

4K STREAMING AV MIXER VR-400UHD

Version 1.20 and later



Before using the VR-400UHD, 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 as follows: [SETUP] button → <System> tab in the Setup screen → <Version> → "System".

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Video output: overview

With the VR-400UHD, you can freely arrange multiple input videos and combine them into a single screen.

The combined video image is called a **“scene”**. You can switch between output videos for each scene. The scene preview is shown on the built-in monitor, letting you check the preview while switching between scenes.

By preparing the scenes beforehand according to how the event proceeds, including the titles and captions as well as the screen layout, you can smoothly operate this unit and produce a video with a live-action feel.

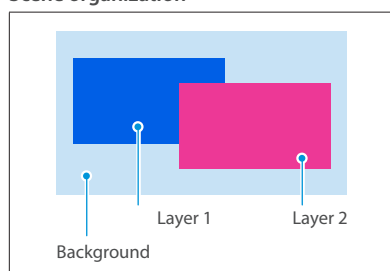
How the scenes are organized

Each scene is composed of three layers: a background layer, layer 1 and layer 2.

On each layer, you can display the input video signal from the HDMI 4K IN connector and the still images imported into this unit. You can also use the crop function to cut out a certain part of the input video or still image.

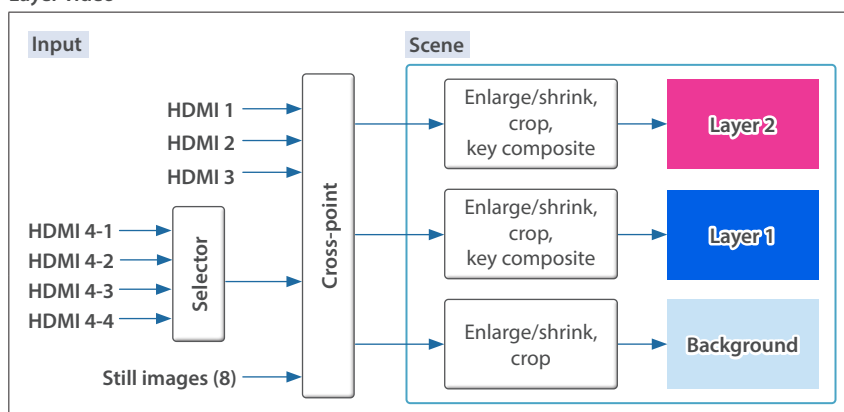
It's easy to create the screen layout you want just by enlarging or shrinking the layer window (display region) or by moving a window to the desired location. You can also use the luminance key or chroma key on layers 1 and 2 to create a key composite video.

Scene organization



- The layer stacking order cannot be edited.
- You can choose whether to show or hide each layer.

Layer video



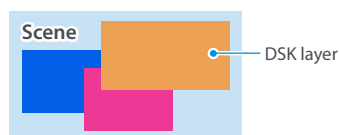
Number of scenes that can be created

Each group of eight scenes is managed as a “bank”.

The VR-400UHD has eight banks, so you can create a total of 64 scenes (8 scenes × 8 banks).

DSK layer

A DSK layer is positioned in front of the scenes. The DSK layer lets you use DSK composition to add video or text (titles, captions, etc.) to a scene.



- Video on the DSK layer cannot be magnified or reduced.
- In addition to the DSK layer, you can composite the still image from the LOGO layer, but only for video output from the 4K STREAMING port.

What is a DSK (downstream keyer)?

DSK is a function that lets you composite more video and text on top of an already composited video.

This is called “downstream keyer” because the key is composited in the downstream process.

For DSK composition, you can use a luminance key, a chroma key or a still image (.png) with an alpha channel as the alpha key.

Outputting separate scenes to different output destinations (Dual mode)

There are two methods of outputting a scene: PGM/PST mode (factory setting) and Dual mode.

For PGM/PST mode, only one scene is output. For Dual mode, two scenes can be output independently.

This lets you select the optimal scene to match output destinations for different purposes (example: for stage use and for streaming).

MEMO

- You can use two video buses, PGM 1 and PGM 2 in Dual mode. You can also set the video bus assignment for each output connector.
Scene switching is always performed as a freeze-frame cut.
- The output method for scenes is set in System mode (p. 10).

Output images in Dual mode

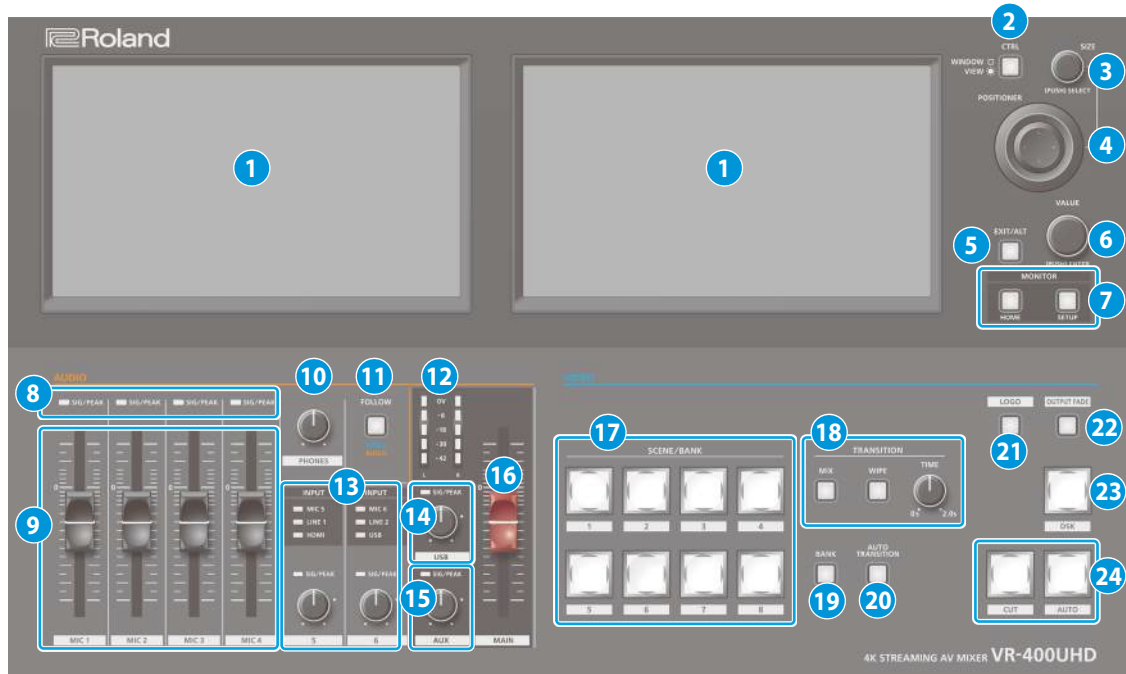
You can use the two built-in monitors on this unit to select the scene to send to each video bus (PGM 1, PGM 2).



Panel descriptions

Top panel

* Do not block the cooling-fan intake and exhaust ports on the side panels. If the cooling-fan intake and exhaust ports are blocked, the internal temperatures may rise, causing malfunctions due to excessive heat.



1 Monitor (touch panel)

This shows various information and settings screens, depending on the operation.

You can operate the VR-400UHD by directly touching the screen.

* This device does not support multi-touch operations.

2 [CTRL] button

This selects what is controlled by the [SIZE] knob and the [POSITIONER] stick.

Unlit	Window size/position
Lit	Zoom ratio/position of video in the window

3 [SIZE] knob

Turning	Adjusts the window size or the zoom ratio of the video inside the window. * Use the [CTRL] button to select what is controlled.
Pressing	Switches the Positioner popup between visible and hidden. Select the layer to be controlled in the Positioner popup.

4 [POSITIONER] stick

Adjusts the window position or the position of the video inside the window.

* Use the [CTRL] button to select what is controlled.

5 [EXIT/ALT] button

Exits the settings screen that's currently displayed.

When on the multi-view screen, use this in combination with the touch operations on the display to recall a specific function.

6 [VALUE] knob

Turning	Edits the values on each settings screen.
Pressing	Closes the numerical value popups and other controls.

7 MONITOR

[HOME] button

Shows the home screen on this unit's monitor.

The home screen changes according to the system mode (p. 10).

System mode	Left monitor	Right monitor
PGM/PST	Audio mixer screen	Multi-view screen
Dual	Multi-view PGM 1 screen	Multi-view PGM 2 screen

[SETUP] button

Shows the Setup screen on this unit's monitor.

8 SIG/PEAK indicators (MIC 1–4)

Indicates the audio input levels for the MIC 1–4 jacks.

SIG/PEAK indicator

Indicator color	Status
Red	Volume is excessive (0 dB or higher)
Yellow	Volume is suitable (-18 – -1 dB)
Green	Volume is insufficient (-42 – -19 dB)

9 [MIC 1]–[MIC 4] faders

Adjusts the input level of the MIC 1–4 jacks.

10 [PHONES] knob

Adjusts the volume of the headphones.

11 [FOLLOW] button

Turns the “Video Follows Audio” function or the “Audio Follows Video” function on/off.

Lit blue	Turns the Video Follows Audio function on. The scene automatically switches in tandem with the audio input.
Lit orange	Turns the Audio Follows Video function on. The audio output automatically switches in tandem with the scenes.
Unlit	Off

12 MAIN level meter

Indicates the audio output level of the MAIN jacks.

Indicator color	Status
Red	Excessive (0 dB or higher)
Yellow	Suitable (-18 – -1 dB)
Green	Insufficient (-42 – -19 dB)

13 INPUT indicators (INPUT 5, 6)

Indicator		Explanation
MIC 5	MIC 6	Shows the audio source that’s controlled by the INPUT [5] and [6] knobs.
LINE 1	LINE 2	
HDMI	USB	

SIG/PEAK indicators (INPUT 5, 6)

Indicates the input levels for the audio source that’s currently selected (p. 4).

INPUT [5] [6] knobs

Adjusts the input level for the audio source that’s currently selected.

14 SIG/PEAK indicator (USB)

Indicates the audio output level of the 4K STREAMING port (p. 4).

[USB] knob

Adjusts the audio output level of the 4K STREAMING port.

15 SIG/PEAK indicator (AUX)

Indicates the audio output level of the AUX jacks (p. 4).

[AUX] knob

Adjusts the audio output level of the AUX jacks.

16 [MAIN] fader

Adjusts the audio output level of the MAIN jacks.

17 SCENE/BANK [1]–[8] buttons

[BANK] button	SCENE/BANK button function
Off (unlit)	These buttons select the scene to be output next (the preset scene). The color of the button indicates the output destination video bus. Red: PGM bus Green: PST bus * This is how the unit works when the system mode is set to “PGM/PST” (the factory setting).
On (lit)	Switches the scene bank. The selected button is lit blue.

18 TRANSITION**[MIX] [WIPE] button**

Select the video transition effects (MIX or WIPE). The selected button is lit.

[TIME] knob

Specifies the video transition time.

19 [BANK] button

When this is ON (lit), the SCENE/BANK [1]–[8] buttons function as bank select buttons for the scene.

20 [AUTO TRANSITION] button

Turns the auto transition function on/off.

When this is turned ON (lit), the operation for the [AUTO] button is automatically executed when you select the next scene to output (preset scene).

* This function is only enabled when the system mode is set to “PGM/PST”.

21 [LOGO] button

Turns the LOGO layer composite on/off for the scene (video) that’s output from the 4K STREAMING port (USB).

* Only still images saved in this unit can be used as sources for the LOGO layer.

* The LOGO layer is composited regardless of the video bus you select for the USB output.

22 [OUTPUT FADE] button

Fades the audio and PGM/PGM 1 bus video in/out.

The [OUTPUT FADE] button indicates the fade status.

Lit	Fade-out completed
Blinking	Now fading-in/out
Unlit	Normal output

* The fade time is specified by the [TIME] knob setting.

23 [DSK] button

Turns DSK composition on/off for the PGM/PGM 1 bus scene.

24 [CUT] [AUTO] buttons

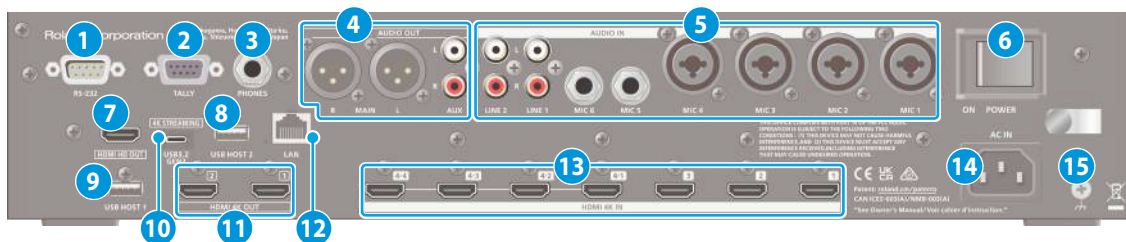
Use these buttons to automatically output the PST bus scene to the PGM bus.

[CUT]	The scene switches instantly.
[AUTO]	The scene switches with a transition effect applied.

* This function is only enabled when the system mode is set to “PGM/PST”.

Rear panel

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



Pin assignment	MAIN jacks (XLR)	MIC 1-4 jacks (XLR)	MIC 1-6 jacks (TRS)
	1: GND — 2: HOT 3: COLD	2: HOT — 1: GND 3: COLD	TIP: HOT RING: COLD SLEEVE: GND

1 RS-232 connector

You can connect this to a computer equipped with an RS-232 connector, and remotely control the VR-400UHD.

2 TALLY connector

Use this to connect to devices that have a tally indicator feature.

3 PHONES jack (Stereo 1/4-inch phone type)

Connect headphones.

4 MAIN, AUX jacks

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

You can configure what's assigned to the audio bus (MAIN, AUX) for each jack. With the factory settings, the bus assignments are as follows.

MAIN jacks	MAIN bus	AUX jacks	AUX bus
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5 MIC 1-6, LINE 1, LINE 2 jacks

These jacks input audio. Choose the jacks that are appropriate for the connected devices.

About phantom power

You can supply phantom power (+48 V) from the MIC 1-4 jacks (XLR). Turn on phantom power when you're using a condenser microphone that requires phantom power.

Press the [HOME] button, access MIC 1-4 <SETUP> from the audio mixer screen and then set "+48V" on the Audio Input Setup screen to "Enable".

* If you don't need phantom power, be sure to turn phantom power off. You risk causing damage if you mistakenly supply phantom power to dynamic microphones or other devices that don't require such power.

6 [POWER] switch

Turns the power on/off.

7 HDMI HD OUT connector

Outputs the same video as the built-in monitor. You can select which video to output (either the video shown on the left monitor or on the right). The same audio as the audio output from the MAIN connectors is outputted.

* The output format is always HD (720p/60 Hz).

8 USB HOST 2 port

Connect a USB flash drive. Use this for saving/recalling the internal settings, or for loading still images.

9 USB HOST 1 port

Connect a USB flash drive. This is used to update the system program.

10 4K STREAMING port (USB Type-C®)

Outputs video/audio to a computer that's connected to this unit. When the [LOGO] button on the top panel is on, you can overlay a still image (a logo or image) on top of the scene to output.

This is also used to input audio played on your computer to the VR-400UHD.

* Your computer and USB cable must be compatible with the following specifications in order to output video (p. 18).

USB 3.2 Gen 1/5 Gbps (USB 3.1 Gen 1, USB 3.0)

USB 3.2 Gen 2/10 Gbps (USB 3.1 Gen 2)

* If you connect via an extension cable or a USB hub, the computer might not recognize the VR-400UHD.

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

11 HDMI 4K OUT 1, 2 connectors

These connectors output video and audio.

The video output from each connector differs depending on the system mode and video bus settings. With the factory settings, the video bus assignments are as follows.

HDMI 4K OUT 1 connector	PGM bus
HDMI 4K OUT 2 connector	PST bus

12 LAN port

Connect a controlling device and use a command-line app such as Terminal or the command prompt to remotely control the VR-400UHD over a network.

13 HDMI 4K IN 1-3, 4-1-4-4 connectors

These connectors input video and audio. Select one input of the HDMI 4K IN 4-1 through 4-4 connectors, which you can use as a scene or DSK source.

The input format is automatically recognized.

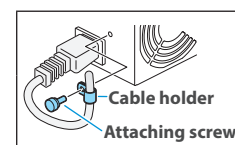
14 AC IN jack

Connect the included power cord.

You can fasten the power cord with the cable holder to keep it in place.

1 Loosen the attaching screw and remove the cable holder.

2 Reattach the cable holder with the power cord fastened underneath, and tighten the screw back in place.



15 Ground terminal

Connect this to an external earth or ground if necessary.

Basic operations

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.

Turning the power on

1. Make sure that all devices are powered-off.
2. Turn on the [POWER] switch on the VR-400UHD to turn on the power.



3. Turn on the power in the order of source devices → output devices.

Turning the power off

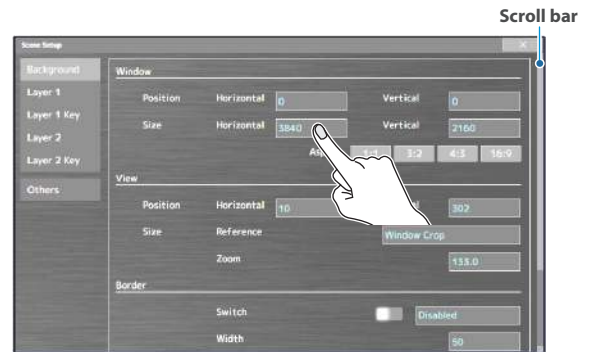
1. Turn off the power in the order of output devices → source devices.
2. Turn off the [POWER] switch on the VR-400UHD to turn off the power.

- * If you need to turn off the power completely, first turn off the unit, then unplug the power cord from the power outlet.
For details, read "USING THE UNIT SAFELY" (to completely turn off power to the unit, pull out the plug from the outlet) in the Startup Guide.

Screen (touch panel) operations

Here's how to configure the video/audio settings along with the settings for this unit by operating the screen.

1. Press the [HOME] button or [SETUP] button.
The home screen or SETUP screen appears.
2. Touch the screen to select the setting item that you want to edit.

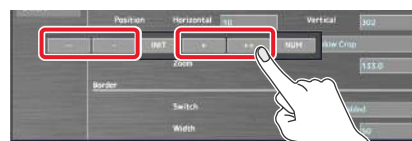


- * When the scroll bar is shown:
Touch and drag up/down on the screen to scroll it.

3. Repeat step 2 as needed.
Touching < X > on the screen or pressing the [EXIT/ALT] button returns you to the previous screen.
4. Touch the screen or turn the [VALUE] knob to change the setting value.



Changing numerical values



INIT	Returns the current setting item you're setting to its default value.
NUM	Displays the numerical value popup. You can enter a numerical value by touching the number keys.

Saving your settings

The settings are saved to this unit if you don't operate the unit for four seconds, or if you press the [HOME] button to close the screen.

