

V-600UHD

4K MULTI-FORMAT VIDEO SWITCHER

AUDIO
Adjusts the volume level (digital gain) for AUDIO IN L/R and output/headphones

USER
Execute the functions that are assigned by the menu settings.

MEMORY
Save the current settings (such as video settings and operating panel status) to memory, or recall settings from memory

COMPOSITION /DSK
Controls for the Composition and DSK section. You can combine 2 PinPs or Keyers (Upstream/ Downstream) in any combination.

MODE
Selects the destination of the video. The video selected by the AUX/COMPOSITION - DSK cross-point [1]–[8] button is sent.

PGM
Selects the final output video.

PST
Selects the preset video (the video to output next).

MODE [AUX/ COMPOSITION] button and [DSK/ ROI] button.

AUX/ COMPOSITION - DSK
Indicates the status of video input to the crosspoints. Here you can also select the video that is sent to the destination specified by the MODE [AUX/ COMPOSITION] button and [DSK/ ROI] button.

PINP/ROI SCALING
Adjusts, enlarges or reduces the display position and size of the input video or PinP inset screen.

USB MEMORY PORT
Use this when importing still images, or when saving or loading settings.

AUDIO IN
Inputs the audio signals. Connect an audio mixer, CD players, or other such audio equipment.

TALLY/GPI CONNECTOR
Connect devices provided with a tally-light feature or with control-signal output functionality to this connector.

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

AUDIO OUT
Output the results of audio mixing. Connect an audio recorder, amplifier, speakers, or other such equipment

MULTI-VIEW CONNECTOR

VIDEO OUTPUTS
Three independent HDMI 2.0 outputs + one 12G SDI output with scalers.

VIDEO INPUTS
Four independent HDMI 2.0 inputs + two 12G SDI inputs with scalers.

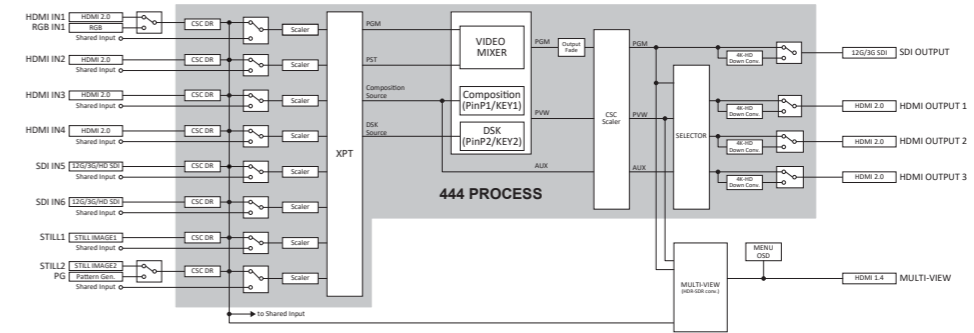
Upgrade your events to 4K HDR — one input at a time

- 4K without compromise
- High Dynamic Range [HDR]
- Full 60Hz frame rate
- A more vivid color space
- 10-bit 4:4:4 pixel-accurate color
- Support for DCI cinema 4K resolution
- The right I/O for your show
- Capture all the action with a single 4K camera
- Get creative with composition
- Integrate with the audio system
- The best solution for working with LED Displays

