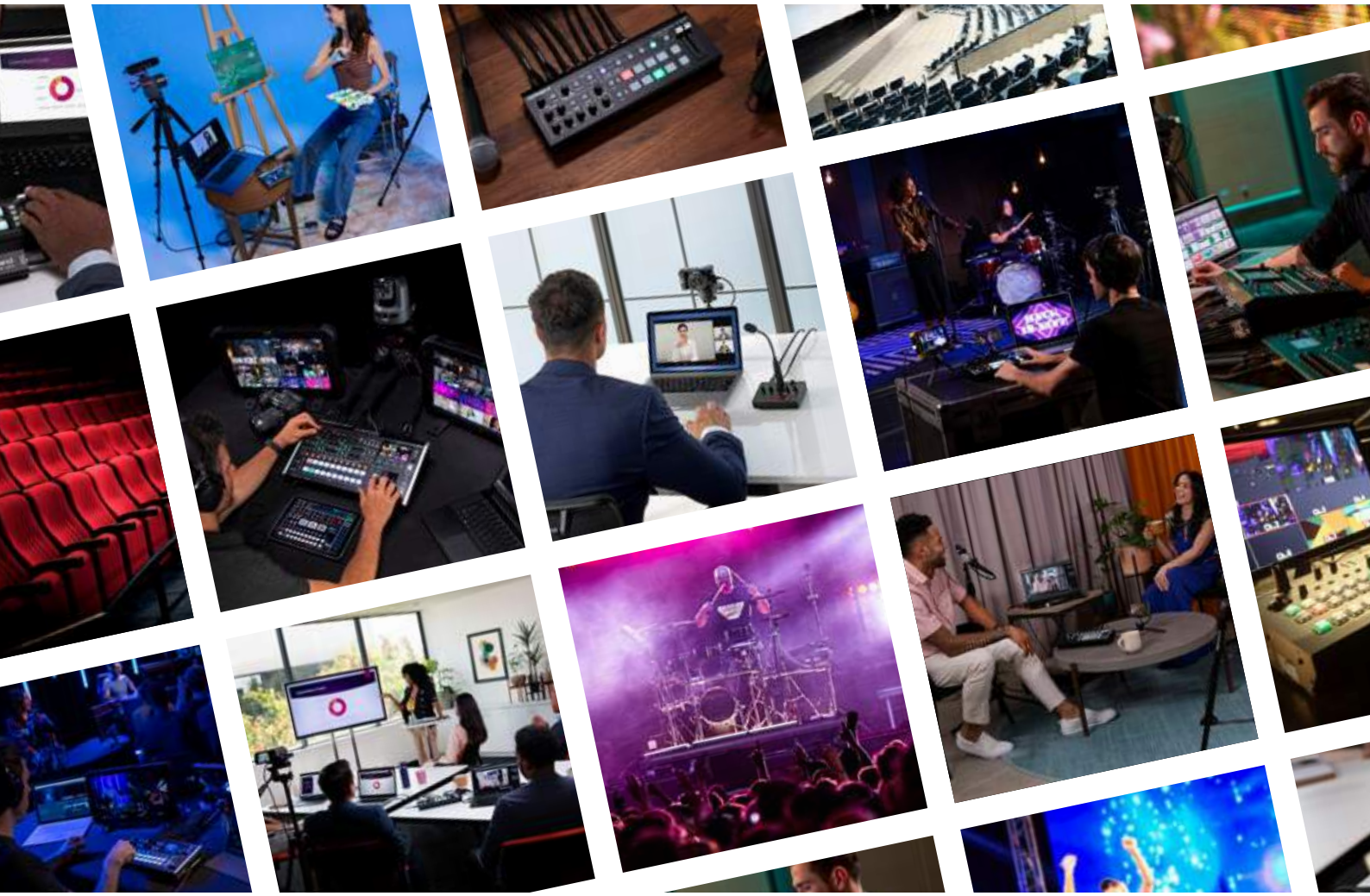
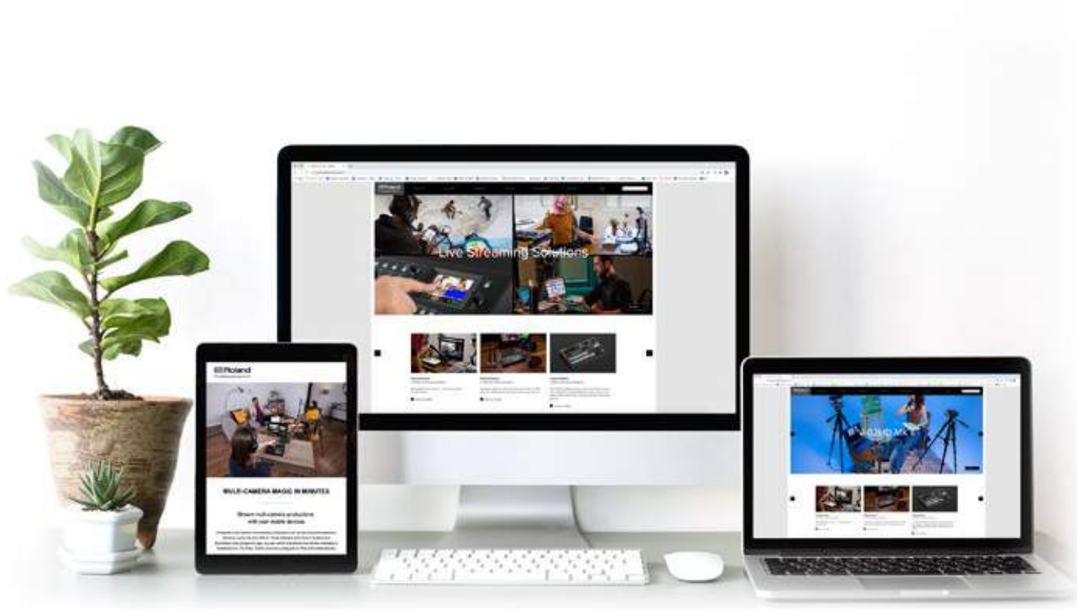
Roland
Professional A/V



PROFESSIONAL VIDEO EQUIPMENT

2022 CATALOGUE

Roland
Professional A/V



Welcome

Roland offers an array of professional video solutions for multiple applications, combining superb product quality with award-winning design. As the product of choice for video professionals on a global scale, the video range is feature-rich, innovative and built on the ground-breaking digital technology that has made Roland a market leader.

Roland first entered the world of professional video in 1998 with the V-5 Video Canvas, which delivered unprecedented quality and functionality at an accessible price. In 2018, we celebrated our twentieth anniversary in video, and today have a varied and ever-growing product portfolio.

As the world of professional video evolves, we are inspired to develop products with increasingly sophisticated features, that can deal with ever-changing hardware and software, handle those last-minute changes and still deliver a seamless result. That's why Roland's professional video products are designed through consultation with the market and – most importantly – the end user, so that every requirement is met. The result is a comprehensive portfolio of compact, integrated products that provide the flexibility and connectivity demanded by video professionals.

From portable, full-HD studio gear that can mix, edit, record and distribute audio/video, to full-HD matrix switchers that connect and switch multiple sources, Roland video equipment has the features you need to achieve professional results. In addition to these all-important features, we've enhanced the user experience by incorporating intuitive user interfaces, touchscreen displays, preview monitors and clear workflows into the product design.

As the Roland Corporation celebrates it's 50th year in 2022, we take pride in holding our place at the cutting edge of video technology. The audiovisual world is constantly evolving, more so in recent years, and we have responded with award winning multi-camera livestreaming and hybrid event solutions. The Roland philosophy to 'inspire enjoyment through creativity' has never been stronger.

Whether you're working in corporate, broadcast, live production, livestreaming, visual performance or house of worship, Roland professional video gear has all the features you are looking for – and more. And if your requirement is for video switchers, streaming switchers, matrix switchers, converters or equipment for recording and playback, our products are reliable, powerful and affordable.

For further information, visit the Roland Professional Video website for video tutorials, application guides, product brochures and case studies.

PROAV.ROLAND.COM

4K VIDEO SWITCHER

V-600UHD

VIDEO SWITCHERS

V-1200HD

V-800HD MK II

V-60HD

V-1HD

V-1HD+

V-1SDI

V-02HD MK II

V-160HD

V-8HD

AV MIXERS AND STREAMING DEVICES

VR-1HD

VR-4HD

VR-50HD MK II

AeroCaster

UVC-01

UVC-02

MATRIX SWITCHERS

XS-42H

XS-1HD

XS-62S

VIDEO PROCESSOR

VP-42H

VIDEO INSTANT REPLAY

P-20HD

CONVERTERS

VC-100UHD

VC-1 HS

VC-1 SH

VC-1 DL

VC-1 SC

ACCESSORIES

HT-TX01

HT-RX01

HDMI Cables

SDI Cables

CB-BV1

RRC-SP SERIES

RRC-V1200

V-600UHD

4K MULTI-FORMAT VIDEO SWITCHER VER 2.0

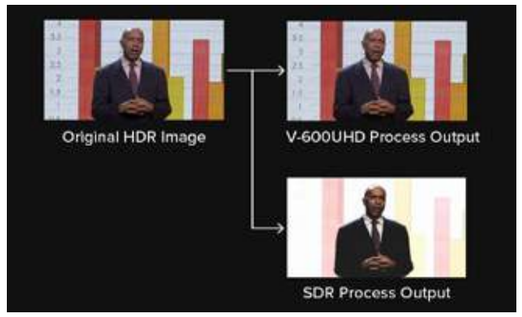
Upgrade your events to 4K HDR — one input at a time

- 4K without compromise
- High Dynamic Range [HDR]
- Full 50/60Hz 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
- Audio system integration
- The best solution for working with LED displays
- Automatic ROI
- PTZ Control

ULTRA SCALER

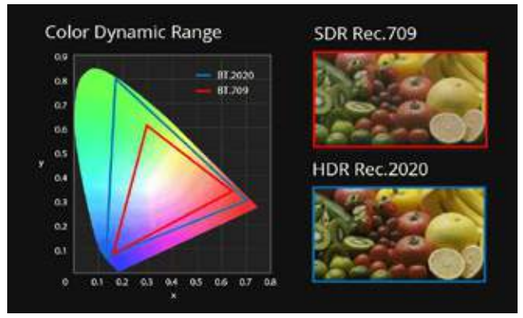
As clients and audiences start demanding 4K at events, your current HD sources and displays shouldn't become obsolete — and the V-600UHD lets you transition to 4K workflows as demand and budgets allow.
With Roland's Ultra Scaler technology, scaling is provided on every input, so you can use Full HD and 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?



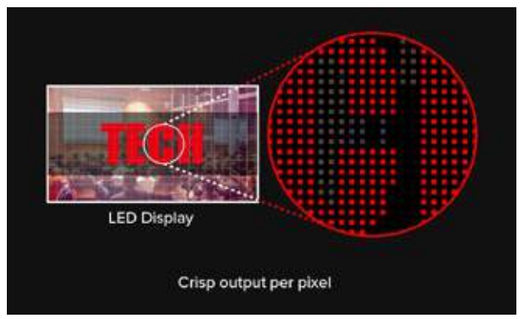
High Dynamic Range [HDR]

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.