Video input/output settings

List of compatible video formats

Input formats

HDMI 4K IN connectors

2160p/60 Hz	1080p/60 Hz	720p/59.94 Hz
2160p/59.94 Hz	1080p/59.94 Hz	720p/60 Hz
2160p/50 Hz	1080p/50 Hz	720p/50 Hz
2160p/30 Hz	1080p/30 Hz	2560 x 1440/120 Hz (*1)
2160p/29.97 Hz	1080p/29.97 Hz	2560 x 1440/60 Hz (*1)
2160p/25 Hz	1080p/25 Hz	
2160p/24 Hz	1080p/24 Hz	
2160p/23.98 Hz	1080p/23.98 Hz	
1080p/120 Hz	1080i/59.94 Hz	
1080p/119.88 Hz	1080i/50 Hz	

(*1) Conforms to VESA-DMT

Audio formats

HDMI 4K IN connectors	Linear PCM, 24 bits, 48 kHz, 2 ch
4K STREAMING port	Linear PCM, 16 bits, 48 kHz, 2 ch

Output formats

HDMI 4K OUT connectors

2160p/60 Hz	2160p/25 Hz	1080p/60 Hz
2160p/59.94 Hz	2160p/24 Hz	1080p/59.94 Hz
2160p/50 Hz	2160p/23.98 Hz	1080p/50 Hz
2160p/30 Hz		1080p/30 Hz
2160p/29.97 Hz		1080p/29.97 Hz

HDMI HD OUT connector

1280x720/60 Hz

4K STREAMING port

Resolution	Frame rate
3840x2160	30 Hz, 29.97 Hz, 25 Hz
2560x1440	
1920x1080	60 Hz, 59.94 Hz, 50 Hz, 30 Hz, 29.97 Hz, 25 Hz
1280x720	
960x540	

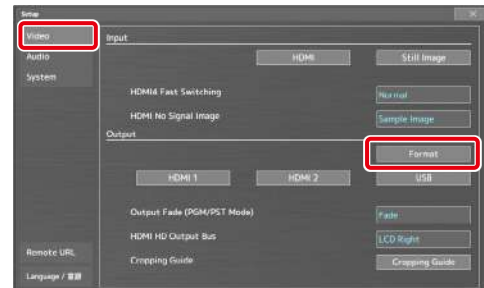
Audio formats

HDMI 4K OUT connectors	Linear PCM, 24 bits, 48 kHz, 2 ch
4K STREAMING port	Linear PCM, 16 bits, 48 kHz, 2 ch

Setting the output format

Here's how to specify the output format as appropriate for the device that's connected.

1. From the [SETUP] button, touch <Format> in the <Video> tab.



Displays the Video Output Setup screen.

2. Touch <Format>.



The Format Select window appears.

3. Touch the screen to select the output format, and touch <Execute>.



The output format switches.

MEMO

- It may take some time for the output format to change (up to around three minutes).
- The output format of the HDMI HD OUT connector is fixed at HD resolution (720p/60 Hz).
- Set the output resolution and frame rate of the 4K STREAMING port from the "Resolution" and "Frame Rate" settings in the <USB> tab on the Video Output Setup screen (p. 35).

Specifying the input format (EDID)

With the factory settings, the EDID data is "Default" (set so that EDID data for all formats that can be inputted is sent).

Edit this setting if you want the EDID data for a specific input format to be sent to the source device.

What is EDID?

EDID is data that is transmitted from the VR-400UHD to the source device when the VR-400UHD is connected to a source device. EDID contains data such as the formats that can be input to the VR-400UHD (resolution, color space, color depth) and audio information.

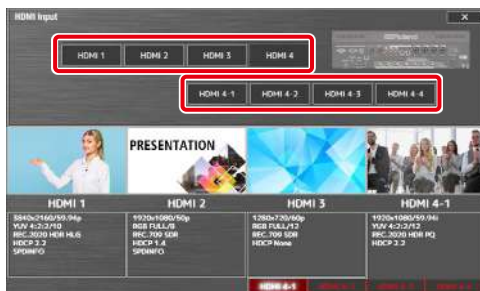
Based on the EDID data that the source device receives, it outputs the most appropriate video format to the VR-400UHD.

1. From the [SETUP] button, touch input <HDMI> in the <Video> tab.



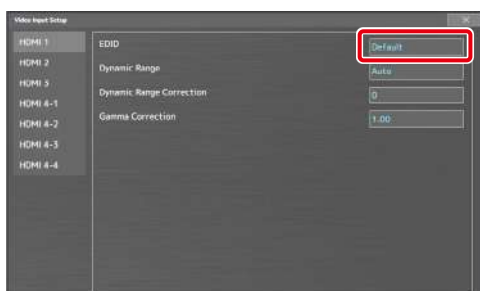
The HDMI Input screen appears.

2. Touch <HDMI 1>–<HDMI 4-4>.



Displays the Video Input Setup screen.

3. Touch <EDID> and select the input format (the EDID data that's sent).



This switches the input format (EDID).

Inputting copy-protected (HDCP) video

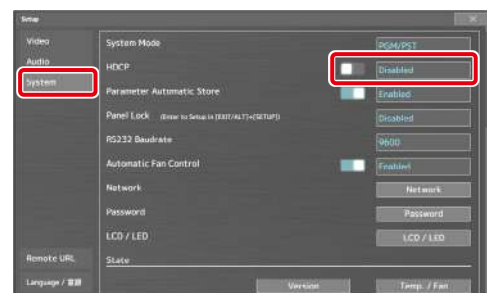
If you want to input HDCP-protected video from a BD player or other device, you can enable HDCP input.

- * If you want to output copy-protected (HDCP) video or audio, connect a device that supports HDCP.

What's HDCP?

HDCP is copyright-protection technology that prevents unlawful copying of content by encoding the path when sending digital signals from a video playback device to a display monitor or other display equipment.

1. From the [SETUP] button, touch <HDCP> in the <System> tab.



2. Touch the screen to select <Enabled>.

Value	Explanation
Enabled	HDCP-protected video can be input. HDCP is also added to the video that is output. * Video/audio is not output from the 4K STREAMING port while HDCP is enabled.
Disabled	HDCP-protected video cannot be input.

Video operations

Setting the output method for scenes (system mode)

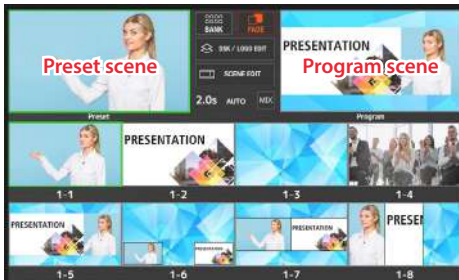
There are two methods of outputting a scene: PGM/PST mode and dual mode.

The scene output method is determined by the system mode.

PGM/PST mode (factory settings)

In this mode, you select the scene (preset scene) to be used next for program output, after which the program scene switches according to the take operation.

You can add mix and wipe effects that are applied when switching between scenes.



Dual mode

In this mode, use the left-right monitors to respectively select the scene to output for programs 1 and 2. You can output two different scenes at the same time.

Scene switching is always performed as a freeze-frame cut.



The target operations for the buttons and knobs change according to the system mode, as follows.

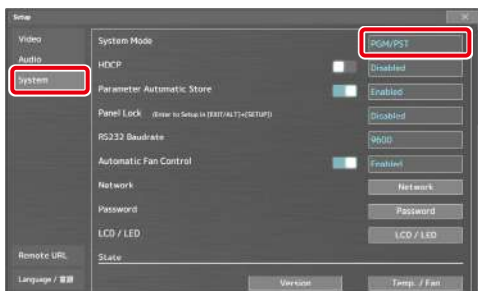
Button/knob operation	PGM/PST	Dual
[CUT]	✓	–
[AUTO]	✓	–
[AUTO TRANSITION] (auto transition function)	✓	✓ (Always ON)
[MIX] [WIPE]	✓	– (Freeze-frame cut)
[TIME]	✓	✓ (*1)
SCENE/BANK [1]–[8]	✓	Program 1 (*2)
[BANK]	✓	Program 1 (*2)
[OUTPUT FADE]	✓	Program 1 (*2)
[DSK]	✓	Program 1 only

(*1) Operates both programs 1 and 2 at the same time (common setting).

(*2) Only touch operations on the multi-view PGM 2 screen are available for program 2.

Changing the system mode

1. From the [SETUP] button, touch <System Mode> in the <System> tab.



2. Touch the screen to select either “PGM/PST” or “Dual”.

Switching scenes in PGM/PST mode

Here are the steps when "PGM/PST mode" (p. 10) is selected in the system mode settings.

1. Press the [HOME] button.



The audio mixer screen is shown on the left monitor, and the multi-view screen is shown on the right monitor.

2. Press the [MIX] or [WIPE] button to select the transition effect.



Mix

The two videos are mixed as the transition occurs.



Wipe

The next video moves across to replace the original video.



3. Use the [TIME] knob to set the video transition time (0.0–2.0 sec).



4. Select a preset scene (the next scene to be output).

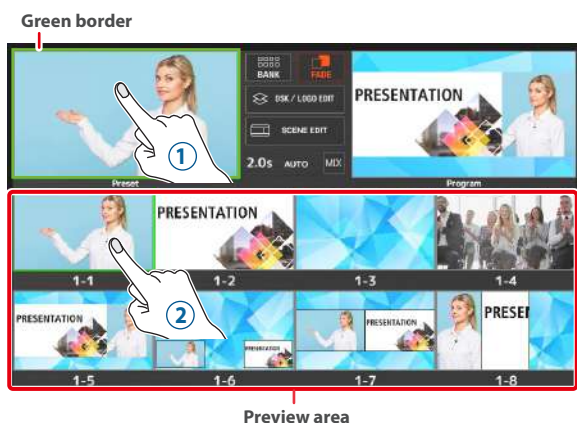
Selecting by touch on the multi-view screen

① Touch the preset area.

A green border appears around the preset area. You can select a preset scene in the preview area while the green border is shown.

② In the preview area, touch the scene you want to output.

A green border is shown around the selected scene.



Selecting with the buttons

① Press the SCENE/BANK [1]–[8] buttons.

The selected button lights up green.



5. Press the [AUTO] or [CUT] button.



Button	Explanation
[CUT]	The program scene switches via cut.
[AUTO]	The program scene switches with a transition effect applied.

MEMO

- When you touch the transition effect area on the multi-view screen, the Transition Setup window appears, where you can edit the transition pattern for the wipe effect and so on (p. 41).



• Auto-transition function

Use the auto-transition function to automate the pressing of the [AUTO] button. The program scene switches automatically at the timing with which you selected the preset scene in step 4. Press the [AUTO TRANSITION] button to turn the auto-transition function on/off.

This is set to "ON" by factory default.



- When you touch the program area in the multi-view screen, a red border appears in the program area. You can touch to select a program scene in the preview area while the red border is shown.

Select a program scene to cut to the next scene, regardless of the transition effect you've selected.

Switching scenes in dual mode

Here are the steps when "Dual mode" (p. 10) is selected in the system mode settings.

* Scene switching is always performed as a freeze-frame cut.

1. Press the [HOME] button.



The multi-view PGM 1 screen is shown on the left monitor, and the multi-view PGM 2 screen is shown on the right monitor.

2. In the preview area on the multi-view PGM 1/PGM 2 screens, touch the scenes you want to use for program output.

The program scenes switch via freeze-frame cut.



A red border is shown around the program scenes.

MEMO

Scene link function

By using the scene link function, you can make the PGM 2 scene switch at the same time as the PGM 1 scene.

For PGM 2, the same scene number as PGM 1 is automatically selected.

* When you switch the scene for PGM 2, the link does not operate.

Touch <LINK> to turn the scene link function on/off.

Switching the scene bank

Each group of eight scenes is managed as a "bank". The VR-400UHD features eight banks.

Switching by touching the screen

1. Touch <BANK> on the multi-view screen.



The Bank Select window appears.

2. Touch the bank you want to use.



This switches to the new bank.

3. Touch < X > to close the Bank Select window.

MEMO

You can change the bank icon or bank name of the Bank Select window.

Content	Operation
Changing the bank icon	Touch the bank icon while holding down the [EXIT/ALT] button.
Changing the bank name	Touch the bank name while holding down the [EXIT/ALT] button.

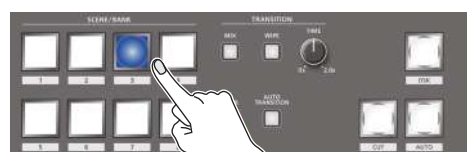
Switching with the buttons

* In dual mode, the buttons only work for PGM 1.

1. Press the [BANK] button to make it light up.



2. Press the SCENE/BANK [1]–[8] buttons to select the bank.



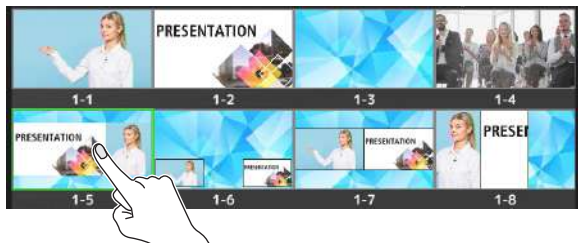
This switches to the new bank.

The selected button lights up blue.

Editing the scenes

This section explains the basic methods of editing a scene.

1. Touch the scene to edit in the preview area of the multi-view screen.



2. Touch <SCENE EDIT>.

* Touch <SCENE> when in dual mode.



The Scene Edit screen appears on the left and right monitors.

3. Edit the scene on the Scene Edit screen.

(Right-side screen)



1 Select the layer to edit (Operation layer)

Touch the layer to edit.

Touch <ON> to show or hide the respective layer.

2 Select the input source (Source)

Touch <VIDEO> to view the input video signals from the HDMI 4K IN connectors, as shown in 3. Touch to select the video to assign to the layer.

Touch 4 <HDMI 4-1>—<HDMI 4-4> to switch between the HDMI 4 input video signals.

* A black screen is shown when switching between video signals.

* The input video for HDMI 4 uses the same settings as VR-400UHD. You can't configure the settings for each layer or scene.

Touch <STILL> to show the still images (p. 15) loaded into this unit, as shown in 3. Touch to select the still image to assign to the layer.

(Left-side screen)



Square boxes (layer windows) are shown on the left-side screen to represent each layer's position and size.

The layer that's selected in the right-side screen in "Operation Layer" is targeted for editing.

Layer window operations

Position	Drag a layer window to move it.
Size	Drag the  symbol (size icon) at the bottom right corner of a layer window to enlarge or shrink the window. Moving only one side of a window When you touch one side of a layer window in a layer that's targeted for editing, an orange  symbol (edge icon) appears. Drag the  symbol to move only one side of the targeted window.

* You can also change the position and size of layer windows that aren't targeted for editing. For the parts of windows that overlap, the layer targeted for editing is given priority.

Video operations inside a layer window

A  symbol (view icon) and a  symbol (zoom icon) are shown in the windows of layers that are targeted for editing.

Position	Drag the  symbol to adjust the position of the video inside the layer window.
Size	Drag the  symbol (zoom icon) up and down to enlarge or shrink the video inside the layer window.

MEMO

- Since the changes you make to a scene are automatically saved, you don't need to do anything to save them.
- When you touch <UNDO> on the right-hand screen before the Scene Edit screen closes, you can revert the scene to how it was before editing.
- When you touch <SETUP> on the right-hand screen, you can make more detailed settings such as key composition. For details on the parameters, refer to "System Setup screen" (p. 38).

Using DSK and logo composition (DSK/LOGO layer)

A DSK layer is positioned in front of the scenes. The DSK layer lets you use DSK composition to add video or text (titles, captions, etc.) to a scene. In addition to the DSK layer, you can composite the still image (logo) from the LOGO layer, but only for video output from the USB port.

1. Send the scene you want to composite to program output.

- ➡ “Switching scenes in PGM/PST mode” (p. 11)
- ➡ “Switching scenes in dual mode” (p. 12)

2. Touch <DSK / LOGO EDIT>.

- * Touch PGM 1 <DSK> when in dual mode.



The DSK/LOGO Edit screen appears on the left and right monitors.

3. Edit the DSK or LOGO layer on the DSK/LOGO Edit screen.



1 Select the layer (DSK or LOGO) to edit

Touch the layer to edit.

Touch <TAKE> to show or hide the respective layer.

- * You can also do this by pressing the [DSK] or [LOGO] button.

2 Select the input source (Source)

Touch <VIDEO> to view the input video signals from the HDMI 4K IN connectors, as shown in 3. Touch to select the video to assign to the layer.

Touch 4 <HDMI 4-1>--<HDMI 4-4> to switch between the HDMI 4 input video signals.

- * A black screen is shown when switching between video signals.
- * The input video for HDMI 4 uses the same settings as VR-400UHD. You can't configure the settings for each layer or scene.

Touch <STILL> to show the still images (p. 15) loaded into this unit, as shown in 3. Touch to select the still image to assign to the layer.

(Left-side screen)



Square box (layer window) is shown on the left-side screen to represent the layer's position and size.

The layer that's selected in the right-side screen in “Operation Layer” is targeted for editing.

- ➡ “Layer window operations” (p. 13)

- * Only the layer window is shown in the LOGO layer. Video is not shown in the window. Check the output destination device to see the video in the window.

- * You can't enlarge/shrink the video in the layer window for the DSK or LOGO layers.

4. Touch <SETUP>.

The DSK/LOGO Setup screen appears.

5. Touch the parameters to edit their settings.



- * For details on the parameters, refer to “DSK/LOGO Setup screen” (p. 40).

Loading a still image

You can load still images into this unit and use them as input video sources. There are three ways to load a still image: (1) from a USB flash drive, (2) from preset still images (p. 16), and (3) by capturing the output video (p. 16).

You can save up to eight still images in the unit.

- * When still images are saved in the unit, startup takes longer time according to image size and the number of still images saved.
- * If you've canceled the still image load operation when starting up this unit, you can load the still images later, as these images are stored in internal memory. See "Loading still images from internal memory after startup" (p. 17) for details.

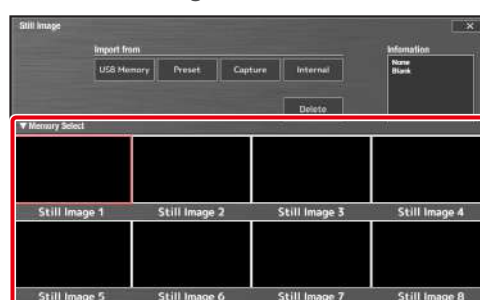
Loading a still Image from a USB flash drive

Here's how to load a still image from a USB flash drive into the unit.

NOTE

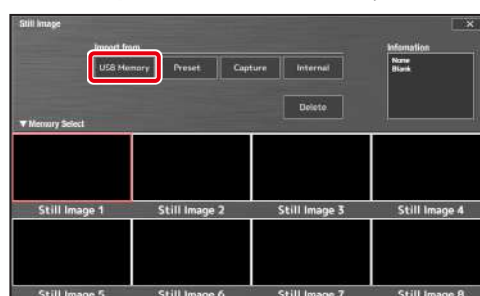
- You can't shrink the still images. In advance, you must prepare still images of the resolution that is appropriate for your output format.
- When using a USB flash drive for the first time, you must format it using the VR-400UHD (p. 27).
- Never turn off the power or remove the USB flash drive while the message "Loading Still Images." is shown.
- Depending on the USB flash drive, recognition of the flash drive might take some time.

