDEO SWITCHER button blinks red, and then remains lit up red when the transition effect finishes.						
PGM/PST	In this mode, the PST video is displayed in the PVW bus, and you can check the video before outputting it to the PGM bus. Press the VIDEO SWITCHER [1]–[8] buttons to select a PST video (the buttons light up green). The content is shown in the PVW bus.						
	<table><tr><th>Button to operate</th><th>Action taken when pressed</th></tr><tr><td>[CUT] button</td><td>The video switches instantly.</td></tr><tr><td>[AUTO] button</td><td>A switch (transition) effect is applied, and the video switches automatically.</td></tr></table>	Button to operate	Action taken when pressed	[CUT] button	The video switches instantly.	[AUTO] button	A switch (transition) effect is applied, and the video switches automatically.
	Button to operate	Action taken when pressed					
	[CUT] button	The video switches instantly.					
[AUTO] button	A switch (transition) effect is applied, and the video switches automatically.						
	* During the transition effect, the [AUTO] button blinks red, and then goes dark when the transition effect finishes.						

Front Panel



1 PHONES jack

Connect your headphones here.

2 [PHONES] knob

Adjusts the headphone volume.

3 USB HOST connector

Connect USB storage such as a USB flash drive or an external SSD here, for backing up this unit's settings or importing materials from the storage device into this unit. You can also connect a smartphone for tethering.

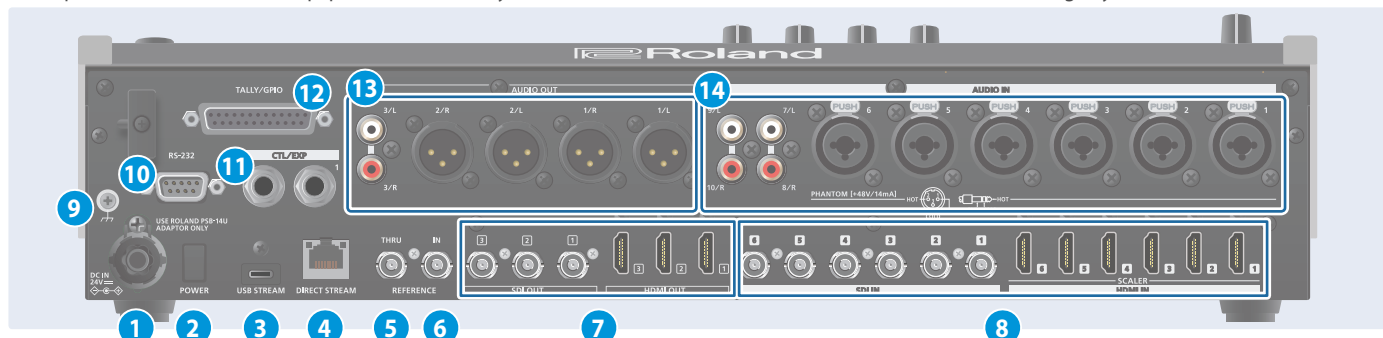
4 SDXC card slot

Insert an SD card here.

This lets you record video and audio, back up this unit's settings and import material that's saved on the storage media.

Rear Panel

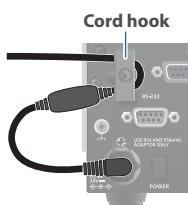
* To prevent malfunction and equipment failure, always turn down the volume, and turn off all the units before making any connections.



1 DC IN jack

Connect the included AC adaptor to this jack.

- * Use the cord hook to secure the cord of the AC adaptor as shown in the illustration. If you have trouble running the cord through, loosen the screw a little on the cord hook.



2 [POWER] switch

Turns the power on/off.

3 USB STREAM connector (USB Type-C®)

- Outputs the audio and video to your computer. This is also used to input audio played on your computer to the VR-120HD.
- Use the dedicated software to remotely control the VR-120HD from a computer or iPad that is connected.
- * If you are outputting HD video via USB, connect this to a USB 3.0 port of your computer.
- * If you connect via an extension cable or a USB hub, the computer might not recognize the VR-120HD.