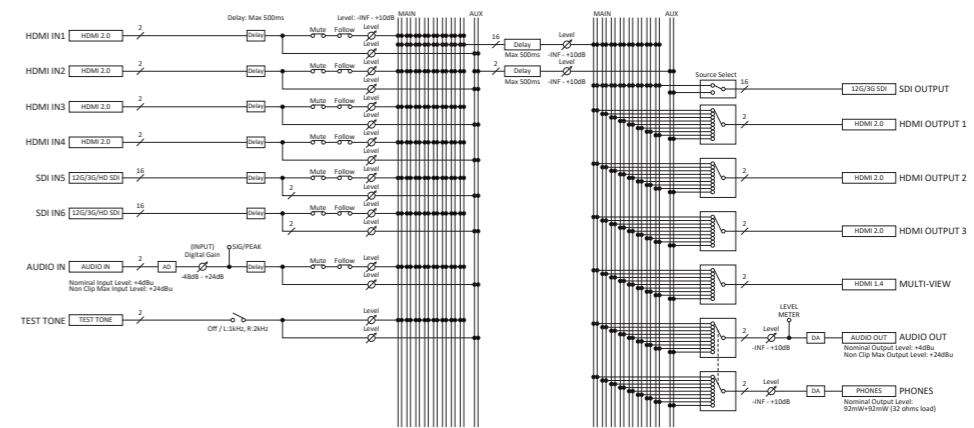


BLOCK DIAGRAM

VIDEO



AUDIO



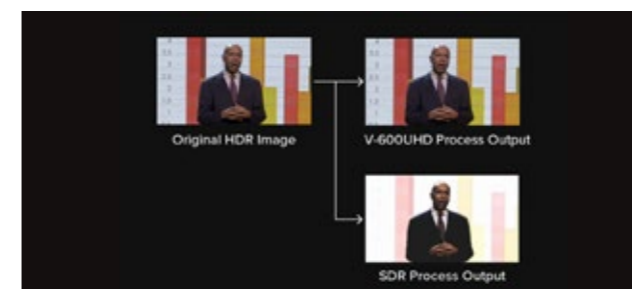
As clients and audiences start demanding 4K at events, your current HD sources and displays shouldn't become obsolete — and the V-600UHD lets you transition to 4K workflows as demand and budgets allow. With Roland's Ultra Scaler technology, scaling is provided on every input, so you can use Full HD and 4K sources simultaneously, and output at multiple resolutions. You can also leverage the high pixel density of 4K camera sources in Full HD workflows for problem-free, visually-impressive productions.

4K Without Compromise

Upgrading to 4K greatly improves the image quality in your productions, so why compromise with switchers that may deliver more pixels but omit the true capabilities of 4K?

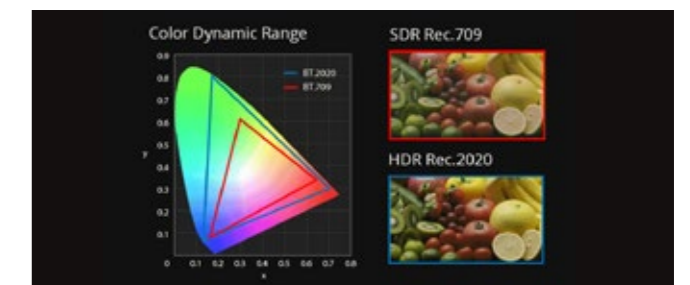
High Dynamic Range [HDR]

The V-600UHD uses High Dynamic Range [HDR] so your events look amazing. You don't just see more pixels, you see better, more dynamic-looking pixels that preserve the details in the darkest and brightest areas of an image. HDR provides well-balanced stage lighting without oversaturation for IMAG (and it's easier to achieve compared with using SDR.) And SDR dynamic range signals can also be input and switched with the V-600UHD.



A More Vivid Color Space

The V-600UHD supports Rec.2020, the highest-specification Wide Color Gamut (WCG), as well as RGB and Rec.709 standards to display the widest range of visible colors. This provides an increased level of realism and improved color accuracy, especially for red and yellow color ranges.

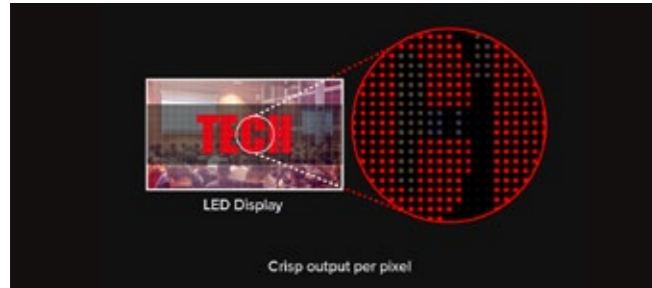


Full 60Hz Frame Rate

With full 60Hz framerate support, the V-600UHD delivers a smooth, crisp video image without the blur that's common when fast motion is displayed at 30Hz refresh rates.