- Touch Memory Select <Still Image 1>–<Still Image 8> to select the loading destination for the still image.



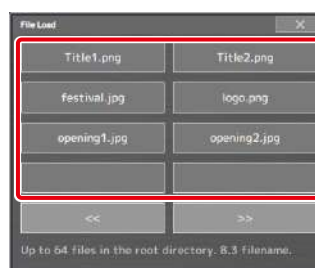
A red border is shown around the selected memory.

- Touch "Import from <USB Memory>".



A list of the still images (up to 64) in the USB flash drive is shown.

- Touch the still image file you want to load.



The still image is loaded into the unit. "Done." is shown once the operation is finished.

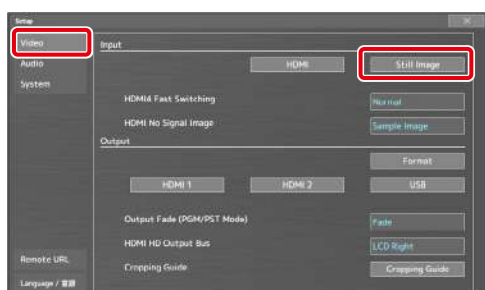
- Touch <OK> to close the message.

Formats supported for loading

Format	Bitmap file (.bmp), 24-bit color, uncompressed
	JPEG file (.jpg, .jpeg), 24-bit color
	PNG file (.png), 24-bit color * Alpha channel supported
Resolution	Maximum 3840 x 2160 pixels
File name	Maximum of 12 single-byte alphanumeric characters, including the file extension * You must add the extension ".bmp", ".png", ".jpg" or ".jpeg".

Loading a still image

- Save the still image in the root directory of the USB flash drive.
- Connect the USB flash drive to the USB HOST 2 port.
- From the [SETUP] button, touch <Still Image> in the <Video> tab.

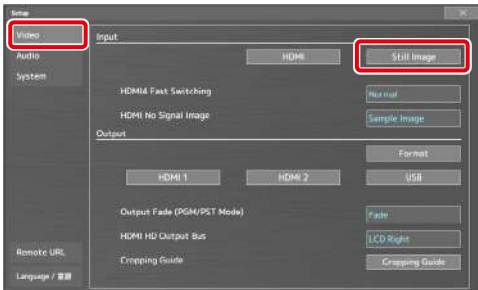


The Still Image screen appears.

Loading the preset still images

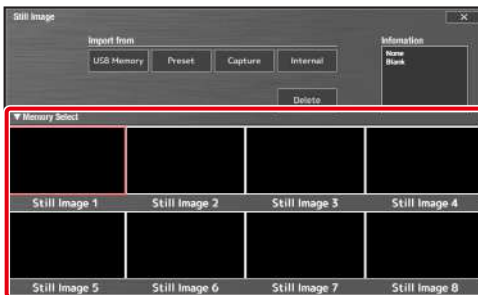
This shows how to specify the still image patterns (16 types) and pattern colors, and load the preset still images into this unit.

1. From the [SETUP] button, touch <Still Image> in the <Video> tab.



The Still Image screen appears.

2. Touch Memory Select <Still Image 1>--<Still Image 8> to select the loading destination for the still image.



A red border is shown around the selected memory.

3. Touch Import from <Preset>.



Preset Still Image Select window appears.

4. Touch the parameters to edit their settings.



Setting	Explanation
Pattern	Selects the pattern color.
Color Theme	Loads the still image.

5. Touch <Generate>.

The still image is loaded into the unit. "Done." is shown once the operation is finished.

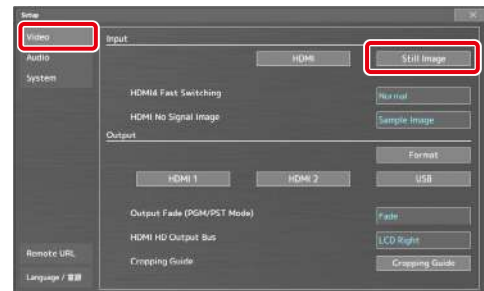
6. Touch <OK> to close the message.

Capturing a still image from program output video

Here's how to capture a still image from the program output video.

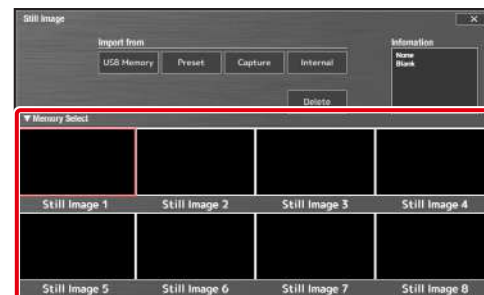
- * When in dual mode, this captures the output video for program 1 (PGM 1).

1. From the [SETUP] button, touch <Still Image> in the <Video> tab.



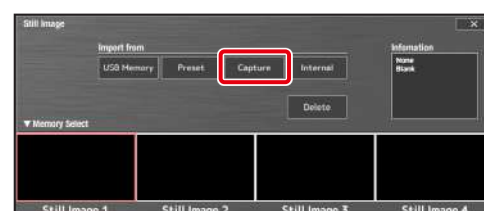
The Still Image screen appears.

2. Touch Memory Select <Still Image 1>--<Still Image 8> to select the loading destination for the still image.



A red border is shown around the selected memory.

3. Touch "Import from <Capture>" at the desired timing.



A confirmation message appears.

- * To cancel, touch <Cancel>.

4. Touch <Execute>.

The capture is executed. "Done." is shown once the operation is finished.

5. Touch <OK> to close the message.

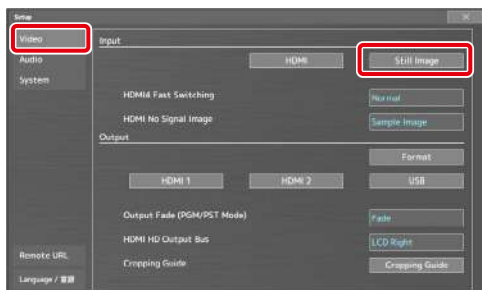
MEMO

- If you capture when HDCP (p. 9) is on, the still image that is created is handled in the same way as HDCP-protected video. This feature is unavailable if HDCP is disabled.
- The capture may take some time to finish.

Deleting a still image

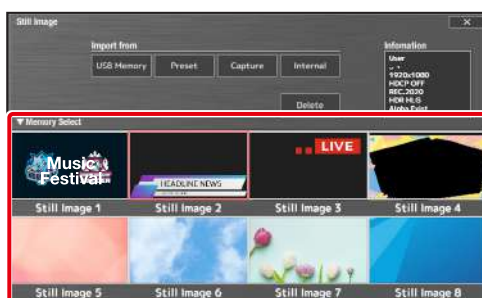
Here's how to delete the still image that's saved in the unit.

1. From the [SETUP] button, touch <Still Image> in the <Video> tab.



The Still Image screen appears.

2. Touch Memory Select <Still Image 1>–<Still Image 8> to select the still image you want to delete.



A red border is shown around the selected memory.

3. Touch <Delete>.



A confirmation message appears.

* To cancel, touch <Cancel>.

4. Touch <Execute>.

The still image is deleted. "Done." is shown once the operation is finished.

5. Touch <OK> to close the message.

Loading still images from internal memory after startup (after canceling still image load during startup)

The still images saved to internal memory are loaded when you turn on this unit. A status message is shown while the still images are being loaded, and you can touch <Cancel> to cancel the operation. If you've canceled the operation, you can load the still images later from internal memory.

* If you've already loaded different still images after starting up this unit, the still images in internal memory are overwritten.

1. From the [SETUP] button, touch <Still Image> in the <Video> tab.
2. To specify an internal memory and load the still images, touch Memory Select <Still Image 1>–<Still Image 8>.

* You don't need to do this if you want to load all of the still images from memory.

3. Touch Import from <Internal>.

The Load from Internal Memory window appears.



4. Touch either <All memories> or <One memory>.

All memories	Load all still images saved to internal memory.
One memory	Only the still images from the internal memory that you specified in step 2 are loaded.

The still image is loaded into the unit. "Done." is shown once the operation is finished.

5. Touch <OK> to close the message.

Outputting video/audio to a computer for streaming

Here's how the video and audio mixed by the VR-400UHD can be output to a connected computer. You can also input audio that's played back by the computer. By using an internet-connected computer with streaming software, you can distribute content as a live internet stream.

- * In order for the audio and video from this unit to be correctly viewed on the computer, software that supports the USB video class and USB audio class must be installed on the computer.
- * For the latest operating requirements, refer to the Roland website (<https://proav.roland.com/>).

Outputting Video and Audio to the Computer

Your computer and USB cable must be compatible with the following specifications in order to output video.

- USB 3.2 Gen 1/5 Gbps (USB 3.1 Gen 1, USB 3.0)
- USB 3.2 Gen 2/10 Gbps (USB 3.1 Gen 2)

USB standard	Output resolution
USB 2.0	Video cannot be output. Only audio is output.
USB 3.2 Gen 1/5 Gbps	960 x 540, 1280 x 720, 1920 x 1080
USB 3.2 Gen 2/10 Gbps	960 x 540, 1280 x 720, 1920 x 1080 1920 x 1080, 2560 x 1440, 3840 x 2160

- * The first time that the VR-400UHD is connected to the computer, the standard drivers of the operating system are installed automatically.
- * If you connect via an extension cable or a USB hub, the computer might not recognize the VR-400UHD.

Audio settings

- 1 Touch **USB <SETUP>** in **AUDIO OUTPUT** on the audio mixer screen (p. 20).
- 2 Touch the parameters to edit their settings.



- * For details on the parameters, refer to "Audio Output Setup screen" (p. 44).

- **To send audio to the USB bus:** set this in "USB SEND" on the PAN/AUX/USB/REVERB SEND screen (p. 21).
- **To change the USB output volume:** adjust the [USB] knob.

Checking the USB connection status

You can check the USB connection status from the Video Output Setup screen ([SETUP] button → <Video> tab → <USB>).



When the connection is established, the "Connection" area indicates the current status (USB3.2 GEN1 or USB3.2 GEN2).

If this indicates "None", a connection is not established.

If you have these problems

Operation is unstable, such as if a connection cannot be established, or the video is disordered

Touch <Connection Reset> and try reconnecting the VR-400UHD to your computer.

The "Dropped Frames" number is increasing

Normally this indicates "0". If the number is increasing, video transmission is not fast enough.

Either use "Resolution" to lower the output resolution, or use "Frame Rate" to lower the frame rate.

Using the loopback function

Audio from the computer can be input to the VR-400UHD via USB, mixed with other audio, and returned to the computer (the loopback function).

You can add a narration to music that's played back from your computer and live-stream it, or record it using app on your computer.

1. Turn on the VR-400UHD and your computer.
2. Using a USB cable, connect a USB port on the computer to the 4K STREAMING port on the VR-400UHD.
When communication with the computer has been established, the computer recognizes the VR-400UHD as a USB video device and USB audio device.
3. Operate the VR-400UHD to output video/audio to your computer.
4. On your computer, verify the input from the VR-400UHD.
Start software that supports the USB video class and audio class, and verify the video and audio that are being input from the VR-400UHD.
5. Operate the VR-400UHD to make settings for the video/audio that will be output via USB.

Video settings

- 1 From the [SETUP] button, touch <USB> in the <Video> tab.
- 2 Touch the parameters to edit their settings.



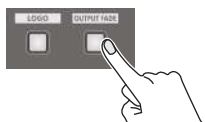
- * For details on the parameters, refer to "Video Output Setup screen" (p. 36).

Fading the program output video in/out

Here's how to perform a fade-out from the program output video to a black screen, or a fade-in from a black screen to the program output video.

- * The program output video and audio fade in/out simultaneously.
- * The fade-in/out effect is applied only to the program output.

1. Press the [OUTPUT FADE] button.



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

The program output video fades out to a black screen.

When fade-out is complete, the [OUTPUT FADE] button lights up.

2. To fade in, press the [OUTPUT FADE] button again.

The [OUTPUT FADE] button blinks, and program output begins.

When fade-in is complete, the [OUTPUT FADE] button goes dark.

MEMO

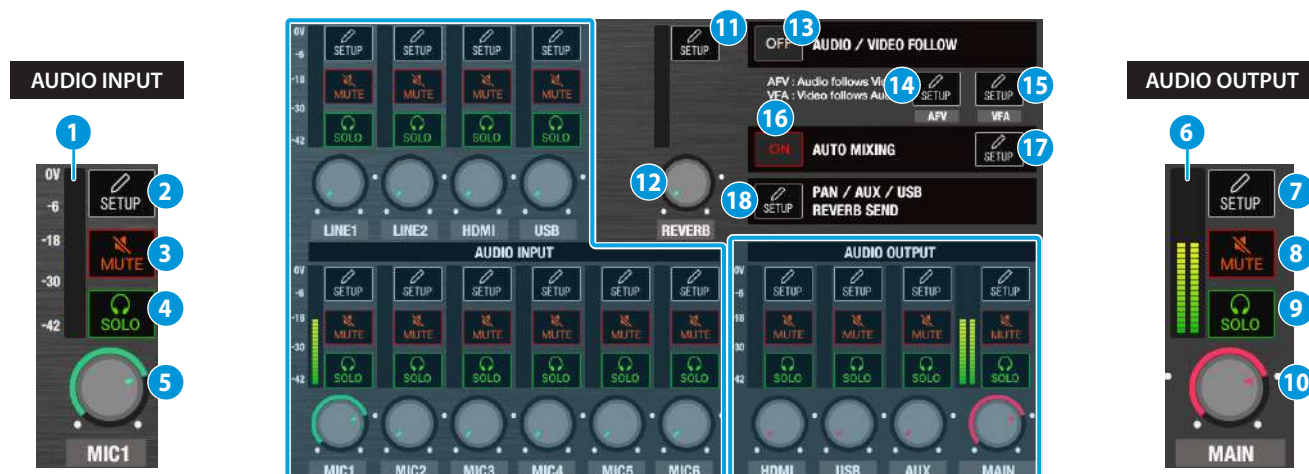
- The time required for fade-in/out is determined by the video transition time setting.
- You can assign the freeze function to the [OUTPUT FADE] button to temporarily freeze or pause the program output video.
Set "Output Fade" to "Freeze" from the <Video> tab on the Setup screen (p. 33).
- When in dual mode, the output video for program 1 (PGM 1) fades in/out.
To fade the program 2 (PGM 2) output video in/out, touch <FADE> on the multi-view PGM 2 screen.

Audio operations

Audio mixer screen

PGM/PST mode: Press the [HOME] or [SETUP] button to show the audio mixer screen.

Dual mode: Press the [SETUP] button to show the audio mixer screen.



AUDIO INPUT (LINE 1, LINE 2, HDMI, USB, MIC 1–6)

This configures the input audio and adjusts the volume.

About the LINE 1/LINE 2/HDMI/USB channels

You can assign and use an audio source other than a mic (from LINE 1, LINE 2, HDMI 1–4 or USB).

Edit the audio source assignments from <SETUP> → “Source” for each channel.

1 Level meter

Indicates the volume level.

2 AUDIO INPUT <SETUP>

Displays the Audio Input Setup screen (p. 42, p. 43).

3 <MUTE>

Turn the mute function on/off. When this is on (lit), the audio is temporarily silenced.

4 <SOLO>

Turn the solo function on/off. Only the audio for which this is on (lit) is heard in the headphones.

5 Volume knob

Adjusts the input volume.

AUDIO OUTPUT (HDMI, USB, AUX, MAIN)

This configures the output audio and adjusts the volume.

6 Level meter

Indicates the volume level.

7 AUDIO OUTPUT <SETUP>

Displays the Audio Output Setup screen (p. 44).

8 <MUTE>

Turn the mute function on/off. When this is on (lit), the audio is temporarily silenced.

9 <SOLO>

Turn the solo function on/off. Only the audio for which this is on (lit) is heard in the headphones.

10 Volume knob

Adjusts the output volume.

11 REVERB <SETUP>

Displays the Audio Others Setup screen (p. 46).

12 <REVERB>

Adjusts the amount of sound that is returned from the reverb (return level).

13 AUDIO / VIDEO FOLLOW <OFF>

Touching this button toggles between “OFF”, “VFV” and “AFV”.

OFF	Off
VFA	Video Follows Audio function: ON
AFV	Audio Follows Video function: ON

14 AFV <SETUP>

Displays the Audio follow video screen (p. 46).

15 VFA <SETUP>

Displays the Video follow audio screen (p. 47).

16 AUTO MIXING <ON>

Turns the auto-mixing function (used to automatically control the volume) on/off.

17 AUTO MIXING <SETUP>

Displays the Audio Others Setup screen (p. 46).

18 PAN / AUX / USB REVERB SEND <SETUP>

Displays the PAN / AUX / USB / REVERB SEND screen (p. 21).

PAN/AUX/USB/REVERB SEND screen



<PAN>

Adjusts the stereo position (pan).

If you're using two mics to stream a performance, panning the two mics to left and right will give the sound a more spacious feel.

<REVERB>

Adjusts the amount of audio that is sent to reverb.

<USB SEND>

Sets whether the audio signal is sent to the USB bus. When this is on (lit), audio is sent to the USB bus.

<AUX>

Adjusts the amount of audio sent to the AUX bus.

AUX <Pre/Post>

Specifies the position from which the audio sent to the AUX bus is taken.

(PRE)	The send volume is constant, regardless of the input volume (pre-fader).
(POST)	The send volume can be changed by adjusting the input volume (pre-fader).

Adjusting the input gain (sensitivity)

Here's how to adjust the input gain so that the audio is at the appropriate level.

In this example, we use the audio from MIC 1.

1. On the audio mixer screen, set the MIC 1 and MAIN volume knobs near the indicator (97 = 0 dB).



- Operations using the panel controls

[MIC 1]–[MIC 4] faders	Adjusts the volume of MIC 1–4.
INPUT [5] [6] knobs	Adjusts the volume of the audio source that's assigned to the knobs.
[MAIN] fader	Adjusts the MAIN volume.

2. Touch MIC 1 <SETUP>.

The Audio Input Setup screen appears.

3. Touch <GAIN (dB)> to adjust the input gain while outputting audio.



Raise the input gain as high as possible without allowing the level meter to light red when the loudest sound level occurs.



Applying effects to input audio

You can apply effects to the input audio to adjust the character of the sound. The following table shows the effects that are available.

Input audio	Reverb	High-pass filter	Anti-feedback	Noise gate	Compressor	De-esser	Delay	Parametric equalizer
MIC 1–6	✓	✓	✓	✓	✓	✓	✓	✓
LINE 1, LINE 2, HDMI, USB	✓	✓	–	✓	✓	–	✓	✓

Follow the steps below to configure effects aside from reverb.