4 DIRECT STREAM port

- Connect this port to a network device for livestreaming.
- Lets you remotely control the VR-120HD by using terminal software, etc.
- Use the dedicated software to remotely control the VR-120HD from a computer that is connected.
- Use the VR-120HD to remotely control a camera that is connected.
- Displays a tally on your wireless LAN connected iOS or Android device (this is the "smart tally" function).

NOTE

As this port supports GbE, use a LAN cable with a CAT5e specification or better.

5 REFERENCE THRU jack

Sends the synchronization signal that is inputted to the VR-120HD to an external device that is connected to this unit.

6 REFERENCE IN jack

Connect an external source device for synchronization in order to input a sync signal.

7 HDMI OUT 1–3 and SDI OUT 1–3 connectors

These connectors are for video output. Use the connectors that are appropriate for the connected devices. You can change the video bus assignment for each connector. With the factory settings, the bus assignments are as follows.

Connector	Bus
SDI/HDMI OUT 1	PROGRAM (final output video)
SDI/HDMI OUT 2	PREVIEW (preview output video)
SDI/HDMI OUT 3	MULTI-VIEW (multi-view)

8 HDMI IN 1–6 connectors, SDI IN 1–6 connectors

These connectors are for video input. Use the connectors that are appropriate for the connected devices. The input format is detected automatically.

9 Ground terminal

Connect this to an external earth or ground, if necessary.

10 RS-232 connector

You can connect this to a computer equipped with an RS-232 connector to remotely control the VR-120HD.

11 CTL/EXP 1, 2 jacks

You can connect a footswitch (such as a BOSS FS-6, sold separately) or expression pedal (such as the EV-5, sold separately) to this jack. Use this when you want to switch between video using your foot.

- * Use only the specified expression pedal (Roland EV-5, EV-30, BOSS FV-500L/FV-500H; sold separately). Connecting expression pedals made by third-party manufacturers may cause this unit to malfunction.

12 TALLY/GPIO connector

Use this to connect to devices that have a tally indicator feature, or to connect to devices that have a control signal input/output function.

13 AUDIO OUT (XLR, RCA) jacks

These jacks output audio. Use the jacks that are appropriate for the connected devices.

For each jack, you can change the audio bus (Main, AUX 1, AUX 2, Monitor) that is assigned for output from that jack.

14 AUDIO IN 1–6 (XLR/TRS) jacks

Use these jacks for audio input. Connect mic or line-level analog audio equipment here.

* About phantom power

You can supply phantom power (+48 V) from the AUDIO IN 1–6 jacks (XLR). This should be switched on for condenser mics that require phantom power.

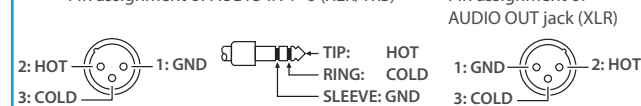
[MENU] button → "Audio Input" → "AUDIO IN 1" – "AUDIO IN 6", and set "PHANTOM +48V" to "On".

AUDIO IN 7/L, 8/R (LINE IN) jacks

AUDIO IN 9/L, 10/R (LINE IN) jacks

Use this connector for audio input. Connect analog audio equipment such as an audio mixer here.

Pin assignment of AUDIO IN 1–6 (XLR/TRS)



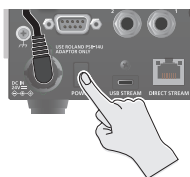
Basic Operation

Turning the Power On/Off

- * 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.
- * Never turn off the power or remove the USB flash drive or SD card while the USB flash drive or SD card is being accessed.
- * This unit is not designed for continuous operation over long periods of time (one month or longer). If you want to use this unit over long periods of time, cycle the power periodically.

Turning the power on

1. Make sure that all devices are powered off.
2. Turn on the [POWER] switch of the VR-120HD.



3. Turn on the power of the source devices.
Turn on the power of the source devices that are connected to the VR-120HD's input connectors, such as video cameras.
4. Turn on the power of the output devices.
Turn on the power of the devices that are connected to the VR-120HD's output connectors, such as projectors.

