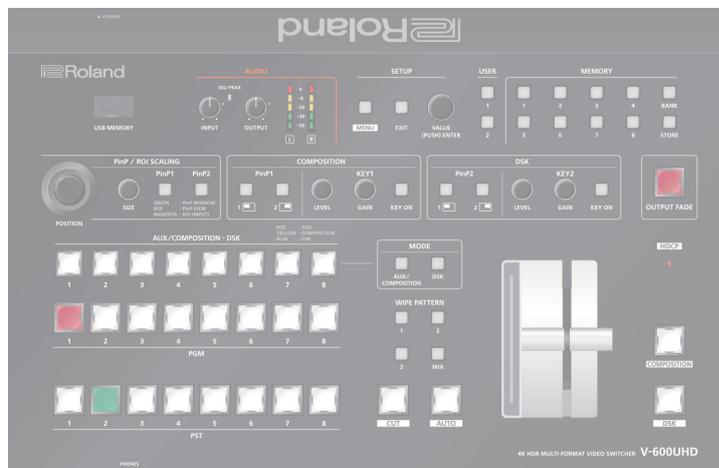


Recommended cables

When inputting or outputting 4K resolution video (2160p (UHD), 2160p (DCI), 3840x2160, 4096x2160), please use premium high-speed HDMI cables and SDI cables that support 12G SDI.



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Update History

Ver.1.10

Additional functions

- A function for capturing a still image from the final output video (PGM or PVW) has been added.
Captured still images can be stored on a USB flash drive and loaded from the USB flash drive during boot.
 - * Still images captured from copyright protected (HDCP) video cannot be stored on a USB flash drive.
- The number of still images that can be loaded from a USB flash drive was increased from 2 to 8.
You can load or capture up to 8 still images. And you can choose from 8 still images as the source for Ch.7 (STILL1) or Ch.8 (STILL2).
- PNG has been added as a file format that can be imported via a USB flash drive.
 - * The alpha channel of PNG files cannot be imported.
- A function for freezing the final output video (PGM) has been added.
- Support for the following output formats on HDMI outputs have been added.
 - 1920 x 1080/30 Hz (FHD) (*)
 - 3840 x 2160/30 Hz (UHD 4K)
 - 4096 x 2160/30 Hz (DCI 4K)

*: "1920 x 1080/30 Hz (FHD)" is output when the following settings are used.

- In System menu → Processing → Format: 3840x2160
- In System menu → Frame Rate: 30Hz
- In Output menu → HDMI OUT 1-3 → Down Convert: Enabled

- Support for the following resolutions and frame rates on HDMI inputs have been added.
 - 720/50p, 720/59.94p
 - 1024 x 768/60 Hz (XGA)
 - 1280 x 768/60 Hz (WXGA)
 - 1280 x 1024/60 Hz (SXGA)
 - 1400 x 1050/60 Hz (SXGA+)
 - 1600 x 1200/60 Hz (UXGA)
 - 1920 x 1080/30 Hz (FHD)
 - 3840 x 2160/24 Hz (UHD 4K)
 - 4096 x 2160/24 Hz (DCI 4K)
- A function for selecting the EDID setting for HDMI inputs has been added.
- Added SDI input function that determines if source is SDR or HDR, based on SDI Video Payload ID.
Added SDI output parameter to set the Video Payload ID.
- Parameters for changing the display and color of ROI border shown on the multi-view monitor have been added.
- In the Input Scaling menu, functions for adjusting ROI size to FHD and resetting parameters have been added.
- 1k stereo test tone output has been added. (L:1k + R:1k)
- A function for erasing individual stored MEMORY settings has been added.
- A function for erasing imported still images and captured still images has been added.

Functionality improvements

- Automatically recall the position of the AUDIO OUTPUT knob at startup and after Factory Reset.
- Improved processing with 1080/50i and 1080/59.94i inputs.
- Adjusted synchronization timing when Reference Source is "SDI IN5."

Ver.1.08

Bug fix

- The problem of the V-600UHD experiencing a system lockup in extremely rare cases was corrected.

Ver.1.07

Additional functions

- SDI OUT 3G Level B output
- Functions that use the RS-232 connector and LAN port (LAN/RS-232 command and WebRCS)
- SDI IN audio functionality (*)

*: Immediately after updating to Ver.1.07, the SDI IN audio parameter is muted.

If you want to use SDI IN audio, perform one of the following operations.

- In Audio menu → SDI IN 5/6 screen, edit the Mute, Level, Aux Send, and Mix Ch.1–16 parameters.
- Execute Factory Reset.

Ver.1.06

Functionality improvements

- The stability of HDMI and SDI input and output has been improved.
- The display of signal status when a Mac computer is connected has been improved.

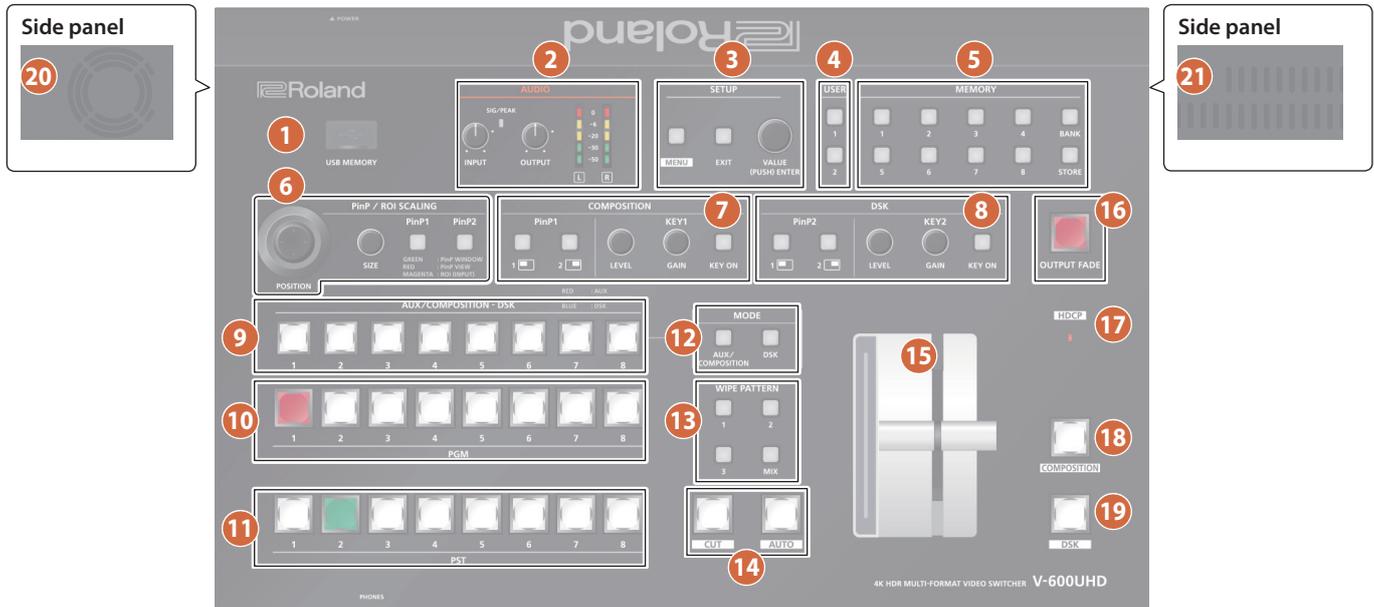
Ver.1.05

Bug fix

- The possibility that in extremely rare cases signals to HDMI IN might fail to be received correctly has been circumvented.

Panel Descriptions

Top Panel / Side Panel



Name	Explanation				
1 USB MEMORY port	This is for connecting a USB flash drive. Use this to load a still image, save or load settings, or save a captured still image. * Never turn off the power or remove the USB flash drive while the USB flash drive is being accessed.				
2 AUDIO					
[INPUT] knob	Adjusts the volume level (digital gain) for AUDIO IN L/R.				
SIG/PEAK indicator	Lit green when input is detected at AUDIO IN L/R, and lit red when the volume is excessive.				
[OUTPUT] knob	Adjusts the audio output/headphones volume.				
Level meter	Indicates the audio output (L/R) volume level.				
3 SETUP					
[MENU] button	Switches between displaying or hiding the menu. The menu appears on the multi-view monitor connected to the MULTI-VIEW connector.				
[EXIT] button	Returns you to the menu one level higher.				
[VALUE] knob	Turning: Selects a menu item or changes a setting value. Pressing: Accepts the selected menu item or applies changes to a setting. It also executes operations.				
4 USER					
[1], [2] buttons	Execute the functions that are assigned by the menu settings.				
5 MEMORY					
[1]–[8] buttons	Save the current settings (such as video settings and operating panel status) to memory, or recall settings from memory. Button functioning is switched according to whether the [STORE] button is on/off. <table border="1"> <tr> <td>[STORE] on (lit)</td> <td>Saves current settings in memory.</td> </tr> <tr> <td>[STORE] off (unlit)</td> <td>Recalls settings that are saved in memory.</td> </tr> </table>	[STORE] on (lit)	Saves current settings in memory.	[STORE] off (unlit)	Recalls settings that are saved in memory.
[STORE] on (lit)	Saves current settings in memory.				
[STORE] off (unlit)	Recalls settings that are saved in memory.				
[BANK] button	When this is turned on (lit), the [1]–[8] buttons function as bank selection buttons for memories.				
[STORE] button	When this is turned on (lit), you can save settings in memories.				

Name	Explanation												
6 PinP / ROI SCALING													
[POSITION] stick	Adjusts the display position of the input video or PinP inset screen.												
[SIZE] knob	Enlarges or reduces the size of the input video or PinP inset screen.												
[PinP1], [PinP2] buttons (*1)	Select what is controlled by operating the [POSITION] stick and [SIZE] knob. [PinP1] button <table border="1"> <tr> <td>Lit green</td> <td>PinP1 window</td> </tr> <tr> <td>Lit red</td> <td>Video shown in the PinP1 inset screen</td> </tr> <tr> <td>Lit magenta</td> <td>ROI (input video)</td> </tr> </table> [PinP2] button <table border="1"> <tr> <td>Lit green</td> <td>PinP2 window</td> </tr> <tr> <td>Lit red</td> <td>Video shown in the PinP2 inset screen</td> </tr> <tr> <td>Lit magenta</td> <td>ROI (input video)</td> </tr> </table>	Lit green	PinP1 window	Lit red	Video shown in the PinP1 inset screen	Lit magenta	ROI (input video)	Lit green	PinP2 window	Lit red	Video shown in the PinP2 inset screen	Lit magenta	ROI (input video)
Lit green	PinP1 window												
Lit red	Video shown in the PinP1 inset screen												
Lit magenta	ROI (input video)												
Lit green	PinP2 window												
Lit red	Video shown in the PinP2 inset screen												
Lit magenta	ROI (input video)												
* When selecting "ROI," you can adjust the input video selected as the preset video.													
7 COMPOSITION (*1)													
PinP1 [1], [2] buttons	Turns picture-in-picture video compositing on/off. The selected button lights up when it is switched on. The color of the lit button indicates the output destination of the compositing results. <table border="1"> <tr> <td>Lit green</td> <td>PinP1 composition on</td> </tr> <tr> <td>Lit red</td> <td>Final output</td> </tr> <tr> <td>Unlit</td> <td>PinP1 composition off</td> </tr> </table>	Lit green	PinP1 composition on	Lit red	Final output	Unlit	PinP1 composition off						
Lit green	PinP1 composition on												
Lit red	Final output												
Unlit	PinP1 composition off												
KEY1 [LEVEL] knob	During key compositing, this adjusts the amount of keying (transparency).												
KEY1 [GAIN] knob	During key compositing, this adjusts the degree of edge blur (the semi-transmissive region) for keying.												
KEY1 [KEY ON] button	Turns key composition on/off. When on, the KEY1 [KEY ON] button lights up. The color of the lit button indicates the output destination of the compositing results. <table border="1"> <tr> <td>Lit green</td> <td>KEY1 composition on</td> </tr> <tr> <td>Lit red</td> <td>Final output</td> </tr> <tr> <td>Unlit</td> <td>KEY1 composition off</td> </tr> </table>	Lit green	KEY1 composition on	Lit red	Final output	Unlit	KEY1 composition off						
Lit green	KEY1 composition on												
Lit red	Final output												
Unlit	KEY1 composition off												

Name	Explanation										
8 DSK											
PinP2 [1], [2] buttons	<p>Turns picture-in-picture video compositing on/off. The selected button lights up when it is switched on.</p> <p>The color of the lit button indicates the output destination of the compositing results.</p> <table border="1"> <tr> <td>Lit green</td> <td>PinP2 composition on</td> </tr> <tr> <td>Lit red</td> <td>Final output</td> </tr> <tr> <td>Unlit</td> <td>PinP2 composition off</td> </tr> </table>	Lit green	PinP2 composition on	Lit red	Final output	Unlit	PinP2 composition off				
Lit green	PinP2 composition on										
Lit red	Final output										
Unlit	PinP2 composition off										
KEY2 [LEVEL] knob	During key compositing, this adjusts the amount of keying (transparency).										
KEY2 [GAIN] knob	During key compositing, this adjusts the degree of edge blur (the semi-transmissive region) for keying.										
KEY2 [KEY ON] button	<p>Turns key composition on/off. When on, the KEY2 [KEY ON] button lights up.</p> <p>The color of the lit button indicates the output destination of the compositing results.</p> <table border="1"> <tr> <td>Lit green</td> <td>KEY2 composition on</td> </tr> <tr> <td>Lit red</td> <td>Final output</td> </tr> <tr> <td>Unlit</td> <td>KEY2 composition off</td> </tr> </table>	Lit green	KEY2 composition on	Lit red	Final output	Unlit	KEY2 composition off				
Lit green	KEY2 composition on										
Lit red	Final output										
Unlit	KEY2 composition off										
9 AUX/COMPOSITION - DSK											
Cross-point [1]–[8] buttons (*2)	<p>Indicates the status of video input to the cross-points.</p> <p>Here you can also select the video that is sent to the destination specified by the MODE [AUX/COMPOSITION] button and [DSK/ROI] button.</p> <table border="1"> <tr> <td>Unlit</td> <td>Video is not being input.</td> </tr> <tr> <td>Lit green</td> <td>Valid video is being input.</td> </tr> <tr> <td>Lit red</td> <td>Video is being sent to AUX. You can use the [1]–[8] buttons to change the video that is sent to AUX.</td> </tr> <tr> <td>Lit yellow</td> <td>Video is being sent to COMPOSITION. You can use the [1]–[8] buttons to change the video that is sent to COMPOSITION.</td> </tr> <tr> <td>Lit blue</td> <td>Video is being sent to DSK. You can use the [1]–[8] buttons to change the video that is sent to DSK.</td> </tr> </table>	Unlit	Video is not being input.	Lit green	Valid video is being input.	Lit red	Video is being sent to AUX. You can use the [1]–[8] buttons to change the video that is sent to AUX.	Lit yellow	Video is being sent to COMPOSITION. You can use the [1]–[8] buttons to change the video that is sent to COMPOSITION.	Lit blue	Video is being sent to DSK. You can use the [1]–[8] buttons to change the video that is sent to DSK.
Unlit	Video is not being input.										
Lit green	Valid video is being input.										
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Lit yellow	Video is being sent to COMPOSITION. You can use the [1]–[8] buttons to change the video that is sent to COMPOSITION.										
Lit blue	Video is being sent to DSK. You can use the [1]–[8] buttons to change the video that is sent to DSK.										
10 PGM											
Cross-point [1]–[8] buttons	Selects the final output video. The selected cross-point button is lit red.										
11 PST											
Cross-point [1]–[8] buttons	<p>Selects the preset video (the video to output next). The selected cross-point button is lit green. While compositing of the video is in progress it lit red.</p> <p>* When the menu is not shown, you can hold down the [MENU] button and press a PST cross-point [1]–[8] button to successively switch the input source setting.</p>										