10-bit 4:4:4 Pixel-accurate Color

Internal 10-bit Color Depth processing reduces color banding and sharpens high-detail sources from computers. This makes it easier to read small fonts and other fine details, even when drastically scaled and magnified.



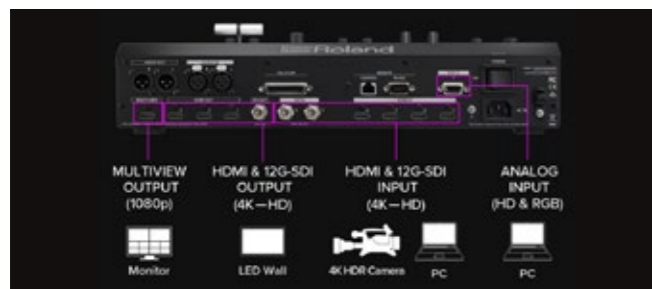
Support for DCI Cinema 4K Resolution

Not all 4K content has the same aspect ratio. Although 4K content is always 2160 pixels high, DCI or "Cinema 4K" is 4096 pixels wide, which is 256 pixels wider than UHD. The V-600UHD lets you switch and display content at the originally intended aspect ratio, without cropping or letterboxing.



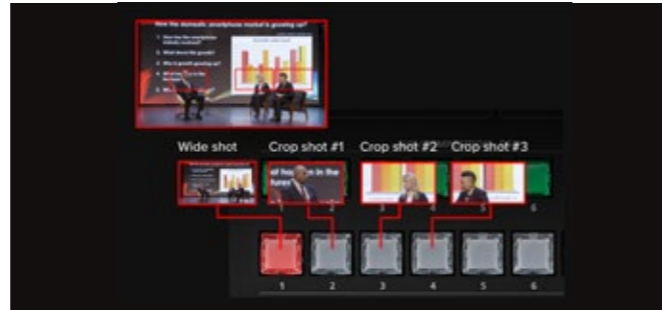
The Right I/O for Your Show

The V-600UHD has four HDMI 2.0 and two 12G SDI inputs, perfect for events needing several computer and video playback sources complete with IMAG camera support. Each input independently supports input and scaling of HD, Full HD, UHD 4K, and DCI 4K, as well as PC resolutions from UXGA to DCI 4K — with no converters needed. AUX destination switching makes it easy to include down-stage confidence monitors, while the configurable multi-view monitor lets you see all your sources, programs and previews — at a glance. Each output also supports downscaling to Full HD for outputting to streaming encoders or other HD-equipped destination displays.



Capture All the Action with a Single 4K Camera

You don't need multiple cameras for multiple shots. If your production requires a wide shot of the stage, a medium shot of the speaking panel, and close-ups of each speaker, the V-600UHD has you covered with built-in Region of Interest [ROI]. This allows you to point a single 4K camera at the stage and use the V-600UHD's input sharing and scaling functions to crop out up to eight "camera shots" that you can assign to the V-600UHD's cross points. Increase your production value without increasing your camera count, complexity or costs.



Get Creative with Composition

The V-600UHD supports two Picture-in-Picture windows (PnP) that offer so much more than simple fixed inset windows. You can accomplish results comparable to dedicated screen processors, with fully customizable aspect ratios, sizes and input source scaling — letting you display whatever you want, wherever you want it. Combine flexible PnP with the ultra-wide pixel count of DCI 4K to create engaging and impressive screen sets.

Integrate with the Audio System

Embedded audio from digital video signals can be tricky to incorporate into audio systems at an event or performance. Superior audio management lies at the heart of the V-600UHD, with flexible 24-bit 48kHz audio processing that lets you avoid problems before they occur. You can de-embed audio from the currently selected source and send to an external sound mixer using Audio Follows Video. Or program audio returning from the same console can also be embedded in one or all video outputs and then sent to the web, a recorder or overflow room.



The Best Solution for Working with LED Displays

Professional broadcast cross-point buttons with PGM/PST LED color indicators. Rugged T-Bar, DSK quick-edit knobs for key level and gain. Two dedicated PinP and Split buttons with knobs for center framing of Split and PinP placement. Change transition type using either mix or two preset wipe buttons with dedicated transition dissolve time knob. Front panel 3-inch LCD display with quick access menu navigation to adjust switcher parameters.