Turning the power off

1. Turn off the power of the output devices first, and then the source devices.
2. Turn off the [POWER] switch of the VR-120HD.

The following message appears.



3. Press the [VALUE/CURSOR] knob to finish shutting down.
If you wish to cancel, press the [POWER] switch again.

About SD Card

An SD card is required for recording audio/video or for using still images on the VR-120HD.

SD cards that can be used on the VR-120HD



SDXC card can be used on the VR-120HD.

Some SD card types or SD cards from some manufacturers may not properly record audio/video with the VR-120HD.

Refer to the support page on the Roland website for the latest information on compatibility.

<https://roland.cm/vr-120hd>



NOTE

Before you can use a commercially available SD card with the VR-120HD, you must format it as described in "Formatting an SD Card".

Inserting the SD Card

1. Push the SD card all the way into the SDXC card slot until you hear a click.

NOTE

Ensure that the SD card is oriented correctly, and insert it all the way into the port. Do not forcibly push the card into place.



Formatting an SD Card

1. Press the [MENU] button → "SD Card/USB Memory" → select "Format" and press the [VALUE/CURSOR] knob.

A confirmation message appears.

2. Select "OK" and press the [VALUE/CURSOR] knob.

The SD card is now formatted.

NOTE

Formatting the SD card erases all data on the media (video and audio data).

Removing an SD Card

1. Press the [MENU] button → "SD Card/USB Memory" → select "Eject" and press the [VALUE/CURSOR] knob.

2. Select "OK" and press the [VALUE/CURSOR] knob.

Once the message "The SD Card is safe to remove" is displayed on the screen, you can safely remove the card.

3. Push the SD card further into the slot.

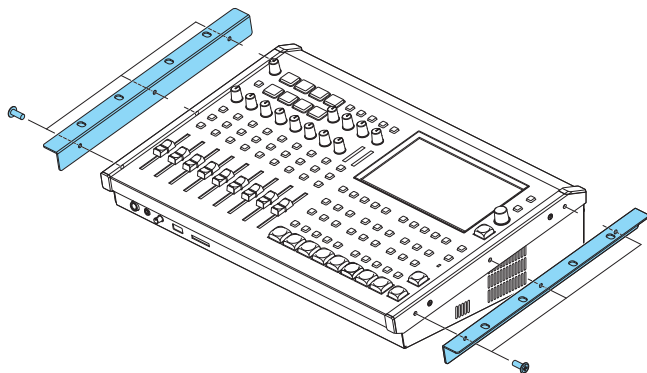
4. Hold the SD card and pull it out towards you.

Rack-Mounting This Unit

You can attach the included rack-mount angles to mount this unit into a 19-inch rack.

Attaching the Rack-Mount Angles

1. Turn off the power of the VR-120HD, unplug the power cord and disconnect all cables.
2. Use the included mounting screws (three per side) to attach the rack-mount angles.



* Both rack-mount angles are of the same shape, with no difference between left and right.

NOTE

Removing the rack-mount angles

Before you remove the rack-mount angles, turn off the power of the VR-120HD, unplug the power cord and disconnect all cables.