* For reverb, refer to “Applying reverb” on this page.

1. Touch <SETUP> for each input audio source on the audio mixer screen.

The Audio Input Setup screen appears.

2. Touch the effect parameters to edit their settings.



For details on the parameters, refer to the following pages.

- ➔ “Audio Input Setup screen (MIC)” (p. 42)
- ➔ “Audio Input Setup screen (excluding MIC)” (p. 43)

Reverb

Adds reverberation to the sound.

High-pass filter (HPF)

Cuts off unneeded low-band audio. The cutoff frequency is 80 Hz.

Anti-feedback

Decreases the unpleasant acoustic feedback that occurs when a mic is brought near a speaker.

Noise Gate

Eliminates audio that is lower than the specified threshold level. This helps remove white noise and other such sounds during silence.

Compressor

Audio that exceeds the specified threshold level is compressed. This reduces the difference between the louder and softer sounds, making the audio more listenable.

De-esser

Reduces sibilant noise (the sounds you hear when pronouncing “s” words and other hissing sounds).

Delay

Outputs audio with a delay. You can make the timing of the video and audio match.

Parametric Equalizer

This is a 4-band parametric equalizer. This adjusts the volume for each frequency band to make the audio easier to hear.

Applying reverb

Adds reverberation to the sound.

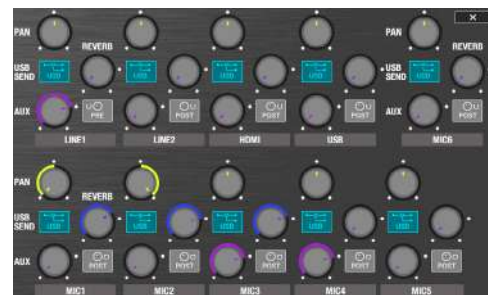
Adjusting how much reverb to send

1. On the audio mixer screen, touch PAN / AUX / USB / REVERB SEND <SETUP>.

The PAN / AUX / USB / REVERB SEND screen appears.

2. Use the <REVERB> knob to adjust how much audio is sent to reverb.

Adjust the reverb depth for each input audio channel.



Adjusting how much reverb is returned

3. Touch REVERB <SETUP> on the audio mixer screen.

The Audio Others Setup screen appears.

4. Touch <Switch> and select “Enabled”.

Reverb turns on.



5. Touch a parameter to adjust how the reverb is applied.

Setting	Explanation
Type	Specifies the reverb type.
Time (sec)	Specifies the time until the reverberation is no longer heard.

6. On the audio mixer screen, use the <REVERB> knob to adjust how much audio is returned from reverb (return level).

This adjusts the depth of the overall reverb.

Applying effects to output audio

Here's how to modify the tonal character by applying effects to the audio output. The following table shows the effects that are available.

Audio bus	Delay	Compressor	Limiter	Graphic equalizer
Main, AUX, USB	✓	✓	✓	✓

1. Touch <SETUP> for each output audio source on the audio mixer screen.

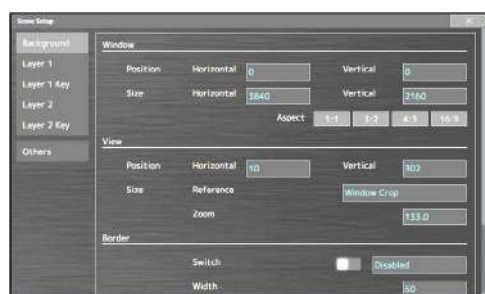
The Audio Output Setup screen appears.

2. Touch the "Delay" parameters to edit their values.

When using an effect other than delay, touch <SETUP>.



3. Touch the effect parameters to edit their settings.



* For details on the parameters, refer to "Audio Output Setup screen" (p. 44).

Delay

Outputs audio with a delay. You can make the timing of the video and audio match.

Compressor

Audio that exceeds the specified threshold level is compressed. This reduces the difference between the louder and softer sounds, making the audio more listenable.

Limiter

Enables the limiter. Limits the output volume so that it does not exceed the specified threshold level.

Graphic Equalizer

This is a 15-band graphic equalizer. This adjusts the volume for each frequency, to make the audio easier to hear.

Controlling volume levels automatically (auto mixing)

Auto mixing is used to automatically adjust the volume, a task that's normally performed by an operator.

This lets you rely on the VR-400UHD to make complex volume adjustments if a dedicated operator is not available. This is especially useful for meetings, discussions, debates, and other situations where multiple microphones are used.

1. On the audio mixer screen, touch AUTO MIXING <ON> to make it light up.

The auto mixing function turns on.



2. Touch AUTO MIXING <SETUP>.

The Audio Others Setup screen appears.



3. Touch <Switch> for Mic 1–6 to set auto mixing to "Enabled" or "Disabled" for each of these inputs.

For audio that does not require auto mixing, such as background music, set this to "Disabled".

4. Touch <Weight> to set the weight level (priority for volume distribution).

If there is audio that you want to make more prominent, such as when you want to raise the volume level of an emcee microphone, raise the weight level of that audio to emphasize it, and lower the weight level for other audio.

- On audio to which Auto Mixing is applied, setting the weight level to "0" results in no audio output.
- When air conditioner noise or the like is a concern, set the weight level to a lower value.

5. To turn auto mixing off, touch AUTO MIXING <ON> again.

Switching the scene automatically (video follows audio)

Here's how to automatically switch to the desired scene when the unit detects audio input that matches specific conditions (Video Follows Audio). For example, if you're streaming a talk show or a conversation, you can use this to switch between a closeup of the individual who is speaking and a wide shot of both people when neither person is speaking.

1. Touch VFA <SETUP> on the audio mixer screen.

The Video follows audio screen appears.

2. Touch the parameters to edit their settings.

Common tab



Setting	Explanation
Destination	Specifies the video bus used for Video Follows Audio.
Duration (sec)	Specifies the time until audio detection resumes after the scene finishes switching.
Sense (dB)	Sets the detection level for audio, for each input.
Mic 1-6 Line 1, 2 HDMI USB	When the input audio exceeds the detection level, the indicator next to the input box for the value lights up.

3. On the audio mixer screen, touch AUDIO / VIDEO FOLLOW <OFF> to turn VFA to the ON setting.

Touching this button toggles between "OFF", "VFA" and "AFV".

When this is set to "VFA", the Audio Follows Video function turns on.

* You can also do this by pressing the [FOLLOW] button.



MEMO

You can swap the settings between slots to change the audio detection priority. Lower slot numbers have greater priority.

From the <Priority> tab, set the "Source" (where you want to swap the settings from) and the "Destination" (where you want to move the settings to), and touch <Execute>.

Slot 1-8 tabs

This registers the detailed conditions (slots 1-8) for Video Follows Audio.



Setting	Explanation	
Switch	Enables/disables the slot. If multiple slots are enabled, audio is detected starting from the lowest slot number.	
Recall Scene	Sets the scene that's outputted when the input audio meets the conditions specified by the "Condition" parameters.	
Condition	This specifies the conditions for detecting audio, for each input. The scene changes when audio is detected that meets the conditions on all inputs.	
Mic 1-6 Line 1, 2 HDMI USB	Presence	The detected audio exceeds the level set in the "Sense (dB)" setting.
	Absence	The detected audio is less than the level set in the "Sense (dB)" setting.
	Ignore	Ignores audio detection.

Interlinking audio output to scene switching (audio follows video)

The Audio Follows Video function recalls the input audio volume settings you registered beforehand when you switch between scenes.

* Audio Follows Video can only be used **on the scenes in bank 1**.

1. Touch AFV <SETUP> on the audio mixer screen.

The Audio follows video screen appears.

2. Touch the <Scene 1-1> through <Scene 1-8> tabs to select the scene to set.



3. Touch the parameters to set the volume for each input.

Setting	Explanation	
Switch	Sets this to "Enabled".	
	The volume setting is recalled when you switch to the scene in question.	
Mic 1–6 Line 1, 2 HDMI USB	Left box	Sets the input volume.
	Right box	To recall the volume settings, set this to "Enabled".

* Touch <Snapshot> when you want to apply the current volume settings for each input.

4. On the audio mixer screen, touch AUDIO / VIDEO FOLLOW <OFF> to turn AVF to the ON setting.

Touching this button toggles between "OFF", "VFA" and "AFV". When this is set to "AFV", the Audio Follows Video function turns on.

* You can also do this by pressing the [FOLLOW] button.



Other functions

Saving the unit's settings on a USB flash drive

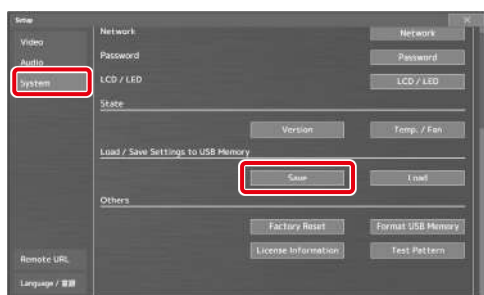
You can group the unit's settings together into a single file (.dat), and save the file to a USB flash drive connected to the USB HOST 2 port. You can access the saved setting file on the USB flash drive and load it into the unit for use when needed.

NOTE

- When using a USB flash drive for the first time, you must format it using the VR-400UHD (p. 27).
- Never turn off the power or remove the USB flash drive while the message "Processing." is shown.
- Depending on the USB flash drive, recognition of the flash drive might take some time.

Saving a new file

1. Connect a USB flash drive to the USB HOST 2 port.
2. From the [SETUP] button → <System> tab → Load / Save Settings to USB Memory, touch <Save>.



The File Save window appears.

3. Touch the <filename> input box in "Save As".



This brings up the touch keyboard.

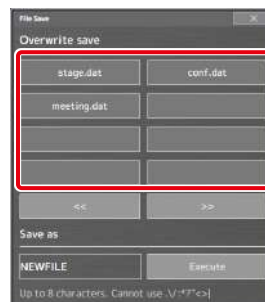
4. Use the touch keyboard to enter a filename.
 - **Valid characters:** alphanumeric characters, underscore
 - **Filename length:** max. of 8 characters
5. Once you've finished inputting, touch <Accept> on the touch keyboard.
6. Touch Save As <Execute>.

This saves the settings file (.data) to the USB flash drive. "Done." is shown once the operation is finished.
7. Touch <OK> to close the message.

Overwrite-saving

1. From the [SETUP] button → <System> tab → Load / Save Settings to USB Memory, touch <Save>.

The File Save window appears.
2. Touch to select the settings file that you want to overwrite.



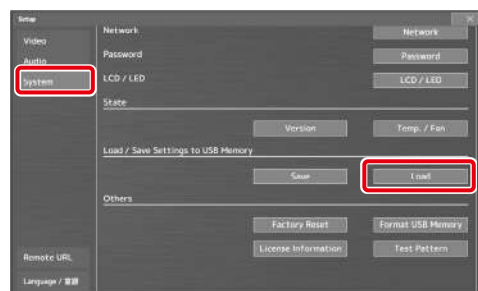
The settings file is overwrite-saved. "Done." is shown once the operation is finished.

3. Touch <OK> to close the message.

Loading

Here's how to load this unit's settings that you saved on a USB flash drive. When you load settings, the current settings are overwritten.

1. From the [SETUP] button → <System> tab → Load / Save Settings to USB Memory, touch <Load>.



The File Load window appears.

2. Touch to select the settings file that you want to recall.

The settings are loaded. "Done." is shown once the operation is finished.
3. Touch <OK> to close the message.

MEMO

If you recall network settings that are different from the current settings while connected to that network, the connection is severed.

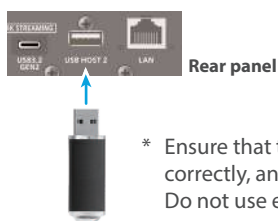
Formatting a USB flash drive

The first time that you use a USB flash drive, you must use the VR-400UHD to format it.

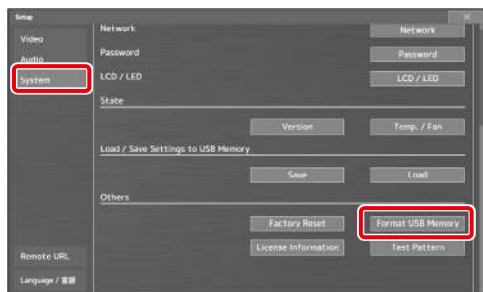
NOTE

- You may not be able to normally use USB flash drives on the VR-400UHD that are formatted on a different device. Be sure to format the media on the VR-400UHD (in FAT32 format).
- Never turn off the power or remove the USB flash drive while the message "Processing." is shown.
- When you format a USB flash drive, all data on that USB flash drive is erased. If the drive contains important data, back it up to your computer before you format the drive.

1. Connect the USB flash drive to the USB HOST 2 port.



2. From the [SETUP] button, touch <Format USB Memory> in the <System> tab.



A confirmation message appears.

- * To cancel, touch <Cancel>.

3. Touch <Execute>.

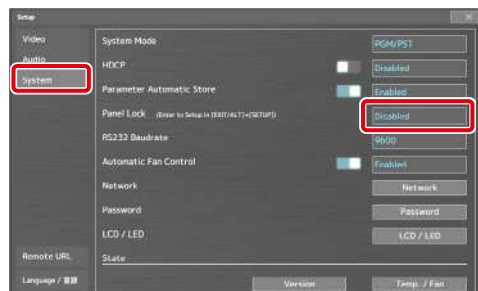
Formatting is executed. "Done." is shown once the operation is finished.

4. Touch <OK> to close the message.

Preventing unintended operation (panel lock)

You can lock the controls and screen of this unit to prevent accidental operations (panel lock function).

1. From the [SETUP] button, touch <Panel Lock> in the <System> tab.



2. Touch the screen to select a value.

Value	Explanation
Disabled	Unlocks the panel.
All Lock	Locks the controls and screen, so that all operations are disabled.
LCD Lock	Locks the screen and disables screen touch operations.
Edit Lock	Locks the panel/screen controls related to scene editing, which disables editing operations.

This enables the panel lock function.

Disabling the panel lock

1. Hold down the [EXIT/ALT] button and press the [SETUP] button to show the Setup screen.



2. In the <System> tab, touch <Panel Lock>.

3. Touch the screen to select "Disabled".

This disables the panel lock.

Restoring the factory settings (factory reset)

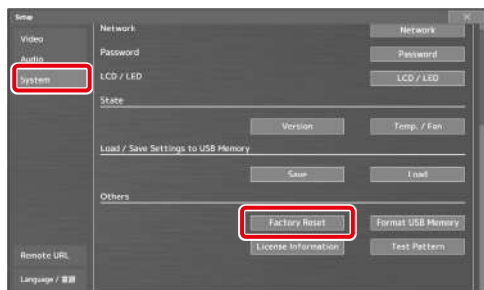
Here's how you can return the settings of the VR-400UHD to their factory-set state.

If the unit does not operate as described even though you've followed the steps in the manual, try executing a factory reset.

NOTE

- When you execute a factory reset, all of the settings you made and the still images saved in memory are lost.
- Do not turn off the power while the message "Processing." is shown.

1. From the [SETUP] button, touch <Factory Reset> in the <System> tab.



A confirmation message appears.

* To cancel, touch <Cancel>.

2. Touch <Execute>.

This executes the factory reset. "Done." is shown once the operation is finished.

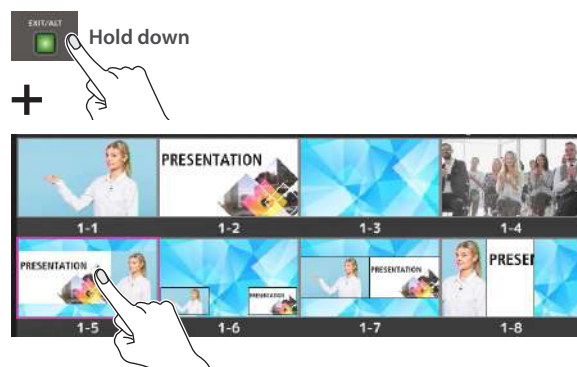
3. Touch <OK> to close the message.

Copying a scene

1. Press the [HOME] button.

The home screen appears.

2. While holding down the [EXIT/ALT] button, touch the copy source scene in the preview area.



A magenta border is shown around the selected scene.

* You can switch between banks using < << > and < >> > icons that appear while you hold down the [EXIT/ALT] button.

3. Release the [EXIT/ALT] button, and touch the copy destination scene in the preview area.

The copy is complete.

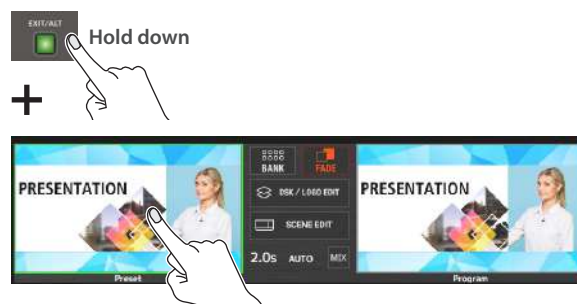
Showing scene preview in full screen

1. Press the [HOME] button.

The home screen appears.

2. While holding down the [EXIT/ALT] button, touch the preset area or program area.

The left monitor shows the scene in the preset area or program area in full screen.



3. Release the [EXIT/ALT] button, and touch the left monitor.

This exits the full screen.

Connecting to a network

You can remotely control the VR-400UHD from a computer that's on the same network.

Using remote control

There are two ways to remotely control this unit.

Using the WebRCS Web app

By inputting the specified URL into your Web browser to launch the WebRCS Web app, you can control the VR-400UHD from your Web browser.

See "WebRCS Web app" (p. 32) for details.

Sending commands from your computer

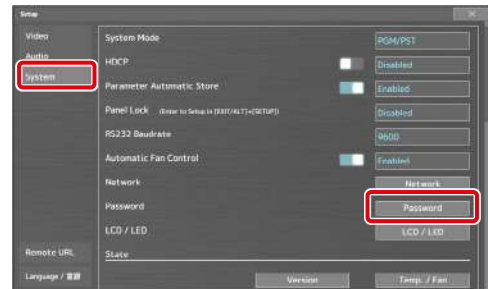
You can use Telnet to operate the VR-400UHD remotely over a LAN (TCP/IP protocol).

See the "Remote Control Guide" (Roland website) for details on commands that you can send.

Setting a password

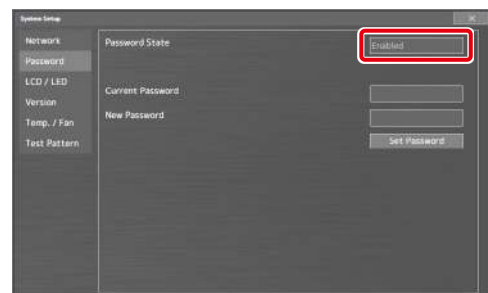
Here's how to set the password used for connecting to the network.