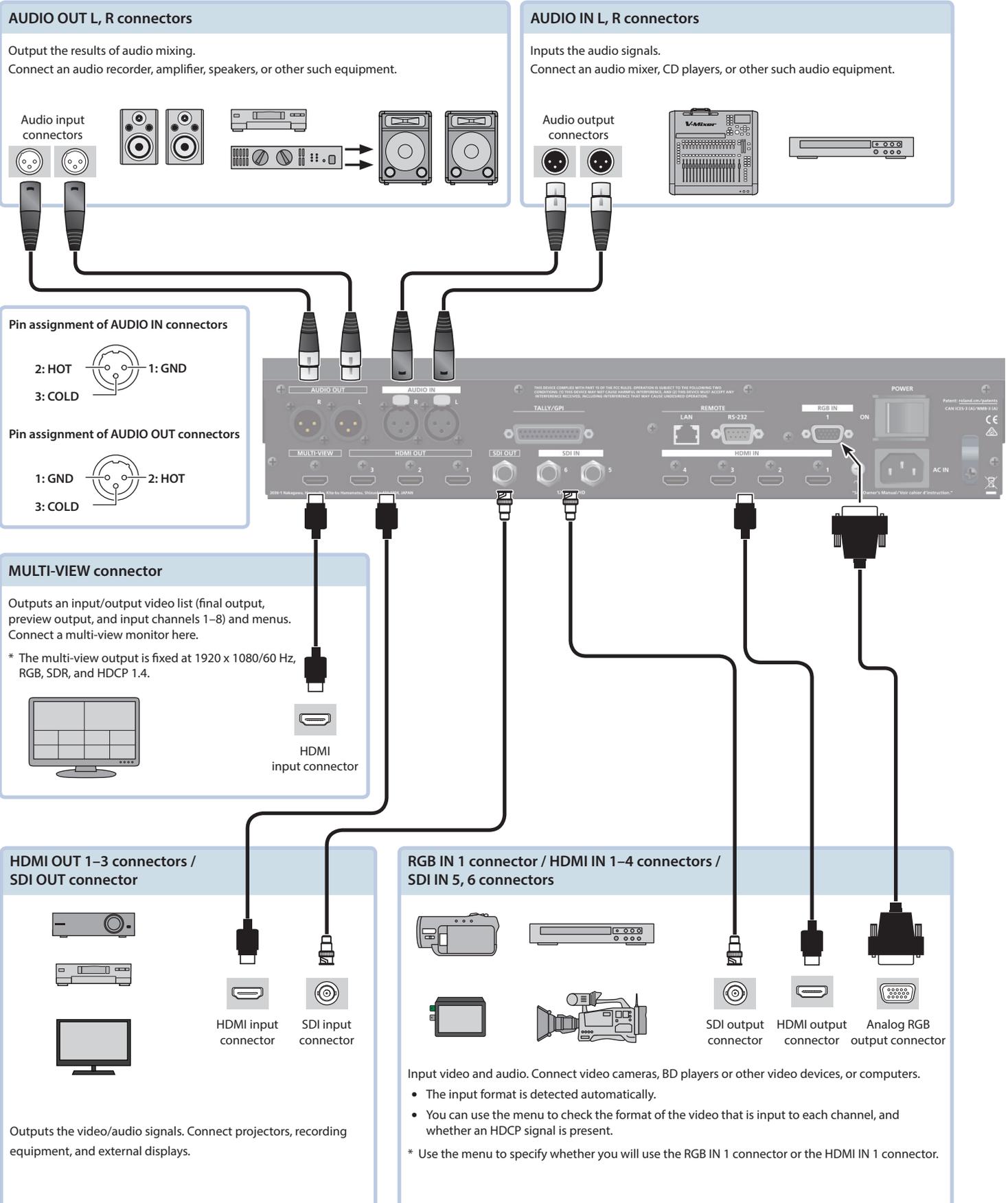
Name	Explanation										
12 MODE											
[AUX/COMPOSITION] button [DSK] button (*2)	<p>Selects the destination of the video.</p> <p>The video selected by the AUX/COMPOSITION - DSK cross-point [1]–[8] button is sent.</p> <table border="1"> <tr> <td colspan="2">[AUX/COMPOSITION] button</td> </tr> <tr> <td>Lit red</td> <td>AUX</td> </tr> <tr> <td>Lit yellow</td> <td>COMPOSITION</td> </tr> <tr> <td colspan="2">[DSK] button</td> </tr> <tr> <td>Lit blue</td> <td>DSK</td> </tr> </table>	[AUX/COMPOSITION] button		Lit red	AUX	Lit yellow	COMPOSITION	[DSK] button		Lit blue	DSK
[AUX/COMPOSITION] button											
Lit red	AUX										
Lit yellow	COMPOSITION										
[DSK] button											
Lit blue	DSK										
13 WIPE PATTERN											
[1]–[3] buttons [MIX] button	<p>Selects the video transition effects. The selected button lights up.</p> <table border="1"> <tr> <td>[1]–[3]</td> <td>The original video is broken into by the next video.</td> </tr> <tr> <td>[MIX]</td> <td>The two pictures are blended together as the video is switched.</td> </tr> </table>	[1]–[3]	The original video is broken into by the next video.	[MIX]	The two pictures are blended together as the video is switched.						
[1]–[3]	The original video is broken into by the next video.										
[MIX]	The two pictures are blended together as the video is switched.										
14 [CUT] button [AUTO] button	<p>Makes the preset video (the video to output next) the final output.</p> <table border="1"> <tr> <td>[CUT]</td> <td>The picture switches instantly.</td> </tr> <tr> <td>[AUTO]</td> <td>The picture switches with a transition effect applied.</td> </tr> </table>	[CUT]	The picture switches instantly.	[AUTO]	The picture switches with a transition effect applied.						
[CUT]	The picture switches instantly.										
[AUTO]	The picture switches with a transition effect applied.										
15 Video fader	Makes the preset video (the video to output next) the final output.										
16 [OUTPUT FADE] button	<p>Performs a fade-in or fade-out for the final output video.</p> <table border="1"> <tr> <td>Lit</td> <td>Fade-out</td> </tr> <tr> <td>Blink</td> <td>Fade-in/fade-out in progress</td> </tr> <tr> <td>Unlit</td> <td>Normal output</td> </tr> </table>	Lit	Fade-out	Blink	Fade-in/fade-out in progress	Unlit	Normal output				
Lit	Fade-out										
Blink	Fade-in/fade-out in progress										
Unlit	Normal output										
17 HDCP indicator	This lights up, blinks, or becomes unlit according to HDCP (High-bandwidth Digital Content Protection) settings and the connection status of HDCP-compatible equipment.										
18 [COMPOSITION] button	If this is on (lit), the composited result COMPOSITION (PinP1/KEY1) is the final output.										
19 [DSK] button	If this is on (lit), the composited result DSK (PinP2/KEY2) is the final output.										
20 Cooling-fan exhaust port	Expels internal heat to keep temperatures inside the V-600UHD cool.										
21 Cooling-fan intake port	<p>NOTE</p> <p>Do not block the cooling-fan intake and exhaust ports. Blocking the intake and exhaust ports might result in a temperature rise inside the V-600UHD and lead to malfunction due to heat.</p>										

*1 COMPOSITION (PinP1/KEY1) operation is not possible if the Aux/Composition setting (p. 43) is "Aux."

*2 Only AUX can be selected if the Aux/Composition (p. 43) setting is "Aux," and only COMPOSITION can be selected if the Aux/Composition setting is "Composition."

Rear Panel / Front Panel (Connecting Your Equipment)

- * To prevent malfunction and equipment failure, always turn down the volume, and turn off all the units before making any connections.
- * Be sure to use cables and adaptor plugs with the proper connectors matching those of the other devices you are using.



TALLY/GPI connector

Connect devices provided with a tally-light feature or with control-signal output functionality to this connector.
* For details on the specifications of the TALLY/GPI connector, refer to p. 49.

LAN connector, RS-232 connector

- You can use a web browser or terminal software to remotely control this unit.
- You can connect a computer equipped with an RS-232 connector, and remotely control this unit.



LAN connector

RS-232 connector

[POWER] switch

Turns the power on/off.

Cord hook

Clamps the power cord to secure it in place.

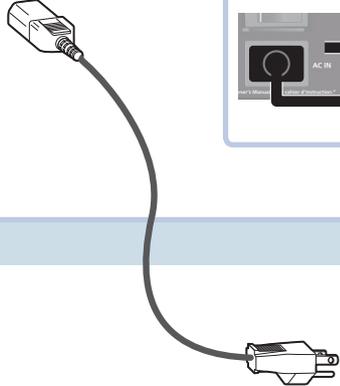
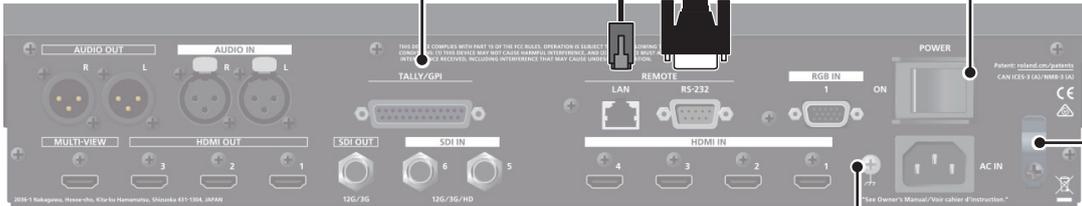
Ground terminal

Connect this to an external earth or ground if necessary.

AC IN connector

Connects the included power cord.
* Be sure to use the included power cord for connecting the power supply.

* The shape of the power cord's plug varies depending on the country.



To AC Outlet

Front panel

PHONES jack (Stereo miniature type)

Connect headphones.



Multi-View Monitor Display

An input/output video list (final output, preview output, and input channels 1–8) and menus are displayed on a multi-view monitor connected to the MULTI-VIEW connector.

Pressing the [MENU] button displays the menu superimposed over the multi-view (p. 9).



No.	Name	Explanation
1	PVW (preview) section	This displays the preset video (the video to be output next).
2	PGM (program) section	This displays the final output video.
3	CH 1–8 section	This monitors the video input via channels 1–8. A red border is displayed around the final video output. A green border is displayed around the preset video (the video to be output next). * Settings for scaling (p. 14) is not applied. * Changing the channel assignments at the cross-point (p. 28) also changes the order of displayed sources.

MEMO

You can change the label names displayed on the multi-view monitor.

Use the [MENU] button → "System" → "Multi-view" → "Label," then change the label name.

For details on how to enter characters, refer to Entering "Entering Characters" (p. 10)."

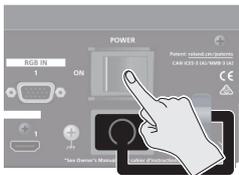
Basic Operations

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 all devices are turned off.
2. Turn on the [POWER] switch on the V-600UHD to turn on the power.



3. Turn on the power to the source devices.
Turn on the power to video cameras or other source equipment connected to input connectors on the V-600UHD.
4. Turn on the power to the output devices.
Turn on the power to projectors or other devices connected to output connectors on the V-600UHD.

Turning the power off

1. Turn off the power in the sequence of first the output equipment, and then the sources.
2. Turn off the [POWER] switch on the V-600UHD to turn off the power.

NOTE

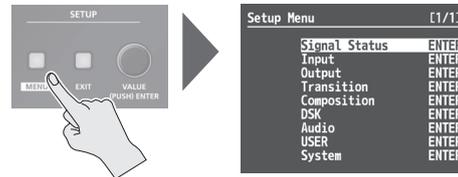
- Do not turn off the power while a message of "Executing..." is shown on menu display area of the multi-view monitor. Your settings may not be saved properly.
- If you need to turn off the power completely, first turn off the V-600UHD, then unplug the power cord from the power outlet.

Using the Menu

This explains how to display menu and make settings for video and for the V-600UHD itself.

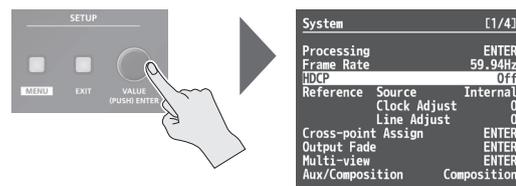
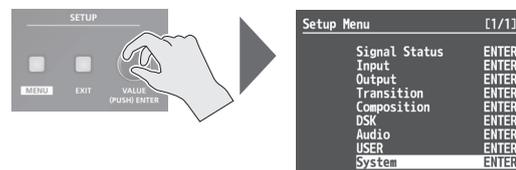
- * Menus are shown only on the multi-view monitor connected to the MULTI-VIEW connector (p. 8).

1. Press the [MENU] button to display the menu.



The [MENU] button lights up, the menu categories are displayed.

2. Turn the [VALUE] knob to select a category, and press the [VALUE] knob to confirm.



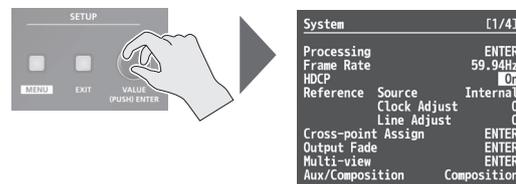
The menu for the selected category is displayed.

3. Turn the [VALUE] knob to select a menu item, then press the [VALUE] knob to confirm.

The cursor moves to the setting value.

- If the menu item is located at a deeper level, repeat step 3.
- Pressing the [EXIT] button moves you back one level higher.

4. Turn the [VALUE] knob to change the value of the setting.



- By turning the [VALUE] knob while pressing it, you can change the value more greatly.
- Pressing and holding the [VALUE] knob returns the current menu item you're setting to its default value.

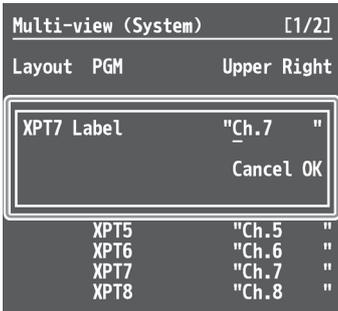
5. Press the [VALUE] knob to apply the setting.

The cursor returns to the menu item.

6. Press the [MENU] button to quit the menu.

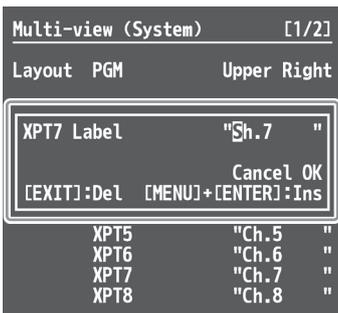
Entering Characters

1. Turn the [VALUE] knob to move the cursor.



Function	Operation
Move the cursor to the beginning/end	Turn the [VALUE] knob while pressing it.

2. Press the [VALUE] knob to highlight the character at the cursor location.
3. Turn the [VALUE] knob to change the character.



Function	Operation
Change the edited character in the order of space → uppercase → lowercase → numerals → symbols	Turn the [VALUE] knob while pressing it.
Delete the character at the cursor location	Press the [EXIT] button.
Insert a space at the cursor location	Press the [VALUE] knob while pressing the [MENU] button.

4. Press the [VALUE] knob to confirm the character.
5. Repeat steps 1 through 4 as needed.

List of Supported Formats

Input Formats

Input connector	Format	Standard	Resolution	Frame rate	Video (Y/Pb/Pr)	PC (RGB)
HDMI IN	1024 x 768 (XGA)	VESA DMT	1024 x 768p	60	✓	✓
	720p	CEA-861-F	1280 x 720p	50/59.94	✓	✓
	1280 x 768 (WXGA)	VESA CVT	1280 x 768p	60	✓	✓
	1280 x 1024 (SXGA)	VESA DMT	1280 x 1024p	60	✓	✓
	1400 x 1050 (SXGA+)	VESA CVT	1400 x 1050p	60	✓	✓
	1600 x 1200 (UXGA)	VESA DMT	1600 x 1200p	60	✓	✓
	1080i	CEA-861-F	1920 x 1080i	50/59.94	✓	✓
	1920 x 1080 (FHD), 1080p	CEA-861-F	1920 x 1080p	30/50/59.94/60	✓	✓
	1920 x 1200 (UXGA)	VESA CVT	1920 x 1200p	60 RB	✓	✓
	2160p (UHD 4K) 3840 x 2160 (UHD 4K)	CEA-861-F	3840 x 2160p	24/30/50/59.94/60	✓	✓
	2160p (DCI 4K) 4096 x 2160 (DCI 4K)	CEA-861-F	4096 x 2160p	24/30/50/59.94/60	✓	✓
RGB IN	1600 x 1200 (UXGA)	VESA DMT	1600 x 1200p	60	–	✓
	1920 x 1080 (FHD)	CEA-861-F	1920 x 1080p	60	–	✓
SDI IN	1080i	SMPTE ST274	1920 x 1080i	50/59.94	✓	–
	1080p	SMPTE ST274	1920 x 1080p	50/59.94	✓	–
	2160p (UHD 4K)	SMPTE ST2036	3840 x 2160p	50/59.94	✓	–
	2160p (DCI 4K)	SMPTE ST2048	4096 x 2160p	50/59.94	✓	–

Output Formats

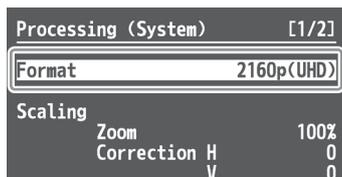
Output connector	Format	Frame rate	Standard	Resolution	Video/PC
HDMI OUT	1080p	50/59.94	CEA-861-F	1920 x 1080p	Video (Y/Pb/Pr)
	2160p (UHD 4K) + Down Convert	50/59.94	CEA-861-F	1920 x 1080p	Video (Y/Pb/Pr)
	2160p (UHD 4K)	50/59.94	CEA-861-F	4096 x 2160p	Video (Y/Pb/Pr)
	2160p (DCI 4K)	50/59.94	CEA-861-F	4096 x 2160p	Video (Y/Pb/Pr)
	1920 x 1080 (FHD)	60	CEA-861-F	1920 x 1080p	PC (RGB)
	3840 x 2160 (UHD 4K)+ Down Convert	30/60	CEA-861-F	1920 x 1080p	PC (RGB)
	3840 x 2160 (UHD 4K)	30/60	CEA-861-F	3840 x 2160p	PC (RGB)
	4096 x 2160 (DCI 4K)	30/60	CEA-861-F	4096 x 2160p	PC (RGB)
SDI OUT	1080p	50/59.94	SMPTE ST274	1920 x 1080p	Video (Y/Pb/Pr)
	2160p (UHD 4K)+ Down Convert	50/59.94	SMPTE ST274	1920 x 1080p	Video (Y/Pb/Pr)
	2160p (UHD 4K)	50/59.94	SMPTE ST2036	3840 x 2160p	Video (Y/Pb/Pr)
	2160p (DCI 4K)	50/59.94	SMPTE ST2048	4096 x 2160p	Video (Y/Pb/Pr)
MULTI-VIEW	Fixed at 1080p	Fixed at 60	CEA-861-F	1920 x 1080p	PC (RGB)

Video Input/Output Settings

Setting the Output Format

You set the output format to match the equipment you connect to the V-600UHD.

1. Select the [MENU] button → “System” → “Processing,” and press the [VALUE] knob.
2. Select “Format,” press the [VALUE] knob, use the [VALUE] knob to select the output format, and then press the [VALUE] knob.



→ Details on menu items: see p. 44.

3. Press the [MENU] button to quit the menu.

Assigning a Video Source to Input Channels

You can specify an assigned video source for each individual input channel. You can assign the following video sources.

Channel 1	Video input via an HDMI IN1 connector or RGB IN1 connector
Channel 2–4	Video input via an HDMI IN2–4 connector
Channel 5–6	Video input via an SDI IN5–6 connector
Channel 7	Still1 picture
Channel 8	Pattern generator (background color) or still2 picture

1. Select the [MENU] button → “Input” → “HDMI/RGB IN1” or “PG/STILL2,” and press the [VALUE] knob.
2. Select “Source,” press the [VALUE] knob, use the [VALUE] knob to select the video source that you want to assign, and then press the [VALUE] knob.



HDMI/RGB IN1

Value	Explanation
HDMI IN1	This inputs video via an HDMI IN1 connector.
RGB IN1	This inputs video via an RGB IN1 connector.

PG/STILL2

Value	Explanation
PG	This assigns a pattern generator
STILL2	This assigns a still2 image

3. Press the [MENU] button to quit the menu.

Sharing a Video Source

You can share separate video sources among channels 1–8.

Sharing a video source assigns a single video source to two or more channels.