Points of Caution When Rack-Mounting

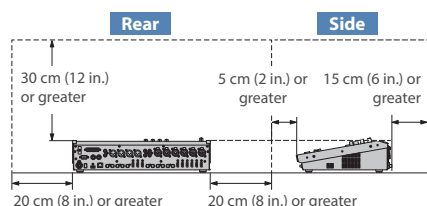
- Before mounting this unit onto a rack, turn off the power of the VR-120HD, unplug the power cord and disconnect all cables.
- When mounting, be careful not to get your fingers or other extremities pinched.
- Be careful not to expose the parts of this unit that protrude from the rack to strong impact, as this may result in malfunctions and faulty operation.
- Leave at least 2U of space above the unit when mounted in the rack, to make room for the connectors and cables.
- All of the screw holes (two on each side for a total of four holes) should be fastened to the rack with screws. Screws for mounting this unit to the rack are not included.
- Do not move the rack while this unit is mounted to the rack. The rack-mount angles may deform due to vibrational impact.
- To effectively cool this unit, use caution regarding the following.
 - Place the unit in a well-ventilated location.
 - Do not block the cooling fan intake and exhaust ports on the side panels of the VR-120HD.
 - Do not mount this unit onto a closed-type rack. The warm air that builds up inside the rack cannot be released, which makes efficient cooling impossible.
 - If you can't open up the rear side when using such a rack, install an exhaust port or mount an exhaust fan onto the upper rear side of the closed-type rack.
- Also read the "Placement" (p. 8 and the leaflet "USING THE UNIT SAFELY") under "IMPORTANT NOTES".

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.



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.

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.

WARNING

Handle lithium batteries carefully

- Lithium batteries must never be recharged, heated, taken apart, or thrown into a fire or water.
- Keep lithium batteries out of reach of small children. If a child has accidentally swallowed a battery, see a doctor immediately.
- Never expose lithium batteries to excessive heat such as sunshine, fire or the like.



CAUTION

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
- Screws (p. 1)

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.

Precautions concerning use of phantom power supply

Always turn the phantom power off when connecting any device other than condenser microphones that require phantom power. You risk causing damage if you mistakenly supply phantom power to dynamic microphones, audio playback devices, or other devices that don't require such power. Be sure to check the specifications of any microphone you intend to use by referring to the manual that came with it.

(This instrument's phantom power: 48 V DC, 14 mA Max)

IMPORTANT NOTES

Power Supply

- 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.

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.

About the Internal Battery

- The time is stored and maintained in this unit even when the power is turned off. If the internal battery loses power, the following message is shown on the display.

BATTERY ERROR!

If you see the message "Battery Error!", contact a Roland service center or an official Roland dealer for service.

For a list of Roland service centers and official Roland dealers, refer to the Roland website.

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.
- Never strike or apply strong pressure to the display.
- This unit allows you to switch images at high speed. For some people, viewing such images can cause headache, nausea, or other discomfort. Do not use this unit to create video that might cause these types of health problems. Roland Corporation will accept no responsibility for any such health problems that may occur in yourself or in viewers.
- Do not use connection cables that contain a built-in resistor.

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.

Caution Regarding Radio Frequency Emissions

- The following actions may subject you to penalty of law.
 - Disassembling or modifying this device.
 - Removing the certification label affixed to the back of this device.
 - Using this device in a country other than where it was purchased
- This unit cannot be used to directly connect to a network operated by a telecommunications provider (such as a mobile or landline-based telecommunications company, an Internet provider or the likes), including a public wireless LAN. You must use a router or similar equipment when connecting this unit to the Internet.

Intellectual Property Right

- It is forbidden by law to make an audio recording, video recording, copy or revision of a third party's copyrighted work (musical work, video work, broadcast, live performance, or other work), whether in whole or in part, and distribute, sell, lease, perform or broadcast it without the permission of the copyright owner.
- Do not use this product for purposes that could infringe on a copyright held by a third party. We assume no responsibility whatsoever with regard to any infringements of third-party copyrights arising through your use of this product.
- This product can be used to record or duplicate audio or visual material without being limited by certain technological copy-protection measures. This is due to the fact that this product is intended to be used for the purpose of producing original music or video material, and is therefore designed so that material that does not infringe copyrights belonging to others (for example, your own original works) can be recorded or duplicated freely.
- The SD logo , SDHC logo  and SDXC logo  are trademarks of SD-3C, LLC.
- This product is using the open source license (GPL/LGPL) software. You have the right to acquire, modify and distribute the source code for this open source license software. You can obtain the open source license source code used in this product by downloading it from the following website: <https://proav.roland.com/global/support/>
- This product contains eParts integrated software platform of eSOL Co., Ltd. eParts is a trademark of eSOL Co., Ltd. in Japan.
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