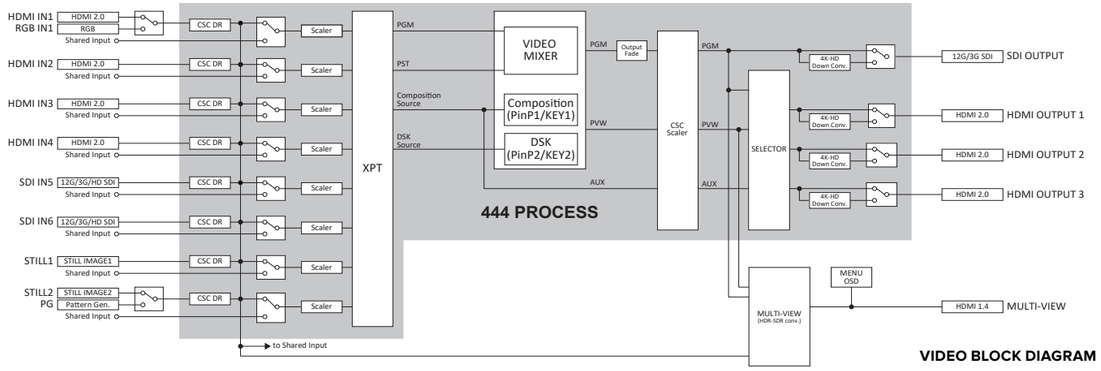


10-bit 4:4:4 pixel-accurate color

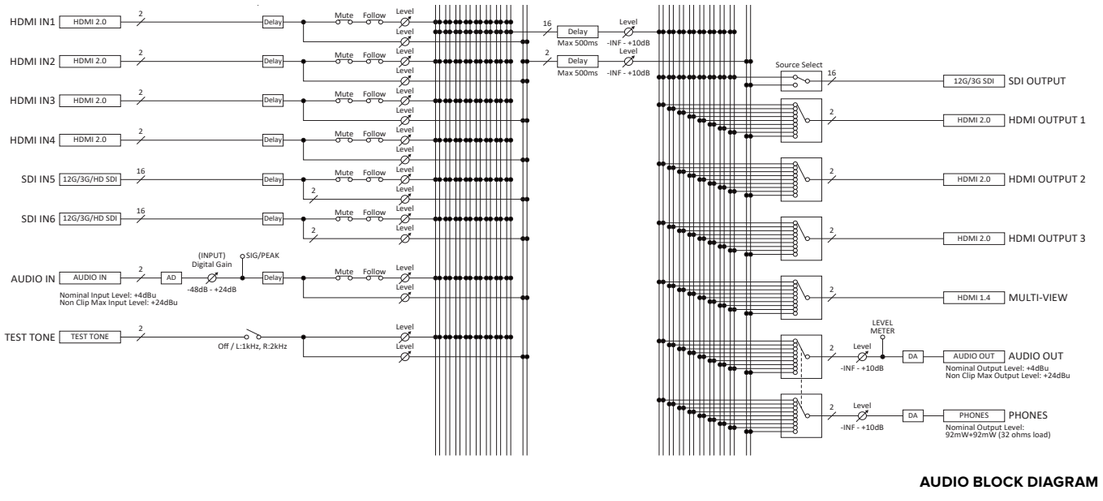
Internal 10-bit Color Depth processing reduces color banding and sharpens high-detail sources from computers. This makes it easier to read small fonts and other fine details, even when drastically scaled and magnified.

Support for DCI cinema 4K resolution

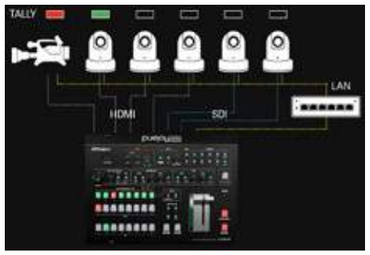
Not all 4K content has the same aspect ratio. Although 4K content is always 2160 pixels high, DCI or "Cinema 4K" is 4096 pixels wide, which is 256 pixels wider than UHD. The V-600UHD lets you switch and display content at the originally intended aspect ratio, without cropping or letterboxing.



VIDEO BLOCK DIAGRAM



AUDIO BLOCK DIAGRAM

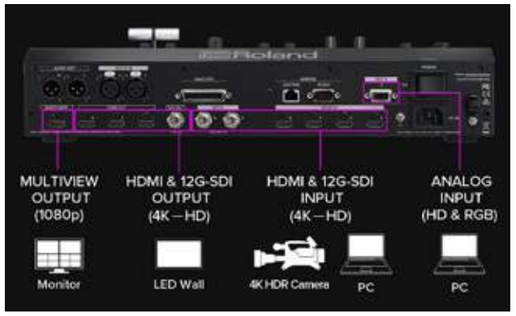


Multiple PTZ & remote camera control

When LAN based, PTZ cameras are called into action, take control using the V-600UHD. Seamlessly integrate JVC, Panasonic, Sony, PTZ Optics, Avonic, and VISCA compatible professional pan-tilt-zoom (PTZ) robotic cameras to streamline workflow without needing a dedicated controller.

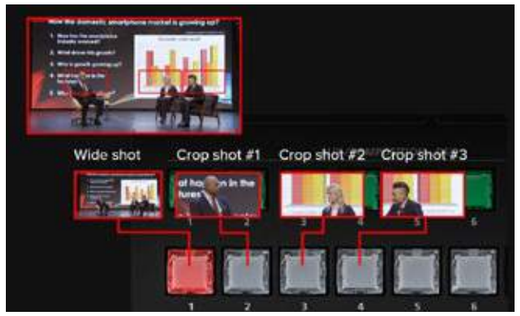
SYSTEM PROGRAM VER 2.0

With the free Ver.2.0 update, V-600UHD transforms into a powerful single-operator production switcher. “Automatic ROI” is a technology-assisted camera workflow blending robust facial tracking technology with Roland's multi-shot Region Of Interest. Ver.2.0 provides all in one control for a variety of LAN based PTZ cameras from multiple manufacturers.



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.

SPECIFICATIONS **V-600HD**

VIDEO	
Video Processing	4:4:4 (Y/Pb/Pr), 10-bit
Supported Video Input Formats	HDMI (Video, CEA-861-F): 720/50p, 720/59.94p, HDMI (Video, CEA-861-F): 1080/50i, 1080/59.94i, HDMI (Video, CEA-861-F): 1080/50p, 1080/59.94p, HDMI (Video, CEA-861-F): 2160/50p (UHD 4K), 2160/59.94p (UHD 4K), HDMI (Video, CEA-861-F): 2160/50p (DCI 4K), 2160/59.94p (DCI 4K), HDMI (PC, VESA DMT): 1024 x 768/60Hz (XGA), HDMI (PC, VESA CVT): 1280 x 768/60Hz (WXGA), HDMI (PC, VESA DMT): 1280 x 1024/60Hz (SXGA), HDMI (PC, VESA CVT): 1400 x 1050/60Hz (SXGA+), HDMI (PC, VESA DMT): 1600 x 1200/60 Hz (UXGA), HDMI (PC, CEA-861-F): 1920 x 1080/30 Hz (FHD), 1920 x 1080/60 Hz (FHD), HDMI (PC, VESA CVT): 1920 x 1200/60 Hz (WUXGA, Reduced blanking), HDMI (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), HDMI (PC, CEA-861-F): 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 1200/60Hz (UXGA), RGB (PC, CEA-861-F): 1920 x 1080/60Hz (FHD) SDI (Video, SMPTE ST274): 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p, SDI (Video, SMPTE ST2036): 2160/59.94p (UHD 4K), 2160/50p (UHD 4K), SDI (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, Still Image: PNG File (.png), Maximum 4096 x 2160 pixels (*1) *1 Alpha channel of PNG file is not loaded. Pattern Generator: 12 patterns, 4 motions
Supported Video Output Formats	HDMI (Video, CEA-861-F): 1080/50p, 1080/59.94p, HDMI (Video, CEA-861-F): 2160/50p (UHD 4K), 2160/59.94p (UHD 4K), HDMI (Video, CEA-861-F): 2160/50p (DCI 4K), 2160/59.94p (DCI 4K), HDMI (PC, CEA-861-F): 1920 x 1080/30Hz (FHD) (*2), 1920 x 1080/60Hz (FHD), HDMI (PC, CEA-861-F): 3840 x 2160/30Hz (UHD 4K), 3840 x 2160/60Hz (UHD 4K), HDMI (PC, CEA-861-F): 4096 x 2160/30Hz (DCI 4K), 4096 x 2160/60Hz (DCI 4K) *2 Available when Down Convert of HDMI OUT 1-3 is set to "Enabled". SDI (Video, SMPTE ST274):1080/59.94p, 1080/50p, SDI (Video, SMPTE ST2036):2160/59.94p (UHD 4K), 2160/50p (UHD 4K), SDI (Video, SMPTE ST2048):2160/59.94p (DCI 4K), 2160/50p (DCI 4K) * Conforms to VESA DMT, VESA CVT, CEA-861-F * Color Gamut: Rec.709, Rec.2020
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: XLR-3-31 type (balanced)
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
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, Output Capture *1 Luminance Key, Chroma Key

AUDIO	
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
Input Level	AUDIO IN L/R: +4 dBu (Maximum: +24 dBu)
Input Impedance	AUDIO IN L/R: 15 k ohms
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) LAN 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
Other Functions	Memory (64 settings), EDID Emulator (HDMI IN), Panel Lock function, Remote Camera Control
Power Consumption	80 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.

V-1200HD

MULTI-FORMAT VIDEO SWITCHER

Hybrid engine 2 M/E switcher and processor for broadcast and live events

- 10 SDI and 4 HDMI inputs, and 6 SDI and 2 HDMI outputs
- 4:2:2/4:4:4 hybrid engine
- The 4:2:2 process functions as a 2 M/E switcher that is able to switch 2 M/E, 1.5 M/E, and 1 M/E
- The 4:4:4 process functions as a multi-format processor that supports live presentation, split-screen, and matrix output
- Up to 92 inputs/outputs 16-channel audio mixer
- Control of up to 7 remote cameras
- Optional control surface V-1200HDR with a T-fader and dual displays
- All switcher functions can be operated from a computer using remote control software, V-1200HD RCS (for Windows and Mac OSX, free download)
- Input/output expandable via expansion slots

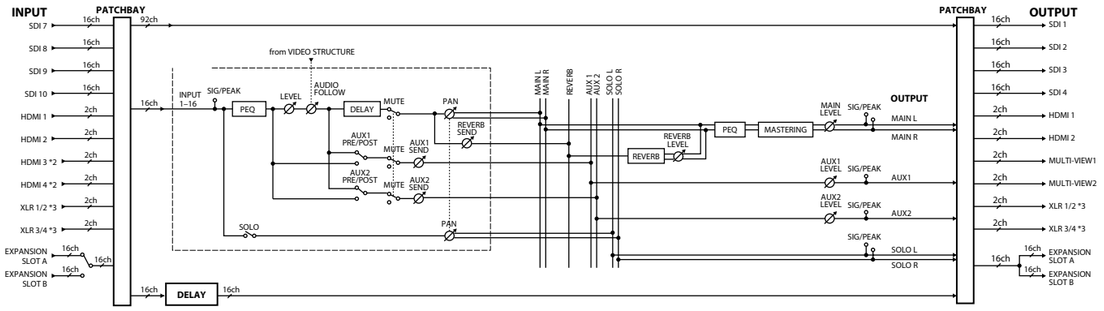
A comprehensive and flexible multi-format video switcher giving you complete control of video sources, key layers and mixing engine configurations. The V-1200HD introduces a unique flexible hybrid engine with 4:2:2 broadcast switcher and 4:4:4 live event switcher. In addition to powerful video capabilities, the V-1200HD also has a built-in 16-channel audio mixer.

Broadcast studios

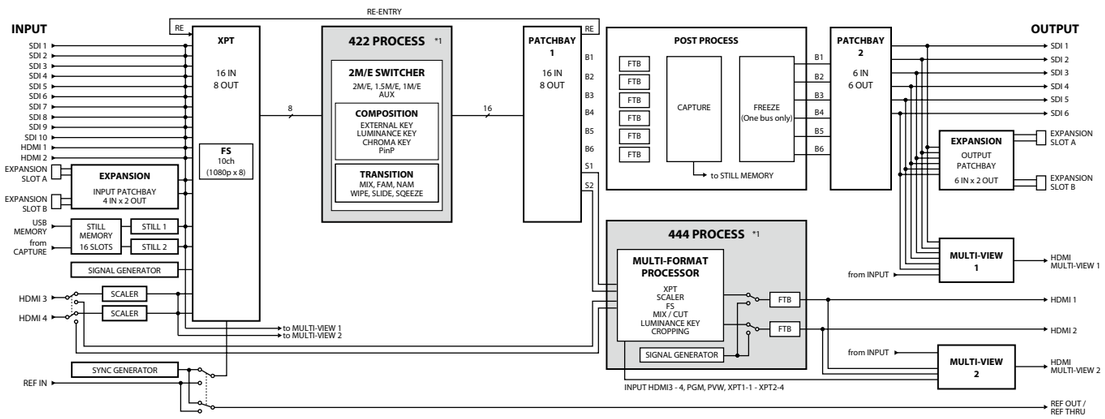
Live-performance production

Events and conferences

Classrooms and event halls



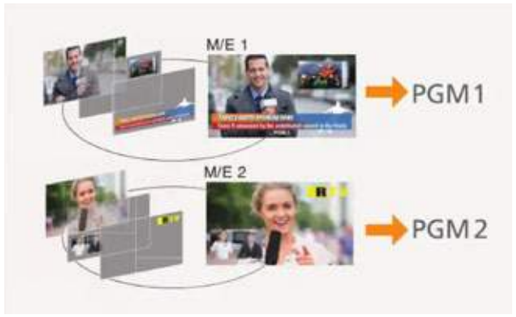
AUDIO BLOCK DIAGRAM



VIDEO BLOCK DIAGRAM

4:4:4 multi-format processor

There are two scalers between the 4:2:2 engine and the 4:4:4 engine, and two scalers between HDMI IN 3 and 4 and the 4:4:4 engine. These enable switching, self key composition, and matrix output. Signals input from HDMI IN 3 and 4 can be sent to both 4:2:2 process and 4:4:4 process, which means if you choose the latter, you will get clearer computer images. With the scalers you can also display a single picture across two screens.