1. From the [SETUP] button, touch <Password> in the <System> tab.



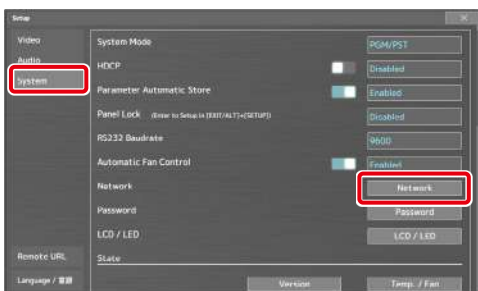
The System Setup screen appears.

2. Check whether a password is set in the "Password State" parameter.



Display	Explanation
Not set	Password not set ➔ Go to step 4
Enabled	Password set ➔ Go to step 3

1. From the [SETUP] button, touch <Network> in the <System> tab.



The System Setup screen appears.

2. Touch <DHCP> to configure the method of acquiring network information.



Value	Explanation
Client	Information required for connecting to the network such as the IP address from the DHCP server on the LAN is automatically acquired.
Server	Enables the DHCP server function. This automatically assigns the information from the VR-400UHD that's required to connect to the network, such as a computer on the LAN.
Static	Selects how to configure the IP address, subnet mask and default gateway.

When DHCP = Static

3. Configure the parameters in "Static Address" according to the network.

3. To edit the password, touch <Current Password> and enter the current password.

Use the touch keyboard to enter the password. Once you've finished inputting, touch <Accept> on the touch keyboard.

4. Touch <New Password> to enter a new eight-character password.

Use the touch keyboard to enter the password. Once you've finished inputting, touch <Accept> on the touch keyboard.

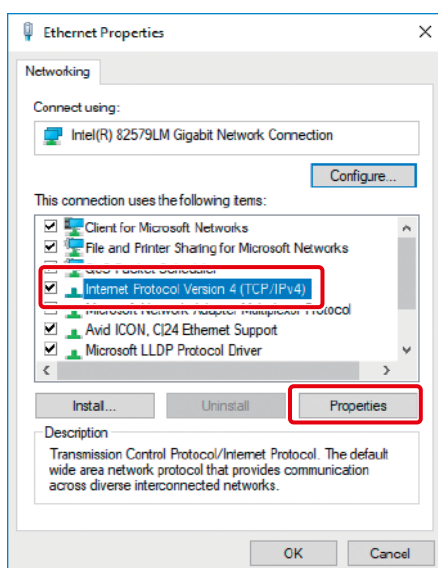
5. Touch <Set Password>.

This registers or changes the password.

Network settings on your computer

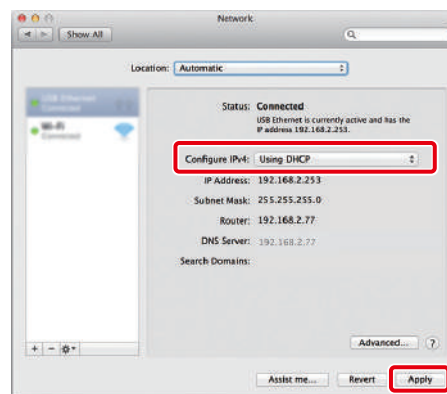
Windows PC

1. Click the [Windows (Start)] button and then “Settings” (gear icon).
2. Click “Network & Internet”.
3. Click “Change adapter options”.
4. Right-click the network connection you want to use, and click “Properties”.
5. Select “Internet Protocol Version 4 (TCP/IPv4)”, and click the [Properties] button.

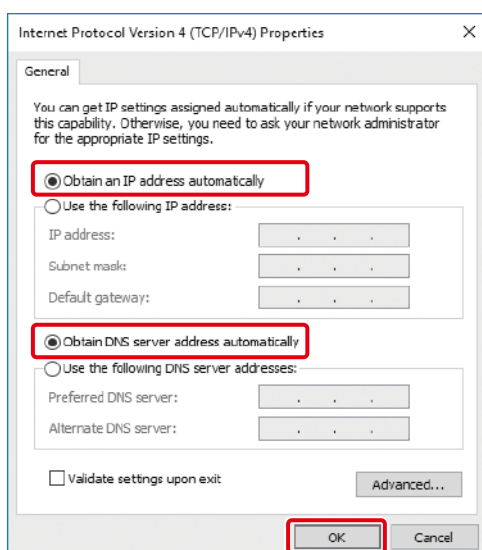


Mac

1. From the Apple menu, click “System Preferences” and then “Network”.
2. From the list on the left-hand side, select the network connection service you are using.
3. In the “Configure IPv4” dropdown menu, select “Using DHCP”, and click the [Apply] button.



6. Select the “Obtain an IP address automatically” and “Obtain DNS server address automatically” radio buttons, and click the [OK] button.



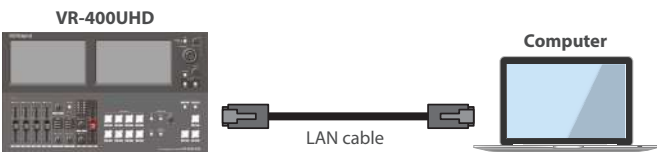
Connection example

Connecting directly to a computer

The VR-400UHD can be connected directly to your computer.

MEMO

- You can use both straight-through and crossover LAN cables.
- If your computer doesn't support a wired LAN connection, use a LAN adaptor, available separately.
- If you encounter connectivity problems when connecting over a network, check whether you can connect by directly hooking up the VR-400UHD to your computer.



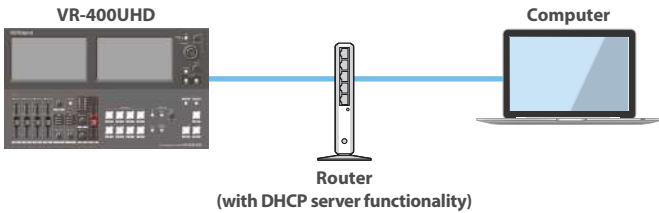
VR-400UHD network setting

Item	Setting
DHCP	Server

Connecting via router

You can also connect this unit via a router that features DHCP server functionality.

DHCP servers are typically sold in the form of routers. Use a router that has built-in DHCP server and wireless LAN conversion capabilities.



VR-400UHD network setting

Item	Setting
DHCP	Client

WebRCS web app

The WebRCS web app is a remote control app that's built into the VR-400UHD. This app lets you remotely control the VR-400UHD from a computer that's on the same network via a browser.

- * There is no need to install dedicated app on your computer.

Operating environment

The Web browsers that are compatible with this app are shown below.

Windows	Google Chrome 56 or later
Mac	Safari 10 or later Google Chrome 56 or later

- * JavaScript must be enabled on the browser you're using.
- * Although the app has been tested under these operating environments, operation is not guaranteed. Operating conditions may differ depending on the state of your network or the processing capabilities of your Web browser, among other factors.

Launching the app

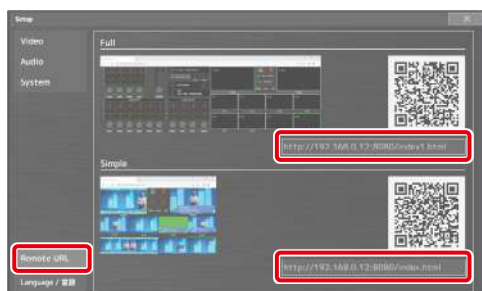
Getting ready

1. Follow the steps in "Connecting to a network" (p. 29) to connect the VR-400UHD to a computer that's on the same network.
2. Follow the steps in "Setting a password" (p. 29) to set the password used for connecting to the network.

When using the VR-400UHD

3. Press the [SETUP] button and touch the <Remote URL> tab.

This shows the WebRCS URL.



There are two versions of WebRCS.

Full	Lets you operate all of the functions available on the VR-400UHD. Input video is not shown.
Simple	Lets you switch between scenes while checking the input video (updated every five seconds). Does not allow scenes to be edited, nor can you configure the settings on this unit.

When using your computer

4. Launch the Web browser on a computer that's on your network.
5. In the address bar of your Web browser, input the URL that's shown in "Remote URL".
The "Login" dialog box appears.
6. Enter your user name and password to login to the network.

User name	user
Password	Password that you set (p. 29)

This launches WebRCS, and you can now remotely control the VR-400UHD from your Web browser.

WebRCS: Full



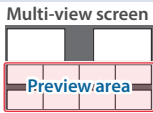
WebRCS: Simple

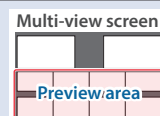


Parameter list

Setup Screen

[SETUP] button

Setting	Value (bold text: default value)	Explanation	
Video			
These are the video-related settings.			
Input			
HDMI	Shows the HDMI Input screen.		
	Item	Explanation	
	Upper row	HDMI 1–3, 4-1–4-4	Displays the Video Input Setup screen (p. 35).
	Middle row	HDMI 1–4	Shows the input video.
	Lower row	HDMI 1–4 4-1–4-4	Displays information about the incoming video (format, size, etc.). Selects the video source for HDMI 4.
Still Image	–	Displays the Still Image screen (p. 37).	
HDMI4 Fast Switching	Sets what happens when you switch the HDMI 4 video source (HDMI 4-1 through HDMI 4-4). * If “HDCP” is enabled, the “Normal” operation is used, regardless of the setting.		
	Normal	A black screen is shown when you switch between video sources (HDMI 4-1 through HDMI 4-4). HDMI 4-1 through HDMI 4-4 input state: Only the selected video source is shown, and the inputs for other video sources are temporarily shut off.	
	Fast	The video sources (HDMI 4-1 through HDMI 4-4) switch without interruption. With this setting, the presence of a video signal is recognized quicker than with the “Normal” setting. HDMI 4-1 through HDMI 4-4 input state: All video sources are input.	
HDMI No Signal Image	When there is no video input, this sets the image to show in the preview area of the multi-view screen. When this is set to “Color Matte” or “Sample Image”, you can check the screen layout even when there is no video input. * You can’t output the “Color Matte” or “Sample Image” view.		
	Black	Shows a black image.	
	Color Matte	Shows a single-color image. The color differs for each layer.	
	Sample Image	Shows the sample image for the scene. * You can’t change or edit the sample image.	
			
Output			
Format	–	Displays the Video Output Setup screen (p. 35).	
HDMI 1, 2	–		
USB	–		
Output Fade (PGM/PST Mode)	This sets the function for the [OUTPUT FADE] button when in PGM/PST mode. * When in dual mode, the [OUTPUT FADE] button function is always “Fade”, regardless of the setting.		
	Fade	Fades the audio and program out video in/out.	
	Freeze	Temporarily freezes (pauses) the program output video (freeze function).	
HDMI HD Output Bus	This selects the video to be output from the HDMI HD OUT jack. * The same audio as the audio output from the MAIN connectors is outputted.		
	LCD Left	Outputs the same video as the left monitor on this unit.	
	LCD Right	Outputs the same video as the right monitor on this unit.	
Cropping Guide	–	Displays the Video Output Setup screen (p. 35).	
Audio			
Configure the audio settings here.			
Knob Assign			
Input 5	Mic 5, Line 1, HDMI	Sets the audio source to be controlled by the INPUT [5] knob.	
Input 6	Mic 6, Line 2, USB	Sets the audio source to be controlled by the INPUT [6] knob.	
Others			
Touch Beep	0–127	Sets the volume of the operating sound you hear when touching the built-in monitor. * The touch operating sound is output from the internal speakers. You must turn up the volume on the internal speakers using the “Internal Speaker” parameter to hear the touch operating sound.	
Internal Speaker	0–127	Adjusts the volume of the built-in speakers. * The touch operating sound for the built-in monitor, as well as the same audio signal as the audio from the PHONES jack are output from the internal speakers.	
System			
These settings configure the overall system settings for this unit.			
System Mode	Configures the system mode for this unit. The scene output method switches depending on the system mode.		
	PGM/PST	Selects the next scene to be program output (preset scene) and switches the scene for program output by means of the take operation. * You can add mix and wipe effects that are applied when switching between scenes.	
	Dual	Use the left-right monitors to respectively select the scene to output for programs 1 and 2. You can output two different scenes at the same time. * Scene switching is always performed as a freeze-frame cut.	



Parameter list

Setting	Value (bold text: default value)	Explanation													
HDCP	Disabled , Enabled	Specifies whether HDCP is enabled or disabled. When enabled, copyright-protected (HDCP) video can be input. HDCP is also added to the video that is output. * Video/audio from the 4K STREAMING port is not outputted.													
Parameter Automatic Store	Sets whether to automatically save your settings or not.														
	Disabled	The settings you make are not saved. All of the settings you made are lost when you turn off the power.													
	Enabled	After you edit the settings, the settings are automatically saved if you don't operate the unit for four seconds, or if you press the [HOME] button to close the screen. The settings aside from the [MIC 1]–[MIC 4] faders are restored the next time you turn on the power.													
Panel Lock	Locks/unlocks the controls and screen of this unit. * If the panel is locked, hold down the [EXIT/ALT] button and press the [SETUP] button to show the Setup screen. Aside from unlocking operations via touch, you can edit the various settings by touch as well.														
	Disabled	Unlocks the panel.													
	All Lock	Locks the controls and screen, so that all operations are disabled.													
	LCD Lock	Locks the screen and disables screen touch operations.													
	Edit Lock	Locks the panel/screen controls related to scene editing, which disables editing operations.													
RS-232 Baudrate	9600 , 38400	Specifies the communication speed (bps) of the RS-232 connector.													
Automatic Fan Control	This sets whether to automatically regulate (enable/disable) the cooling fan operating speed (RPM).														
	Disabled	The cooling fan always operates at high speed, regardless of the internal temperature of this unit.													
	Enabled	The cooling fan speed is automatically regulated based on the temperature inside this unit. Normally, the fan runs at low speed, and switches to high speed when the internal temperature rises.													
Network	Network	Shows the System Setup screen (p. 38).													
Password	Password														
LCD / LED	LCD / LED														
State															
Version	–	Displays the System Setup screen (p. 38).													
Temp. / Fan	–														
Load / Save Settings to USB Memory These settings are for saving/recalling this unit's settings to/from a USB flash drive.															
Save	Shows the File Save window.														
	<table><tr><th colspan="2">Item</th><th>Explanation</th></tr><tr><td rowspan="2">Overwrite save</td><td>File name</td><td>Shows a list of the setting files (.dat) that are on the USB flash drive. When you touch a filename, the current settings are overwritten.</td></tr><tr><td><< / >></td><td>Switches to the previous/next page.</td></tr><tr><td rowspan="2">Save as</td><td>File name</td><td>Enter the filename.</td></tr><tr><td>Execute</td><td>Saves the settings as a new file.</td></tr></table>		Item		Explanation	Overwrite save	File name	Shows a list of the setting files (.dat) that are on the USB flash drive. When you touch a filename, the current settings are overwritten.	<< / >>	Switches to the previous/next page.	Save as	File name	Enter the filename.	Execute	Saves the settings as a new file.
	Item		Explanation												
	Overwrite save	File name	Shows a list of the setting files (.dat) that are on the USB flash drive. When you touch a filename, the current settings are overwritten.												
		<< / >>	Switches to the previous/next page.												
	Save as	File name	Enter the filename.												
		Execute	Saves the settings as a new file.												
	Content that is not saved to the file														
	• The “Test Pattern” and “Test Tone” settings in the System Setup screen (p. 38). This unit always starts up with the “Disabled” setting.														
• Any still images captured from HDCP copy-protected video.															
• The state of the [OUTPUT FADE] button. These buttons are always dark when the unit starts up.															
Load	Shows the File Load window.														
	<table><tr><th>Item</th><th>Explanation</th></tr><tr><td>File name</td><td>Shows a list of the setting files (.dat) that are on the USB flash drive. When you touch a filename, the current settings are recalled.</td></tr><tr><td><< / >></td><td>Switches to the previous/next page.</td></tr></table>		Item	Explanation	File name	Shows a list of the setting files (.dat) that are on the USB flash drive. When you touch a filename, the current settings are recalled.	<< / >>	Switches to the previous/next page.							
	Item	Explanation													
	File name	Shows a list of the setting files (.dat) that are on the USB flash drive. When you touch a filename, the current settings are recalled.													
<< / >>	Switches to the previous/next page.														
Factory Reset	–	Returns the unit to its factory defaults. * It may take some time for the reset to finish (up to around three minutes).													
Format USB Memory	–	Formats a USB flash drive as FAT32.													
License Information	–	Shows the open-source software (OSS) license.													
Test Pattern	–	Displays the System Setup screen (p. 38).													
Remote URL															
Remote URL	Shows the URL to use for launching the “WebRCS” (p. 32) Web app from your computer. There are two versions of WebRCS.														
	Full	Lets you operate all of the functions available on the VR-400UHD. Input video is not shown.													
	Simple	Lets you switch between scenes while checking the input video (updated every five seconds). Does not allow scenes to be edited, nor can you configure the settings on this unit.													
Language / 言語															
Language / 言語	English , Japanese	Changes the language that's used on the various Setup screens. Touch <Redraw / 更新> to switch between languages.													

Video Input Setup screen

[SETUP] button → <Video> tab → Input <HDMI> → <HDMI 1>--<HDMI 4-4> on HDMI Input screen

Setting	Value (bold text: default value)		Explanation
HDMI 1–HDMI 4-4			
Adjusts the video input from the HDMI 4K IN 1–3 and 4-1 through 4-4 connectors.			
EDID	Default		Specifies the input format (EDID). If this is set to “Default”, EDID data for all formats that can be input to the VR-400UHD is transmitted.
	1080p 23/24Hz	2160p 23/24Hz	
	1080p 25Hz	2160p 25Hz	
	1080p 29/30Hz	2160p 29/30Hz	
	1080i 50Hz	2160p 50Hz	
	1080p 50Hz	2160p 59/60Hz	
	1080i 59/60Hz	1080p 120Hz	
	1080p 59/60Hz	1440p 120Hz	
Dynamic Range	Sets the dynamic range.		
	Auto	Automatically sets the dynamic range according to the input format.	
	SDR	Standard dynamic range	
	HDR PQ	High dynamic range: PQ format	
	HDR HLG	High dynamic range: HLG format	
Dynamic Range Correction	-64–0–+63		Adjusts the hue on videos after you’ve converted their dynamic range from SDR to HDR, or from HDR to SDR.
Gamma Correction	0.30–1.00–3.30		Corrects the gamma so that the video colors (hues) are more natural.