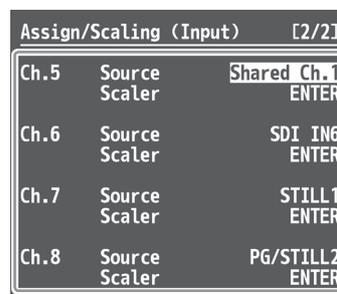
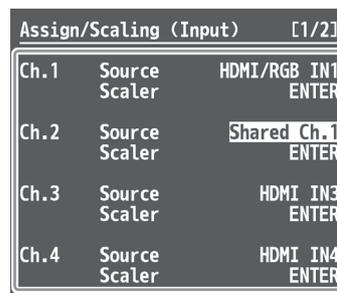
You can specify individual scaling settings for the shared video sources.

* The following settings cannot be individually specified for shared video sources.

- Color Correction
- Color Gamut
- Dynamic Range

1. Select the [MENU] button → “Input” → “Assign/Scaling,” and press the [VALUE] knob.
2. Select the “Source” of the channel whose video source you want to share, and use the [VALUE] knob to select the share-source channel.

For example, if you want to share the video source of channel 1, select “Shared Ch.1.”

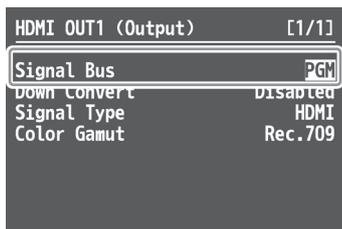


3. Repeat step 2 as many times as needed.
4. Press the [MENU] button to quit the menu.

Assigning a Bus to an Output Connector

The V-600UHD has three internal buses (PGM, PVW, and AUX). For each individual output connector, you can select which bus to output.

1. Select the [MENU] button → “Output” to select the output connector whose bus assignment you want to change, and press the [VALUE] knob.
2. Select “Signal Bus,” and use the [VALUE] knob to select “PGM,” “PVW,” or “AUX,” and set the assigned bus.



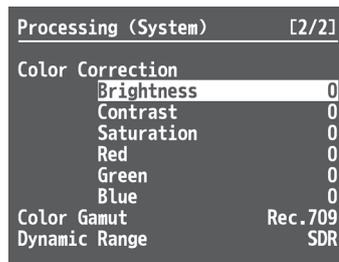
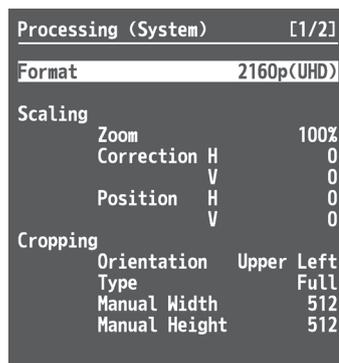
Menu item	Signal Bus setting
HDMI OUT 1	PGM, PVW, AUX
HDMI OUT 2	PGM, PVW, AUX
HDMI OUT 3	PGM, PVW, AUX
SDI OUT	PGM fixed

3. Press the [MENU] button to quit the menu.

Adjusting Final Output Video

You adjust the final video output to match the equipment receiving output from the V-600UHD.

1. Select the [MENU] button → “System” → “Processing,” and press the [VALUE] knob.
2. Select a menu item, then use the [VALUE] knob to adjust the output video.



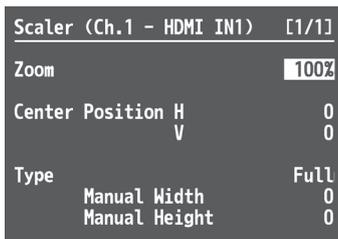
→ Details on menu items: see p. 44.

3. Press the [MENU] button to quit the menu.

Adjusting the Input Video

You can adjust the image quality and scaling of video input via channels 1–8.

1. Select the [MENU] button → “Input” → “Assign/Scaling,” and press the [VALUE] knob.
2. Select the Ch.1–8 “Scaler” and press the [VALUE] knob.
3. Select a menu item, then use the [VALUE] knob to adjust the input video.



→ Details on menu items: see p. 32.

4. Press the [MENU] button to quit the menu.

3. Use the [POSITION] stick to adjust the display position of the video. Also, use the [SIZE] knob to enlarge or reduce the video.



The operation results are applied in the PVW section of the multi-view monitor.

- * The video in the CH 1–8 section of the multi-view monitor is not updated.

MEMO

- In the CH 1–8 section of the multi-view monitor, a border can be shown for the region that is enlarged by the ROI function. To show the ROI border, select System menu “Multi-view” → “ROI Border” and set it to either “Shared Ch” or “All On” (p. 45).
- The size (width x height) of the video after adjustment can be checked from Signal Status menu → “Input Ch.1–Ch.8” → “Scaling.”

Using ROI SCALING to Adjust the Input Video

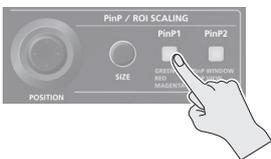
You can use the ROI (Region of Interest) function to extract a desired region from the input video.

You can operate the [POSITION] stick and the [SIZE] knob to adjust the position and size of the video to be extracted.

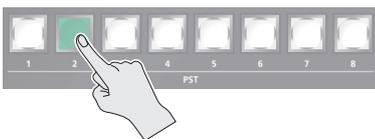
MEMO

By making settings to share video sources between channels 1–8 (p. 12), you can extract up to eight regions from a single input video.

1. Press the [PinP1] button or the [PinP2] button several times to make both buttons light magenta. ROI (INPUT) is selected.



2. Press PST cross-point buttons [1]–[8] to select the video that you want to control.

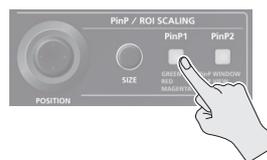


Adjusting the PinP Size

Operate the [POSITION] stick and the [SIZE] knob to adjust the position and size of the PinP inset screen.

- * This cannot be controlled if PinP is being applied to the final output video.

1. Press the [PinP1] button or [PinP2] button to select the object of control.



[PinP1] button

Lit green	PinP1 window
Lit red	Video shown in the PinP1 inset screen

[PinP2] button

Lit green	PinP2 window
Lit red	Video shown in the PinP2 inset screen

2. Use the [POSITION] stick to adjust the display position of the video. Also, use the [SIZE] knob to enlarge or reduce the video.



The operation results are applied in the PVW section of the multi-view monitor.

Inputting Copyright-Protected (HDCP) Video

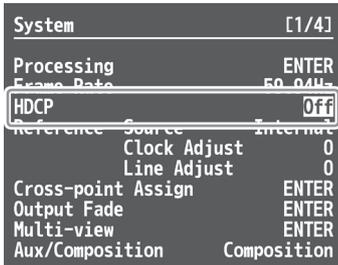
To input copyright-protected (HDCP) video from a Blu-ray Disc player or the like, follow the steps described below to change the “HDCP” setting.

* The V-600UHD must be connected to an HDCP compatible display for HDCP protected video to be connected.

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. Select the [MENU] button → “System” → “HDCP,” and press the [VALUE] knob.



2. Use the [VALUE] knob to select “On,” and then press the [VALUE] knob.

Value	Explanation
On	Copyright-protected (HDCP) video can be input. HDCP is also added to the video that is output.
Off	Copyright-protected (HDCP) video cannot be input.

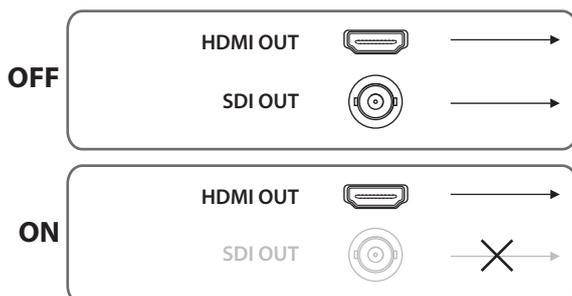
3. Press the [MENU] button to quit the menu.

Checking HDCP-compatible equipment

When “HDCP” is set to “On,” you can use the [MENU] button → “Signal Status” → “Input Ch.1-8” → “HDCP” → the Input menu to check the status of HDCP compatibility of source equipment.

Output from Connectors

When “HDCP” is set to “On,” video is output only from the HDMI OUT connectors.



Operation of the HDCP indicator

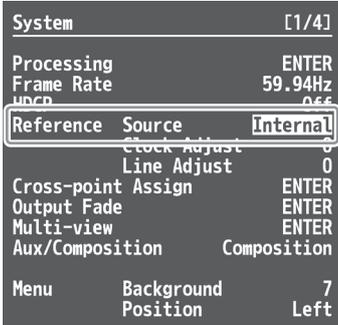


Indicator	HDCP	Connection status
Lighted	On	An HDCP-compatible device is connected to the HDMI OUT connector.
	On	A device that does not support HDCP is connected.
Flashing	Off	Video for which copy protection (HDCP) must be enabled is being input from the HDMI IN connector.
	Off	—

Specifying a Reference Clock

You can specify a clock to which operation of the V-600UHD is referenced (a reference clock).

1. Select the [MENU] button → “System” → “Reference Source,” and press the [VALUE] knob.



2. Use the [VALUE] knob to select the reference clock, and then press the [VALUE] knob.

Value	Explanation
Internal	The V-600UHD's internal clock is used as the reference clock.
SDI IN5	A signal input via an SDI IN5 connector is used as the reference clock.

When set to “SD IN5,” adjust the following System menu items as needed.

Value	Explanation
Clock Adjust	This adjusts the phase horizontally. Adjust this when output is horizontally out of sync with the operation of other devices using the same clock.
Line Adjust	This adjusts the phase vertically. Adjust this when output is vertically out of sync with or field-shifted from the operation of other devices using the same clock.

3. Press the [MENU] button to quit the menu.

Video Operations

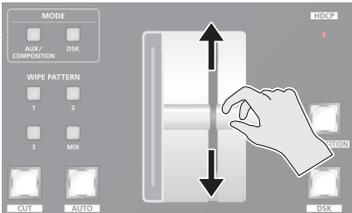
Switching the Video

You can switch the output of video input into the V-600UHD.

Switching Using the Video Fader

The video in the PGM section always becomes the final output. You use the PST section to select and check the preset video (the video to output next), then switch it.

1. Move the video fader all the way to one end or the other.

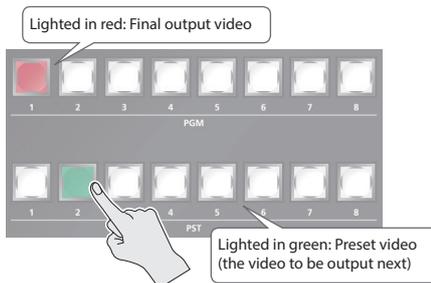


2. Press one of the WIPE PATTERN [1]–[3] buttons or the [MIX] button to select the transition effect.

The selected button lights up.

WIPE PATTERN [1]–[3] buttons
In this transition, the original video is broken into by the next video.
* You can change the wipe pattern and wipe direction (p. 35).
[MIX] button
The two pictures are blended together as the video is switched.

3. Press a cross-point [1]–[8] button in the PST section to select the preset video (the video to output next).



The preset video appears in the PVW section of the multi-view monitor.

4. Move the video fader in the direction opposite to the direction in step 1.

The output video is switched.

When the video has been switched completely, the lighted buttons for the PGM position and PST position change places.

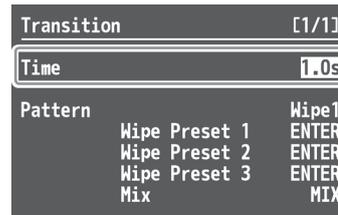
MEMO

Directly selecting the cross-point at the PGM position of the video currently being output switches the video with a cut, regardless of any selection of a transition effect.

Using the [AUTO] or [CUT] Button to Switch Video

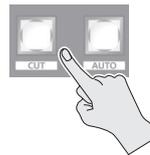
You can use the [AUTO] or [CUT] button to switch video automatically, without using the video fader.

1. Select the [MENU] button → “Transition” → “Time,” and use the [VALUE] knob to set the transition time.



2. Press the [MENU] button to quit the menu.

3. Press the [AUTO] or [CUT] button at the desired timing for switching the video.



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

MEMO

When you use the [AUTO] or [CUT] button to switch video, the actual output might come to differ from the position of the video fader.

Using Imported Still Images

You can assign loaded a still image to channel 7 or 8, then output it in the same way as video. There are two ways to load a still image: you can capture from output video, or you can load from a USB flash drive.

The V-600UHD can handle up to eight still images.

Capturing a Still Image from the Output Video

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

MEMO

- A captured still image cannot be saved in this unit. When you turn off the power, the still image data is lost.

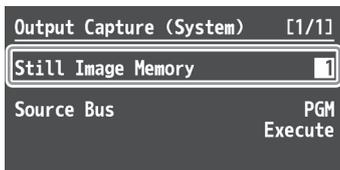
If you've saved a captured still image to a USB flash drive, that still image can be automatically loaded from the USB flash drive at startup.

For details, refer to "Saving a still image to a USB flash drive."

- The following restrictions apply to still images captured from copy-protected (HDCP) video.
 - If "HDCP" (p. 15) is off, the still image cannot be used as a video source.
 - The still image cannot be saved to a USB flash drive.

1. Select the [MENU] button → "System" → "Output Capture," and press the [VALUE] knob.

2. Select "Still Image Memory," and use the [VALUE] knob to select a still image memory number (1–8).



* Memory numbers that contain a still image are indicated by a "*" symbol.

3. Select "Source Bus," then use the [VALUE] knob to specify the bus for the video source (PGM or PVW).

4. Select "Execute," and press the [VALUE] knob.

The message "Are you sure?" appears.

If you want to cancel the operation, select "NO," and press the [VALUE] knob.

5. Select "YES," and press the [VALUE] knob.

Capturing is carried out.

6. Press the [MENU] button to quit the menu.

Saving a still image to a USB flash drive

Here's how a captured still image can be saved to a USB flash drive.

The saved still image is automatically loaded into the V-600UHD if the unit is started-up with the USB flash drive connected.

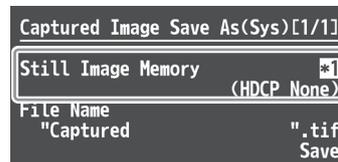
MEMO

- * Depending on the USB flash drive, recognition of the flash drive might take some time.
- * When you're using a USB flash drive for the first time, be sure to format it on the V-600UHD (p. 28).
 - The still image is saved in TIFF format. If you will be using the still image on a computer, we recommend that you specify the output format (p. 12) as "1920 x 1080," "3840 x 2160," or "4096 x 2160."

1. Connect the USB flash drive to the USB MEMORY port.

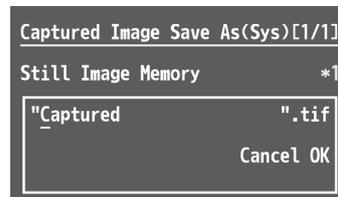
2. Select the [MENU] button → "System" → select the Output Capture "Save As," and press the [VALUE] knob.

3. Select "Still Image Memory," and use the [VALUE] knob to select a memory number (1–8) for the still image that you want to save.



* Only memory numbers that contain a captured still image are shown.

4. Select "File Name," then specify the file name (p. 10).



The extension of the file name is ".tif."

5. Select "OK," and press the [VALUE] knob.

If you want to cancel the operation, select "Cancel," and press the [VALUE] knob.

6. Select the File Name "Save," and press the [VALUE] knob.

The message "Are you sure?" appears.

If you want to cancel the operation, select "NO," and press the [VALUE] knob.

7. Select "YES," and press the [VALUE] knob.

The still image (.tif) is saved to the USB flash drive.

8. Press the [MENU] button to quit the menu.

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.

Formats supported for loading

BMP

Format	Windows Bitmap file (.bmp), 24-bit color, uncompressed
Resolution	Maximum 4096 × 2160 pixels
File name	Single-byte alphanumeric characters * Be sure to append the ".bmp" file extension.

PNG

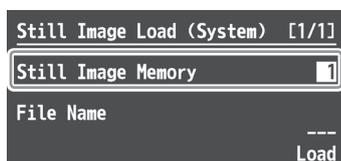
Format	PNG File (.png) * PNG alpha channel is not supported.
Resolution	Maximum 4096 × 2160 pixels
File name	Single-byte alphanumeric characters * Be sure to append the ".png" file extension.

Loading a still image

MEMO

- Depending on the USB flash drive, recognition of the flash drive might take some time.
- When you're using a USB flash drive for the first time, be sure to format it on the V-600UHD (p. 28).
- The loaded still image cannot be saved in the unit. When you turn off the power, the still image data is lost.

- Save the still image in the root directory of the USB flash drive.
- Connect the USB flash drive containing the saved still image to the USB MEMORY port.
- Select the [MENU] button → "System" → select the Still Image Memory "Load," and press the [VALUE] knob.
- Select "Still Image Memory," and use the [VALUE] knob to select a still image memory number (1–8).



* Memory numbers that contain a still image are indicated by a "*" symbol.

- Select the "File Name," and press the [VALUE] knob.
A list of the still image on the USB flash drive appears.
- Select the still image that you want to load, then press the [VALUE] knob.
- Select the File Name "Load," and press the [VALUE] knob.
The message "Are you sure?" appears.
If you want to cancel the operation, select "NO," and press the [VALUE] knob.
- Select "YES," and press the [VALUE] knob.
The still image is loaded into the unit.

- Press the [MENU] button to quit the menu.

MEMO

- You can make the previously-loaded still image be automatically loaded at startup. Save the same file in the root directory of the USB flash drive, and start the V-600UHD with the USB flash drive connected.
- If you want to delete a still image, use the System menu's Still Image Memory "Delete" → "Still Image Memory" to select the memory number of the still image that you want to delete, and then execute "Delete."

Assigning a Still Image to Channel 7 or 8

Here's how a still image that was captured or loaded from a USB flash drive can be assigned to channel 7 or 8.

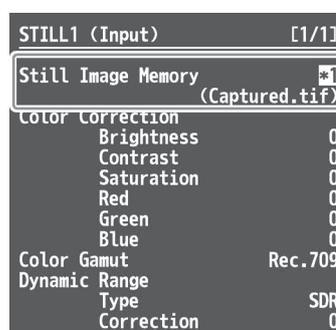
1. Channel 7

Select the [MENU] button → "Input" → "STILL1," and press the [VALUE] knob.