2 M/E mode

This provides a standard 2 M/E operation style. Two keyers can be used with each M/E. Keyer priority can also be assigned and changed. Not only is re-entry of the video source from M/E 1 to M/E 2 possible, but so is reverse re-entry from M/E 2 to M/E 1. This means you can switch the two M/Es and output them from a single PGM output. The two M/Es can also be output independently allowing for applications such as simultaneous transmission of captions in two different languages.

SPECIFICATIONS **V-1200HD**

VIDEO	
Processing	4:4:4 (Y/Pb/Pr/RGB), 10-bit/4:2:2 (Y/Pb/Pr), 10-bit
Input Connectors	3G/HD/SD-SDI: BNC type x 10 * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M, 259M-C HDMI: type A x 2 (HDMI INPUT 1-2) * HDCP Not Supported HDMI: type A x 2 (HDMI INPUT 3-4) * HDCP Supported, Multi-format Supported
Output Connectors	3G/HD/SD-SDI: BNC type x 6 * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M, 259M-C HDMI: type A x 2 (HDMI OUTPUT 1–2) * HDCP Supported HDMI: type A x 2 (HDMI OUTPUT MULTI-VIEW 1 * HDCP Not required, 1080/60p) (HDMI OUTPUT MULTI-VIEW 2 * HDCP Required, 1080/60p)
Formats	SDI: 480/59.94i *1, 576/50i *1, 720/59.94p *1, 720/50p *1, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p * Conforms to SMPTE 274M, SMPTE 296M, ITU-R BT.601-5 HDMI: 480/59.94i, 576/50i, 480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p, 1024 x 768/60 *2, 1280 x 720/60 *2, 1280 x 800/60 *2, 1366 x 768/60 *2, 1280 x 1024/60 *2, 1400 x 1050/60 *2, 1600 x 1200/60, 1920 x 1080/60, 1920 x 1200/60 RB * Conforms to CEA-861-E, VESA DMT Version 1.0 Revision 11 * The output format of HDMI 1-2 and SDI is always the same * Frame rate is 59.94 (NTSC) or 50 (PAL) * MULTI-VIEW 1-2 output is 1080/60p always *1: Features to be added by planned firmware update *2: Output refresh rate is 75 Hz when frame rate is set to 50 Hz
Effects (4:2:2 Processing)	M/E: 1M/E, 1.5M/E, 2M/E (9types) Transition: Mix, NAM *3, FAM *3, Cut, Wipe Composition (Keyer): 4 (PinP, Luminance Key, Chroma Key, External Key supported) AUX: 2 Others: Output Fade, Output Freeze, Output Capture, Composition Edit, SDI Output Patchbay * These effects depend on M/E type *3: PGM/PST only
Effects (4:4:4 Processing)	M/E: 1M/E, Matrix, Scaler Input: 4 (4:2:2 Processing outputs x 2, HDMI INPUT 3, HDMI INPUT 4) Transition: Mix, Cut Composition (Keyer): 1 (PinP, Luminance Key) Others: HDCP Supported, Output Fade, Output Cropping, Signal Generator * These effects depend on M/E type
Still Image	Input: 2 Internal Memory: 16 Maximum Size: 1920 x 1080 pixels Format: Windows Bitmap File (.bmp) 24 bit per pixel, uncompressed Portable Network Graphic File (.png) * Alpha Channel Supported
Multi-viewer	MULTI-VIEW 1 (4:2:2 Processing): 16/10 screens, Label, Tally * HDCP Not Supported MULTI-VIEW 2 (4:4:4 Processing): 4 screens, Label, Tally, OSD Setup Menu * HDCP Required

AUDIO	
Processing	Sampling Rate: 24 bits/48 kHz
Input Connectors	3G/HD/SD-SDI: BNC type x 4 (Ch7-10), HDMI x 4, AUDIO IN (XLR) L (1/2), R (3/4) * Analog Audio or AES/EBU
Output Connectors	3G/HD/SD-SDI: BNC type x 4 (Ch1-4), HDMI x 4, AUDIO OUT (XLR) L (1/2), R (3/4) * Analog Audio or AES/EBU
Input Level and impedance	AUDIO IN: +4 dBu (Maximum: +22 dBu, 15 k ohms)
Output Level and impedance	AUDIO OUT: +4 dBu (Maximum: +22 dBu, 600 ohms)
Formats	SDI: Linear PCM, 24 bits, 48 kHz, 16ch * Conforms to SMPTE 299M, SMPTE 272M-C HDMI: Linear PCM, 24 bits, 48 kHz, 2ch AES/EBU: Linear PCM, 24 bits, 48 kHz, 4ch
Effects	Patchbay: 92 inputs x 92 outputs Delay: 16ch Mixer: 16ch (Channel Effects: 3-Band EQ, Delay/ Master Effects: Mastering, 3-Band EQ, Reverb)

OTHERS	
Expansion Slot	Slot: 2 * The maximum number of channels for the two slots in total is 2 inputs/2 outputs for video and 16 inputs/16 outputs for audio * Features to be added by planned firmware update
Reference	Input: BNC type x 1 * Black Burst (Sync to frames), Bi-Level, Tri-Level Output/Through: BNC type x 1 * Black Burst (Sync to frames)
External Connectors	RS-232: D-Sub 9-pin type (Male) x 1 * For Remote Control RS-422: D-Sub 9-pin type (Female) x 1 * For VISCA Control TALLY/GPIO: D-sub 25-pin type (Female) x 1 (Input: 8, Output/Tally: 16) LAN: RJ45 100Base-TX (Connect to V-1200HDR or Computer) USB: A type x 2 (USB Memory/Use for future expansion)
Preset Memory	8 * Last Memory Function
User Function	32 * 16 buttons x 2 banks
Remote Camera Control	Connector: RS-422 D-Sub 9-pin type (Female) x 1 Protocol: VISCA
Remote Controller	V-1200HDR Control Surface * Option V-1200HD RCS * Windows 7 SP1 or higher is supported.
Power Supply	AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz) DC 24 V (XLR-4-32 type) * Redundant Power Supply
Power Consumption	90 W/0.8 A (117V), 90 W/0.5 A (220V, 230V, 240V), 90 W/3.75 A (DC 24V) * When expansion slot is void
Accessories	482 (W) x 357 (D) x 133 (H) mm 19 (W) x 14-1/16 (D) x 5-1/4 (H) inches * EIA-3U rack mount size
Dimensions	9.0 kg, 19 lbs 14 oz
Weight	Power Cord, Rubber Feet × 4, Owner's Manual

* 0 dBu=0.775 Vrms * This product is a Class A digital device under FCC part 15. * In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.

EXPANSION CARDS

REAC expansion interface XI-REAC

REAC audio interface
Connect 16 input channels and 16 output

SDI expansion interface XI-SDI

Equipped with two input and two output SDI connectors
Two built-in scalers
Connect to 4:2:2 engine

DVI expansion interface XI-DVI

Equipped with two DVI-I connectors for switchable bidirectional input/output, with support for analog RGB, composite, DVI-D, and HDMI signals
Two built-in scalers
Connect to 4:2:2 engine

DANTE expansion interface XI-DANTE

DANTE audio interface
Connect 16 input channels and 16 output channels to the internal audio processor

V-1200HDR

DEDICATED CONTROL SURFACE FOR THE V-1200HD

A dedicated V-1200HDR controller provides fast and accurate operation. Dual touch monitors provide quick and easy operation. All the functionality required for operation of a high-end switcher, in an efficient compact size.

SPECIFICATIONS **V-1200HDR**

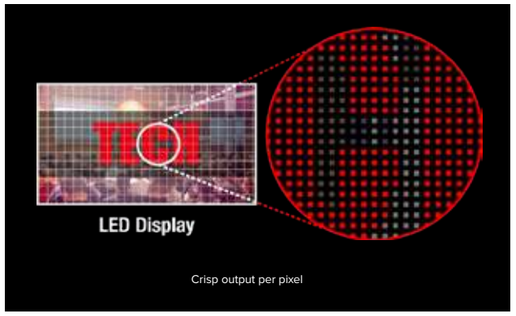
Display	7 inch 800 x 480 Graphic color LCD (touch screen) x 2
Video Input	HDMI (type A) x 2 * 1920 x 1080/60p, HDCP Supported
Video output	HDMI (type A) x 1 * Use for future expansion
Others	USB: type A x 1 * USB Memory, USB: type B x 1 * Use for future expansion LAN: RJ45 100Base-TX (Connect to V-1200HD) PHONES jack: Stereo 1/4-inch phone type x 1 (80 mW + 80 mW, 32 ohms) Internal speakers (stereo)
Power Supply	AC Adaptor, DC 9 V to 16 V (XLR-4-32 type) * Can not be used at the same time.
Power Consumption	36 W
Dimensions	520 (W) x 237 (D) x 111 (H) mm, 20-1/2 (W) x 9-3/8 (D) x 4-3/8 (H) inches * Protruding parts not included.

V-800HD MK II

MULTI-FORMAT VIDEO SWITCHER

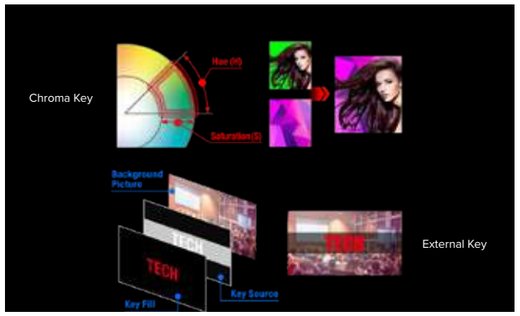
Updated version of the industry-standard multi-format video switcher

- Up to 16 inputs, 8 cross points (4 SDI/composite + 4 DVI-I/HDMI)
- 6 simultaneous outputs (2 SDI + 2 DVI + RGB + composite)
- Dedicated multi-view monitor output
- 10-bit 4:4:4 high quality processing
- Frame sync & scaler on all inputs and outputs
- 3G, HD, SD 3-mode SDI (3G-SDI Level A/B compatible)
- HDCP compatible
- Two active still images from sixteen still image stores
- AUX bus switch



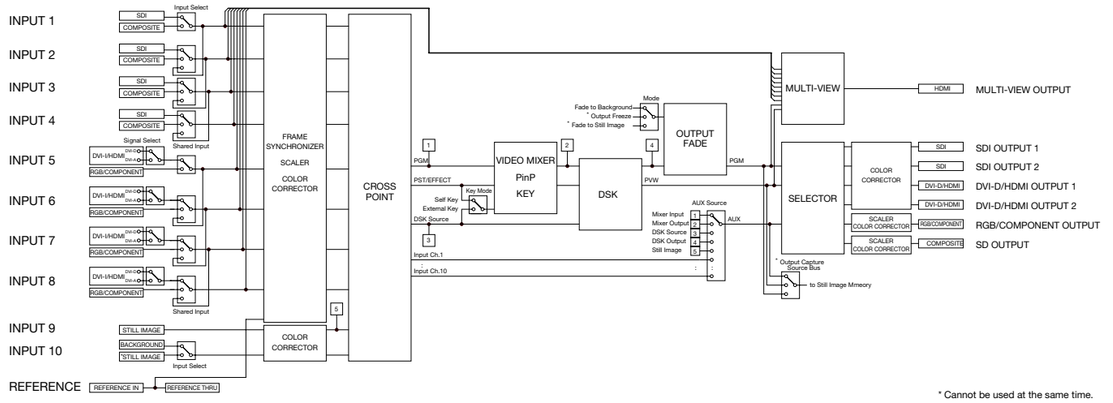
4:4:4/10-bit internal processing

The V-800HD MK II uses 4:4:4/10-bit internal signal processing. This lets you achieve compositing and output with no reduction in high-detail RGB signals driven from a computer. The result is a sharp, unblurred display of video and text, even on large screens and LED displays. The V-800HD MK II delivers high image quality for all uses, from live broadcasts to event displays.