Video Output Setup screen

[SETUP] button → <Video> tab → <Format>, <HDMI 1>, <HDMI 2>, <USB>, <Cropping Guide>

Setting	Value (bold text: default value)	Explanation
Format		
Format	Shows the Format Select window.	
	FHD 1920x1080/29.97p 1920x1080/30p 1920x1080/50p 1920x1080/59.94p 1920x1080/60p UHD 3840x2160/23.98p 3840x2160/24p 3840x2160/25p 3840x2160/29.97p 3840x2160/30p 3840x2160/50p 3840x2160/59.94p 3840x2160/60p	Sets the output format. Touch <Execute> to apply the selected output format. * It may take some time for the output format to change (up to around three minutes).
Color Gamut	Auto , REC.709, REC.2020	Sets the color gamut. When this is set to “Auto”, the color gamut is set automatically according to the output format.
Dynamic Range	Sets the dynamic range.	
	SDR	Standard dynamic range
	HDR PQ	High dynamic range: PQ format
	HDR HLG	High dynamic range: HLG format
HDMI 1, HDMI 2 These are the settings related to the video output from the HDMI 4K OUT 1 and 2 connectors.		
Bus	When System Mode = PGM/PST PGM, PST , AUX / DSK Source	Specifies the video bus that’s assigned to the HDMI 4K OUT 1 and 2 connectors.
	When System Mode = Dual PGM 1, PGM 2, AUX / DSK Source	Default settings are as follows. HDMI 1: PGM HDMI 2: PST
UHD-FHD Down Convert	Disabled , Enabled	Enables/disables the “down convert” function. When this is enabled, 4K video is downsampled and output as full HD video.
Color Space	Auto	Specifies the color space. When this is set to “Auto”, the color space is set automatically according to the output format. NOTE You may not be able to output using the color space you set, depending on the output format. For this reason, the actual color space that’s output may differ from the value you set. When the unit can’t output with the specified color space, the image is output using a color space with the maximum color gamut out of the color spaces that are available for output.
	YUV444/12 RGB FULL/8 YUV420/8 RGB FULL/10 YUV420/10 RGB FULL/12 YUV422/12 RGB LIMIT/8 YUV444/8 RGB LIMIT/10 YUV444/10 RGB LIMIT/12	

Parameter list

Setting	Value (bold text: default value)	Explanation
USB Use these settings to adjust the video that's output from the 4K STREAMING port.		
Connection	This shows the connection status between this unit and your computer.	
	None	Not connected
	USB3.2 GEN1	The unit is connected via USB 3.2 Gen 1.
	USB3.2 GEN2	The unit is connected via USB 3.2 Gen 2.
Dropped Frames	No image (HDCP)	Video/audio are not output, since HDCP is enabled.
	–	Normally this indicates "0". If the number is increasing, video transmission is not fast enough. Either use "Resolution" to lower the resolution, or use "Frame Rate" to lower the frame rate.
Connection Reset	–	If the unit is not operating in a stable manner, such as when the video is distorting, try reconnecting your computer to the VR-400UHD.
Bus	When System Mode = PGM/PST PGM, PST, AUX / DSK Source	Sets the video bus that's assigned to the 4K STREAMING port.
	When System Mode = Dual PGM 1, PGM 2, AUX / DSK Source	
Resolution	960x540 (GEN1)	Sets the video resolution. * The USB port on the computer to which you are connecting must support the following specifications. Gen 1 connection: USB 3.2 Gen 1/5 Gbps (USB 3.1 Gen 1, USB 3.0) Gen 2 connection: USB 3.2 Gen 2/10 Gbps (USB 3.1 Gen 2)
	1280x720 (GEN1)	
	1920x1080 (GEN1)	
	1920x1080 (GEN2) (*1)	
	2560x1440 (GEN2)	
Frame Rate	3840x2160 (GEN2)	Specifies the frame rate.
	25.00, 29.97, 30.00, 50.00, 59.94 , 60.00	
	When Resolution = 3840x2160 (GEN2) 25.00, 29.97, 30.00	
Dynamic Range Correction	–64– 0 –+63	Adjusts the hue on videos after you've converted their dynamic range from HDR to SDR. * The video that's output from the 4K STREAMING port always uses the "SDR" setting.
Gamma Correction	0.30– 1.00 –3.30	Corrects the gamma so that the video colors (hues) are more natural.
Color Correction These settings are for correcting the color.		
Brightness	–128– 0 –+127	Adjusts the brightness.
Contrast	–128– 0 –+127	Adjusts the contrast.
Saturation	–128– 0 –+127	Adjusts the saturation.
Red	–128– 0 –+127	Adjusts the red level.
Green	–128– 0 –+127	Adjusts the green level.
Blue	–128– 0 –+127	Adjusts the blue level.
Cropping Guide Adjusts the position and size of the cropping guide.		
Cropping Guide 1		
Position	Horizontal	0 –3840
	Vertical	0 –2160
Size	Horizontal	0– 1920 –3840
	Vertical	0– 1080 –2160
Cropping Guide 2		
Position	Horizontal	0– 1920 –3840
	Vertical	0 –2160
Size	Horizontal	0– 1920 –3840
	Vertical	0– 1080 –2160

(*1) When Resolution is "1920x1080 (GEN2)" and you set Frame Rate to 30 frames or less, a USB 3.2 Gen 1 connection is used.

Still Image screen

[SETUP] button → <Video> tab → <Still Image>

Setting	Value (bold text: default value)	Explanation
Import from	Loads still images into internal memory.	
USB Memory	Loads still images from a USB flash drive.	
	Touch <USB Memory> to show the File Load window.	
	Item	Explanation
	File name	Shows a list of still images (up to 64) that are on the USB flash drive. When you touch a filename, the still image is loaded.
	<< / >>	Switches to the previous/next page.
	Formats supported for loading	
	Format	Bitmap file (.bmp), 24-bit color, uncompressed
		JPEG file (.jpg, .jpeg), 24-bit color
		PNG file (.png), 24-bit color * Alpha channel supported
		Resolution Maximum 3840 x 2160 pixels
	File name	Maximum of 12 single-byte alphanumeric characters, including the file extension * You must add the extension ".bmp", ".png", ".jpg" or ".jpeg".
Preset	Loads the preset still images into this unit.	
	Touch <Preset> to show the Preset Still Image Select window.	
	Setting	Value Explanation
	Pattern	Pattern 1 –16 Selects the still image pattern.
	Color Theme	Gray , Red, Green, Blue Selects the pattern color.
	Generate	– Loads the still image.
Capture	Captures the program output video. * When "System Mode" is "Dual", this captures the program 1 (PGM 1) video.	
Internal	This loads the still images saved to internal memory. * If you've canceled the still image load operation when starting up this unit, you can load the still images later.	
	All memories	Load all still images saved to internal memory.
	One memory	Loads only the still images from the internal memory that you selected using "Memory Select".
Information	–	Shows the information for the still images you selected in "Memory Select".
Delete	–	Deletes the still images you selected in "Memory Select".
Memory Select	Still Image 1–8	Shows the internal memory (still images 1–8) of this unit. You can select where to load the still images or which still images to delete. A red border is shown around the selected memory.

System Setup screen

[SETUP] button →
 <System> tab → <Network>, <Password>, <LCD / LED>, <Version>, <Temp. / Fan>, <Test pattern>

Setting	Value (bold text: default value)	Explanation	
Network			
These are the network settings related to remote control of the VR-400UHD over LAN (WebRCS, Telnet).			
DHCP	Selects how to configure the IP address, subnet mask and default gateway.		
	Client	Information required for connecting to the network such as the IP address from the DHCP server on the LAN is automatically acquired.	
	Server	Enables the DHCP server function. This automatically assigns the information required to connect from the VR-400UHD to the network, such as a computer on the LAN.	
	Static	Manually configures the IP address, subnet mask and default gateway.	
Static Address			
Manually configures the network connection when DHCP is set to "Static".			
IP Address	192 168 10 10 (Example)	Specifies the IP address as appropriate for the network to which the unit is connected.	
Subnet Mask	255 255 255 0 (Example)	Specifies the subnet mask as appropriate for the network to which the unit is connected.	
Default Gateway	192 168 10 1 (Example)	Configures the default gateway according to the network to which this unit connects.	
State			
Shows the current network settings.			
IP Address	255 255 255 255 (Example)	Displays the IP address.	
Subnet Mask	255 255 255 255 (Example)	Displays the subnet mask.	
Default Gateway	255 255 255 255 (Example)	Shows the default gateway.	
MAC Address	00 40 ab c6 44 00 (example)	Displays the MAC address.	
Password			
Sets the password necessary to connect to the network (WebRCS, Telnet).			
When connecting a computer or other device on the same network to access the VR-400UHD, input the password that's set here.			
Password State	Shows whether the password has been set.		
	Not set	Password not set	
	Enabled	Password set	
Current Password	–	When you want to change the password, enter the current password here.	
		When you're registering a password for the first time, you don't need to input this setting.	
New Password	–	Enter the new eight-character password.	
Set Password	–	Registers/changes the password.	
LCD / LED			
LCD			
Brightness	Left	1–16	Adjusts the brightness of the left monitor on this unit.
	Right	1–16	Adjusts the brightness of the right monitor on this unit.
LED			
Dimmer	1–16	Adjusts the brightness when the buttons or indicators are lit.	
Version			
System	–	Displays the version of the system program.	
Details	–	Displays the version for each processor.	
Temp. / Fan			
Temperature (Celsius)			
Main FPGA	–	Displays the processor temperature.	
		When the processor temperature exceeds 90°C, a temperature alert appears. If the temperature rises even more, the protective function begins to operate, which automatically shuts down the power of the VR-400UHD.	
Sub FPGA	–	You should keep the processor at a suitable temperature of around 70°C.	
Fan (RPM)			
Left	At low speed, "Low" is indicated	Shows the speed (RPM) of the cooling fan on the left side of this unit (viewed from the front).	
Right	At high speed, the fan speed (RPM) is indicated	Shows the speed (RPM) of the cooling fan on the right side of this unit (viewed from the front).	
Test Pattern			
Pattern	Disabled, Color Bars, Hatch, Ramp	Selects the test pattern to display.	
Scroll	Disabled, Enabled	Sets whether to scroll the test pattern.	
Test Tone	Disabled, -18dB, -20dB	Sets the volume of the test tone.	

Scene Setup screen

[HOME] button → <SCENE EDIT> → <SETUP>

Setting	Value (bold text: default value)	Explanation
Background, Layer 1, 2 These are the settings for each layer.		
Window These settings are for adjusting the layer window.		
Position	Horizontal	-3840~+3840
	Vertical	-2160~+2160
Size	Horizontal	0~ 1920 ~3840
	Vertical	0~ 1080 ~2160
Aspect	1:1, 3:2, 4:3, 16:9	
View	Adjusts the layer video (the input video that's shown in the layer window).	
Position	Horizontal	-3840~ 0 ~+3840
	Vertical	-2160~ 0 ~+2160
Size	Reference	Sets the reference value for enlarging/shrinking the layer video according to changes in layer window size.
		Dot by Dot
		Output
		Window Letterbox
	Window Crop	Window Crop
Zoom (%)		1.0~ 100.0 ~1000.0
Border These are the border-related settings for the layer window.		
Switch	Disabled , Enabled	Sets whether to show or hide the window border.
Width	0~ 50 ~3840	Adjusts the width of the window border.
Color Sets the color of the window border.		
Picker		–
Hue (deg.)		0 ~359
Saturation		0~ 50 ~100
Value		0~ 50 ~100
Layer 1, 2 Key These are the settings related to key composition for layers 1 and 2.		
Key Configures the key composition.		
Switch	Disabled , Enabled	Enables/disables key-compositing.
Type	This sets the key type used for key composition.	
	Luminance Black	Composite using luminance key. Makes black portions transparent according to brightness.
	Luminance White	Composite using luminance key. Makes white portions transparent according to brightness.
	Chroma Blue 1~3	Composite using chroma key. Uses a color threshold to make blue transparent. Select a composite preset that works the best, from 1 to 3.
	Chroma Green 1~3	Composite using chroma key. Uses a color threshold to make green transparent. Select a composite preset that works the best, from 1 to 3.
User Chroma		Composite using chroma key. Makes the specified key color transparent according to hue.
Level	0~ 32 ~255	Adjusts the degree of extraction (transparency) for the key.
Gain	0~ 32 ~255	Adjusts the degree of edge blur (semi-transmissive region) for the key.
User Chroma Sets the desired key color. This can be set if "Type" is "User Chroma".		
Center Sets the key color.		
Hue (deg.)		0 ~359
Saturation		0~ 50 ~100
Value		0~ 50 ~100
Range Sets the range of colors within which to apply transparency, based on the key color.		
Hue (deg.)		0 ~359
Saturation		0~ 50 ~100
Value		0~ 50 ~100
Chroma Picking – You can select a desired key color by touching the Scene Edit screen at left. The data for the key color you selected is reflected in the Center "Hue (deg.)", "Saturation" and "Value".		

Setting	Value (bold text: default value)	Explanation
Others	These settings are related to scene editing.	
Cropping Guide	Disabled , Enabled	Sets whether to show or hide the cropping guide (the rectangular border on the Scene Edit screen). You can use the cropping guide as a guide that shows the visible range of the LED display or projector. The window border snaps to the guide when you adjust the layer window position or size. * Two cropping guides are shown. Set the size and position for each cropping guide using the "Cropping Guide 1" and "Cropping Guide 2" parameters on the Video Output Setup screen (p. 35).
Swap Layer 1-2	–	Swaps (exchanges) the settings of layers 1 and 2.
Scene Undo	–	Reverts the settings of the scene you're editing to how they were before you started editing. * This takes effect until you close the Scene Edit screen.
Scene Initialize	–	Restores the settings of the scene you're editing to their default values.

DSK/LOGO Setup screen

[HOME] button → <DSK / LOGO EDIT> on multi-view screen → <SETUP>

Setting		Value (bold text: default value)	Explanation
DSK, LOGO		Configures the video settings for the DSK and LOGO layer.	
Window		These settings are for adjusting the layer window.	
Position	Horizontal	-3840 –0 +3840	Adjusts the horizontal position.
	Vertical	-2160 –0 +2160	Adjusts the vertical position.
Size	Horizontal	0 –3840 (DSK) 0 –1920 (LOGO)	Adjusts the horizontal size.
	Vertical	0 –2160 (DSK) 0 –1080 (LOGO)	Adjusts the vertical size.
View		Adjusts the layer video (the input video that’s shown in the layer window).	
Position	Horizontal	-3840 –0 +3840	Adjusts the horizontal position.
	Vertical	-2160 –0 +2160	Adjusts the vertical position.
Key		Configures the key composition.	
Switch		Disabled, Enabled	Enables/disables key-compositing.
Type (*2)		This sets the key type used for key composition. * When you assign a still image with an alpha channel to the LOGO layer, you can only use the “Still Image Alpha” setting.	
		Luminance Black	Composite using luminance key. Makes black portions transparent according to brightness.
		Luminance White	Composite using luminance key. Makes white portions transparent according to brightness.
		Chroma Blue 1–3	Composite using chroma key. Uses a color threshold to make blue transparent. Select a composite preset that works the best, from 1 to 3.
		Chroma Green 1–3	Composite using chroma key. Uses a color threshold to make green transparent. Select a composite preset that works the best, from 1 to 3.
		User Chroma	Composite using chroma key. Makes the specified key color transparent according to hue.
		Still Image Alpha	Uses the alpha channel (an area which contains transparency data) to cut out still images and place them against the scene as a composite.
Level		0 –32 –255	Adjusts the degree of extraction (transparency) for the key.
Gain		0 –32 –255	Adjusts the degree of edge blur (semi-transmissive region) for the key.
User Chroma		Sets the desired key color. This can be set if “Type” is “User Chroma”.	
Center		Sets the key color.	
	Hue (deg.)	0 –359	Adjusts the hue.
	Saturation	0 –100	Adjusts the saturation.
	Value	0 –100	Adjusts the color brightness or luminosity.
Range		Sets the range of colors within which to apply transparency, based on the key color.	
	Hue (deg.)	0 –10 –359	Adjusts the hue.
	Saturation	0 –10 –100	Adjusts the saturation.
	Value	0 –10 –100	Adjusts the color brightness or luminosity.
Chroma Picking		–	You can select a desired key color by touching the Scene Edit screen at left. The data for the key color you selected is reflected in the Center “Hue (deg.)”, “Saturation” and “Value”.
Others			
Cropping Guide		Disabled , Enabled	Sets whether to show or hide the cropping guide (the rectangular border on the DSK/LOGO Edit screen). * Two cropping guides are shown. Set the size and position for each cropping guide using the “Cropping Guide 1” and “Cropping Guide 2” parameters on the Video Output Setup screen (p. 35).

(*2) When assigning a still image with an alpha channel to the DSK/LOGO layer input source, you can only use the "Still Image Alpha" setting.

Transition Setup window

[HOME] button → transition effect area on multi-view screen

Setting	Value (bold text: default value)	Explanation
Transition	Selects the transition effect. You can also press the [MIX] or [WIPE] button to select the transition effect.	
	MIX	The two videos are mixed as the transition occurs. 
	WIPE	The next video moves across to replace the original video. 
Wipe Preset	Wipe 1 –Wipe 4 (icon display)	Selects the preset for the wipe effect. * You can edit the preset settings.
SETUP	–	Displays the Video Wipe Setup screen (p. 41).
Time (sec)	0.0 –2.0	Specifies the video transition time. This can also be set by the [TIME] knob.
Auto Transition	Lit (on) , unlit (off)	Turns the auto transition function on/off. You can also press the [AUTO TRANSITION] button to turn this on/off. Auto-transition is a function that automatically switches between scenes when you select the preset scene (the next scene to be output).

Video Wipe Setup screen

[HOME] button → transition effect area on multi-view screen → <SETUP> in Transition Setup window

Setting	Value (bold text: default value)	Explanation
Wipe 1–4		
Pattern	Horizontal, Vertical, Horizontal Open, Vertical Open, Upper Left, Upper Right, Lower Left, Lower Right, Box, FAM, NAM	Specifies the wipe pattern. Default settings are as follows. Wipe 1: Horizontal Wipe 3: Horizontal Open Wipe 2: Vertical Wipe 4: Vertical Open
Direction	Normal , Reverse, N/R	Specifies the direction of wipe.
Curve	Linear , Slow, Fast, S Curve	Sets the curve used for changing the speed of the wipe motion.
Position Adjusts the wipe start position.		
Horizontal (%)	-100.0– 0 –+100.0	Adjusts the horizontal position.
Vertical (%)	-100.0– 0 –+100.0	Adjusts the vertical position.
Aspect Ratio		
Aspect Ratio	1:1, 3:2 , 4:3, 5:4, 16:9	Sets the aspect ratio of the wipe pattern.
Correction	Horizontal (%)	-100.0– 0 –+100.0
	Vertical (%)	-100.0– 0 –+100.0
Border Configures the border added to the edge of the wipe area.		
Switch	Disabled , Enabled	Sets whether to show or hide the border.
Width	0 –40	Adjusts the width of the border.
Color Specifies the color of the edge.		
Hue (deg.)	0 –359	Adjusts the hue.
Saturation	0 – 50 –100	Adjusts the saturation.
Value	0 – 50 –100	Adjusts the color brightness or luminosity.
Picker	–	Shows the color picker window. You can use the color picker to select the color of the window border. The data for the color you selected is reflected in the "Hue (deg.)", "Saturation" and "Value".