Channel 8

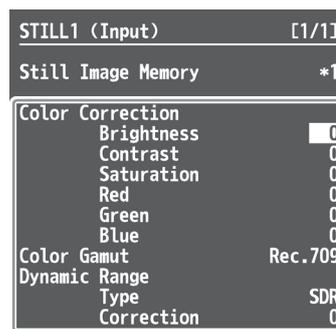
Select the [MENU] button → "Input" → "PG/STILL2" → specify "STILL2" as the source assignment → press the [VALUE] knob.

- Select "Still Image Memory," and select the memory number of the still image that you want to assign to STILL1 or STILL2.



* Memory numbers that contain a still image are indicated by a "*" symbol.

- Select a menu item, then use the [VALUE] knob to make the detailed settings.



→ Details on menu items: see p. 33.

- Press the [MENU] button to quit the menu.

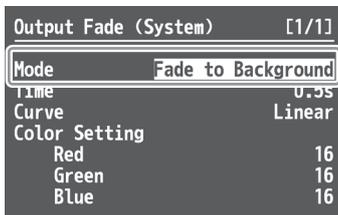
Fading-In/Out the Final Output Video

This applies a fade to final video output. This lets you make the final output fade to a monochrome picture (background color) when you want to suppress video output.

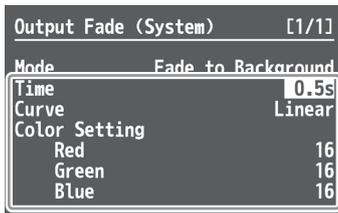
Setting the operation mode

Here's how to specify the operation mode of the [OUTPUT FADE] button.

1. Select the [MENU] button → "System" → "Output Fade," and press the [VALUE] knob.
2. Select "Mode," and use the [VALUE] knob to set the operation mode of the [OUTPUT FADE] button to "Fade to Background."



3. Select a menu item, then use the [VALUE] knob to make the detailed settings.

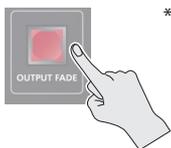


→ Details on menu items: see p. 43.

4. Press the [MENU] button to quit the menu.

Fading-in/out the final output video

1. Press the [OUTPUT FADE] button to perform a fade-out.



* During the fade, the [OUTPUT FADE] button flashes.

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

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

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

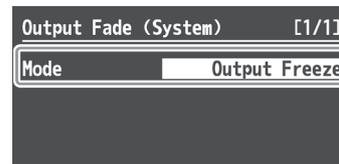
Freezing the Final Output Video (Freeze)

You can temporarily freeze the final output video (freeze function).

Setting the operation mode

Here's how to specify the operation mode of the [OUTPUT FADE] button.

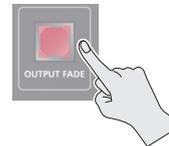
1. Select the [MENU] button → "System" → "Output Fade," and press the [VALUE] knob.
2. Select "Mode," and use the [VALUE] knob to set the operation mode of the [OUTPUT FADE] button to "Output Freeze."



3. Press the [MENU] button to quit the menu.

Freezing the final output video

1. Press the [OUTPUT FADE] button to turn freeze on (lit).



The program output video freezes.

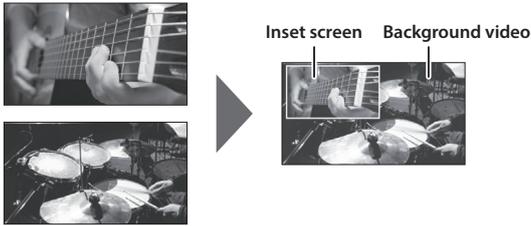
2. To turn off freeze, press the [OUTPUT FADE] button once again.

The [OUTPUT FADE] button goes dark, and normal output resumes.

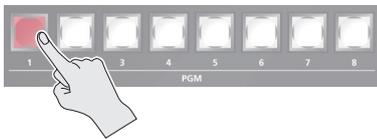
Video Composition Operations

Compositing Using Picture-in-Picture (PinP)

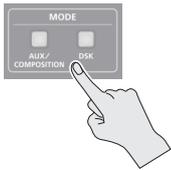
This composites video in an inset screen onto a different background video.



1. Press a cross-point [1]–[8] button in the PGM section to select the video you want to make the background video.



2. Press the MODE [AUX/COMPOSITION] button or [DSK] button to select the send-destination for the video.



3. Press a cross-point [1]–[8] button in the AUX/COMPOSITION - DSK section to select the video you want to make the inset screen.



4. According to the button that you pressed in step 2, press one of the following buttons to turn video compositing on (lit).

If you pressed the [AUX/COMPOSITION] button

Press the COMPOSITION PinP1 [1] or [2] button.



If you pressed the [DSK] button

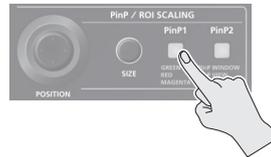
Press the DSK PinP2 [1] or [2] button.



The selected button lights up in green, and a preview of the composition results is displayed in the PVW section of the multi-view monitor.

At this stage, the final output has not yet been changed.

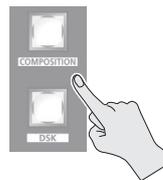
5. Press the PinP/ROI SCALING [PinP1] or [PinP2] button to select the object of control.



6. Use the [POSITION] stick and the [SIZE] knob to adjust the position and size of the inset screen.



7. If the object of control is PinP1, press the [COMPOSITION] button; if PinP2, press the [DSK] button.



At this time, the PinP [1] or [2] button light up in red.

Pressing the [COMPOSITION] or [DSK] button a second time makes the inset screen disappear.

8. To turn video compositing off, make the [COMPOSITION] or [DSK] button go dark, and then press the PinP [1] or [2] button.

Making detailed settings for the inset screen

For each of the COMPOSITION PinP1 [1] and [2] buttons and the DSK PinP2 [1] and [2] buttons, you can make settings such as the position and size of the inset screen and the border that is added to the inset screen.

PinP1 [1], [2] buttons

Select the [MENU] button → "Composition" → for PinP1, select "Position 1" or "Position 2."

→ Details on menu items: see p. 36.

PinP2 [1], [2] buttons

Select the [MENU] button → "DSK" → for PinP2, select "Position 1" or "Position 2."

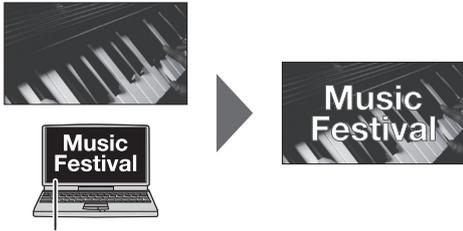
→ Details on menu items: see p. 38.

Compositing Using Luminance Key/Chroma Key

This makes a portion of the video transparent and composites it onto a background video.

Luminance Key

This takes video in which white or black areas are made transparent, and composite it overlaid on a background picture.



Black or White

Chroma Key

This composites video shot against a blue or green background onto a different background video.



Blue or Green

Setting the key type and extraction color

To change the key type and extraction color to match the video you want to composite.

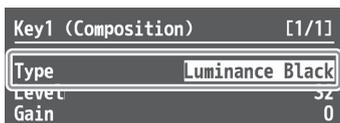
1. COMPOSITION

Select the [MENU] button → “Composition” → “Key1,” and press the [VALUE] knob.

DSK

Select the [MENU] button → “DSK” → “Key2,” and press the [VALUE] knob.

2. Select “Type,” and use the [VALUE] knob to specify the key type (extraction color) to use when compositing.

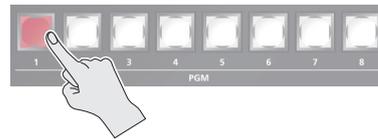


Value	Explanation
Luminance White	This uses a brightness threshold to make white transparent.
Luminance Black	This uses a brightness threshold to make black transparent.
Chroma Blue	This uses a color threshold to make blue transparent.
Chroma Green	This uses a color threshold to make green transparent.
Chroma Manual	This uses a color threshold to make manual color transparent.

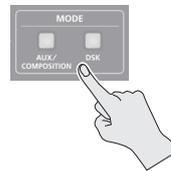
3. Press the [MENU] button to quit the menu.

Compositing using key

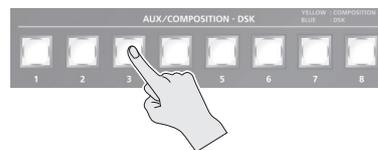
1. Press a cross-point [1]–[8] button in the PGM section to select the video you want to make the inset screen.



2. Press the MODE [AUX/COMPOSITION] button or [DSK] button to select the send-destination for the video.



3. Press a cross-point [1]–[8] button in the AUX/COMPOSITION - DSK section to select the video to overlay.



4. According to the button that you pressed in step 2, press one of the following buttons to turn key compositing on (lit).

If you pressed the [AUX/COMPOSITION] button

Press the COMPOSITION KEY1 [KEY ON] button.



If you pressed the [DSK] button

Press the DSK KEY2 [KEY ON] button.



The KEY1 [KEY ON] or KEY2 [KEY ON] button lights up in green, and a preview of the composition results is displayed in the PVW section of the multi-view monitor.

At this stage, the final output has not yet been changed.

5. Turn the KEY [LEVEL] or [GAIN] knob (KEY1 or KEY2) to adjust the degree of effect applied.



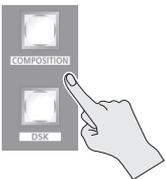
KEY [LEVEL] knob

This adjusts the degree of extraction (transparency) for the key.

KEY [GAIN] knob

This adjusts the degree of edge blur (semi-transmissive region) for the key.

6. If the object of control is KEY1, press the [COMPOSITION] button; if KEY2, press the [DSK] button.



The video you selected in steps 1 and 3 is composited and output. At this time, the KEY1 or KEY2 [KEY ON] button light up in red.

Pressing the [AUTO] or [CUT] button a second time makes the overlaid video disappear.

MEMO

- When you combine PinP (p. 21) with the compositing results from luminance or chroma key, the superimposed video becomes the inset screen. You can also use the [POSITION] stick and the [SIZE] knob to adjust the display position and size of the overlaid video.

Making advanced settings for chroma key

When the key type is “Chroma Manual,” you can use the Key menu to fine-tune the key color.

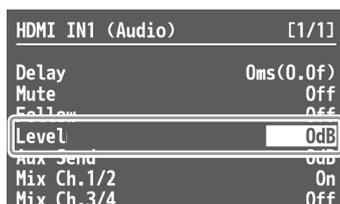
Menu item	Explanation
Hue Center	This adjusts the center position for hue of key color.
Width	This adjusts the hue width (range) of key color.
Saturation Center	This adjusts the center position for saturation of key color.
Width	This adjusts the saturation width of key color.

Audio Operations

Adjusting the Input/Output Volume

Here's how to adjust the audio volume (Level) that is being input to or output from the V-600UHD.

1. Use [MENU] button → "Audio" → "Input"/"Output" to select the object of volume adjustment, and then press the [VALUE] knob.
2. Select "Level," and use the [VALUE] knob to adjust the volume.

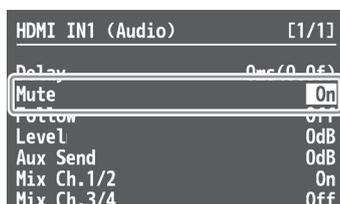


3. Press the [MENU] button to quit the menu.

Muting the Input Audio

Here's how to silence a specific audio input (mute function).

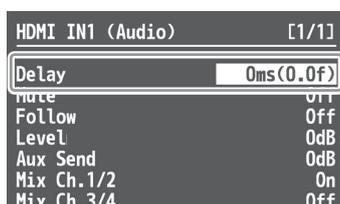
1. Use [MENU] button → "Audio" → "Input" to select the object for muting, and press the [VALUE] knob.
2. Select "Mute," and use the [VALUE] knob to set this to "On."



3. Press the [MENU] button to quit the menu.

Matching the Timing of the Input/Output Audio with the Video

1. Use [MENU] button → "Audio" → "Input"/"Output" to select the object of timing adjustment, and then press the [VALUE] knob.
2. Select "Delay," and use the [VALUE] knob to specify the time by which the audio is delayed.

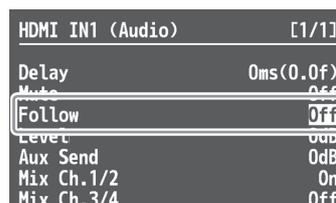


3. Press the [MENU] button to quit the menu.

Interlinking Audio Output to Video Switching (Audio Follow)

Here's how to make the specified audio be automatically output or muted in linkage with video switching.

1. Use [MENU] button → "Audio" → "Input" to select the object for audio follow, and press the [VALUE] knob.
2. Select "Follow," and use the [VALUE] knob to turn the setting On/Off.

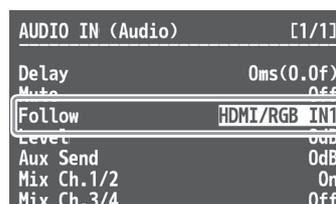


Value	Explanation
On	This enables the Audio Follow feature. Muting is performed automatically when video on another channel is output.
Off	This disables the Audio Follow feature.

3. Press the [MENU] button to quit the menu.

Applying Audio Follow to AUDIO IN

1. Select the [MENU] button → "Audio" → "Input" → "AUDIO IN," and press the [VALUE] knob.
2. Select "Follow," and use the [VALUE] knob to select the input to which audio follow will be applied.



Value	Explanation
HDMI/RGB IN1	This sets the video channel to interlink with input audio using Audio Follow.
HDMI IN2-4	Audio from AUDIO IN is muted out for video channels other than what you specified.
SDI IN5, 6	Audio from AUDIO IN is muted out for video channels other than what you specified.
Off	This assigns no video channel to Audio Follow.

3. Press the [MENU] button to quit the menu.

Mixing Input Audio with HDMI Video or SDI Video

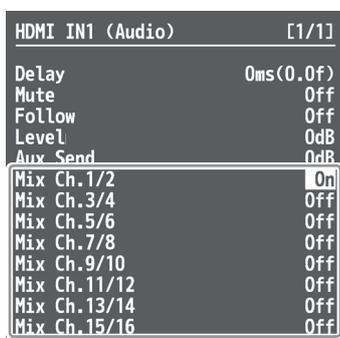
The SDI connectors of the V-600UHD support 16 channels of embedded audio. The HDMI connectors support two channels of embedded audio. The MAIN bus of the V-600UHD's audio mixer has a 16-channel structure.

Selecting the audio input channels to mix

You can select the MAIN bus channels into which the HDMI IN, SDI IN, and AUDIO IN audio will be mixed.

1. Use [MENU] button → "Audio" → "Input" to select HDMI IN 1–4, SDI IN5–6, or AUDIO IN, and press the [VALUE] knob.
2. Select "Mix Ch.1/2"–"Mix Ch.15/16," and use the [VALUE] knob to turn the setting On/Off.

The SDI IN audio can be switched on/off by the "Mix Ch.1-16" settings.



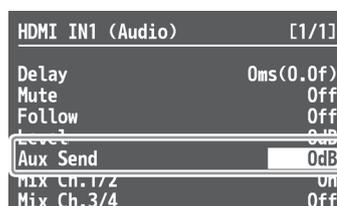
3. Press the [MENU] button to quit the menu.

Mixing input audio into the AUX bus

The V-600UHD has a two-channel AUX bus, and you can specify whether input audio is mixed into the AUX bus.

* The first two channels of SDI IN audio can be mixed into the AUX bus.

1. Use [MENU] button → "Audio" → "Input" to select HDMI IN 1–4, SDI IN5–6, or AUDIO IN, and press the [VALUE] knob.
2. Select "Aux Send," and use the [VALUE] knob to specify the volume that is sent to the aux bus.



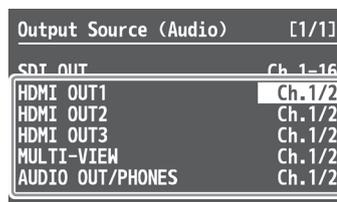
3. Press the [MENU] button to quit the menu.

Selecting the audio source that is output

For each output connector, you can select either a specified channel of the MAIN bus or the AUX bus as the source that will be output.

* For SDI OUT audio, you can select either the entire MAIN bus or the AUX bus.

1. Select the [MENU] button → "Audio" → "Output" → "Source," and press the [VALUE] knob.
2. Select the connector for which you want to make settings, and use the [VALUE] knob to specify the channel.



3. Press the [MENU] button to quit the menu.

Other Operations

Saving/Recalling Settings (Memory)

You can save video settings, the state of the operation panel, and other current settings in memory and call them up for use when needed. The V-600UHD has 8 internal banks for saving settings in memory. You can save settings in 8 memories in each bank, letting you use up to 64 memories for saving.

About the Last Memory function

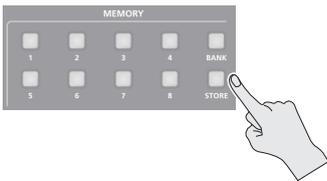
When you use the Last Memory function, the current settings are automatically saved when you exit a menu or change the setting. To use the Last Memory function, go to the System menu and set "Auto Memory" to "ON."

Saving a memory

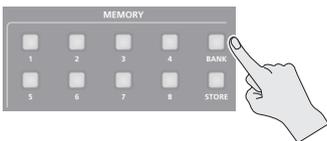
NOTE

- When the System menu item "Memory Protect" is set to "On," settings cannot be saved to a memory.
- The following settings are not saved in memory.
 - The state of the operating panel's [OUTPUT FADE] button
 - The items of the Output, USER, and System menus

1. Press the [STORE] button (lit red) to enable saving settings to a memory.



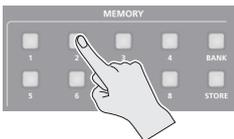
2. Press the [BANK] button (lit green), then press the MEMORY button for the bank number where you want to save the settings.



When you press the [BANK] button to make it light, the MEMORY button of the currently selected bank number is lit green.

When the bank is switched, the [BANK] button and the MEMORY button go dark.