Newly developed key-compositing engine

Along with the upgraded internal signal processing, a newly developed keyer is included. Chroma Key lets you adjust phase range, amount of chroma, and other parameters based on HSV color space that is closely related to human chromatic sensation. This allows you to achieve high quality and tight chroma key compositing even when using 1080p video sources. What's more, the V-800HD MK II can accept an External Key.



* Cannot be used at the same time.

SPECIFICATIONS **V-800HD MK II**

VIDEO PROCESSING		
Processing		4 : 4 : 4 (Y/Pb/Pr, RGB), 10-bit
Supported Formats	Video	480/59.94i, 576/50i, 480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p *SDI and Composite input can input the same frame rate as a setup menu setting.
	PC	640×480/60Hz (*1), 800×600/60Hz (*1) (*3), 1024×768/60Hz (*1), 1280×768/60Hz (*1), 1280×1024/60Hz (*1), 1366×768/60Hz (*1), 1400×1050/60Hz (*1), 1600×1200/60Hz, 1920x1080/60Hz, 1920×1200/60Hz (*2), *Conforms to VESA DMT Version 1.0 Revision 10 *1 Output refresh rate is 75 Hz when frame rate is set to 50 Hz *2 Reduced blanking *3 When Reference is set to External, the resolution of 800 x 600 and refresh rate of 60 Hz are no longer compliant with the VESA standard. This means that display on some devices may not be possible in this situation
	Still	Windows Bitmap File (.bmp) *Maximum 1900 x 1200 pixels, 24-bit per pixel, uncompressed

INPUT/OUTPUT LEVEL AND IMPEDANCE		
Composite		1.0Vp-p 75Ω
Analog HD/RGB		0.7Vp-p 75Ω (H, V:5 VTTL)

INPUT CONNECTORS		
3G/HD/SD-SDI		BNC type×4 *Conforms to SMPTE 424M (Level-A, Level-B), 292M, 259M-C
DVI-I/HDMI		DVI-I type×4 *Select DVI-A or DVI-D/HDMI using switch per channel
Analog Video	HD	Component (Mini D-sub 15-pin type) x 4 *Combined use with Analog RGB
	SD	Composite (BNC type) x 4 *Select Composite or SDI using menu per
Analog RGB		Mini D-sub 15-pin type x 4 *Combined use with Analog Video (HD) *Select DVI-D/HDMI or Analog RGB using menu per channel

OUTPUT CONNECTORS		
3G/HD/SD-SDI		BNC type x 2 *Conforms to SMPTE 424M (Level-A, Level-B), 292M, 259M-C
DVI-I/HDMI		DVI-I type x 2, HDMI x 1 (for multi-view monitor)
Analog Video	HD	Component (Mini D-sub 15-pin type) x 1 *Combined use with Analog RGB
	SD	Composite (BNC type) x 1 *Combined use with Analog Video (HD) *Does not synchronize with Reference Input.
Analog RGB		Mini d-sub 15-pin type x 1 *Combined use with Analog Video (HD)

OTHER CONNECTORS	
Tally	Mini D-sub 15-pin type x 2 *Input (max): 12 V, 200 mA Open collector Type
Reference	BNC type (IN, THRU) *Black Burst (Sync to frames), Bi-Level, Tri-Level
MIDI	5 pin DIN type (IN, OUT/THRU)
RS-232	D-sub 9 pin type x 1
USB port (host)	A type x 1 (for USB memory)

EFFECTS	
Transition	Mix, Cut, Wipe (9 patterns)
Composition	PinP, DSK, Chrominance Key, Luminance Key, External Key
Others	Output Fade, Output Freeze

OTHERS	
Power Supply	AC 115 V, AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)
Power Consumption	75W
Dimensions	482 (W) x 275 (D) x 116 (H) mm 19 (W) x 10-7/8 (D) x 4-5/8 (H) inches * When rack mount angles are fitted
Weight	5.5kg
Operating Temp.	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Accessories	Owner's Manual, Power cord, Rack-mount angle x 2

V-60HD

HD VIDEO SWITCHER VER 3.0

Plug-and-play production switcher with audio for live events and streaming

- 4 SDI inputs (with de-interlacer)
- 2 HDMI inputs (scaled)
- 1 RGB shared with HDMI input 6 (scaled)
- 2 SDI outputs – assignable to PGM, PVW, AUX
- 2 HDMI outputs – assignable to PGM, PVW, AUX
- 1 multiview output – program, preview, plus 8 video sources with audio meters
- LAN – remote control and Smart Tally
- RS-232 – remote control
- USB Port – still Image upload, saving program files

Roland's unique and proprietary wireless tally system called Smart Tally uses a wireless LAN router connected to the V-60HD to send tally information to iOS or Android devices on the network.

Live production

Corporate event production is the fastest growing live event space with companies hosting meetings, trainings, new product announcements, both in person and streaming. The V-60HD is portable and small enough to be used in multiple locations in an office or outside. The four SDI inputs and two HDMI inputs are perfect for switching cameras and computers at the same time for dynamic presentations. Not all cameras support full 1080p so the de-interlacer on the SDI inputs allows you to mix and match 1080i and 1080p SDI video sources without external converters. Audio is easier to mix than ever before using the V-60HD's auto mixing function.

Education

Video communication helps improve the effectiveness of education when used for streaming lectures, assemblies, distance learning, sports, live performances or theater productions. Multi destination outputs include Program, Preview and AUX buses and make it easy to send the main output to the primary screen or live stream and presenter notes to a presenter's monitor. Audio auto-mixing automatically adjusts audio level based on weighting ensuring even levels for the room mix, presenter to send to recording, live stream or in-room speakers. Educators can use the multi-channel audio embed function to record 8 discreet audio channels to an SDI video recorder to fix audio issues in later editing or separate multi-language audio sources post event.

Church/theater

The V-60HD is ideal for multiscreen environments usually found in churches, conference centers, hotels, and trade show facilities where different content needs to be switched to independent screens. The dedicated Aux buttons make switching to a second destination as easy as switching to the main screen. The wireless tally system for iOS and Android devices makes for smoother events by providing tally that helps talent and camera operators identify which camera is currently selected for program and which camera will be switched to next. Auto-Scan (Ver.2.0), integrated audio inputs and advanced effects including Auto-Mixing and powerful dynamics make the V-60HD an ideal streaming mixer solution to remix stems from an audio console and adjust for broadcast.

SYSTEM PROGRAM VER 3.0

The Ver.3.0 update enhances workflows and expands control. The V-60HD can capture stills directly from PGM. Additional frame-rate support on SDI inputs includes 60p, 30p, 25p, 24p and 23.98p. Take control of even more PTZ cameras over IP using universal VISCA protocols. Analog Audio input 1-6 can is assignable to AUX output.

Professional user interface

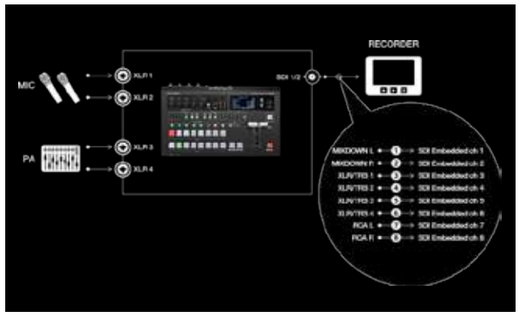
Professional broadcast cross point buttons with PGM/PST LED color indicators. Rugged T-Bar, DSK quick edit knobs for key level and gain. Two dedicated PinP and Split buttons with knobs for center framing of Split and PinP placement. Change transition type using either mix or two preset wipe buttons with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

Multi-view output

V-60HD can preview all six video inputs and two still images, PGM and PVW to a single preview monitor via the Multi-view output. In addition, you can display the menu on the Multi-view display, so you make setting changes without changing your focus from the preview display. From Ver.2.0, exchanging PGM and PVW window and editing label name of IN1 to 6 are possible.

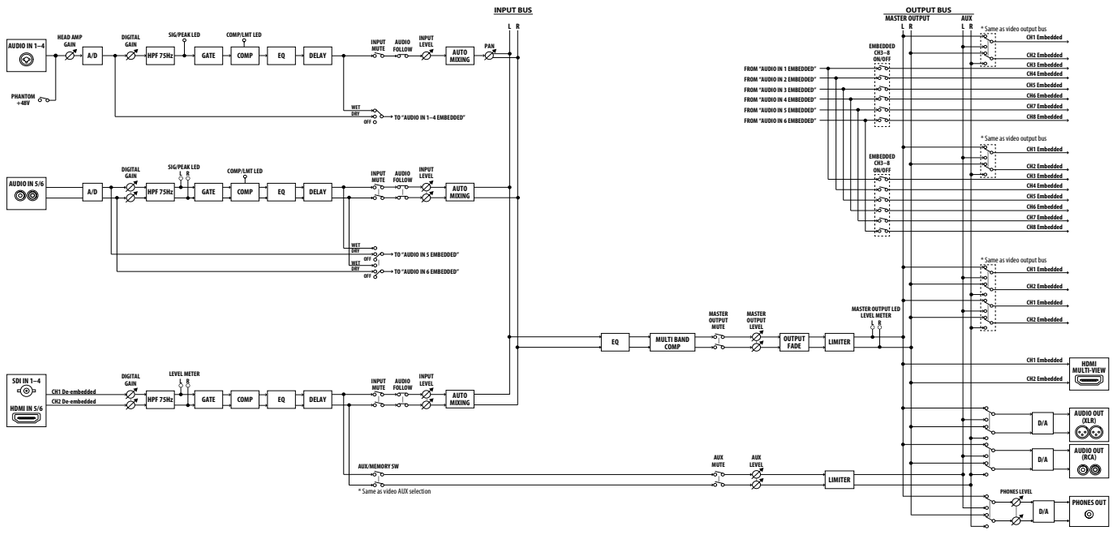
AUX bus

Live streams, HD recording, and confidence monitors often have different visual needs from the main program output. Switch any of the connected input sources to any of the four SDI or HDMI outputs without affecting the main PGM destination. AUX Linked PGM enables AUX output to synchronize with the Program (PGM) output.

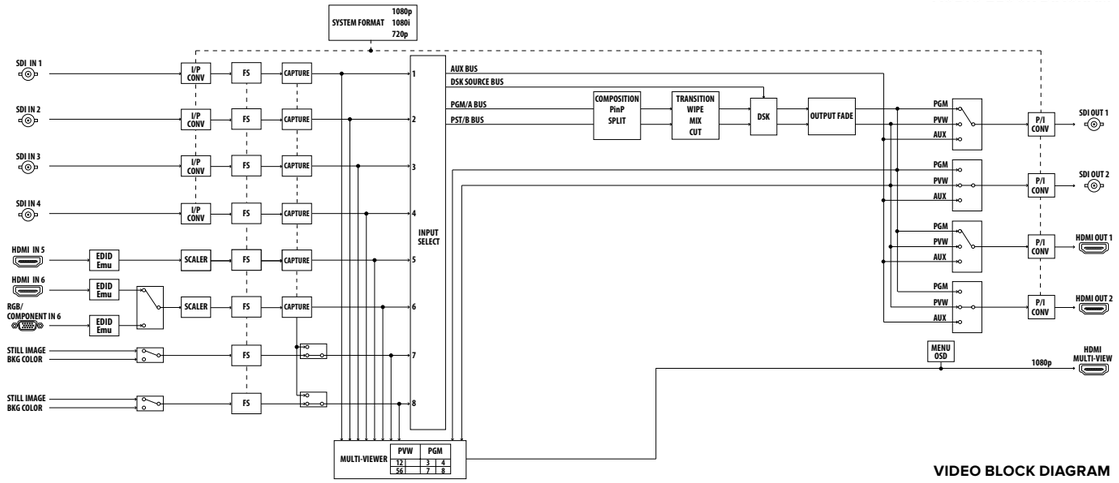


Discreet multi-channel audio embedding

Assign up to eight analog audio inputs a separate audio embed channel on SDI 1 and 2 outputs to ensure a separate mix pre-effect (dry) or post effect (wet) for correcting audio problems post live event. This feature is additionally useful for multi-language events to record the voice-over or language translation on its own audio channel to a separate master.