Audio Input Setup screen (MIC)

[HOME] button → AUDIO INPUT MIC 1–6 <SETUP> on audio mixer screen

Setting	Value (bold text: default value)	Explanation																												
Mic 1–6 Adjusts the audio input from the MIC 1–6 jacks.																														
+48V	Disabled, Enabled	Enables/disables phantom power. When enabled, phantom power is supplied via the MIC 1–4 jacks (XLR). * There is no “+48V” setting for MIC 5 and 6.																												
Gain (dB)	0–68	Adjusts the input gain (sensitivity).																												
Auto Gain	Disabled, Enabled	Enables/disables the auto gain control function. When enabled, the gain is automatically adjusted to an optimum level by detecting the input volume.																												
HPF (80Hz)	Disabled, Enabled	Enables/disables the high-pass filter. This cuts off unwanted low-band audio when enabled. The cutoff frequency is 80 Hz.																												
Anti-feedback	Disabled, Enabled	Enables/disables anti-feedback. This suppresses feedback when enabled.																												
Noise Gate	Eliminates audio that is lower than the specified threshold level. This helps remove white noise and other such sounds during silence.																													
Switch	Disabled, Enabled	Enables/disables the noise gate.																												
Threshold (dB)	-80– -48– 0	Specifies the level used as the threshold for removing audio. Audio below the level set here is removed.																												
Release (ms)	30–5000	Adjusts the length of time until the audio is fully attenuated after audio falls below the threshold.																												
Compressor	Audio that exceeds the specified threshold level is compressed. This reduces the difference between the louder and softer sounds, making the audio more listenable.																													
Switch	Disabled, Enabled	Enables/disables the compressor.																												
Threshold (dB)	-50– -8–0	Specifies the level used as the threshold at which the compressor is applied. Compression is applied to audio that exceeds the threshold.																												
Ratio	1.00:1–2.50:1–INF:1	Sets how much compression is applied when the audio level crosses the threshold. The ratio used when no compression is applied is defined as “1”.																												
Attack (ms)	0–30–100	Adjusts the time from when audio exceeding the threshold is input until when compression begins.																												
Release (ms)	30–250–5000	Adjusts the length of time until compression ends after audio falls below the threshold.																												
Makeup (dB)	-40–0–+40	Adjusts the output volume level after applying the compressor.																												
De-esser	Reduces sibilant noise (the sounds you hear when pronouncing “s” words and other hissing sounds).																													
Switch	Disabled, Enabled	Enables/disables the de-esser.																												
Sens	0–80–100	Adjusts the sensitivity with which sibilants are detected.																												
Depth	0–64–100	Adjusts the intensity of the de-esser effect.																												
Delay	Use this to correct any timing discrepancy between the video and the audio.																													
Switch	Disabled, Enabled	Enables/disables the delay. Delays the output of the audio by the specified time.																												
Time (ms)	0.0–500.0	Adjusts the delay time (audio latency).																												
Parametric Equalizer	This is a 4-band parametric equalizer. This adjusts the volume for each frequency band to make the audio easier to hear.																													
Switch	Disabled, Enabled	Enables/disables the equalizer.																												
FLAT	–	Restores the equalizer to “flat” (zero) settings.																												
SETUP	The PEQ Mic 1–6 screens are shown for these settings.																													
	<table><tr><th>Setting</th><th>Value</th><th>Explanation</th></tr><tr><td rowspan="2">LOW</td><td>GAIN</td><td>-15.0–0.0–15.0</td></tr><tr><td>FREQ</td><td>20–100–250</td></tr><tr><td rowspan="3">MID LOW</td><td>GAIN</td><td>-15.0–0.0–15.0</td></tr><tr><td>FREQ</td><td>20–500</td></tr><tr><td>Q</td><td>0.3–1.0–16.5</td></tr><tr><td rowspan="3">MID HIGH</td><td>GAIN</td><td>-15.0–0.0–15.0</td></tr><tr><td>FREQ</td><td>20–2K</td></tr><tr><td>Q</td><td>0.3–1.0–16.5</td></tr><tr><td rowspan="2">HIGH</td><td>GAIN</td><td>-15.0–0.0–15.0</td></tr><tr><td>FREQ</td><td>20–10K–20K</td></tr></table>			Setting	Value	Explanation	LOW	GAIN	-15.0–0.0–15.0	FREQ	20–100–250	MID LOW	GAIN	-15.0–0.0–15.0	FREQ	20–500	Q	0.3–1.0–16.5	MID HIGH	GAIN	-15.0–0.0–15.0	FREQ	20–2K	Q	0.3–1.0–16.5	HIGH	GAIN	-15.0–0.0–15.0	FREQ	20–10K–20K
	Setting	Value	Explanation																											
	LOW	GAIN	-15.0–0.0–15.0																											
		FREQ	20–100–250																											
	MID LOW	GAIN	-15.0–0.0–15.0																											
		FREQ	20–500																											
		Q	0.3–1.0–16.5																											
	MID HIGH	GAIN	-15.0–0.0–15.0																											
		FREQ	20–2K																											
		Q	0.3–1.0–16.5																											
	HIGH	GAIN	-15.0–0.0–15.0																											
		FREQ	20–10K–20K																											

Audio Input Setup screen (excluding MIC)

[HOME] button → LINE 1/LINE 2/HDMI/USB <SETUP> on audio mixer screen

Setting	Value (bold text: default value)	Explanation		
Line 1, Line 2, HDMI, USB				
Adjusts each channel's audio input.				
Source	Line 1, Line 2, HDMI 1–4, USB Default settings are as follows. Line 1: Line 1 Line 2: Line 2 HDMI: HDMI 1 USB: USB	Specifies the audio source that's assigned to the channel.		
Gain (dB)	-42.0– 0.0 –42.0	Adjusts the digital gain.		
HPF (80Hz)	Disabled , Enabled	Enables/disables the high-pass filter. This cuts off unwanted low-band audio when enabled. The cutoff frequency is 80 Hz.		
Noise Gate	Eliminates audio that is lower than the specified threshold level. This helps remove white noise and other such sounds during silence.			
Switch	Disabled , Enabled	Enables/disables the noise gate.		
Threshold (dB)	-80– -48 –0	Specifies the level used as the threshold for removing audio. Audio below the level set here is removed.		
Release (ms)	30 –5000	Adjusts the length of time until the audio is fully attenuated after audio falls below the threshold.		
Compressor	Audio that exceeds the specified threshold level is compressed. This reduces the difference between the louder and softer sounds, making the audio more listenable.			
Switch	Disabled , Enabled	Enables/disables the compressor.		
Threshold (dB)	-50– -8 –0	Specifies the level used as the threshold at which the compressor is applied. Compression is applied to audio that exceeds the threshold.		
Ratio	1.00:1– 2.50:1 –INF:1	Sets how much compression is applied when the audio level crosses the threshold. The ratio used when no compression is applied is defined as "1".		
Attack (ms)	0– 30 –100	Adjusts the time from when audio exceeding the threshold is input until when compression begins.		
Release (ms)	30– 250 –5000	Adjusts the length of time until compression ends after audio falls below the threshold.		
Makeup (dB)	-40– 0 –+40	Adjusts the output volume level after applying the compressor.		
De-esser	Reduces sibilant noise (the sounds you hear when pronouncing "s" words and other hissing sounds).			
Switch	Disabled , Enabled	Enables/disables the de-esser.		
Sens	0– 80 –100	Adjusts the sensitivity with which sibilants are detected.		
Depth	0– 64 –100	Adjusts the intensity of the de-esser effect.		
Delay	Use this to correct any timing discrepancy between the video and the audio.			
Switch	Disabled , Enabled	Enables/disables the delay. Delays the output of the audio by the specified time.		
Time (ms)	0.0 –500.0	Adjusts the delay time (audio latency).		
Parametric Equalizer	This is a 4-band parametric equalizer. This adjusts the volume for each frequency band to make the audio easier to hear.			
Switch	Disabled , Enabled	Enables/disables the equalizer.		
FLAT	–	Restores the equalizer to "flat" (zero) settings.		
SETUP	The PEQ Stereo 1–4 screens are shown for these settings.			
	Setting	Value	Explanation	
	LOW	GAIN	-15.0– 0.0 –15.0	Boosts or attenuates the low band.
		FREQ	20– 100 –250	Adjusts the width of the frequency band used for boosting or attenuating the low-band audio.
	MID LOW	GAIN	-15.0– 0.0 –15.0	Boosts or attenuates the low-midrange band.
		FREQ	20– 500	Adjusts the width of the frequency band when boosting or attenuating low-midrange band.
		Q	0.3– 1.0 –16.5	Adjusts the frequency bandwidth when boosting or attenuating the midrange band.
	MID HIGH	GAIN	-15.0– 0.0 –15.0	Boosts or attenuates the high-midrange band.
		FREQ	20– 2K	Adjusts the center frequency when changing the volume in the mid- to high-range band.
		Q	0.3– 1.0 –16.5	Adjusts the width of the frequency band when boosting or attenuating high-midrange band.
	HIGH	GAIN	-15.0– 0.0 –15.0	Boosts or attenuates the high band.
		FREQ	20– 10K –20K	Adjusts the center frequency when changing the volume in the high band.

Audio Output Setup screen

[HOME] button → AUDIO OUTPUT HDMI/USB/AUX/MAIN <SETUP> on audio mixer screen

Setting	Value (bold text: default value)	Explanation
Main Output Adjusts the audio output from the MAIN connectors.		
Bus	Main, AUX, USB, SOLO	Specifies the audio bus that's assigned to the MAIN connectors.
SETUP	–	Shows the settings screen for the audio bus selected in "Bus".
Delay	Use this to correct any timing discrepancy between the video and the audio. Delays the output of the audio by the specified time.	
Switch	Disabled, Enabled	Enables/disables the delay.
Time (ms)	0.0–500.0	Adjusts the delay time (audio latency).
AUX Output This adjusts the audio output from the AUX jacks.		
Bus	Main, AUX, USB, SOLO	Specifies the audio bus that's assigned to the AUX jacks.
SETUP	–	Shows the settings screen for the audio bus selected in "Bus".
Delay	Use this to correct any timing discrepancy between the video and the audio. Delays the output of the audio by the specified time.	
Switch	Disabled, Enabled	Enables/disables the delay.
Time (ms)	0.0–500.0	Adjusts the delay time (audio latency).
USB Output This adjusts the audio that's output from the 4K STREAMING port.		
Bus	Main, AUX, USB, SOLO	Specifies the audio bus that is assigned to the 4K STREAMING port.
SETUP	–	Shows the settings screen for the audio bus selected in "Bus".
Delay	Use this to correct any timing discrepancy between the video and the audio. Delays the output of the audio by the specified time.	
Switch	Disabled, Enabled	Enables/disables the delay.
Time (ms)	0.0–500.0	Adjusts the delay time (audio latency).
HDMI Output Adjusts the audio output from the HDMI 4K OUT 1 and 2 connectors.		
Bus	Main, AUX, USB, SOLO	Specifies the audio bus that's assigned to the HDMI 4K OUT 1 and 2 connectors.
SETUP	–	Shows the settings screen for the audio bus selected in "Bus".
Delay	Use this to correct any timing discrepancy between the video and the audio. Delays the output of the audio by the specified time.	
Switch	Disabled, Enabled	Enables/disables the delay.
Time (ms)	0.0–500.0	Adjusts the delay time (audio latency).
Main Bus Adjusts the audio of the Main bus.		
Dynamics Type	This enables/disables the dynamics-related effects (compressor and limiter).	
	Through	Disables the compressor/limiter.
	Compressor	Enables the compressor. Audio that exceeds the specified threshold level is compressed. This reduces the difference between the louder and softer sounds, making the audio more listenable.
	Limiter	Enables the limiter. Limits the output volume so that it does not exceed the specified threshold level. * Distortion will occur if audio that exceeds the allowable range of the limiter is input.
Compressor		
Threshold (dB)	–50– –8 –0	Specifies the level used as the threshold at which the compressor is applied. Compression is applied to audio that exceeds the threshold.
Ratio	1.00:1– 2.50:1 –INF:1	Sets how much compression is applied when the audio level crosses the threshold. The ratio used when no compression is applied is defined as "1".
Attack (ms)	0– 30 –100	Adjusts the time from when audio exceeding the threshold is input until when compression begins.
Release (ms)	30– 250 –5000	Adjusts the length of time until compression ends after audio falls below the threshold.
Makeup (dB)	–40– 0 –+40	Adjusts the output volume level after applying the compressor.
Limiter		
Threshold (dB)	–50– –6 –0	Specifies the level used as the threshold at which the limiter is applied. Compression is applied to audio that exceeds the threshold. The output volume is limited to below the threshold.
Output (dB)	–40– 0 –+40	Adjusts the output volume level after applying the limiter.
Attack (ms)	0 –100	Adjusts the time from when audio exceeding the threshold is input until when compression begins.
Release (ms)	30– 500 –5000	Adjusts the length of time until compression ends after audio falls below the threshold.
Soft	Disabled, Enabled	When set to "Enabled", this minimizes perceptible distortion when using extreme limiter settings.
Loudness Auto Gain Control These settings are related to the loudness control function. Loudness control measures the loudness of the audio (which indicates the volume of sound perceived by the listener), and automatically adjusts the volume to an optimal level.		
Target LKFS (dB)	–34– –24 ––10	Sets the average loudness target value.
Integrated Control	Switch	Disabled, Enabled
	Sens	0– 100 –127
Momentary Control	Switch	Disabled, Enabled
	Sens	0– 80 –127
Graphic Equalizer This is a 15-band graphic equalizer. This adjusts the volume for each frequency, to make the audio easier to hear.		
Switch	Disabled, Enabled	Enables/disables the equalizer.
FLAT	–	Sets the equalizer settings to flat (0.0 dB).

Setting	Value (bold text: default value)	Explanation
SETUP	–	Shows the GEQ Main Bus screen. Sets the gain (amount of boost/cut) for each frequency band. You can adjust this within a range of -15→+15 dB.
AUX Bus These settings adjust the audio of the AUX bus.		
Dynamics Type	This selects the dynamics-related effects (compressor and limiter). The effect you select is enabled.	
	Through	Disables the compressor/limiter.
	Compressor	Enables the compressor. Audio that exceeds the specified threshold level is compressed. This reduces the difference between the louder and softer sounds, making the audio more listenable.
	Limiter	Enables the limiter. Limits the output volume so that it does not exceed the specified threshold level. * Distortion will occur if audio that exceeds the allowable range of the limiter is input.
Compressor		
Threshold (dB)	-50– -8 –0	Specifies the level used as the threshold at which the compressor is applied. Compression is applied to audio that exceeds the threshold.
Ratio	1.00:1– 2.50:1 –INF:1	Sets how much compression is applied when the audio level crosses the threshold. The ratio used when no compression is applied is defined as “1”.
Attack (ms)	0– 30 –100	Adjusts the time from when audio exceeding the threshold is input until when compression begins.
Release (ms)	30– 250 –5000	Adjusts the length of time until compression ends after audio falls below the threshold.
Makeup (dB)	-40– 0 –+40	Adjusts the output volume level after applying the compressor.
Limiter		
Threshold (dB)	-50– -6 –0	Specifies the level used as the threshold at which the limiter is applied. Compression is applied to audio that exceeds the threshold. The output volume is limited to below the threshold.
Output (dB)	-40– 0 –+40	Adjusts the output volume level after applying the limiter.
Attack (ms)	0 –100	Adjusts the time from when audio exceeding the threshold is input until when compression begins.
Release (ms)	30– 500 –5000	Adjusts the length of time until compression ends after audio falls below the threshold.
Soft	Disabled , Enabled	When set to “Enabled”, this minimizes perceptible distortion when using extreme limiter settings.
Graphic Equalizer This is a 15-band graphic equalizer. This adjusts the volume for each frequency, to make the audio easier to hear.		
Switch	Disabled , Enabled	Enables/disables the equalizer.
FLAT	–	Sets the equalizer settings to flat (0.0 dB).
SETUP	–	Shows the GEQ AUX Bus screen. Sets the gain (amount of boost/cut) for each frequency band. You can adjust this within a range of -15→+15 dB.
USB Bus Adjusts the audio of the USB bus.		
Dynamics Type	This selects the dynamics-related effects (compressor and limiter). The effect you select is enabled.	
	Through	Disables the compressor/limiter.
	Compressor	Enables the compressor. Audio that exceeds the specified threshold level is compressed. This reduces the difference between the louder and softer sounds, making the audio more listenable.
	Limiter	Enables the limiter. Limits the output volume so that it does not exceed the specified threshold level. * Distortion will occur if audio that exceeds the allowable range of the limiter is input.
Compressor		
Threshold (dB)	-50– -8 –0	Specifies the level used as the threshold at which the compressor is applied. Compression is applied to audio that exceeds the threshold.
Ratio	1.00:1– 2.50:1 –INF:1	Sets how much compression is applied when the audio level crosses the threshold. The ratio used when no compression is applied is defined as “1”.
Attack (ms)	0– 30 –100	Adjusts the time from when audio exceeding the threshold is input until when compression begins.
Release (ms)	30– 250 –5000	Adjusts the length of time until compression ends after audio falls below the threshold.
Makeup (dB)	-40– 0 –+40	Adjusts the output volume level after applying the compressor.
Limiter		
Threshold (dB)	-50– -6 –0	Specifies the level used as the threshold at which the limiter is applied. Compression is applied to audio that exceeds the threshold. The output volume is limited to below the threshold.
Output (dB)	-40– 0 –+40	Adjusts the output volume level after applying the limiter.
Attack (ms)	0 –100	Adjusts the time from when audio exceeding the threshold is input until when compression begins.
Release (ms)	30– 500 –5000	Adjusts the length of time until compression ends after audio falls below the threshold.
Soft	Disabled , Enabled	When set to “Enabled”, this minimizes perceptible distortion when using extreme limiter settings.
Graphic Equalizer This is a 15-band graphic equalizer. This adjusts the volume for each frequency, to make the audio easier to hear.		
Switch	Disabled , Enabled	Enables/disables the equalizer.
FLAT	–	Sets the equalizer settings to flat (0.0 dB).
SETUP	–	Shows the GEQ USB Bus screen. Sets the gain (amount of boost/cut) for each frequency band. You can adjust this within a range of -15→+15 dB.

Audio Others Setup screen

[HOME] button → REVERB <SETUP> on the audio mixer screen, or AUTO MIXING <SETUP>

Setting	Value (bold text: default value)	Explanation
Reverb		
Adds reverberation to the sound.		
Switch	Disabled , Enabled	Enables/disables the reverb.
Type	Specifies the reverb type.	
	Room	Produces the natural-sounding reverberation of a room.
	Studio 1, Studio 2	Adds reverberation to make it sound like you're recording in a studio.
	Hall 1, Hall 2, Hall 3	Produces the reverberation that is typical of a performance in a concert hall.
	Plate	Adds reverberation that simulates a plate reverb (which creates reverberations from the vibrations of a steel plate).
Time (sec)	0.0– 1.0 –5.0	Specifies the time until the reverberation is no longer heard.
Auto Mixing		
Mic 1–6	Switch	Disabled , Enabled
	Weight	0– 50 –100
		Enables/disables the auto mixing function. Auto mixing is a function that automatically controls the volume adjustments. * When auto mixing is on, the "Switch" setting is enabled.
		Specifies the weight level (the priority of volume distribution). * When the weight level is "0", no audio is output.