3. Press the MEMORY button for the number whose setting you want to save.



Button illumination color when selecting memories

Lit light blue	Current blue
Lit blue	Memory in which current settings are saved
Unlit	Memory in which no settings are saved

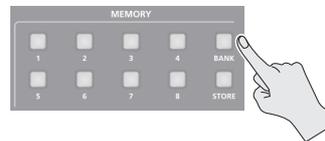
The [STORE] button blinks, the current settings are saved, and then the [STORE] button goes dark.

MEMO

If you don't want to change the save-destination bank, steps 2 are not required.

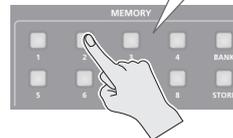
Recalling a memory

1. Press the [BANK] button (lit green), then press the MEMORY button for the bank number whose settings you want to recall.



2. Press the MEMORY button for the number whose setting you want to recall.

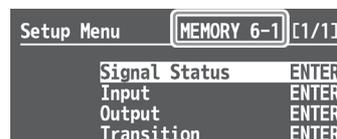
When switching banks, the MEMORY buttons of numbers in which settings are saved will blink blue until a memory is recalled.



The memory is recalled. The MEMORY button of the current memory is lit light blue.

MEMO

- If you don't want to change the recall-source bank, steps 1 are not required.
- The top screen of the menu shows the "bank number–memory number" of the currently selected memory.



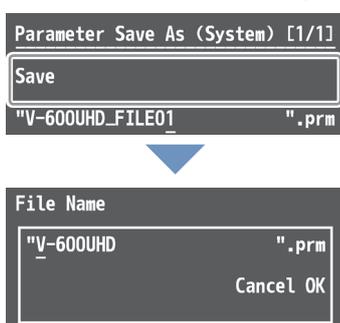
Saving the Unit's Settings on a USB Flash Drive

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

- * When you're using a USB flash drive for the first time, be sure to format it on the V-600UHD (p. 28).
- * Depending on the USB flash drive, recognition of the flash drive might take some time.
- * Still images (p. 18) are not saved in the file.

Choose save new

1. Select the [MENU] button → "System" → select the USB Memory "Parameter Save As," and press the [VALUE] knob.
2. Select "File Name," then specify the file name (p. 10).



The extension of the file name is ".prm."

3. Select "OK," and press the [VALUE] knob.
If you want to cancel the operation, select "Cancel," and press the [VALUE] knob.
4. Select "Save," and press the [VALUE] knob.
The message "Are you sure?" appears.
If you want to cancel the operation, select "NO," and press the [VALUE] knob.
5. Select "YES," and press the [VALUE] knob.
The file (.prm) is newly saved on the USB flash drive.
6. Press the [MENU] button to quit the menu.

Saving by Overwriting

1. Select the [MENU] button → "System" → select the USB Memory "Parameter Save," and press the [VALUE] knob.
2. Select the file that you want to overwrite, select "Save," and press the [VALUE] knob.
The message "Are you sure?" appears.
If you want to cancel the operation, select "NO," and press the [VALUE] knob.
3. Select "YES," and press the [VALUE] knob.
The file is saved by overwriting.
4. Press the [MENU] button to quit the menu.

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. Select the [MENU] button → "System" → select the USB Memory "Parameter Load," and press the [VALUE] knob.
2. Select the file that you want to load, select "Load," and press the [VALUE] knob.
The message "Are you sure?" appears.
If you want to cancel the operation, select "NO," and press the [VALUE] knob.
3. Select "YES," and press the [VALUE] knob.
The settings are loaded, and the values in the unit's settings are overwritten.
4. Press the [MENU] button to quit the menu.

Deleting a file on a USB flash drive

1. Select the [MENU] button → "System" → select the USB Memory "Parameter Delete," and press the [VALUE] knob.
2. Select the file that you want to delete, select "Delete," and press the [VALUE] knob.
The message "Are you sure?" appears.
If you want to cancel the operation, select "NO," and press the [VALUE] knob.
3. Select "YES," and press the [VALUE] knob.
The settings are deleted from the USB flash drive.
4. Press the [MENU] button to quit the menu.

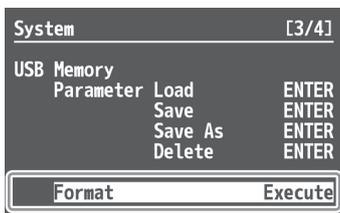
Formatting USB Flash Drives

When you're using a USB flash drive for the first time, it must first be formatted on the V-600UHD.

NOTE

- The V-600UHD does not recognize unformatted USB flash drives.
- Operation has been tested for commonly available USB flash drives, but operation of all USB flash drives is not assured. Depending on the manufacturer and type of the USB flash drive, correct operation may not be possible.
- Performing formatting causes all data already saved on the USB flash drive to be deleted. If the flash drive contains necessary data, back it up onto a computer or elsewhere before formatting the drive.
- Depending on the USB flash drive, recognition of the flash drive might take some time.

1. Select the [MENU] button → "System" → for USB Memory, select "Format," and press the [VALUE] knob.



The message "Are you sure?" appears.

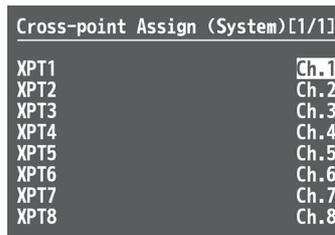
If you want to cancel the operation, select "NO," and press the [VALUE] knob.

2. Select "YES," and press the [VALUE] knob. Formatting of the USB flash drive is carried out.
3. Press the [MENU] button to quit the menu.

Changing Cross-Point Assignments

You can change the channels assigned to the cross-point [1]–[8] buttons.

1. Select the [MENU] button → "System" → "Cross-point Assign," and press the [VALUE] knob.
2. Select cross-point cross point (from XPT1 to 8), then use the [VALUE] knob to specify the channel number (Ch. 1 to 8) to assign to the cross point.



Value	Explanation
Ch.1–8	Assigns an input channel.
Blank	Assigns no input channel. If you press the cross-point button, a black screen is output.
None	Disables operation of the cross-point button.

3. Press the [MENU] button to quit the menu.

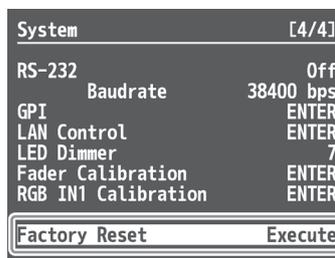
Returning to the Factory Settings (Factory Reset)

You can return the values of settings on the V-600UHD to their factory defaults.

NOTE

Executing a factory reset causes all values that have been set, settings saved in memories (p. 26), and still images saved in the unit to be lost.

1. Select the [MENU] button → "System" → "Factory Reset," and press the [VALUE] knob.



The message "Are you sure?" appears.

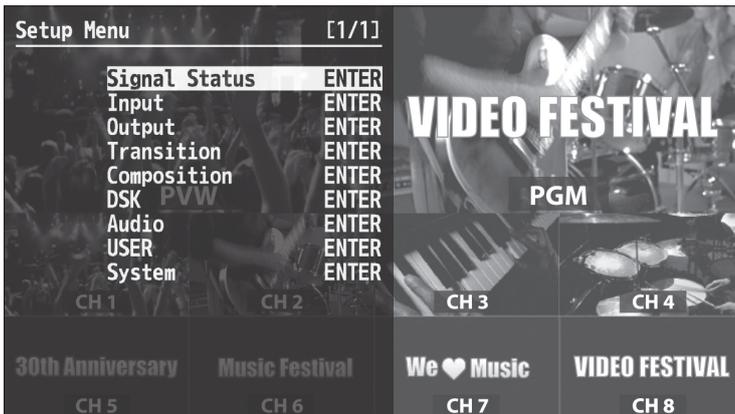
If you want to cancel the operation, select "NO," and press the [VALUE] knob.

2. Select "YES," and press the [VALUE] knob. A factory reset is executed.
3. Press the [MENU] button to quit the menu.

Menu List

Press the [MENU] button to call up the menu items. The menu will appear on the multi-view monitor connected to the V-600UHD.

* Menus are shown only on the multi-view monitor connected to the HDMI OUT connector.



The menu categories are displayed at first. Choose the menu category whose setting you want to change.

Category	Explanation
Signal Status	This is for showing input signal status.
Input	This is for input setup like source assign etc.
Output	This is for output setup.
Transition	This is for transition setup.
Composition	This is for Picture in Picture setup, luminance and chroma key setup.
DSK	This is for Picture in Picture setup, luminance and chroma key setup.
Audio	This is for audio setup.
USER	This is for setup of user function.
System	This is for system setup of the V-600UHD.

MEMO

- When a setting value has menu items that let you make more-detailed settings, "ENTER" is displayed at the top of the screen. Press the [VALUE] knob to go down a level.
- To execute an operation, press the [VALUE] knob.
- You can change a setting value rapidly by holding down the [VALUE] button and turning.
- Long-press the [VALUE] knob returns the currently selected setting to its default value.

Signal Status

Menu item	Displayed value	Explanation
Input Ch.1-8	This displays input status. Pressing the [VALUE] knob displays the detailed information.	
	■ Ch.1-4	
	No Signal	No signal
	RESOLUTION	Video Format: 720pRATE, 1080iRATE, 1080pRATE, 2160p(UHD)RATE, 2160p(DCI)RATE, Unsupported PC Format: WxH@RATE, Unsupported RATE is displayed only in integer part (example: 59.94 → 59).
	Shared Ch.1-8	This enables sharing of the video source on the other channel.
	■ Ch.5- 6	
	No Signal	No signal
	RESOLUTION	Video Format: 1080iRATE, 1080pRATE, 2160p(UHD)RATE, 2160p(DCI)RATE, Unsupported RATE is displayed only in integer part (example: 59.94 → 59).
	Shared Ch.1-8	This enables sharing of the video source on the other channel.
	■ Ch.7- 8	
No Image	No signal	
RESOLUTION	Maximum 4096 x 2160, No Image	
Shared Ch.1-8	This enables sharing of the video source on the other channel.	
Output	This display output status. Pressing the [VALUE] knob displays the detailed information.	
	RESOLUTION	Video Format: 1080pRATE, 2160p(UHD)RATE, 2160p(DCI)RATE PC Format: WxH@RATE RATE is displayed only in integer part (example: 59.94 → 59).

Input Ch.1-Ch.8 → [VALUE]

Menu item	Displayed value	Explanation	
Source	Input Ch.1	HDMI IN1, RGB IN1, Shared Ch.2-8	
	Input Ch.2-4	HDMI IN2-4, Shared Ch.1-8	
	Input Ch.5-6	SDI IN5-6, Shared Ch.1-8	
	Input Ch.7	STILL1, Shared Ch.1-8	
	Input Ch.8	PG, STILL2, Shared Ch.1-7	
Resolution (*1)	Input Ch.1-4	1024x768-4096x2160, 720p, 1080i, 1080p, 2160p(UHD), 2160p(DCI), No Signal	
	Input Ch.5-6	1080i, 1080p, 2160p(UHD), 2160p(DCI), No Signal	
	Input Ch.7-8	Maximum 4096 x 2160, No Image	
Frame Rate (*1)	24, 30, 50, 59.94, 60, -	This part displays the current input format.	
HDCP (*1)	1.x, 2.2, None, -		
Color Gamut (*1)	Input Ch.1-6		Rec.709, Rec.2020, RGB Full, RGB Limited, -
	Input Ch.7-8		SDR
Dynamic Range (*1)	Input Ch.1-6		SDR, HDR PQ, HDR HLG, -
	Input Ch.7-8	RGB Full, RGB Limited	
Scaling	Input Ch.1-8	(Width x Height) Scaling: Indicates the size in pixel units that is being extracted from the input video by the ROI function.	

(*1) If an unsupported signal is input, the displayed value blinks.

Output → [VALUE]

Menu item	Displayed value	Explanation	
Format	1920x1080, 3840x2160, 4096x2160, 1080p, 2160p(UHD), 2160p(DCI)	This part displays the current output format.	
Frame Rate	30, 50, 59.94, 60		
HDCP	Off, On		
Color Gamut	Rec.709, Rec.2020, RGB Full, RGB Limited		
Dynamic Range	SDR, HDR PQ, HDR HLG		
■ HDMI1			
BUS	PGM, PVW, AUX	This part displays output bus settings and down convert settings.	
Down Convert	Disabled, Enabled		
■ HDMI2			
BUS	PGM, PVW, AUX		
Down Convert	Disabled, Enabled		
■ HDMI3			
BUS	PGM, PVW, AUX		
Down Convert	Disabled, Enabled		
■ SDI (*1)			
BUS	PGM, –		
Down Convert	Disabled, Enabled		

(*1) If HDCP is "On," SDI menu items are not shown.

Input

Assign/Scaling → [VALUE]

Menu item	Value (Bold: default)	Explanation
■ Ch.1		
Source	HDMI/RGB IN1 , Shared Ch.2–8	This sets the video source to assign to the channel.
■ Ch.2–4		
Source	HDMI IN2–4, Shared Ch.1–8	default value of Ch.2–6 Ch.2: HDMI IN2 Ch.3: HDMI IN3 Ch.4: HDMI IN4 Ch.5: SDI IN5 Ch.6: SDI IN6
■ Ch.5–6		
Source	SDI IN5–6, Shared Ch.1–8	
■ Ch.7		
Source	STILL1 , Shared Ch.1–8	
■ Ch.8		
Source	PG/STILL2 , Shared Ch.1–7	
■ Ch.1–8		Pressing the [VALUE] knob displays the detailed settings menu.
Scaler	ENTER	

Scaler → [VALUE]

You use the following items to make settings for scaling.

Menu item	Value (Bold: default)	Explanation
Zoom	10– 100 –1000%	This adjusts the zoom ratio.
Center Position	H -4096– 0 –+4096	This adjusts the display position in the horizontal direction.
	V -2160– 0 –+2160	This adjusts the display position in the vertical direction.
Type	This sets the scaling type.	
	Full	The input image will be displayed fully on output screen. The aspect ratio will be changed.
	Letterbox	The entirety of the input image will be displayed on output screen. The aspect ratio will be maintained.
	Crop	The input image will be displayed fully on the output screen. The aspect ratio will be maintained.
	DotByDot	Scaling will not be executed.
	Manual	This performs scaling according to the “Manual Width” and “Manual Height” settings.
Manual Width (*1)	-4000– 0 –+4000	This adjusts the horizontal size.
Manual Height (*1)	-4000– 0 –+4000	This adjusts the vertical size.
Adjust to FHD (*2)	Execute	Scales to FHD (1920 x 1080).
Adjust to 2K (*3)	Execute	Scales to 2K (2048 x 1080)
Reset	Execute	Returns the scaling settings to the default value. The Type setting is maintained.

(*1) Available when Type is set to “Manual.”

(*2) Shown when Format is other than “2160p (DCI)” or “4096x2160.”

(*3) Shown when Format is “2160p (DCI)” or “4096x2160.”

HDMI/RGB IN1, HDMI IN2–4, SDI IN5–6, STILL1, PG/STILL2 → [VALUE]

Menu item	Value (Bold: default)	Explanation
Source	HDMI IN1 , RGB IN1	This sets the input connector assigned to channel 1.
	PG , STILL2	This assigns a pattern generator (Test Pattern) or still image to channel 8.
EDID	Internal 4096x2160, 2160p(DCI) 3840x2160, 2160p(UHD) 1920x1080, 1080p 1080i 1920x1200 1600x1200	This selects the EDID specified for the HDMI IN 1–4 connectors.
Still Image Memory (*1)	1–8	Selects the memory number in which the still image is saved, and assigns the still image to either STILL1 or STILL2. * Memory numbers that contain a still image are indicated by a “*” symbol.
Color Correction	You use the following items to perform color correction. * Not available when source is “PG.”	
Brightness	-64– 0 –+63	This adjusts the brightness.
Contrast	-64– 0 –+63	This adjusts the contrast.
Saturation	-64– 0 –+63	This adjusts the color saturation.
Red	-64– 0 –+63	This adjusts the red level.
Green	-64– 0 –+63	This adjusts the green level.
Blue	-64– 0 –+63	This adjusts the blue level.
Color Gamut	Rec.709, Rec.2020, RGB Full, RGB Limited, Auto	This part select color gamut or color spaces of Input Ch.1–6.
	RGB Full , RGB Limited	This part select color gamut or color spaces of Input Ch.7–8. * In the case of a captured still image, this shows the color space of the image.
Dynamic Range		
Type	SDR, HDR PQ, HDR HLG, Auto	This part select dynamic range of Input Ch.1–6. * The dynamic range of Input Ch.7–Ch.8 cannot be changed. • In the case of a still image loaded from a USB flash drive, this is fixed at SDR. • In the case of a captured still image, this shows the dynamic range of the image.
Correction	-64– 0 –+63	This adjust dynamic range.
Sampling	You use the following items for make settings for sampling. * Available when Source is set to “RGB IN1.”	
Auto Sampling	Execute	This executes automatic settings for sampling.
Frequency	-8– 0 –+8	This adjusts the sampling frequency.
Phase	-8– 0 –+8	This adjusts the sampling phase.
Gain	-20– 0 –+20	This adjusts the sampling gain.
Position	H -16– 0 –+16	This adjusts the horizontal start position of sampling.
	V -16– 0 –+16	This adjusts the vertical start position of sampling.
Pattern (*2)	Colorbar75% , Colorbar100%, Ramp, Step, Hatch, Frame, Circle, Red, Green, Blue, White, Black	Specifies the test pattern.
Motion (*2)	Disabled , Slow, Medium, Fast	Specifies the scroll speed of the test pattern.

(*1) Only for STILL1 and PG/STILL2 (Source: STILL2).

(*2) Available when Source is set to “PG” in Ch.8.