AUDIO BLOCK DIAGRAM



VIDEO BLOCK DIAGRAM

SPECIFICATIONS **V-60HD**

VIDEO	
Processing	4:2:2 (Y/Pb/Pr), 8-bit
Input Connectors	SDI IN 1--4: BNC type x 4 * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M
	HDMI IN 5--6: HDMI type A x 2 * HDCP Supported * Multi-format Supported
	RGB/COMPONENT IN 6: HD DB-15 type x 1 * INPUT 6: HDMI or RGB/COMPONENT selected * Multi-format Supported
Output Connectors	SDI OUT 1--2: BNC type x 2 * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M
	HDMI OUT 1--2: HDMI type A x 2 HDMI MULTI-VIEW: HDMI type A x 1 * HDCP Supported
Input formats	SDI IN 1--4: Conforms to SMPTE 296M, SMPTE 274M 720/59.94p, 720/60p *1, *3, 720/50p *1, *4, 1080/59.94i, 1080/60i, 1080/59.94p, 1080/60p, 1080/29.97p, 1080/30p *2, *3, 1080/50i, 1080/50p, 1080/25p *2, *4, 1080/23.98p, 1080/24p *2 * The input interlaced video signal is converted to progressive video signal by internal processing. * The video signal frame rate can be selected at the SYSTEM menu (59.94 or 50).
	HDMI IN 5: HDMI/RGB/COMPONENT IN 6: 480/59.94i, 576/50i, 480/59.94p, 576/50p, 720/59.94p, 720/60p, 1080/59.94i, 1080/60i, 1080/59.94p, 1080/50p, VGA (640 x 480/60 Hz), SVGA (800 x 600/60 Hz), XGA (1024 x 768/60 Hz), WXGA (1280×800/60Hz), SXGA (1280×1024/60Hz) FWXGA (1366 x 768/60 Hz), SXGA+ (1400 x 1050/60 Hz), UXGA (1600 x 1200/60 Hz), WUXGA (1920 x 1200/60 Hz) * The refresh rate is the maximum value of each resolution. * Conforms to CEA-861-E,VESA DMT Version 1.0 Revision 11. * 1920 x 1200/60 Hz: Reduced blanking * The input interlaced video signal is converted to progressive video signal by internal processing. * The video signal frame rate can be selected at the SYSTEM menu (59.94 or 50)
Still Image	Bitmap File (.bmp) Maximum 1920 x 1080 pixels, 24-bit color, uncompressed. PNG File (.png) Maximum 1920 x 1080 pixels, 24-bit color JPG File (.jpg) Maximum 1920 x 1080 pixels, 24-bit color * It can be stored up to 2 files in the internal memory. * It can be exported in the USB memory. * PNG alpha channel not supported.
Output formats	SDI OUT 1--2: Conforms to SMPTE 296M, 274M HDMI OUT 1--2: 720/59.94p, 720/50p (SYSTEM FORMAT = 720p) 1080/59.94i, 1080/50i (SYSTEM FORMAT = 1080i) 1080/59.94p, 1080/50p (SYSTEM FORMAT = 1080p) * The video signal frame rate can be selected at the SYSYTEM menu (59.94 or 50)
HDMI MULTI-VIEW	1080/59.94p, 1080/50p
Video Effects	Transition: CUT, MIX (DISSOLVE/FAM/NAM), WIPE (30 types) Composition: PinP (SQUARE, CIRCLE, HEART, DIAMOND), SPLIT (4 types), DSK (Luminance Key, Chroma Key) Others: Flip horizontal, Output fade, Still Image Capture, Still Image Playback, Test pattern output

AUDIO	
Audio Processing	Sampling rate: 24 bits/48 kHz
Audio formats	SDI IN: Linear PCM, 24 bits/48 kHz, 2ch (Conforms to SMPTE 299M) SDI OUT: Linear PCM, 24 bits/48 kHz, 8ch (Conforms to SMPTE 299M) HDMI IN/OUT: Linear PCM, 24 bits/48 kHz, 2ch
Input Connectors	Digital: SDI IN 1--4: BNC tyep x 4, HDMI IN 5--6 (HDMI Type A 19 pins) x 2
	Analog: AUDIO IN 1--4: Combo type (XLR, 1/4-inch TRS phone), phantom power AUDIO IN 5--6: RCA phono type
Phantom Power	DC 48 V (unloaded maximum), 10 mA (maximum load) * Current value per channel
Output Connectors	Digital: SDI OUT 1--2: BNC type x 2 HDMI OUT 1--2: HDMI type A x 2, HDMI MULTI-VIEW: HDMI type A x 1
	Analog: AUDIO OUT: XLR type AUDIO OUT: RCA phono type PHONES: Stereo 1/4-inch phone type
Input Level	AUDIO IN 1--4: -60--+4 dBu (Maximum: +22 dBu) AUDIO IN 5--6: -10 dBu (Maximum: +8 dBu)
Input Impedance	AUDIO IN 1--4: 10 k ohms (HEAD AMP GAIN 0--23 dB), 5 k ohms (HEAD AMP GAIN 24--+64 dBu) AUDIO IN 5--6: 15 k ohms
Output Level	AUDIO OUT (XLR): +4 dBu (Maximum: +22 dBu) AUDIO OUT (RCA): -10 dBu (Maximum: +8 dBu) PHONES: 92 mW + 92 mW (32 ohms)
Output Impedance	AUDIO OUT (XLR): 600 ohms AUDIO OUT (RCA): 1 k ohm PHONES: 10 ohms
Audio Effects	Auto Mixing, EQ, Delay, Compressor, HPF, Gate, Multi-Band Compressor, Limiter

OTHERS	
Other Connectors	USB: USB A type (for USB memory)
	TALLY/GPI: DB-25 type (Female)(Tally: 12, GPI: 8) RS-232: DB-9 type (Male) *for Remote Control LAN: RJ45 100BASE-TX *for Remote Control
Other Functions	MEMORY (8 types), Panel lock function, EDID Emulator, EDID Emulator
Display	Graphic LCD: 128 x 64 dots
Power Supply	AC Adaptor
Current Draw	3.1 A
Power Consumption	37.0 W
Operating Temp.	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	356 (W) x 221 (D) x 96 (H) mm, 14-1/16 (W) x 8-3/4 (D) x 3-13/16 (H) inches
Weight (excl. AC adapt.)	3.0 kg, 6 lbs 10 oz
Accessories	Owner's Manual, AC adaptor, Power cord

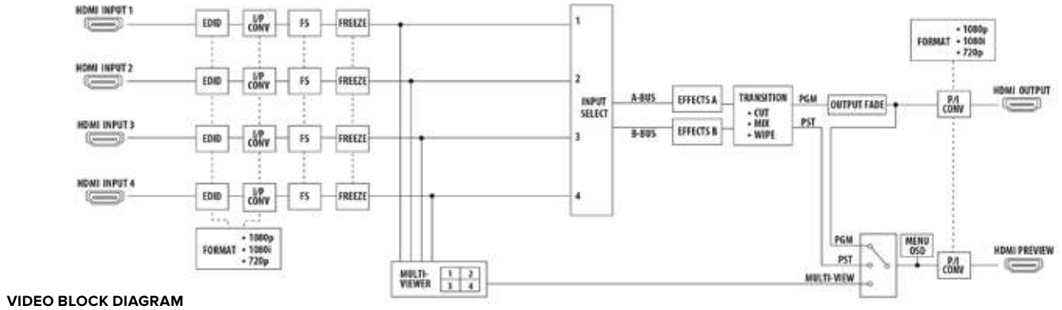
(0dBu=0,775Vrms)

V-1HD

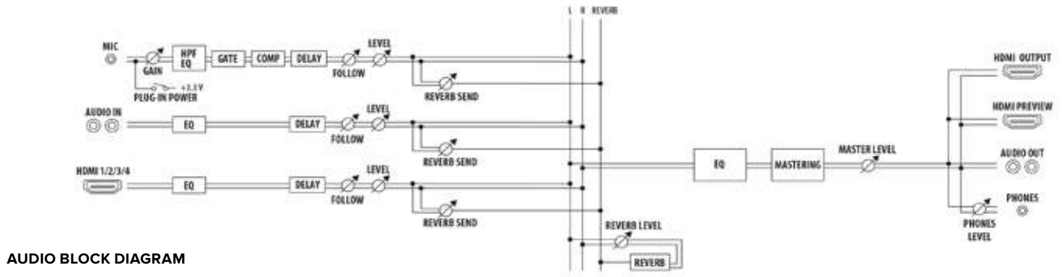
HD VIDEO SWITCHER VER 2.0

Compact and portable entry model of full HD supported video switcher

- 4 HDMI inputs
- Easy-to-use interface
- Easy to operate with hardware controls
- Picture-in-picture and split functions
- Remote control via USB or MIDI connection
- Supports up to Full HD 1080p
- Full 12-channel audio mixer included
- Two HDMI outputs
- Two EFFECTS knobs deliver genuine visual performance
- Software control using V-1HD RCS application for Mac, PC, and iPad



VIDEO BLOCK DIAGRAM



AUDIO BLOCK DIAGRAM

SYSTEM PROGRAM VER 2.0

System Program Version 2.0 is a free update for the popular V-1HD HDMI video switcher including the companion Remote Control Software version 2.0 for Windows & macOS. Version 2.0 expands picture-in-picture effects with a new 1/3 sizing option. Turn on Auto Scan for hands-free switching. Numerous user interface improvements include the ability to view audio level meters on the multi-viewer, panel lock, and quickly reset system values by holding the WIPE button.

SPECIFICATIONS **V-1HD**

VIDEO	
Processing	4:2:2 (Y/Pb/Pr), 8-bit
Input Connectors	HDMI INPUT 1--4: Type A (19 pins) x 4 * HDCP Supported
Output Connectors	HDMI OUTPUT: Type A (19 pins) * HDCP Supported HDMI PREVIEW: Type A (19 pins) * HDCP Supported
Input formats	HDMI: 720/59.94p, 720/50p (FORMAT switch=720p) 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p (FORMAT switch=1080i or 1080p) * The input interlaced video signal is converted to progressive video signal by internal processing. * The video signal frame rate is selected by SETUP parameters (59.94 or 50)
OUTPUT formats	HDMI: 720/59.94p, 720/50p (FORMAT switch=720p) 1080/59.94i, 1080/50i (FORMAT switch=1080i) 1080/59.94p, 1080/50p (FORMAT switch=1080p) * The video signal frame rate is selected in SETUP parameters (59.94 or 50)
Effects	Transition: CUT, MIX (DISSOLVE/FAM/NAM/MOSAIC), WIPE (30 types), TRANSFORMER (11 types) Filter and Compositing: NEGATIVE, EMBOSS, COLORIZE, COLORPASS, POSTERIZE, SILHOUETTE, MONOCOLOR, FINDEDGE, FLIP, WH-LUMIKEY@, BK-LUMIKEY@, GR-CHROMAKEY@, BL-CHROMAKEY@, PinP (1/4)@, PinP (1/2)@, SPLIT (H-STRETCH)@, SPLIT (H-CENTER)@, SPLIT (V-STRETCH)@, SPLIT(V-CENTER)@ * @ marked Effects are effected common to A-BUS and B-BUS

(0dBu=0.775Vrms)