LED display technology has quickly become a versatile creative tool for event designers, whether serving as the background for a stage or a huge backdrop at a music festival. The challenge is that when using IMAG cameras with a bright LED background and an SDR switcher, it's difficult to light a presenter or performer when standing in front of the LED — they just appear as a shadowy outline. But now you can easily work with low light stages and bright backgrounds; just use an HDR camera with the V-600UHD and the subject appears properly lit.

Corporate events and festivals use pixel widths that exceed the HD format's 1920 pixels. With the V-600UHD's support for DCI Cinema 4K Resolution, you can switch content to display images up to 4096 pixels wide, fulfilling the creative vision of ambitious event designers. The V-600UHD offers incredibly high-quality "dot-by-dot" output scaling that allows you to directly connect to an LED display controller at the exact pixel dimensions, without the extra expense and increased latency of a dedicated scaling processor.

SPECIFICATIONS V-600UHD

VIDEO		AUDIO	
Video Processing	4:4:4 (Y/Pb/P), 10-bit	Audio Processing	24 bits/48 kHz
Supported Video Input Formats	Video: 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: 1600 x 1200/60 Hz (UXGA), 1920 x 1080/60 Hz (FHD), 1920 x 1200/60 Hz (WUXGA, Reduced blanking), 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) Still Image: Windows Bitmap File (.bmp), Maximum 4096 x 2160 pixels, 24-bit per pixel, uncompressed	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
Supported Video Output Formats	Video: 1080/59.94p, 1080/50p, 2160/59.94p (UHD 4K), 2160/50p (UHD 4K), 2160/59.94p (DCI 4K), 2160/50p (DCI 4K) PC: 1920 x 1080/60 Hz (FHD), 3840 x 2160/60 Hz (UHD 4K), 4096 x 2160/60 Hz (DCI 4K) MULTI-VIEW: 1080/60p * Conforms to VESA DMT, VESA CVT, CEA-861-F * Color Gamut: BT.709, BT.2020 * Dynamic Range: SDR, HDR PQ (HDR10)§HDR HLG	Audio Effects	Matrix mixer Delay (1 ms units, max 500 ms) Test tone output
Input Connectors	HDMI IN 1-4 connectors: HDMI type A (HDMI 2.0) SDI IN 5-6 connectors: BNC type (12G/3G-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: XLR-3-31 type (balanced)	Input Level	AUDIO IN L/R: +4 dBu (Maximum: +24 dBu)
Output Connectors	SDI OUTPUT 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: XLR-3-32 type (balanced) PHONES jack: Stereo miniature phone type	Input Impedance	AUDIO IN L/R: 15 k ohms
Video Effects	Transition: Mix, Cut, Wipe (9 patterns) Composition: PinP, Key (*1), PinP + Key (*1) DSK: PinP, Key (*1), PinP + Key (*1) Others: Output Fade, Output Freeze *1 Luminance Key, Chroma Key	Output Level	AUDIO OUT L/R: +4 dBu (Maximum: +24 dBu) PHONES: 92 mW + 92 mW (32 ohms)
		Output Impedance	AUDIO OUT L/R: 600 ohms PHONES: 10 ohms
		OTHERS	
		Other Connectors	USB MEMORY port: USB A type (for USB flash drive) RS-232 connector: DB-9 type (Male) (for Remote Control) CONTROL port: RJ45 type, 100BASE-TX (for Remote Control) TALLY/GPI port: DB-25 type (Female) (Tally: 16, GPI: 8) * XLR type: 1 GND, 2 HOT, 3 COLD
		Power Consumption	75 W
		Operating Temp.	+5 to +40 degrees Celsius +41 to +104 degrees Fahrenheit
		Dimensions	482 (W) x 300 (D) x 109 (H) mm 19 (W) x 11-13/16 (D) x 4-5/16 (H) inches * When rack mount angles are fitted.
		Weight	5.3 kg 11 lbs 11 oz * Including rack mount angles.
		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.