Output

HDMI OUT1-3 → [VALUE]

Menu item	Value (Bold: default)	Explanation
Signal Bus	PGM, PVW, AUX (*1)	This sets the bus to be sent to HDMI OUT 1-3 connectors.
Down Convert	Disabled , Enabled	This specifies whether down convert from 4K to FHD is enabled or disabled. * Available when Format is set to "2160p(UHD)" or "3840x2160."
Signal Type	HDMI , DVI-D	This sets the output mode for HDMI output. * This can be selected if Format is "1920x1080."
Color Gamut	Rec.709, Rec.2020, RGB Full, RGB Limited	This part select color gamut or color spaces. * "RGB Full" and "RGB Limited" can be selected if Format is "1920x1080," "3840x2160," or "4096x2160," and Signal Type is "HDMI." * "Rec.709" and "Rec.2020" can be selected if Format is "1080p," "2160p(UHD)," or "2160p(DCI)"

(*1) HDMI OUT 1 : PGM, HDMI OUT 2: PVW, HDMI OUT 3: AUX

SDI OUT → [VALUE]

Menu item	Value (Bold: default)	Explanation
Signal Bus	PGM / Disabled	This part displays the output status of SDI Output. This is fixed at PGM in the case of video resolution, and fixed at Disabled in the case of PC resolution.
Down Convert	Disabled , Enabled	This specifies whether down convert from 4K to FHD is enabled or disabled. * Available when Format is set to "2160p(UHD)."
3G-SDI Mapping	Level A , Level B	This displays the mapping structure for 3G-SDI output. * Available when Format is set to "1080p." * This can be selected if Format is "2160p(UHD)" and Down Convert is "Enabled."
Video Payload ID	SMPTE SDR, SMPTE SDR/HDR	This specifies whether set HDR information on the Video Payload ID.

Transition

Menu item	Value (Bold: default)	Explanation
Time	0.0– 1.0 –4.0s	This sets the transition time.
Pattern	Wipe1 , Wipe2, Wipe3, Mix	This sets the transition effect. * The WIPE PATTERN [1]–[3] buttons and the [MIX] button are “Wipe Pattern” shortcut buttons.
Wipe Preset 1	ENTER	This displays the Detailed Settings menu for the WIPE PATTERN [1]–[3] buttons.
Wipe Preset 2	ENTER	
Wipe Preset 3	ENTER	
Mix	FAM, NAM, MIX	

Wipe Preset 1–3 → [VALUE]

Menu item	Value (Bold: default)	Explanation
Pattern	Horizontal, Vertical, Horizontal Open, Vertical Open, Upper Left, Upper Right, Lower Left, Lower Right, Box (*1)	This sets the wipe pattern.
Direction	Normal , Reverse, N/R	This sets the wipe direction.
Curve	Linear , Slow In, Cosine, Slow Out	This sets the wipe curve for video transition.
Position	H (*2) -100.0– 0 –+100.0%	This sets the horizontal position of start video transition.
	V (*3) -100.0– 0 –+100.0%	This sets the vertical position of start video transition.
Aspect ratio	(*4) 1:1, 4:3, 3:2, 16:9	This sets aspect ratio of video transition.
Correction	H (*2) -100.0– 0 –+100.0%	This adjusts the horizontal position of start video transition.
	V (*3) -100.0– 0 –+100.0%	This adjusts the vertical position of start video transition.
Border	You use the following items to adjust the border settings.	
Width	0 –10pixel	This adjusts the border width.
Color	H 0 –359deg.	This sets the hue of border color.
	S 0 –100%	This sets the saturation of border color.
	V 0 – 50 –100%	This sets the value of border color.

(*1) Wipe Preset 1: Horizontal, Wipe Preset 2: Vertical, Wipe Preset 3: Box

(*2) Not valid when Pattern is set to “Horizontal,” “Vertical,” or “Vertical Open.”

(*3) Not valid when Pattern is set to “Horizontal,” “Vertical,” or “Horizontal Open.”

(*4) Not valid when Pattern is set to “Horizontal,” “Vertical,” “Horizontal Open,” or “Vertical Open.”

Composition

Menu item	Value (Bold: default)	Explanation
Status	PGM Off , On	This specifies whether the result of PinP1/KEY1 compositing is sent to the final output (On) or is not sent (Off).
	PVW Off, On	This specifies whether the result of PinP1/KEY1 compositing is sent to preview (On) or is not sent (Off).
Source Channel	XPT1- XPT3 -XPT8	This sets the source channel of PinP1 and KEY1.
Type	None , PinP1-1, PinP1-2, Key1, PinP1-1+Key1, PinP1-2+Key1	This sets the type of PinP1 and KEY1.
PinP1	Position 1 ENTER	This displays the Detailed Settings menu for the PinP1 Position 1.
	Position 2 ENTER	This displays the Detailed Settings menu for the PinP1 Position 2.
Key1	ENTER	This displays the Detailed Settings menu for the KEY1.

PinP1 Position 1-2 → [VALUE]

Menu item	Value (Bold: default)	Explanation
View	Use the following items to adjust the video displayed in the inset screen.	
Size	10.0- 100.0 -1000.0%	This sets the zoom ratio.
Position	H -4096- 0 -+4095	This adjusts the display position in the horizontal direction.
	V -2160- 0 -+2159	This adjusts the display position in the vertical direction.
Window	Use the following items to make the settings for the inset screen.	
Size	10.0- 30.0 -100.0%	This adjusts the zoom ratio.
Aspect ratio	1:1, 4:3, 16:9, System	This sets the aspect ratio of the inset screen.
Correction	H -100.0- 0 -+100.0%	This adjust the horizontal size of the inset screen.
	V -100.0- 0 -+100.0%	This adjust the vertical size of the inset screen.
Position	H -4096-+4096 (*1)	This adjusts the display position in the horizontal direction.
	V -2160- -270 -+2160	This adjusts the display position in the vertical direction.
Type	Border , Shadow	This sets the type of border for the inset screen.
Border	Use the following items to adjust the border. * Available when Type is set to "Border."	
Width	0- 10 -40pixel	This sets the border width.
Color	H 0 -359deg.	This sets the hue of border color.
	S 0 -100%	This sets the saturation of border color.
	V 0- 50 -100%	This sets the value of border color.
Shadow	* Available when Type is set to "Shadow."	
Position	H -10.0- 0 -+10.0%	This sets the horizontal ratio of shadow to inset screen.
	V -10.0- 0 -+10.0%	This sets the vertical ratio of shadow to inset screen.
Level	0- 50 -100%	This set darkness for shadow.

(*1) Position 1: -480, Position 2: +480

Key1 → [VALUE]

Menu item	Value (Bold: default)	Explanation	
Type	This sets the key type (extraction color) to use when compositing.		
	Luminance White	This uses a brightness threshold to make white transparent.	
	Luminance Black	This uses a brightness threshold to make black transparent.	
	Chroma Blue	This uses a color threshold to make blue transparent.	
	Chroma Green	This uses a color threshold to make green transparent.	
	Chroma Manual	This uses a color threshold to make manual color transparent.	
Level	0- 32 -255	This adjusts the amount of extraction.	
Gain	0 -255	This adjusts the amount of edge blur.	
Chroma Manual	* Available when Type is set to "Chroma Manual."		
Hue	Center	0- 120 -359deg.	This adjusts the center position for hue of key color.
	Width	0- 10 -359deg.	This adjusts the hue width (range) of key color.
Saturation	Center	0- 90 -100%	This adjusts the center position for saturation of key color.
	Width	0- 10 -100%	This adjusts the saturation width of key color.
Shadow			
Position	H	0 -32pixel	This part set shadow height for key effect.
Level		0- 255	This part set shadow darkness for key effect.

DSK

Menu item	Value (Bold: default)	Explanation
Status	PGM Off , On	This specifies whether the result of PinP2/KEY2 compositing is sent to the final output (On) or is not sent (Off).
	PVW Off, On	This specifies whether the result of PinP2/KEY2 compositing is sent to preview (On) or is not sent (Off).
Source Channel	XPT1- XPT8	This sets the source channel of PinP2 and KEY2.
Type	None , PinP2-1, PinP2-2, DSK, PinP2-1+Key2, PinP2-2+Key2	This sets the type of PinP2 and KEY2.
PinP2	Position 1 ENTER	This displays the Detailed Settings menu for the PinP2 Position 1.
	Position 2 ENTER	This displays the Detailed Settings menu for the PinP2 Position 2.
Key2	ENTER	This displays the Detailed Settings menu for the KEY2.

PinP2 Position 1-2 → [VALUE]

Menu item	Value (Bold: default)	Explanation
View	Use the following items to adjust the video displayed in the inset screen.	
Size	10.0- 100.0 -1000.0%	This sets the zoom ratio.
Position	H -4096- 0 +4095	This adjusts the display position in the horizontal direction.
	V -2160- 0 +2159	This adjusts the display position in the vertical direction.
Window	Use the following items to make the settings for the inset screen.	
Size	10.0- 30.0 -100.0%	This adjusts the zoom ratio.
Aspect ratio	1:1, 4:3, 16:9, System	This sets the aspect ratio of the inset screen.
Correction	H -100.0- 0 +100.0%	This adjust the horizontal size of the inset screen.
	V -100.0- 0 +100.0%	This adjust the vertical size of the inset screen.
Position	H -4096+4096 (*1)	This adjusts the display position in the horizontal direction.
	V -2160- -270 +2160	This adjusts the display position in the vertical direction.
Type	Border , Shadow	This sets the type of border for the inset screen.
Border	Use the following items to adjust the border. * Available when Type is set to "Border."	
Width	0- 10 -40pixel	This sets the border width.
Color	H 0 -359deg.	This sets the hue of border color.
	S 0 -100%	This sets the saturation of border color.
	V 0- 50 -100%	This sets the value of border color.
Shadow	* Available when Type is set to "Shadow."	
Position	H -10.0- 0 +10.0%	This sets the horizontal ratio of shadow to inset screen.
	V -10.0- 0 +10.0%	This sets the vertical ratio of shadow to inset screen.
Level	0- 50 -100%	This set darkness for shadow.

(*1) Position 1: -480, Position 2: +480

Key2 → [VALUE]

Menu item	Value (Bold: default)	Explanation	
Type	This sets the key type (extraction color) to use when compositing.		
	Luminance White	This uses a brightness threshold to make white transparent.	
	Luminance Black	This uses a brightness threshold to make black transparent.	
	Chroma Blue	This uses a color threshold to make blue transparent.	
	Chroma Green	This uses a color threshold to make green transparent.	
	Chroma Manual	This uses a color threshold to make manual color transparent.	
Level	0- 32 -255	This adjusts the amount of extraction.	
Gain	0 -255	This adjusts the amount of edge blur.	
Chroma Manual	* Available when Type is set to "Chroma Manual."		
Hue	Center	0- 120 -359deg.	This adjusts the center position for hue of key color.
	Width	0- 10 -359deg.	This adjusts the hue width (range) of key color.
Saturation	Center	0- 90 -100%	This adjusts the center position for saturation of key color.
	Width	0- 10 -100%	This adjusts the saturation width of key color.
Shadow			
Position	H	0 -32pixel	This part set shadow height for key effect.
Level		0- 255	This part set shadow darkness for key effect.

Audio

Input: HDMI IN1–4 → [VALUE]

Menu item	Value (Bold: default)	Explanation
Delay	0–500ms	This adjusts the delay time for input audio (the frame value is also shown).
Mute	Off, On	This sets the Mute feature on or off. Input audio for which this is set to “On” is silenced.
Follow	Off, On	This switches the Audio Follow feature on or off. Video channels for which this is set to “On” are automatically muted when video on another channel is output.
Level	-INF–0–+10dB	This adjusts the send level to MAIN bus.
Aux Send	-INF–0–+10dB	This adjusts the send level to AUX bus.
Mix Ch.1/2	Off, On	This switches the sending input audio to Mix Ch.1/2 on or off.
Mix Ch.3/4	Off, On	This switches the sending input audio to Mix Ch.3/4 on or off.
Mix Ch.5/6	Off, On	This switches the sending input audio to Mix Ch.5/6 on or off.
Mix Ch.7/8	Off, On	This switches the sending input audio to Mix Ch.7/8 on or off.
Mix Ch.9/10	Off, On	This switches the sending input audio to Mix Ch.9/10 on or off.
Mix Ch.11/12	Off, On	This switches the sending input audio to Mix Ch.11/12 on or off.
Mix Ch.13/14	Off, On	This switches the sending input audio to Mix Ch.13/14 on or off.
Mix Ch.15/16	Off, On	This switches the sending input audio to Mix Ch.15/16 on or off.

Input: SDI IN5–6 → [VALUE]

Menu item	Value (Bold: default)	Explanation
Delay	0–500ms	This adjusts the delay time for input audio (the frame value is also shown).
Mute	Off, On	This sets the Mute feature on or off. Input audio for which this is set to “On” is silenced.
Follow	Off, On	This switches the Audio Follow feature on or off. Video channels for which this is set to “On” are automatically muted when video on another channel is output.
Level	-INF–0–+10dB	This adjusts the send level to MAIN bus.
Aux Send	-INF–0–+10dB	This adjusts the send level to AUX bus.
Mix Ch.1–16	Off, On	This switches the sending input audio to Mix Ch.1–16 on or off.

Input: AUDIO IN → [VALUE]

Menu item	Value (Bold: default)	Explanation
Delay	0–500ms	This adjusts the delay time for input audio (the frame value is also shown).
Mute	Off, On	This sets the Mute feature on or off. Input audio for which this is set to “On” is silenced.
Follow	Off, HDMI/RGB IN1, HDMI IN2–4, SDI IN5–6	This sets the video channel to interlink with input audio using Audio Follow. Audio from AUDIO IN is muted out for video channels other than what you specified. When this is set to “Off,” no video channels using Audio Follow are assigned.
Level	-INF–0–+10dB	This adjusts the send level to MAIN bus.
Aux Send	-INF–0–+10dB	This adjusts the send level to AUX bus.
Mix Ch.1/2	Off, On	This switches the sending input audio to Mix Ch.1/2 on or off.
Mix Ch.3/4	Off, On	This switches the sending input audio to Mix Ch.3/4 on or off.
Mix Ch.5/6	Off, On	This switches the sending input audio to Mix Ch.5/6 on or off.
Mix Ch.7/8	Off, On	This switches the sending input audio to Mix Ch.7/8 on or off.
Mix Ch.9/10	Off, On	This switches the sending input audio to Mix Ch.9/10 on or off.
Mix Ch.11/12	Off, On	This switches the sending input audio to Mix Ch.11/12 on or off.
Mix Ch.13/14	Off, On	This switches the sending input audio to Mix Ch.13/14 on or off.
Mix Ch.15/16	Off, On	This switches the sending input audio to Mix Ch.15/16 on or off.

Input: Test Tone → [VALUE]

Menu item	Value (Bold: default)	Explanation
Test Tone	Off , L:1k+R:2k, L:1k+R:1k	This sets the test tone.
Level	-INF-- 20 +10dB	This adjusts the send level to MAIN bus.
Aux Send	-INF-- 20 +10dB	This adjusts the send level to AUX bus.
Mix Ch.1/2	Off, On	This switches the sending test tone to Mix Ch.1/2 on or off.
Mix Ch.3/4	Off , On	This switches the sending test tone to Mix Ch.3/4 on or off.
Mix Ch.5/6	Off , On	This switches the sending test tone to Mix Ch.5/6 on or off.
Mix Ch.7/8	Off , On	This switches the sending test tone to Mix Ch.7/8 on or off.
Mix Ch.9/10	Off , On	This switches the sending test tone to Mix Ch.9/10 on or off.
Mix Ch.11/12	Off , On	This switches the sending test tone to Mix Ch.11/12 on or off.
Mix Ch.13/14	Off , On	This switches the sending test tone to Mix Ch.13/14 on or off.
Mix Ch.15/16	Off , On	This switches the sending test tone to Mix Ch.15/16 on or off.

Output: Level/Delay → [VALUE]

Menu item	Value (Bold: default)	Explanation
Main		
Delay	0 -500ms	This adjusts the delay time for MAIN bus (the frame value is also shown).
Level	-INF- 0 +10dB	This adjusts the volume level for MAIN bus.
Aux		
Delay	0 -500ms	This adjusts the delay time for AUX bus (the frame value is also shown).
Level	-INF- 0 +10dB	This adjusts the volume level for AUX bus.
AUDIO OUT		
Level	-INF- 0 +10dB	This adjusts the volume level for AUDIO OUT connectors.
PHONES		
Level	-INF- 0 +10dB	This adjusts the volume level for PHONES connectors.
OUTPUT Knob Assign	Main , AUDIO OUT, PHONES	This sets assign of [OUTPUT] knob for controlling volume adjust.

Output: Source → [VALUE]

Menu item	Value (Bold: default)	Explanation
SDI OUT	Ch.1-16 , AUX	This sets the embedded-audio channel that is output via the SDI OUT connector.
HDMI OUT1	Ch.1/2 , Ch.3/4, Ch.5/6, Ch.7/8, Ch.9/10, Ch.11/12, Ch.13/14, Ch.15/16, AUX	This sets the embedded-audio channel that is output via the HDMI OUT1 connector.
HDMI OUT2	Ch.1/2 , Ch.3/4, Ch.5/6, Ch.7/8, Ch.9/10, Ch.11/12, Ch.13/14, Ch.15/16, AUX	This sets the embedded-audio channel that is output via the HDMI OUT2 connector.
HDMI OUT3	Ch.1/2 , Ch.3/4, Ch.5/6, Ch.7/8, Ch.9/10, Ch.11/12, Ch.13/14, Ch.15/16, AUX	This sets the embedded-audio channel that is output via the HDMI OUT3 connector.
MULTI-VIEW	Ch.1/2 , Ch.3/4, Ch.5/6, Ch.7/8, Ch.9/10, Ch.11/12, Ch.13/14, Ch.15/16, AUX	This sets the embedded-audio channel that is output via MULTI-VIEW connector.
AUDIO OUT / PHONES	Ch.1/2 , Ch.3/4, Ch.5/6, Ch.7/8, Ch.9/10, Ch.11/12, Ch.13/14, Ch.15/16, AUX	This sets the embedded-audio channel that is output via AUDIO OUT/ PHONES connectors.

USER

Menu item	Value (Bold: default)	Explanation
■ USER1		
Assign	This sets the functions assigned to the USER [1] button.	
	None	No function is assigned.
	Follow SW	This switches the Audio Follow feature on or off.
	Mute Group	This switches the Mute feature on or off globally for all audio assigned to a group.
	Output Capture	This captures a still image from the output video.
LED Color	Red , Green, Blue, Cyan, Magenta, Yellow	This part set LED color of USER [1] button.
Mute Group Setup	ENTER	This displays detailed setup menu of mute group.
■ USER2		
Assign	This sets the functions assigned to the USER [2] button.	
	None	No function is assigned.
	Follow SW	This switches the Audio Follow feature on or off.
	Mute Group	This switches the Mute feature on or off globally for all audio assigned to a group.
	Output Capture	This captures a still image from the output video.
LED Color	Red, Green , Blue, Cyan, Magenta, Yellow	This part set LED color of USER [2] button.
Mute Group Setup	ENTER	This displays detailed setup menu of mute group.