AUDIO	
Audio Processing	Sampling rate: 24 bits/48 kHz
Input Connectors	Digital: SDI INPUT 1--3 (BNC) x 3 SMPTE 299M, HDMI INPUT 3--4 (HDMI Type A 19 pins) x 2, Analog: AUDIO IN (RCA phono type), MIC (Stereo mini type, plug-in power supported)
Output Connectors	Digital: HDMI OUTPUT (HDMI Type A 19 pins), HDMI PREVIEW (HDMI Type A 19 pins), Analog: AUDIO OUT (RCA pin type), PHONES (Stereo mini type)
Input Level	AUDIO IN: -10 dBu (Maximum: +8 dBu), MIC: -41--13 dBu (Maximum: -1 dBu)
Input Impedance	AUDIO IN: 15 k ohms, MIC: 10 k ohms
Output Level	AUDIO OUT: -10 dBu (Maximum: +8 dBu), PHONES: 72 mW + 72 mW (32 ohms)
Output Impedance	AUDIO OUT: 1 k ohms, PHONES: 10 ohms
Effects	EQ, Delay, Compressor, HPF, Gate, Reverb, Mastering effect
OTHER JACKS	
USB	B Type (for remote control from PC)
MIDI	IN, OUT/THRU
OTHERS	
Other Functions	MEMORY (8 types), FREEZE (input video captured), BPM SYNC (auto transition synchronized to tempo), OUTPUT FADE (WHITE/BLACK)
Power Supply	AC Adaptor
Current Draw	1.5 A
Power Consumption	18 W
Operating Temp.	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	313 (W) x 102 (D) x 59 (H) mm, 12-1/3 (W) x 4 (D) x 2-1/3 (H) inches
Weight	1.2 kg (excluding AC adaptor), 2 lbs 10-2/5 oz
Accessories	Owner's Manual, AC Adaptor, Power Cord, Cord Hook

V-1HD+

HD VIDEO SWITCHER

Switch, mix, and create like a pro

- Professional HD switching solution for live events, livestreaming, or both at once
- Compact and portable for fast set up
- Technology-assisted automatic video switching
- Pro audio I/O with legendary Roland sound quality
- Eight memory presets to recall visual layouts on cue
- Standalone video switcher and 14-channel audio mixer for single operators
- Familiar interface that's quick to learn and easy to use
- Four-layer effects and keying engine to engage audiences with graphics, lower thirds, and social callouts
- Free iPad remote control app available

The V-1HD+ is the ultimate compact A/V switching solution for serious visual storytellers. Elevate your creative production process with versatile I/O, a familiar user interface, deep control, and essential monitoring tools that help keep your content looking great and sounding perfect.

V-1HD+ iPad remote control utility

The dedicated V-1HD+ remote control app turns an iPad into an efficient touch interface for the V-1HD+. Run essential switching functions, mix audio with virtual faders, change settings and effect parameters quickly, and create up to 8 custom scenes for fast, efficient setup changes.

Multiviewer display

A 10-window multiviewer display can be applied to one or both HDMI outputs, helping you manage productions in real time. Cue up camera shots, preview presentations, and choose stored still images before taking them live to the program feed. Camcorder recording status can be monitored as well.

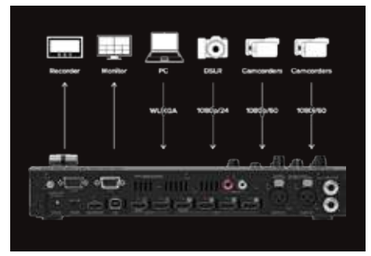
A legacy of success

Since its release in 2015, the Roland V-1HD has been the most popular high-definition, four-channel HDMI video switcher available. The V-1HD+ extends this legacy with a deeper feature set for advanced applications—while still maintaining the simple operation, pro performance, and rugged reliability that's made the V-1HD a favorite of users around the world.

No-compromise video I/O

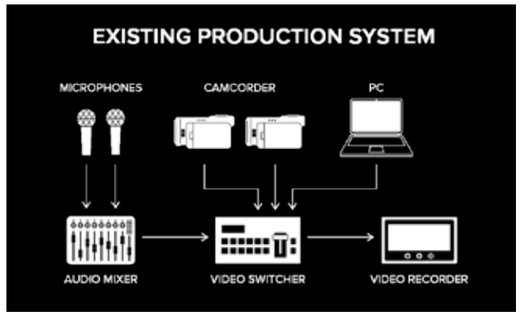
Four HDMI inputs with frame rate conversion let you mix a variety of sources, including cameras, presentation computers, tablets, and video game consoles. And when you have a troublesome source that won't display correctly, simply plug it into Input 4 and let the built-in video scaler sync and calibrate the image automatically.

Two independent HDMI outputs can be assigned to display one of three different video busses, providing the versatility you need for pro production. For example, you can use one as your main program output for a recorder or livestream, and the second output to turn any HD video monitor into an "up-next" input preview display or expanded multiviewer with 10 windows.



14-channel audio mixing with effects

With two XLR mic inputs and selectable phantom power, the V-1HD+ lets you bring pro-grade microphones into your productions, including condenser broadcast mics. There's also an 1/8-inch input for a lavalier mic or stereo audio source like a smartphone, plus another stereo input on RCA jacks. Embedded stereo audio from the four HDMI inputs can be included in your mix as well. With the V-1HD+, there's no need for a dedicated small audio console. Distribute analog sound to a PA system via two balanced ¼-inch TRS outputs, and use embedded digital audio in the HDMI outputs to feed recorders and livestream broadcasts.



Say goodbye to workflow workarounds

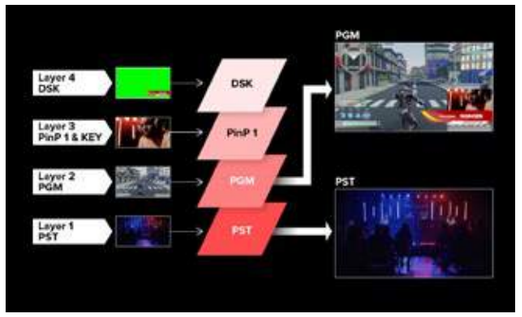
While many video switchers promise easy workflows, they often require workarounds for optimum results. Too often, those workarounds force you into technical compromises and purchasing extra gear. With its feature-rich design, the V-1HD+ provides the key tools you need to get the job done right.

Audio monitoring

Even if your video looks perfect, poor sound will ruin the entire production. With the V-1HD+, you can always keep track of your audio quality. Each analog input has its own signal/peak indicator, and headphones can be plugged in to monitor the overall audio feed. When using the multiviewer display, signal level meters are shown for all inputs and the main outputs.

Pro operation made easy

Your passion for a simplified interface led our designers to add quick-action buttons for the most commonly used operations. With one-touch access to the system menu, downstream key on/off, transition type, picture-in-picture, effects on/off, and more, V-1HD+ production workflow is smooth and hassle-free.

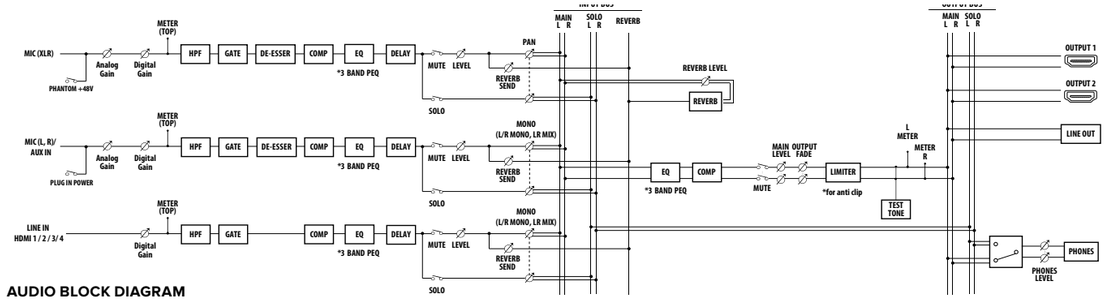


Four-layer effects engine

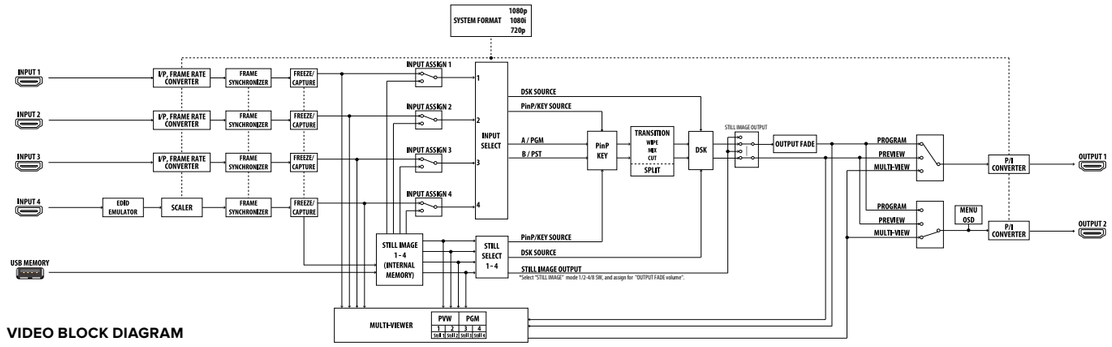
Savvy visual storytellers understand the power of layered graphics and visual effects. With four composition layers at your command, it's simple to add lower-third titles, logos, social media comments, and more to inform your audience and keep them involved.

Legacy Support

Budgets don't always allow you to upgrade every component in your video system at the same time. The V-1HD+ can interface with legacy systems and components via its RS-232 port, allowing you to keep working while saving up for that new piece of gear.



AUDIO BLOCK DIAGRAM



VIDEO BLOCK DIAGRAM

SPECIFICATIONS **V-1HD+**

VIDEO		
Video Processing	4:2:2 (Y/Pb/Pr), 8-bit	
Input Connectors	INPUT 1--3: HDMI type A x 3 *HDCP Supported	INPUT 4: HDMI type A * HDCP Supported * Multi-format Supported
Output Connectors	OUTPUT 1--2: HDMI type A x 2, * HDCP Supported	
Input formats	INPUT 1--3 720/59.94p, 720/60p *1, *3, 720/50p *1, *4, 1080/59.94i, 1080/60i, 1080/59.94p, 1080/60p, 1080/29.97p, 1080/30p *2, *3, 1080/50i, 1080/50p, 1080/25p *2, *4, 1080/23.98p, 1080/24p *2 * The input interlaced video signal is converted to progressive video signal by internal processing. *1 SYSTEM FORMAT = 720p, *2 SYSTEM FORMAT = 1080i or 1080p *3 FRAME RATE = 59.94 Hz, *4 FRAME RATE = 50 Hz INPUT 4 480/59.94i, 480/59.94p, 720/59.94p, 720/60p, 1080/59.94i, 1080/60i, 1080/59.94p, 1080/60p, 1080/29.97p, 1080/30p *1 576/50i, 576/50p, 720/50p, 1080/50i, 1080/50p, 1080/25p *2 1080/23.98p, 1080/24p VGA (640 x 480/60 Hz), SVGA (800 x 600/60 Hz), XGA (1024 x 768/60 Hz) WXGA (1280 x 800/60 Hz), SXGA (1280 x 1024/60 Hz) FWXGA (1366 x 768/60 Hz), SXGA+ (1400 x 1050/60 Hz) UXGA (1600 x 1200/60 Hz), WUXGA (1920 x 1200/60 Hz) * The refresh rate is the maximum value of each resolution. * Conforms to CEA-861-E,VESA DMT Version 1.0 Revision 11. * 1920 x 1200/60 Hz: Reduced blanking * The input interlaced video signal is converted to progressive video signal by internal processing. *1 FRAME RATE = 59.94 Hz *2 FRAME RATE = 50 Hz Still Image: Bitmap File (.bmp) Maximum 1920 x 1080 pixels, 24-bit color, uncompressed. PNG File (.png) Maximum 1920 x 1080 pixels, 24-bit color * It can store up to 4 files in the internal memory. * PNG alpha channel not supported.	
Output formats	OUTPUT 1--2: 720/59.94p *1, *4, 720/50p *1, *5, 1080/59.94i *2, *4, 1080/50i *2, *5 1080/59.94p *3, *4, 1080/50p *3, *5 *1 SYSTEM FORMAT = 720p, *2 SYSTEM FORMAT = 1080i *3 SYSTEM FORMAT = 1080p, *4 FRAME RATE = 59.94 Hz *5 FRAME RATE = 50 Hz	
Video Effects	Transition: CUT, MIX (DISSOLVE/FAM/NAM), WIPE (8 types) Composition: PinP (SQUARE, CIRCLE, DIAMOND), SPLIT (2 types), Keyer (Luminance key, Chroma key), DSK (Luminance key, Chroma key) Other: Flip horizontal, Flip vertical, Still image capture, Still image playback, Output fade (Audio, Video: WHITE or BLACK), Test pattern output	