Audio follow video screen

[HOME] button → AVF <SETUP> on audio mixer screen

Setting	Value (bold text: default value)	Explanation
Scene 1–1–1–8		
These are the related settings for the Audio Follows Video function, applied to each scene (1–1 through 1–8). The Audio Follows Video function recalls the input audio volume settings you registered beforehand when you switch between scenes. * Audio Follows Video can only be used on the scenes in bank 1.		
Switch	Disabled , Enabled	If this is set to "Enabled", the "Recall Audio Level" volume setting is recalled when you switch to the scene in question. * When Audio Follows Video is on, the "Switch" setting is enabled.
Recall Audio Level		
This sets the volume that's applied for each input when you switch scenes.		
Mic 1–6 Line 1, 2 HDMI USB	0–127	Sets the volume.
	Disabled , Enabled	Sets whether to recall volume settings or not.
Snapshot	–	The current volume is applied to "Recall Audio Level" for the respective input.

Video follow audio screen

[HOME] button → VFA <SETUP> on audio mixer screen

Here you can make settings for the Video Follows Audio function. "Video follows audio" is a function that automatically switches to the desired scene when the unit detects audio input that matches specific conditions.

Setting	Value (bold text: default value)	Explanation
Common		
Destination	PGM/PGM1 , PST/PGM2, Both	Specifies the video bus used for Video Follows Audio.
Duration (sec)	1- 3 -30	Specifies the time until audio detection resumes after the scene finishes switching.
Sense (dB)		
Mic 1-6 Line 1, 2 HDMI USB	-50- -20 -0	Sets the detection level for audio, for each input. When the input audio exceeds the detection level, the indicator next to the input box for the value lights up.
Slot 1-8 This registers the detailed conditions (slots 1-8) for Video Follows Audio.		
Switch	Disabled , Enabled	Enables/disables the slot. If multiple slots are enabled, audio is detected starting from the lowest slot number. * When Video Follows Audio is on, the "Switch" setting is enabled.
Recall Scene	1-1 -8-8	Sets the scene that's outputted when the input audio meets the conditions specified by the "Condition" parameters.
Condition This specifies the conditions for detecting audio, for each input. The scene changes when audio is detected that meets the conditions on all inputs.		
Mic 1-6 Line 1, 2 HDMI USB	Presence	The detected audio exceeds the level set in the "Sense (dB)" setting.
	Absence	The detected audio is less than the level set in the "Sense (dB)" setting.
	Ignore	Ignores audio detection.
Priority		
Slot Swap Swaps (exchanges) the slot settings.		
Source	Slot 1 -Slot 8	Specifies the slot number used as the swap source.
Destination	Slot 1 -Slot 8	Specifies the slot number used as the swap destination.
Execute	-	Swaps (exchanges) the slot settings.

Main specifications

■ Video		
Video Processing	4:2:2 (Y/Pb/Pr), 10-bit	
Number of video channels	4 Channels	
Input formats	HDMI 4K IN	2160p/60 Hz, 59.94 Hz, 50 Hz, 30 Hz, 29.97 Hz, 25 Hz, 24 Hz, 23.98 Hz 1080p/120 Hz, 119.88 Hz, 60 Hz, 59.94 Hz, 50 Hz, 30 Hz, 29.97 Hz, 25 Hz, 24 Hz, 23.98 Hz 1080i/59.94 Hz, 50 Hz 720p/60 Hz, 59.94 Hz, 50 Hz 2560 x 1440/120 Hz, 60 Hz (Conforms to VESA-DMT) * HDCP 1.4, 2.2 supported. * Conforms to CTA-861-F * Color Gamut: Rec.709, Rec.2020 * Dynamic Range: SDR, HDR PQ (HDR10), HDR HLG
Output formats	HDMI 4K OUT	2160p/60 Hz, 59.94 Hz, 50 Hz, 30 Hz, 29.97 Hz, 25 Hz, 24 Hz, 23.98 Hz 1080p/60 Hz, 59.94 Hz, 50 Hz, 30 Hz, 29.97 Hz * HDCP 1.4, 2.2 supported. * Conforms to CTA-861-F * Color Gamut: Rec.709, Rec.2020 * Dynamic Range: SDR, HDR PQ (HDR10), HDR HLG
	HDMI HD OUT	1280 x 720/60 Hz * HDCP 1.4 supported. * Conforms to CTA-861-F * Color Gamut: Rec.709 * Dynamic Range: SDR
	4K STREAMING	1280 x 720/60 Hz * Color Gamut: Rec.709 * Dynamic Range: SDR * Conforms to USB Video Class
Still image	Bitmap file (.bmp)	Maximum 3840 x 2160 pixels, 24-bit color, uncompressed.
	PNG file (.png)	Maximum 3840 x 2160 pixels, 24-bit color
	JPG File (.jpg, .jpeg)	Maximum 3840 x 2160 pixels, 24-bit color
	* It can be stored up to 8 files in the internal memory. * PNG alpha channel supported	
Video effects	Transition	Cut, Mix, Wipe (11 patterns)
	Composition	Background, Layer 1 (PinP + Key)(*1), Layer 2 (PinP + Key) (*1), DSK (*2), Logo (*3)
	Other	Multi-View, Output Fade, Output Freeze, Output Capture, Still Image playback, Test pattern output
	(*1) Chrominance Key, Luminance Key (*2) Chrominance Key, Luminance Key, Still image alpha channel (*3) Chrominance Key, Luminance Key, Still image alpha channel, For 4K STREAMING only. Maximum size is 1920 x 1080.	
■ Audio		
Audio Processing	Sample rate	24 bits/48 kHz
Number of audio channels	14 Channels * MIC x 6, LINE x 2, HDMI, USB	
Audio formats	HDMI 4K IN	Linear PCM, 24 bits, 48 kHz, 2 ch
	HDMI 4K OUT	Linear PCM, 24 bits, 48 kHz, 2 ch
	4K STREAMING (Input and Output)	Linear PCM, 16 bits, 48 kHz, 2 ch
Audio effects	Channel Effects	Auto Gain, High pass filter, Anti-feedback, Noise Gate, De-esser, Compressor, 4-Band PEQ, Delay, Auto Mixing
	Master Effects	Reverb, Compressor/Limiter, Loudness Auto Gain Control, 15-band GEQ, Delay
	Others	Output fade, Test tone output
■ Common Section		
External Media	USB flash drive (commercially available)	
Other Functions	Scene Memory (64 types). Panel Lock Function. EDID Emulator. Menu language (English, Japanese)	

■ Connectors				
Video Input Connectors		HDMI 4K IN 1–3, 4-1–4-4	HDMI type A (HDMI 2.0) x 7 * HDCP 1.4/ 2.2 and multi-format supported	
Video Output Connectors		HDMI 4K OUT 1, 2	HDMI type A (HDMI 2.0) x 2 * HDCP 1.4/ 2.2 and multi-format supported	
		HDMI HD OUT	HDMI type A (HDMI 1.4) x 1 * HDCP 1.4 supported	
		4K STREAMING	USB Type-C® (USB 3.2 Gen 2/10 Gbps)	
Audio Input Connectors	Analog	AUDIO IN	MIC 1–4	Combo type (XLR, 1/4-inch TRS phone) balanced, phantom power (DC 48 V, 10 mA Max)
			MIC 5–6	1/4-inch TRS phone, balanced
			LINE 1, 2	RCA phono type
	Digital	4K STREAMING	USB Type-C®	
		HDMI 4K IN 1–3, 4-1–4-4	HDMI type A (HDMI 2.0) x 7	
Audio Output Connectors	Analog	AUDIO OUT	MAIN (L, R)	XLR type
			AUX (L, R)	RCA phono type
		PHONES	Stereo 1/4-inch phone type	
	Digital	4K STREAMING	USB Type-C®	
		HDMI 4K OUT 1, 2	HDMI type A (HDMI 2.0) x 2	
		HDMI HD OUT	HDMI type A (HDMI 1.4) x 1	
Other Connectors	USB HOST1, 2		USB A	
	RS-232		9 pin D-sub type (Male)	
	LAN		RJ45 type, 100BASE-TX	
	TALLY		9 pin D-sub type (Female)	
■ Audio Input/Output Characteristics				
Input Level	AUDIO IN	MIC 1–6	-64–+4 dBu (Maximum input level: +24 dBu)	
		LINE 1, 2	-10 dBu (Maximum input level: +10 dBu)	
Input Impedance	AUDIO IN	MIC 1–6	16 kΩ (phantom power: OFF), 8 kΩ (phantom power: ON)	
		LINE 1, 2	2.7 kΩ	
Output Level	AUDIO OUT	MAIN (L, R)	+4 dBu (Maximum output level: +24 dBu)	
		AUX (L, R)	-10 dBu (Maximum output level: +10 dBu)	
	PHONES		90 mW + 90 mW (32 Ω load)	
Output Impedance	AUDIO OUT	MAIN (L, R)	600 Ω	
		AUX (L, R)	1 kΩ	
	PHONES		10 Ω	
Residual Noise Level (IHF-A, typ.)	Output Connector: AUDIO OUT MAIN (L, R) jacks			
	-87 dBu (All faders: Min)			
	-85 dBu ([MAIN] Fader: Unity, Channel faders: Unity only one MIC 1 channel, Gain: Min)			
	-57 dBu ([MAIN] Fader: Unity, Channel faders: Unity only one MIC 1 channel, Gain: Max)			
	* Input 150 Ω terminate			
	Output Connector: AUDIO OUT AUX (L, R) jacks			
	-100 dBu (All faders: Min)			
	-99 dBu ([MAIN] Fader: Unity, Channel faders: Unity only one MIC 1 channel, Gain: Min)			
-80 dBu ([MAIN] Fader: Unity, Channel faders: Unity only one MIC 1 channel, Gain: Max)				
* Input 150 Ω terminate				
■ Others				
Display	7 inch Graphic color LCD 800 x 480 dots (touch screen) x2			
Internal Speaker	Mono, 1 W			
Power Consumption	115 W			
Operation Temperature	+5 to +40 degrees Celsius			
	+41 to +104 degrees Fahrenheit			
Dimensions	436 (W) x 279 (D) x 137 (H) mm 17-3/16 (W) x 11 (D) x 5-7/16 (H) inches			
Weight	6.8 kg / 15 lbs			
Accessories	Startup Guide, Power cord			

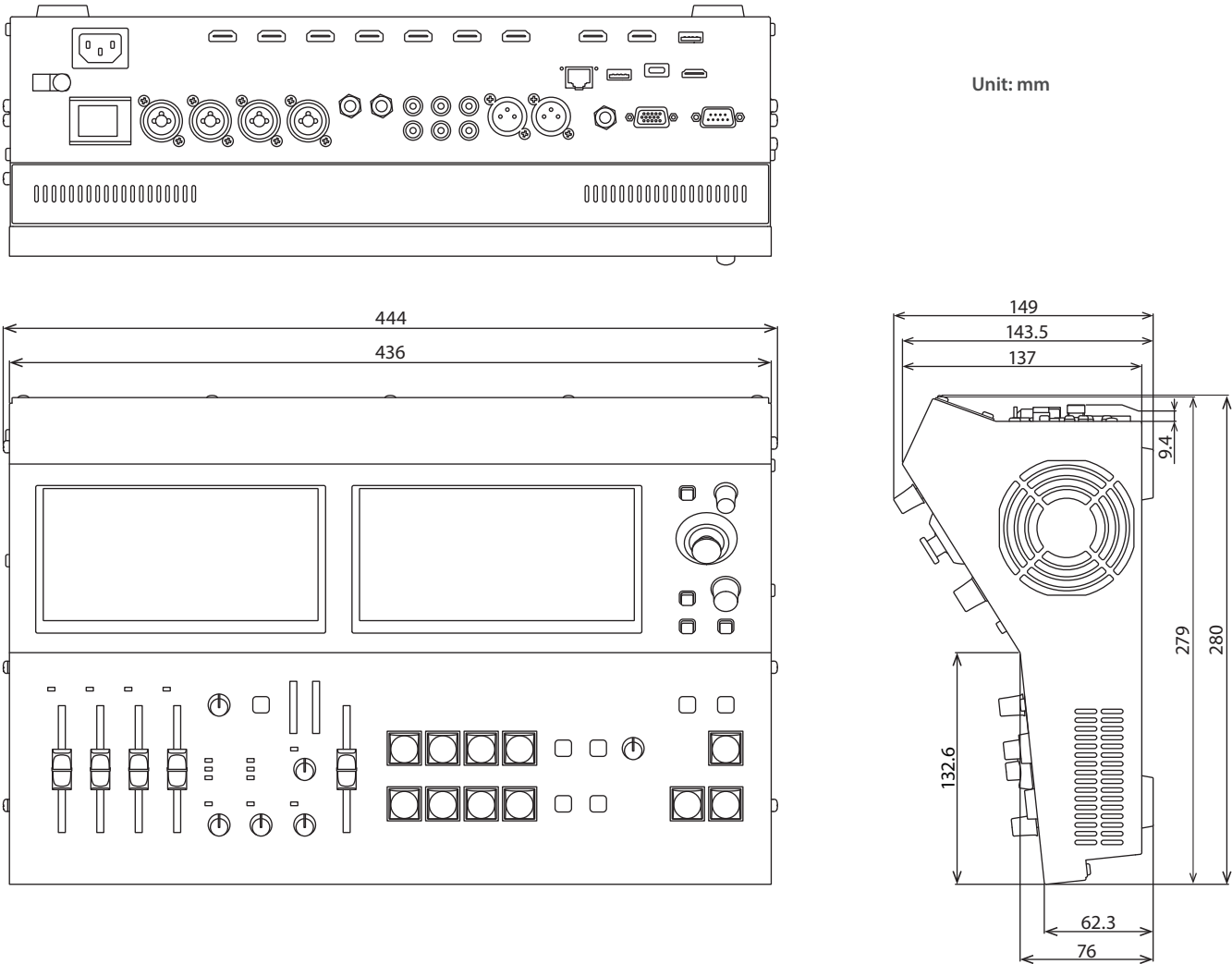
* 0 dBu = 0.775 Vrms

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

* 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.

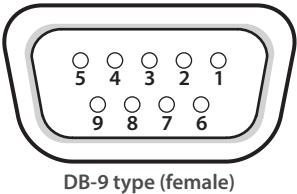
Dimensions

Unit: mm



Specification of the TALLY connector

TALLY connector pin layout



Pin assignments

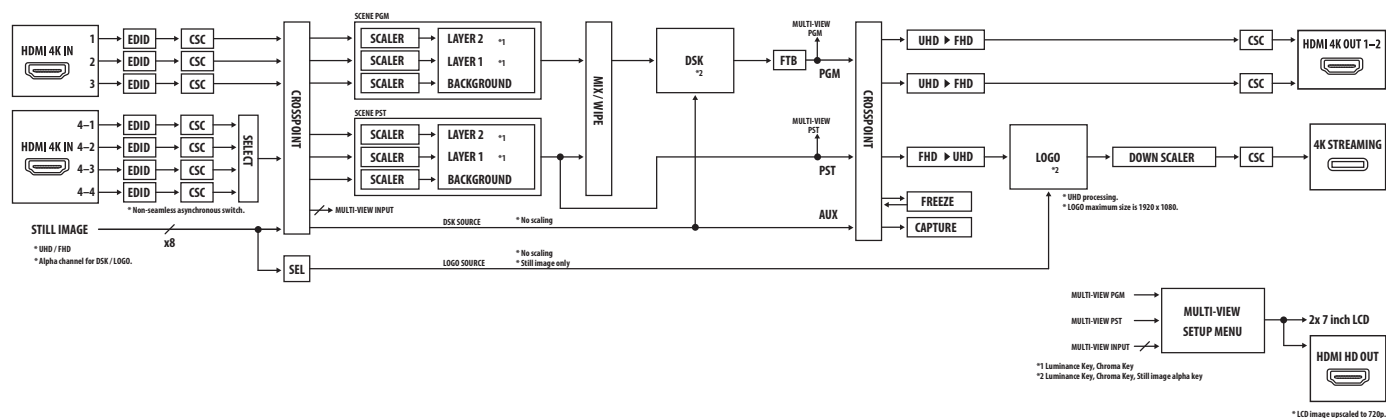
Pin No.	Target
1	GND
2	PGM HDMI 1
3	PGM HDMI 2
4	PGM HDMI 3
5	PGM HDMI 4
6	PST HDMI 1
7	PST HDMI 2
8	PST HDMI 3
9	PST HDMI 4

Tally output

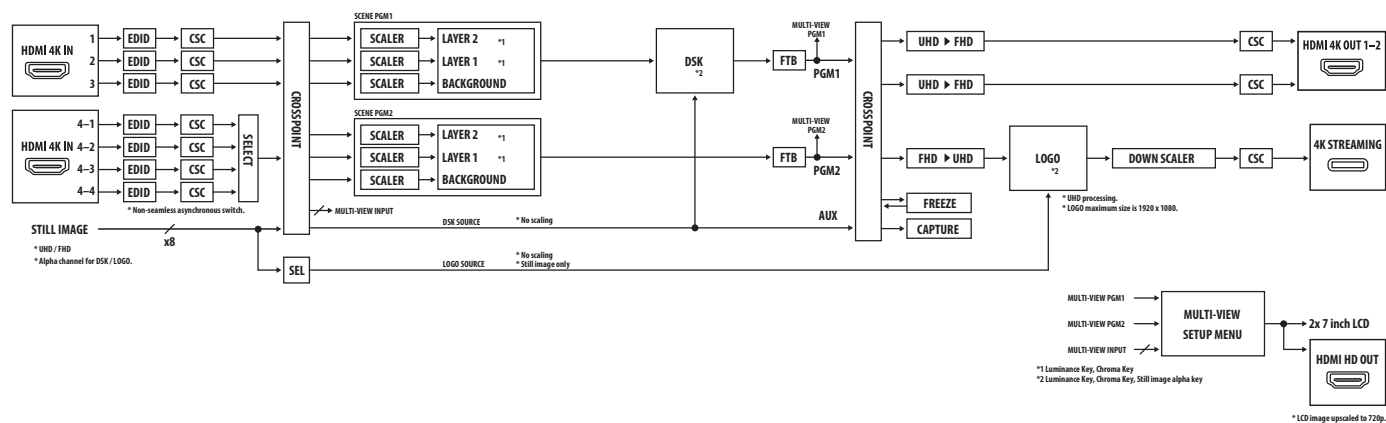
Trigger method	Open collector
Maximum input	12 V/200 mA

Video block diagram

PGM/PST mode



Dual mode



Audio block diagram