Mute Group Setup → [VALUE]

Menu item	Value (Bold: default)	Explanation
HDMI IN1-4, SDI IN5-6, AUDIO IN	Off , On	This specifies whether each item is included in the USER 1-2 mute group.

System

Menu item	Value (Bold: default)	Explanation
Processing	ENTER	This displays detailed setup menu of processing.
Frame Rate	50, 59.94Hz	This sets the frame rate.
	30, 60Hz	* For details on combinations of format and frame rate, refer to "Output Formats" (p. 11).
HDCP	Off , On	This turns on/off the HDCP mode.
Reference	This sets the reference clock of the V-600UHD.	
Source	Internal	The V-600UHD's internal clock is used as the reference clock.
	SDI IN5	A signal input via one of the SDI IN5 connectors is used as the reference clock.
Clock Adjust	-4096- 0 +4096	This adjusts the phase horizontally. Adjust this when output is horizontally out of sync with the operation of other devices using the same clock.
	-2160- 0 +2160	This adjusts the phase vertically. Adjust this when output is vertically out of sync with or field-shifted from the operation of other devices using the same clock.
Cross-point Assign	ENTER	This displays detailed setup menu of channel assign to cross-points.
Output Fade	ENTER	This displays detailed setup menu of output fade.
Multi-view	ENTER	This displays detailed setup menu of multi-view.
Aux/Composition	Composition , Aux	This sets which function to use, AUX or Composition.
Menu	Here you can make menu-related settings.	
Background	0- 4 -7	This adjust the transparency of the menu background.
Position	Left , Right	This switches the position of menu display.
Memory Protect	Off , On	When this is set to "On," the memories are protected, and settings cannot be saved to them.
Auto Memory	Off, On	Setting this to "On" enables last memory feature.
Memory Delete	ENTER	This shows the memory delete selection screen.
Still Image Memory	Here you can perform operations related to still images.	
Load	ENTER	This displays the screen to select a still image file to load.
Delete	ENTER	This displays the screen to select a still image file to delete.
Information	ENTER	This shows information about the still image.
Output Capture	ENTER	This displays the screen to capture a still image.
Save as	ENTER	This displays the screen to save the captured still image.
USB Memory	You use the following items to work with a USB flash drive.	
Parameter Load	ENTER	This displays the screen to select a setting file to load.
Save	ENTER	This displays the screen to select a setting file to save.
Save As	ENTER	This displays the screen to edit the setting file name.
Delete	ENTER	This displays the screen to select a file to delete.
Format	Execute	This executes formatting of a connected USB flash drive.
RS-232	Off , On	This turns valid/invalid of remote control from an external RS-232 device.
Baudrate	9600, 38400 bps	This sets the communication speed (bps) of the RS-232 connector.
GPI	ENTER	This displays detailed setup menu of GPI.
LAN Control	ENTER	This displays detailed setup menu of LAN control.
LED Dimmer	0- 7	This adjusts the brightness of the top panel LEDs.
Fader Calibration	ENTER	This calibrates the video fader.
RGB IN1 Calibration	ENTER	This calibrates the RGB IN 1.
Factory Reset	Execute	This returns the unit to its factory defaults.
Version		This displays the version of the system program.

Processing → [VALUE]

Menu item	Value (Bold: default)	Explanation
Format	1080p, 2160p(UHD) , 2160p(DCI), 1920x1080, 3840x2160, 4096x2160	This part select V-600UHD's output (system) format.
Scaling	You use the following items to make settings for scaling.	
Zoom	10- 100 -1000%	This adjusts the zoom ratio.
Correction	H -4000- 0 +4000	This adjusts the horizontal zoom size.
	V -4000- 0 +4000	This adjusts the vertical zoom size.
Position	H -4096- 0 +4096	This adjusts the display position in the horizontal direction.
	V -2160- 0 +2160	This adjusts the display position in the vertical direction.
Cropping	You use the following items to make settings for cropping.	
Orientation	Upper Left , Upper Right, Lower Left, Lower Right, Center	This sets the orientation of cropping.
Type	This sets the orientation of cropping.	
	Full	When the "Zoom" value is "100%," the entirety of the image is shown on the output screen.
	4:3, 5:4, 16:9	The image will be cropped according to the selected aspect ratio. If the Zoom value is 100%, the image will be letterboxed.
	Manual	The image will be cropped according to the "Manual Width" and "Manual Height" settings.
Manual Width	0- 512 -4096	This adjusts the horizontal size.
Manual Height	0- 512 -2160	This adjusts the vertical size.
Color Correction	You use the following items to perform color correction.	
Brightness	-64- 0 +63	This adjusts the brightness.
Contrast	-64- 0 +63	This adjusts the contrast.
Saturation	-64- 0 +63	This adjusts the color saturation.
Red	-64- 0 +63	This adjusts the red level.
Green	-64- 0 +63	This adjusts the green level.
Blue	-64- 0 +63	This adjusts the blue level.
Color Gamut	Rec.709 , Rec.2020	This part select output (system) color gamut. This can be selected if Format is "1080p," "2160p (UHD)," or "2160p (DCI)."
Dynamic Range	SDR , HDR PQ, HDR HLG	This part select output (system) dynamic range. This can be selected if Format is "1080p," "2160p (UHD)," or "2160p (DCI)."

Cross-point Assign → [VALUE]

Menu item	Value (Bold: default)	Explanation
XPT1	Ch.1 -8, Blank, None	This sets the input channel to be assigned to Cross-point [1]-[8] buttons.
XPT2	Ch.1- 2 -8, Blank, None	
XPT3	Ch.1- 3 -8, Blank, None	
XPT4	Ch.1- 4 -8, Blank, None	
XPT5	Ch.1- 5 -8, Blank, None	
XPT6	Ch.1- 6 -8, Blank, None	
XPT7	Ch.1- 7 -8, Blank, None	
XPT8	Ch.1- 8 , Blank, None	

Output Fade → [VALUE]

Menu item	Value (Bold: default)	Explanation
Mode	This displays the operation mode of the [OUTPUT FADE] button.	
	Fade to Background	This makes the final video output fade to a monochrome picture (background color).
	Output Freeze	This freezes the final output video (freeze function).
Time	0– 0.5 –10.0s	This sets the fade time.
Curve	Linear , Slow In, Cosine, Slow Out	This sets the fade curve for fade to background.
Color Setting	You use the following items to set the background color.	
Red	0– 16 –255	This sets the red level.
Green	0– 16 –255	This sets the green level.
Blue	0– 16 –255	This sets the blue level.

Multi-view → [VALUE]

Menu item	Value (Bold: default)	Explanation
Layout PGM	Upper Left, Upper Right , Lower Left, Lower Right	This sets the position of PGM section in multi-view monitor.
Label PGM	PGM	Pressing the [VALUE] knob displays the label entry screen. Here you can edit the label name shown in the multi-view monitor. To confirm the label name, select "OK" and press the [VALUE] knob.
PVW	PVW	
XPT1	CH.1	
XPT2	CH.2	
XPT3	CH.3	
XPT4	CH.4	
XPT5	CH.5	
XPT6	CH.6	
XPT7	CH.7	
XPT8	CH.8	
ROI Border	This specifies whether the ROI border is shown.	
	Shared Ch	A border is shown only for the channel specified as "Shared Ch."
	All On	A border is shown for all channels.
	Off	A border is not shown.
Color	White , Red, Green, Blue, Cyan, Magenta, Yellow, Black	Specifies the color of the ROI border.

Output Capture → [VALUE]

Menu item	Value (Bold: default)	Explanation
Still Image Memory	1 –8	This selects the save-destination memory number for the captured still image. * Memory numbers that contain a still image are indicated by a "*" symbol.
Source Bus	PGM , PVW	This specifies the bus of the video source used for still image capture.
	Execute	This captures a still image from the output video.

GPI → [VALUE]

Menu item	Value (Bold: default)	Explanation
GPI1–8	This sets the function assigned to the GPI channel. When a control signal is input from an external source, the assigned function is executed. * The GPI trigger is fixed at the trailing edge (low: On). For details, refer to "Inputting a Control Signal" (p. 49).	
	None	No function is assigned.
	PGM XPT1–8	This switches the final output video.
	PST XPT1–8	This switches the preset video (the video to be output next).
	Memory Load1–1–8	This loads a memory (Bank 1 only).
	DSK SRC Sel1–8	During DSK compositing, this switches the cross-point of the overlaid logo or image.

LAN Control → [VALUE]

Menu item	Value (Bold: default)	Explanation
Configure	Selects how settings are made for the IP address and subnet mask. * Changed settings are applied at next start-up.	
	DHCP Server	DHCP server functionality is enabled. The information needed for connecting to the network is assigned automatically by this unit to the computers that are on the LAN.
	DHCP Client	The IP address and other information needed for connecting to the network is obtained automatically from the DHCP server of the LAN.
	Manually	The IP address and subnet mask are specified manually.
IP Address (*1)	192.168.2.254	This sets the IP address.
Subnet Mask (*1)	255.255.255.0	This sets the subnet mask.
MAC Address		This displays the MAC address.
Remote Control URL	http://192.168.2.254:8080/	Shows the URL for starting the WebRCS web application in your web browser. * The URL is not shown if a network connection is not established.

(*1) This can be specified manually if Configure is set to "Manually."

LAN/RS-232 Command Reference

V-600UHD support two types of remote-interface communication: LAN and RS-232.

Using the LAN port or RS-232 connector to send specific commands to the V-600UHD from a controlling device lets you operate the V-600UHD remotely.

LAN Interface

This uses the LAN port on the V-600UHD.

You use Telnet to operate the V-600UHD remotely over a LAN (TCP/IP protocol).

Communication standards

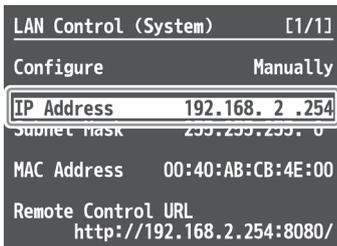
Port	LAN port
Protocol	TCP
Port number	8023

Setting the IP address of the V-600UHD

The method of setting the IP address depends on the Configure setting.

If the Configure setting is "Manually," use the following procedure to make the setting.

1. Select the [MENU] button → "System" → "LAN Control," and press the [VALUE] knob.
2. Select "IP Address," and use the [VALUE] knob to set the IP address.

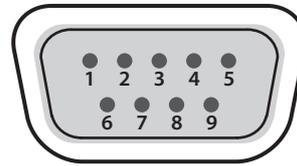


→ Details on menu items: see p. 46.

3. Press the [MENU] button to quit the menu.

RS-232 Interface

RS-232 connector pin layout



DB-9 type (male)

Pin assignments

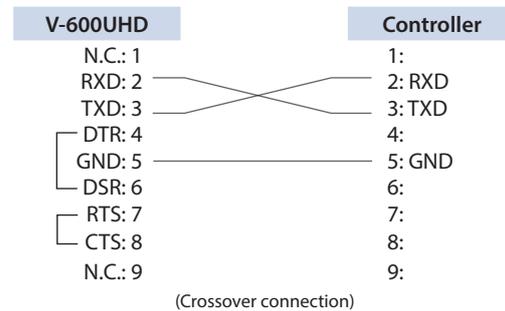
Pin No.	Signal
1	N.C.
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	N.C.

Communication standards

Communication method	Synchronous (asynchronous), full-duplex
Communication speed	9,600 bps/38,400 bps
Parity	none
Data length	8 bits
Stop bit	1 bit
Code set	ASCII
Flow control	XON/XOFF

Cable wiring diagram

Use an RS-232 crossover cable to connect the V-600UHD and the controller (an RS-232-compatible computer or other device).



* The connections between 4 and 6 and between 7 and 8 are inside the V-600UHD.

Command Format

Commands are formatted using the configuration shown below. Commands are all in ASCII code.

stx	Command code	:	Parameter	,	Parameter	;
-----	--------------	---	-----------	---	-----------	---

stx	ASCII code "02H" is a control code indicating the start of a command. "H" indicates that it is a hexadecimal value.
Command code	This specifies the command type (3 letters of the alphabet).
Parameter	This is appended to a command that requires one or more parameter. The command and the parameter portion are separated by a ":" (colon). When there are multiple parameters, they are each separated by "," (comma) characters.
;	This is the code that the V-600UHD recognizes as the end of a command.

* The codes of stx (02H), ACK (06H), and XON (11H)/ XOFF (13H) are the control codes.

List of Commands

* When sending a sequence of commands to the V-600UHD from a controller, after each one, be sure to verify that an "ACK" response is returned before sending the next command.

Video-related operations

Item	Sent command	Response command	Parameter
Select PGM channel	stxPGM:a;	ACK	a: 0 (XPT 1) –7 (XPT 8)
Select PST channel	stxPST:a;	ACK	a: 0 (XPT 1) –7 (XPT 8)
Select channel to send to AUX bus	stxAUX:a;	ACK	a: 0 (XPT 1) –7 (XPT 8)
Select transition pattern	stxTRS:a;	ACK	a: 0 (WIPE 1), 1 (WIPE 2), 2 (WIPE 3), 3 (MIX)
Set video transition time	stxTIM:a;	ACK	a: 0 (0.0 sec) –40 (4.0 sec)
Press the [AUTO] button	stxATO;	ACK	
Press the [CUT] button	stxCUT;	ACK	
Select COMPOSITION type	stxCTY:a;	ACK	a: 0 (None), 1 (PinP1-1), 2 (PinP1-2), 3 (Key1), 4 (PinP1-1+Key1), 5 (PinP1-2+Key1)
Select DSK type	stxDTY:a;	ACK	a: 0 (None), 1 (PinP2-1), 2 (PinP2-2), 3 (DSK), 4 (PinP2-1+Key2), 5 (PinP2-2+Key2)
Press the [COMPOSITION] button	stxCMP;	ACK	
Press the [DSK] button	stxDSK;	ACK	
Set output fade on/off	stxFDE:a;	ACK	a: 0 (OFF), 1 (ON)
Set output fade time	stxFDT:a;	ACK	a: 0 (0.0 sec)–100 (10.0 sec)

Audio-related operations

Item	Sent command	Response command	Parameter
Adjust volume level of input audio	stxIAL:a,b;	ACK	a: 0 (HDMI IN1)–7 (TEST TONE) b: -801 (-INF dB), -800 (-80.0 dB)–0 (0.0 dB)–100 (10.0 dB)
Adjust volume level for master out	stxOAL:a;	ACK	a: -801 (-INF dB), -800 (-80.0 dB)–0 (0.0 dB)–100 (10.0 dB)
Adjust volume level for AUX-bus audio	stxOAX:a;	ACK	a: -801 (-INF dB), -800 (-80.0 dB)–0 (0.0 dB)–100 (10.0 dB)

System-related operations

Item	Sent command	Response command	Parameter
Call up memory	stxMEM:a;	ACK	a: 0 (1-1)–63 (8-8)
Acquire status of V-600UHD	stxACS;	ACK	
Version information	stxVER;	stxVER:V-600UHD,a;	a: Version * The version info is ASCII text strings.
Flow control	XON		
Flow control	XOFF		

Commands spontaneously sent from the V-600UHD

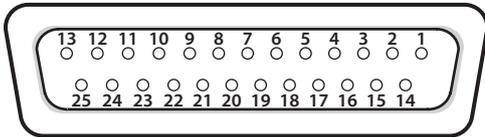
Item	Sent command	Response command	Parameter
Error detected		stxERR:a;	a: 0 (syntax error) The received command contains an error. 5 (out of range error) An argument of the received command is out of range.
Flow control		XON	
Flow control		XOFF	

Control Using the TALLY/GPI Connector

You can operate the V-600UHD remotely from an external device by inputting a GPI control signal via the TALLY/GPI connector. And you can output a tally signal from the TALLY/GPI connector.

Specification of the TALLY/GPI Connector

Pin layout



DB-25 type (female)

Tally output

Trigger method	Open collector
Maximum input	12 V/200 mA

Control input

Trigger method	No-voltage contact (make-contact) triggering
Contact capacity	DC 24 V 0.1 A or higher
Input method	Photocoupler

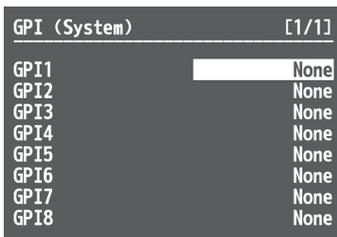
Pin assignments

Pin No.	Function	Pin No.	Function
1	TALLY 1 PGM	14	TALLY 7 PST
2	TALLY 1 PST	15	TALLY 8 PGM
3	TALLY 2 PGM	16	TALLY 8 PST
4	TALLY 2 PST	17	GND
5	TALLY 3 PGM	18	GPI 1
6	TALLY 3 PST	19	GPI 2
7	TALLY 4 PGM	20	GPI 3
8	TALLY 4 PST	21	GPI 4
9	TALLY 5 PGM	22	GPI 5
10	TALLY 5 PST	23	GPI 6
11	TALLY 6 PGM	24	GPI 7
12	TALLY 6 PST	25	GPI 8
13	TALLY 7 PGM		

Inputting a Control Signal

To operate the V-600UHD remotely using control-signal input, you first assign the function to a GPI channel (1 through 8).

1. Select the [MENU] button → “System” → “GPI,” and press the [VALUE] knob.
2. Use the [VALUE] knob to specify the function to assign to the GPI channel (1 through 8).



→ Details on menu items: p. 45

3. Press the [MENU] button to quit the menu.

When a control signal is input from an external source, the assigned function is executed. The GPI trigger is fixed at the trailing edge (low: On).

Outputting a Tally Signal

A tally signal is output from the connector pin corresponding to the video channel being output, also including video composition and transition effects.

Appendix

Troubleshooting

If you suspect a malfunction, please check the following points. If this does not resolve the problem, contact a nearby Roland Service Center.