AUDIO	
Audio Processing	Sample rate: 24 bits/48 kHz
Audio formats	Linear PCM, 24 bits/48 kHz, 2 ch
Input Connectors	INPUT 1--4: HDMI Type A x 4 AUDIO IN 1--2: XLR-3-31 type (balanced, phantom power DC 48 V, 14 mA Max), LINE IN: RCA phono type MIC/AUX IN: Stereo miniature phone type (PLUG-IN power)
Output Connectors	OUTPUT 1--3: HDMI Type A x 2 AUDIO OUT L, R: 1/4-inch TRS phone type PHONES: Stereo miniature phone type
Nominal Input Level	AUDIO IN 1--2: -60 to +4 dBu (Maximum input level: +24 dBu) LINE IN: -10 dBu (Maximum input level: +10 dBu) MIC/AUX IN: -51 to -10 dBu (Maximum input level: +10 dBu)
Input Impedance	AUDIO IN 1--2: 10 k ohms, LINE IN: 15 k ohms, MIC/AUX IN: 10 k ohms
Nominal Output Level	AUDIO OUT L, R: +4 dBu (Maximum output level: +24 dBu) PHONES: 72 mW + 72 mW (32 ohms load)
Output Impedance	AUDIO OUT L, R: 600 ohms, PHONES: 10 ohms
Audio Effects	Delay, High pass filter, De-Esser, Compressor, Noise gate, Equalizer, Limiter, Reverb, Test tone output

OTHERS	
Other Connectors	USB MEMORY: USB A type (for USB flash drive) REMOTE: USB B type (for remote control) RS-232: DB-9 type (male, for remote control) TALLY: DB-9 type (female, for TALLY output)
Other Functions	Preset memory (8 types), Panel lock function, EDID emulator Auto switching, Auto input detect
Power Supply	AC Adaptor
Current Draw	2.1 A
Power Consumption	25.2 W
Operating Temp.	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	316 (W) x 121 (D) x 65 (H) mm, 12-1/2 (W) x 4-13/16 (D) x 2-9/16 (H) inches
Weight (excluding AC adaptor)	1.4 kg, 3 lbs 2 oz
Accessories	Startup Guide, Leaflet "USING THE UNIT SAFELY", AC adaptor, Power cord
Options (sold separately)	Footswitch: BOSS FS-5U, FS-6, FS-7 Expression Pedal: EV-5, BOSS FV-500L, FV-500H

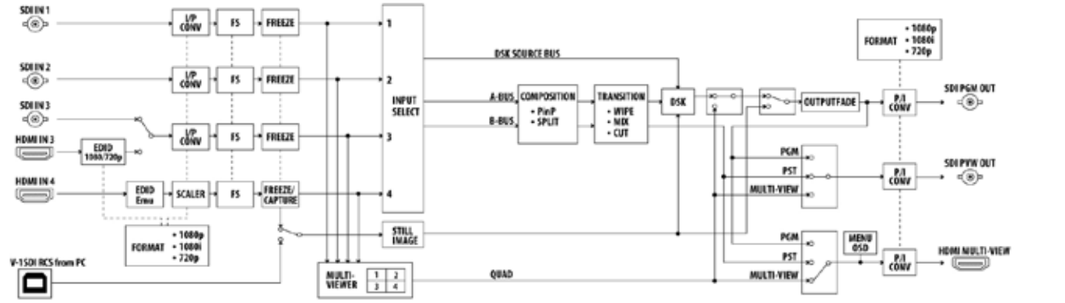
* 0 dBu=0.775 Vrms

V-1SDI

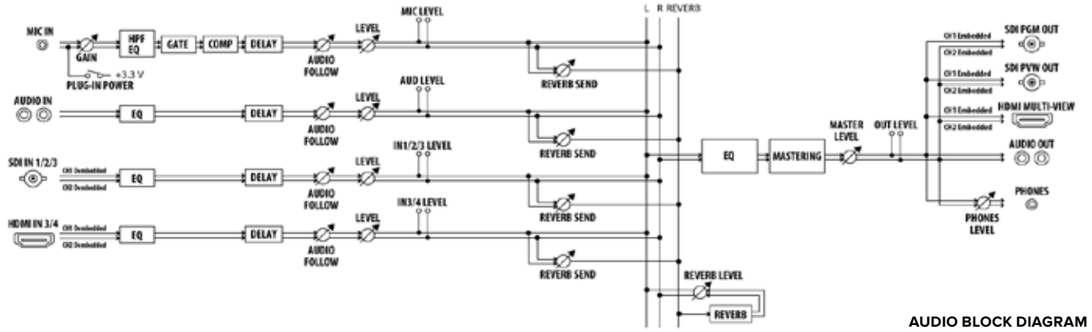
3G-SDI VIDEO SWITCHER VER 1.5

Professional SDI video switching that you can take anywhere

- Support for SDI and HDMI cameras, smartphones, tablet computers and PCs etc.
- Easy to operate with hardware controls
- Compact size
- Supports up to Full HD 1080p
- 3 x 3G-SDI and 2 x HDMI inputs
- 2 x 3G-SDI and 1 x HDMI output
- Input 4's scaler now supports a wider range of video and VESA resolutions[*1] [*2]
- HDCP compliant
- Quad input multi-viewer with source labelling and audio metering
- Composition effects including DSK (Downstream Keyer), picture-in-picture etc.
- Capturing a still image from Input Video on channel 4[*3] [Ver.1.5]
- Full 14-channel audio mixer included
- Software control using V-1SDI RCS application for Mac and PC and remote control via RS-232 connection
- Send a still image to the V-1SDI by V-1SDI RCS [Ver.1.5]



VIDEO BLOCK DIAGRAM



AUDIO BLOCK DIAGRAM

SYSTEM PROGRAM VER 1.5

The Ver.1.5 update supports capturing a still image, sending a still image from the V-1SDI RCS on PC/Mac, and PinP 1/3 size in addition to 1/2 and 1/4 sizes.

SPECIFICATIONS **V-1SDI**

VIDEO	
Processing	4:2:2 (Y/Pb/Pr), 8-bit
Input Connectors	SDI INPUT 1--3: BNC x 3 * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M HDMI INPUT 3--4: Type A (19 pins) x 2 * HDCP Supported * INPUT 3: SDI or HDMI selected
Output Connectors	SDI OUT PGM: BNC x 1, SDI OUT PVW: BNC x 1 * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M, HDMI OUT MULTI-VIEW: Type A (19 pins) x 1 * HDCP Supported
Input formats	SDI INPUT 1-3 Conforms to SMPTE 296M, SMPTE 274M HDMI INPUT 3 720/59.94p, 720/50p SMPTE 296M(FORMAT switch = 720p) 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p SMPTE 274M (FORMAT switch = 1080i or 1080p) * The input interlaced video signal is converted to progressive video signal by internal processing * The video signal frame rate can be selected at the SETUP menu (59.94 or 50). HDMI INPUT 4 480/59.94i, 576/50i, 480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p VGA (640 x 480/60 Hz), SVGA (800 x 600/60 Hz), XGA (1024 x 768/60 Hz) WXGA (1280 x 768/60 Hz), SXGA (1280 x 1024/60 Hz) FWXGA (1366 x 768/60 Hz), SXGA+ (1400 x 1050/60 Hz) UXGA (1600 x 1200/60 Hz), WUXGA (1920 x 1200/60 Hz) * The refresh rate is the maximum value of each resolution * Conforms to VESA DMT Version 1.0 Revision 11 * 1920 x 1200/60 Hz: Reduced blanking * The input interlaced video signal is converted to progressive video signal by internal processing * The video signal frame rate can be selected at the SETUP menu (59.94 or 50)
OUTPUT formats	SDI OUT(PGM/PVW) Conforms to SMPTE 296M, 274M HDMI OUT MULTI-VIEW 720/59.94p, 720/50p SMPTE 296M(FORMAT switch = 720p) 1080/59.94i, 1080/50i SMPTE 274M(FORMAT switch = 1080i) 1080/59.94p, 1080/50p SMPTE 274M(FORMAT switch = 1080p) * The video signal frame rate can be selected at the SETUP menu (59.94 or 50)
Video Effects	Transition: CUT, MIX (DISSOLVE/FAM/NAM/MOSAIC), WIPE (30 types) Composition: PinP, SPLIT, QUAD, DSK (Luminance Key, Chroma Key)

AUDIO	
Audio Processing	Sampling rate: 24 bits/48 kHz
Audio formats	SDI: Linear PCM, 24 bits/48 kHz, 2ch Conforms to SMPTE 299M HDMI: Linear PCM, 24 bits/48 kHz, 2ch
Input Connectors	Digital: SDI INPUT 1--3 (BNC) x 3 SMPTE 299M HDMI INPUT 3--4 (HDMI Type A 19 pins) x 2 Analog: AUDIO IN (RCA phono type) MIC (Stereo mini type, plug-in power supported)
Output Connectors	Digital: SDI OUT PGM: BNC x 1 SMPTE 299M SDI OUT PVW: BNC x 1 SMPTE 299M HDMI OUT MULTI-VIEW: Type A (19 pins) x 1 Analog: AUDIO OUT (RCA phono type) PHONES (Stereo mini type)
Input Level	AUDIO IN: -10 dBu (Maximum: +8 dBu) MIC: -41-- -13 dBu (Maximum: -1 dBu)
Input Impedance	AUDIO IN: 15 k ohms, MIC: 10 k ohms
Output Level	AUDIO OUT: -10 dBu (Maximum: +8 dBu) PHONES: 92 mW + 92 mW (32 ohms)
Output Impedance	AUDIO OUT: 1 k ohm, PHONES: 10 ohms
Audio Effects	EQ, Delay, Compressor, HPF, Gate, Reverb, Mastering effect

OTHERS	
Other Connectors	USB: B Type (for remote control from PC), RS-232: DB-9 type
Other Functions	MEMORY (8 types), FREEZE (input video captured), OUTPUT FADE (Audio, Video: WHITE or BLACK)
Power Supply	AC Adaptor
Current Draw	2.1 A
Power Consumption	25 W
Operating Temp.	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	313 (W) x 108 (D) x 59 (H) mm, 12-1/3 (W) x 4-1/4 (D) x 2-1/3 (H) inches
Weight (excl. AC adapt.)	1.2 kg, 2 lbs 10-2/5 oz
Accessories	Owner's manual, AC adaptor, Power cord, Cord hook

V-02HD MK II

STREAMING VIDEO MIXER

Switcher, scaler, expander with audio processing and video effects

- 2 in / 2 out multi-format video mixer
- Professional transition and composition FX including KEY and PinP
- Input / output scalers and EDID emulator
- 10-bit 4:4:4 quality processing
- 14 onboard Visual FX including Mosaic FX
- Still image store
- Advanced audio processing DSP
- Audio embed/de-embed
- Switch between cameras via a connected footswitch (sold separately)
- Preset memory (8 types)
- Dedicated V-02HD remote control app for iPad

Simply simple

The V-02HD MK II is the world's easiest two-camera livestreaming solution. With its intuitive layout, large controls, and T-bar fader, it's incredibly simple to operate, even if you have no broadcasting experience. Go live in three quick steps: 1. Plug in up to two sources via HDMI, including cameras, computers, mobile devices, and gaming consoles. 2. Connect the USB-C output to your computer. 3. Launch your streaming software and select the V-02HD MK II as the camera source.

Stream with every platform

The V-02HD MK II connects to the streaming computer you already own and the audience you already have. It's instantly recognized as a camera source when you plug in via USB, so it's ready to go for Facebook, YouTube, Twitch, and Zoom. It also integrates seamlessly with OBS Studio, StreamYard, and Restream for more advanced workflows. High-quality streaming up to 1080p/60 FPS is supported, and it's possible to send two additional feeds to external HDMI devices via the Program Out and Preview Out if needed.

Upgrade your sound too

The V-02HD MK II also includes a 10-channel digital audio mixer with Roland's legendary sound quality. There are two audio inputs with 3.5 mm jacks, and each supports a microphone—including lavalier mics that require plug-in power—or stereo audio from a smartphone, mixer, or other device. Embedded stereo audio from your HDMI sources can be mixed in as well, including microphones connected to your cameras.