Problem	Items to check	Action	Page
Video-related problems			
Nothing is displayed on the multi-view monitor.	Does the connected monitor support a resolution and refresh rate of 1920 x 1080/60 Hz (progressive) and HDCP?	Nothing is displayed if the monitor is not compatible.	–
No picture is input.	Could you be inputting copy-protected (HDCP) video?	If you want to input copy-protected (HDCP) video, set the System menu "HDCP" setting to "On."	p. 15
Analog RGB input is not output.	Is the video source at the HDMI/RGB IN1 set to RGB IN1?	In the factory-default state, HDMI/RGB IN1 is assigned to HDMI IN1 input. The assignment must be changed to RGB IN1 input.	p. 12
Video from the computer is corrupted.	When a rapidly moving video is input from a computer, out-of-sync motion, flicker, or other picture corruption may occur.	This is called "tearing," and does not indicate an equipment malfunction.	–
Nothing is output from the SDI OUT connector.	Has the setting for inputting HDCP signal been made?	When "HDCP" at the System menu is set to "On," video is output only from the HDMI OUT connectors. No video is output via the SDI OUT connectors.	p. 15
Can't use COMPOSITION compositing	Could the System menu item "Aux/Composition" be set to "Aux"?	If the System menu item "Aux/Composition" is set to "Aux," you can't use COMPOSITION. If you want to use COMPOSITION, set "Aux/Composition" to "Composition."	p. 43
Still-image cannot be imported.	Are you importing a still image whose format and resolution are supported by the V-600UHD?	Still images of unsupported formats or resolutions are not recognized. Prepare a still image whose format and resolution are supported by the V-600UHD.	p. 18
Audio-related Problems			
No audio is output. Audio volume is low.	Could the volume of the connected amp or speaker be lowered?	Adjust the volume appropriately.	–
	Could the audio be muted?	In the Audio menu, defeat muting.	p. 40
Other Problems			
Switching is not complete even when the video fader is moved.	Factors such as continued use and transportation can sometimes cause the video to fail to be switched completely.	Perform calibration of the video fader. Execute calibration, select "Fader Calibrate" in System menu.	p. 43
The panel indicators are too bright/dark.	Has indicator brightness been adjusted appropriately?	Go to the System menu and use "LED Dimmer" to adjust indicator brightness.	p. 43
A USB flash drive cannot be read.	Has the USB flash drive been formatted on the V-600UHD?	The V-600UHD does not recognize unformatted USB flash drives. Operation has been tested for commonly available USB flash drives, but operation of all USB flash drives is not assured. Depending on the manufacturer and type of the USB flash drive, correct operation may not be possible.	p. 28

Shortcut List

While a menu is displayed

These shortcuts access a specific menu.

Shortcut	Menu display
[MENU] + USER [1]	USER (USER 1 Assign selected)
[MENU] + USER [2]	USER (USER 2 Assign selected)
[MENU] + COMPOSITION PinP1 [1]	PinP1 Position 1 (Comp.)
[MENU] + COMPOSITION PinP1 [2]	PinP1 Position 2 (Comp.)
[MENU] + COMPOSITION KEY1 [KEY ON]	Key1 (Composition)
[MENU] + DSK PinP2 [1]	PinP2 Position 1 (DSK)
[MENU] + DSK PinP2 [2]	PinP2 Position 2 (DSK)
[MENU] + DSK KEY2 [KEY ON]	Key2 (DSK)
[MENU] + [OUTPUT FADE]	Output Fade (System)
[MENU] + PST [1]–[8]	<p>While the Signal Status menu is displayed Shows the detailed settings menu for each input channel.</p> <p>While the Input menu is displayed Shows the detailed settings menu for the corresponding input connector.</p> <p>While the Audio menu is displayed Shows the detailed settings menu for the corresponding audio input.</p> <p>While the System menu item Still Image Info is displayed Shows information for the corresponding still image (1–8).</p> <p>While a menu other than the above is displayed Shows the detailed settings menu for each input channel's Scaler.</p>
[MENU] + MODE [AUX/COMPOSITION]	System (Aux/Composition selected)
[MENU] + WIPE PATTERN [1]	Wipe Preset 1 (Transition)
[MENU] + WIPE PATTERN [2]	Wipe Preset 2 (Transition)
[MENU] + WIPE PATTERN [3]	Wipe Preset 3 (Transition)
[MENU] + WIPE PATTERN [MIX]	Transition (Pattern Mix selected)
[MENU] + [COMPOSITION]	Composition
[MENU] + [DSK]	DSK

While a menu is not displayed

Shortcut	Function
[MENU] + PST [1]–[8] [MENU] + [EXIT] + PST [1]–[8]	<p>Switches to the video source of the input channel corresponding to the PST [1]–[8] button number. The video source switches each time you hold down the [MENU] button and press the PST button.</p>  <p>* If you perform the same operation while holding down the [EXIT] button, you switch to the previous video source.</p>

Main Specifications

Roland V-600UHD: 4K HDR MULTI-FORMAT VIDEO SWITCHER

■ Processing			
Video Processing	4:4:4 (Y/Pb/Pr), 10-bit		
Supported Video Input Formats (*1)	HDMI	Video, CEA-861-F	720/50p, 720/59.94p, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p, 2160/59.94p (UHD 4K), 2160/50p (UHD 4K), 2160/59.94p (DCI 4K), 2160/50p (DCI 4K)
		PC, VESA DMT	1600 x 1200/60 Hz (UXGA)
		PC, VESA DMT	1024 x 768/60 Hz (VGA)
		PC, VESA CVT	1280 x 768/60 Hz (WXGA)
		PC, VESA DMT	1280 x 1024/60 Hz (SXGA)
		PC, VESA CVT	1400 x 1050/60 Hz (SXGA+)
		PC, CEA-861-F	1920 x 1080/60 Hz (FHD)
		PC, VESA CVT	1920 x 1200/60 Hz (WUXGA, Reduced blanking)
		PC, CEA-861-F	3840 x 2160/24 Hz (UHD 4K), 3840 x 2160/30 Hz (UHD 4K), 3840 x 2160/60 Hz (UHD 4K), 4096 x 2160/24 Hz (DCI 4K), 4096 x 2160/30 Hz (DCI 4K), 4096 x 2160/60 Hz (DCI 4K)
	RGB	PC, VESA DMT	1600 x 1200/60 Hz (UXGA)
		PC, CEA-861-F	1920 x 1080/60 Hz (FHD)
	SDI	Video, SMPTE ST274	1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p
		Video, SMPTE ST2036	2160/59.94p (UHD 4K), 2160/50p (UHD 4K)
		Video, SMPTE ST2048	2160/59.94p (DCI 4K), 2160/50p (DCI 4K)
	Still Image	Windows Bitmap File (.bmp), Maximum 4096 x 2160 pixels, 24-bit per pixel, uncompressed PNG File (.png), Maximum 4096 x 2160 pixels * Alpha channel of PNG file is not loaded.	
Supported Video Output Formats (*1)	HDMI	Video, CEA-861-F	1080/59.94p, 1080/50p, 2160/59.94p (UHD 4K), 2160/50p (UHD 4K), 2160/59.94p (DCI 4K), 2160/50p (DCI 4K)
		PC, CEA-861-F	1920 x 1080/30 Hz (FHD) (*2), 1920 x 1080/60 Hz (FHD), 3840 x 2160/30 Hz (UHD 4K), 3840 x 2160/60 Hz (UHD 4K), 4096 x 2160/30 Hz (DCI 4K), 4096 x 2160/60 Hz (DCI 4K)
		MULTI-VIEW, PC, CEA-861-F	1920 x 1080/60 Hz (FHD)
	SDI	Video, SMPTE ST274	1080/59.94p, 1080/50p
		Video, SMPTE ST2036	2160/59.94p (UHD 4K), 2160/50p (UHD 4K)
		Video, SMPTE ST2048	2160/59.94p (DCI 4K), 2160/50p (DCI 4K)
Video Effects	Transition	Mix, Cut, Wipe (9 patterns)	
	Composition	PinP, Key (*3), PinP + Key (*3)	
	DSK	PinP, Key (*3), PinP + Key (*3)	
	Others	Output Fade, Output Freeze, Output Capture	
Audio Processing	24 bits/48 kHz		
Audio formats	SDI IN/OUT	Linear PCM, 24 bits/48 kHz, 16 ch (Conforms to SMPTE 299M)	
	HDMI IN/OUT	Linear PCM, 24 bits/48 kHz, 2 ch	
Audio Effects	Matrix mixer Delay (1 ms units, max 500 ms) Test tone output		

(*1) Conforms to VESA DMT, VESA CVT, CEA-861-F
Color Gamut: Rec.709, Rec.2020
Dynamic Range: SDR, HDR PQ (HDR10), HDR HLG

(*2) "1920 x 1080/30 Hz (FHD)" is output when the following settings are used.

- In System menu → Processing → Format: 3840x2160
- In System menu → Frame Rate: 30Hz
- In Output menu → HDMI OUT 1-3 → Down Convert: Enabled

(*3) Luminance Key, Chroma Key

■ Connectors		
Input Connectors	HDMI IN 1–4 connectors	HDMI type A (HDMI 2.0)
	SDI IN 5–6 connectors	BNC type (12G/3G/HD-SDI, Conforms to SMPTE 2082, 424M (Level-A, Level-B), 292M)
	RGB IN 1 connector	HD DB-15 type (Analog RGB, Select HDMI IN 1 or RGB IN 1 using menu)
	AUDIO IN L/R connectors (*4)	XLR-3-31 type (balanced)
Output Connectors	SDI OUT connector	BNC type (12G/3G-SDI, Conforms to SMPTE 2082, 424M (Level-A, Level-B))
	HDMI OUT 1–3 connectors	HDMI type A (HDMI 2.0)
	MULTI-VIEW connector	HDMI type A (HDMI 1.4)
	AUDIO OUT L/R connectors (*4)	XLR-3-32 type (balanced)
	PHONES jack	Stereo miniature phone type
Other Connectors	USB MEMORY port	USB A type (for USB flash drive)
	RS-232 connector	DB-9 type (Male) (for Remote Control)
	LAN port	RJ45 type, 100BASE-TX (for Remote Control)
	TALLY/GPI port	DB-25 type (Female) (Tally: 16, GPI: 8)

(*4) XLR type: 1 GND, 2 HOT, 3 COLD

■ Audio Input/Output Characteristics		
Input Level	AUDIO IN L/R	+4 dBu (Maximum: +24 dBu)
Input Impedance	AUDIO IN L/R	15 k Ω
Output Level	AUDIO OUT L/R	+4 dBu (Maximum: +24 dBu)
	PHONES	92 mW + 92 mW (32 Ω)
Output Impedance	AUDIO OUT L/R	600 Ω
	PHONES	10 Ω

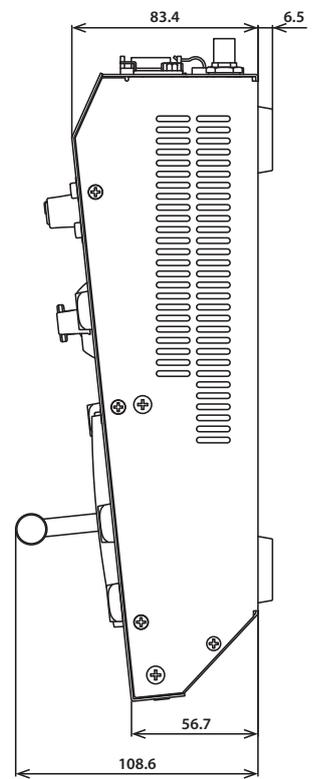
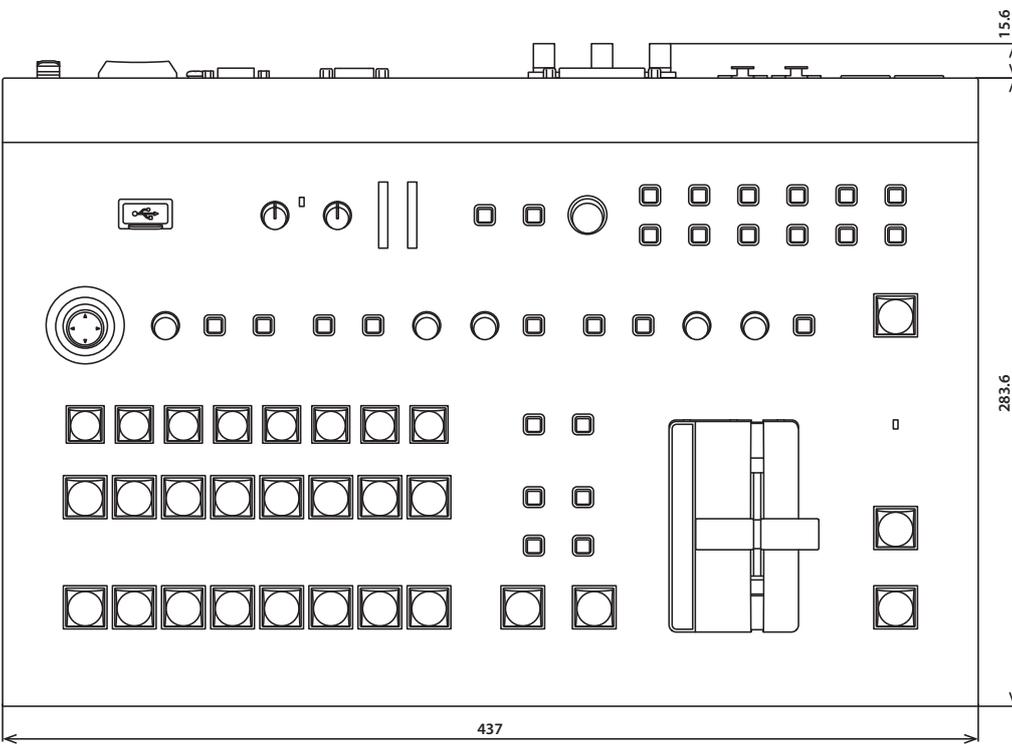
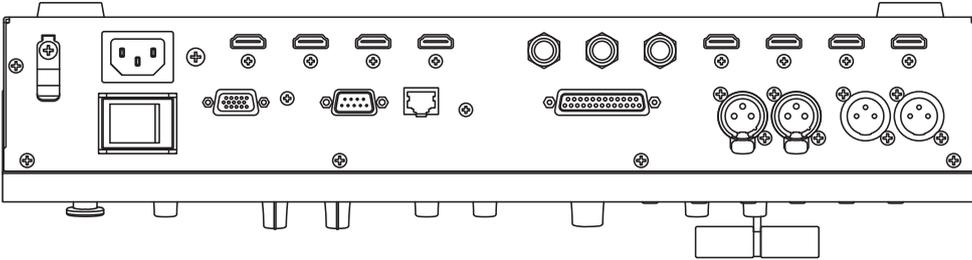
■ Others	
Power Consumption	80 W
Dimensions	482 (W) x 300 (D) x 116 (H) mm 19 (W) x 11-13/16 (D) x 4-5/8 (H) inches
	* When rack mount angles are fitted.
Weight	5.3 kg 11 lbs 11 oz
	* Including rack mount angles.
Operation Temperature	+5 to +40 degrees Celsius +41 to +104 degrees Fahrenheit
Accessories	Owner's Manual Power cord Rack-mount angle x 2

* 0 dBu = 0.775 Vrms

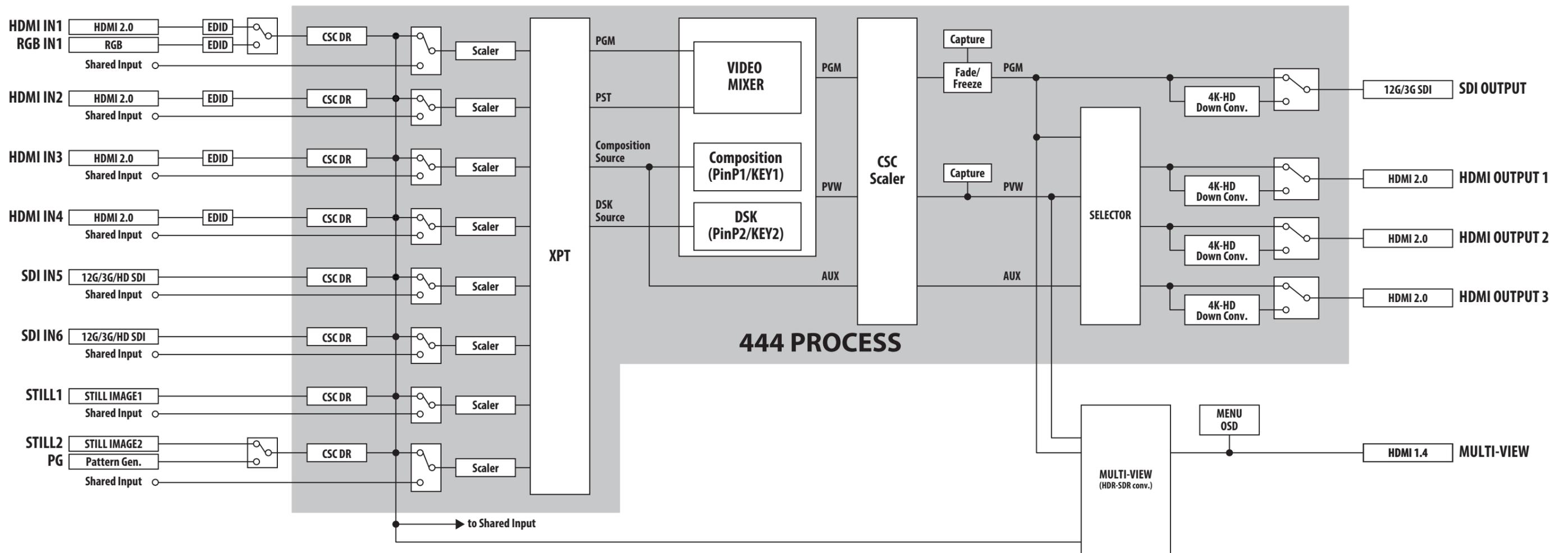
* This product is a Class A digital device under FCC part 15.

Dimensions

Unit: mm



VIDEO Block Diagram



AUDIO Block Diagram