HDMI cameras for the win

From talk shows and live demonstrations to artistic performances and beyond, cameras that support HDMI output will elevate the image quality in your streams and drive more audience engagement. You can connect a variety of different camera types to the V-02HD MK II.
GOOD—A smartphone or tablet with an HDMI adaptor offers a good option that's compact and easy to set up anywhere.
BETTER—A point-and-shoot camera, action camera, or video camcorder with features like zoom, deeper exposure and focus control will take things even further.
BEST—A DSLR or mirrorless camera is the ultimate solution, offering the best image quality for a cinematic look, interchangeable lenses, and improved performance in low-light conditions.

Step Up Your Livestreams. Ditch the webcam and step up your livestreams with the Roland V-02HD MK II Streaming Video Mixer. Compact, affordable, and simple to use, this desktop device allows you to connect and switch two high-quality HDMI cameras and send them directly to your favorite streaming platform over USB-C. You can also mix in audio sources via dedicated inputs and HDMI, apply video effects and transitions, and more.

Go deeper with advanced Pro A/V features

Out of the box, the V-02HD MK II gives you the dedicated controls you need to switch cameras and adjust video and audio sources when you go live. But if you want to dive deeper, there's a world of advanced features and custom assignments to explore. Connecting an HDMI monitor to the Preview Out provides a display for adjusting a vast range of functions from the V-02HD MK II panel. And with our remote control apps for iPad, macOS, and Windows,* you can operate the V-02HD MK II via an intuitive graphical interface.

Wireless camera expansion with the AeroCaster switcher

The purchase of a V-02HD MK II provides free access to Roland's AeroCaster Switcher for iPad, a powerful solution to cleanly expand your camera setup without the hassle of extra cables. With this unique app, you can wirelessly connect and switch up to five smartphone or tablet cameras, then output a combined program feed to the V-02HD MK II or another supported Roland switcher with HDMI input.

More audio control

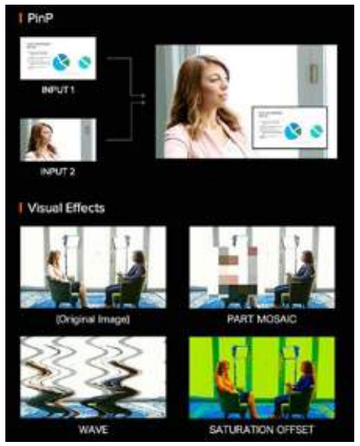
Access full mixing functions for all audio sources, add studio polish with compressor, EQ, and reverb, and have fun with formant shifting and robot sounds with the unique voice changer effect. It's also possible to independently delay the audio inputs and outputs—including the headphones output—if you have any synchronization issues with your cameras.

Visual effects and scenes

Adding video effects and creating scenes has become easier with software, but they put a big burden on your computer. The V-02HD MK II provides a dedicated hardware solution that lightens that load. Via the preview monitor and apps, you can set up picture-in-picture windows, create titles and lower thirds, composite scenes, and much more.

Footswitch assignment

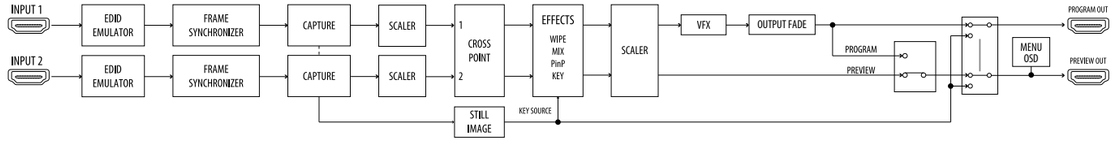
If you've added footswitches to your system, you can set custom functions for them in the preview monitor and remote apps.



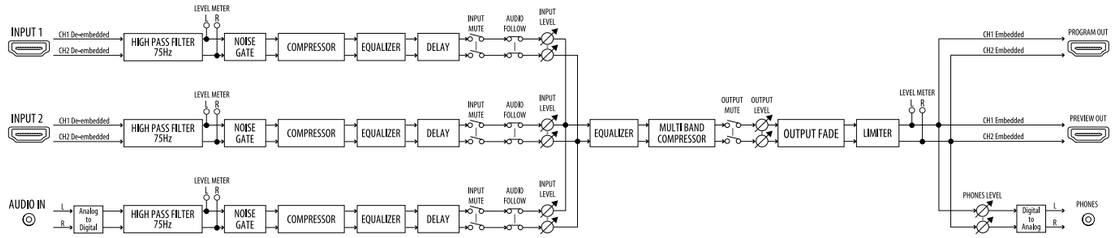
V-02HD MK II iPad remote app

The dedicated V-02HD MK II Remote app turns an iPad into an efficient touch interface for the V-02HD MK II. Run essential switching functions, mix audio with virtual faders, change settings and effect parameters quickly, and create up to eight custom scenes for seamless setup changes.

VIDEO BLOCK DIAGRAM



AUDIO BLOCK DIAGRAM



SPECIFICATIONS **V-02HD MK II**

VIDEO	
Video Processing	4:4:4 (Y/Pb/Pr), 10-bit
Input Connectors	INPUT 1--2: HDMI type A x 2 * HDCP Supported * Multi-format Supported
Output Connectors	PROGRAM OUT: HDMI type A PREVIEW OUT: HDMI type A * HDCP Supported * Multi-format Supported USB STREAM:USB Type-C (TM)
Input formats	480/59.94i, 480/59.94p, 720/59.94p, 1080/59.94i, 1080/59.94p, 1080/60p, 1080/29.97p, 1080/30p *1 576/50i, 576/50p, 720/50p, 1080/50i, 1080/50p, 1080/25p *2 1080/23.98p, 1080/24p VGA (640 x 480/60Hz), SVGA (800 x 600/60Hz), XGA (1024 x 768/60Hz) WXGA (1280 x 800/60Hz), SXGA (1280 x 1024/60Hz) FWXGA (1366 x 768/60Hz), SXGA+ (1400 x 1050/60Hz) UXGA (1600 x 1200/60Hz), WUXGA (1920 x 1200/60Hz) * The refresh rate is the maximum value of each resolution. * Conforms to CEA-861-E, VESA DMT Version 1.0 Revision 11. * 1920 x 1200/60 Hz: Reduced blanking * The input interlaced video signal is converted to progressive video signal by internal processing. *1 FRAME RATE = 59.94 Hz *2 FRAME RATE = 50 Hz
Output formats	PROGRAM OUT, PREVIEW OUT: 480/59.94p, 720/59.94p, 1080/59.94i, 1080/59.94p, 1080/29.97p *1 576/50p, 720/50p, 1080/50i, 1080/50p, 1080/25p *2 SVGA (800 x 600/60 Hz), XGA (1024 x 768/60 Hz) WXGA (1280 x 800/60 Hz), FWXGA (1366 x 768/60 Hz) SXGA (1280 x 1024/60 Hz), SXGA+ (1400 x 1050/60 Hz) UXGA (1600 x 1200/60 Hz), WUXGA (1920 x 1200/60 Hz) HD (1280 x 720/60 Hz), FHD (1920 x 1080/60 Hz) * Conforms to VESA DMT Version 1.0 Revision 11. * The output refresh rates of 800 x 600--1400 x 1050 are 75 Hz when the unit's frame rate setting is 50 Hz. * 1920 x 1200/60 Hz: Reduced blanking *1 FRAME RATE = 59.94 Hz *2 FRAME RATE = 50 Hz USB STREAM: 1080/59.94p, 720/59.94p, 640 x 480/59.94p *1 1080/29.97p, 720/29.97p, 640 x 480/29.97p *2 1080/50p, 720/50p, 640 x 480/50p *3 1080/25p, 720/25p, 640 x 480/25p *4 *Uncompressed format (YUV2) and Compressed format (Motion JPEG) supported. *1 FRAME RATE(USB OUT) = 59.94 Hz *2 FRAME RATE(USB OUT) = 29.97 Hz *3 FRAME RATE(USB OUT) = 50 Hz *4 FRAME RATE(USB OUT) = 25 Hz
Video Effects	Transition: CUT, MIX (DISSOLVE), WIPE (9 types) Composition: PinP (RECTANGLE, CIRCLE, DIAMOND), KEY (Luminance Key, Chroma Key) Visual Effects (14 types): MOSAIC, WAVE, RGB REPLACE, COLORPASS, NEGATIVE, COLORIZE, POSTERIZE, SILHOUETTE, EMBOSS, FIND EDGES, MONOCOLOR, HUE OFFSET, SATURATION OFFSET, VALUE OFFSET Others: Flip horizontal, Flip vertical, Still Image Capture, Still Image Playback, Output fade (Audio, Video: WHITE or BLACK), Test pattern output

AUDIO	
Audio Processing	Sampling rate: 24 bits/48 kHz
Audio formats	Linear PCM, 24 bits/48 kHz, 2ch
Input Connectors	Analog: AUDIO IN 1--2: Stereo miniature type x 2 Digital: USB STREAM: USB Type-C (*) INPUT 1--2: HDMI Type A x 2
Output Connectors	Analog: PHONES: Stereo miniature type Digital: USB STREAM: USB Type-C (TM) PROGRAM OUT: HDMI type A PREVIEW OUT: HDMI type A
Input Level	AUDIO IN: -10 dBu (Maximum: +10 dBu)
Input Impedance	AUDIO IN: 10 k ohms
Output Level	PHONES: 92 mW + 92 mW (32 ohms)
Output Impedance	PHONES: 10 ohms
Audio Effects	Delay, Reverb, High pass filter, Noise gate, De-esser, Compressor, Equalizer, Voice changer, Multi-band compressor, Limiter, Test tone output

OTHERS	
Other Connectors	USB STREAM: USB Type-C (TM) (for backup from PC, for remote control from PC and iPad), CTL/EXP:1/4-inch TRS phone type (for remote control from foot switch and expression pedal)
Other Functions	Preset Memory (8 types) Panel lock function EDID Emulator Auto Switching Auto Input Detect
Power Supply	AC Adaptor
Current Draw	1.4 A
Power Consumption	12.6 W
Operating Temp.	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	160 (W) x 108 (D) x 51 (H) mm 6-5/16 (W) x 4-1/4 (D) x 2-1/16 (H) inches
Weight (excluding AC adaptor)	0.6 kg, 1 lbs 6 oz
Accessories	Startup Guide, AC adaptor, Power cord, Cord hook
Options (sold separately)	Footswitch: BOSS FS-5U, FS-6, FS-7 Expression Pedal: EV-5, BOSS FV-500L, FV-500H

* 0 dBu=0.775 Vrms

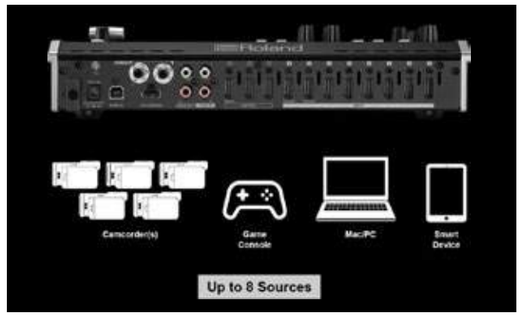
V-8HD

HD VIDEO SWITCHER VER.2.0

Unlock new creative possibilities

- All HDMI workflow
- Built-in multi-viewer preview monitor
- Execute smooth transitions using the T-bar fader
- Powerful live production automation with sequencing, macros, and preset memories (version 2.0)
- Eight-slot still store function supports screen capture and import of BMP, JPEG and transparent PNG images to internal non-volatile memory
- Ultra-mobile, lightweight, and efficient
- Five-layer effects and keying engine
- Aux output for a different video feed
- Technology-assisted automatic video switching
- Newly supported 23.98Hz, 24Hz, 25Hz, 29.97Hz, 30Hz of output formats (version 2.0)
- 18-channel digital audio mixer with a wide range of effects, including sync delay on each channel
- Remote start and stop of Atomos recorders
- Free iPad remote control app available

Versatile, portable, and reliable, the Roland V-8HD brings a world of creative options to live event switching. Its all-in-one hardware design eliminates computer setup hassles and software-based crashes, while the HDMI workflow and loaded professional toolset streamline production and reduce stress on the gig.

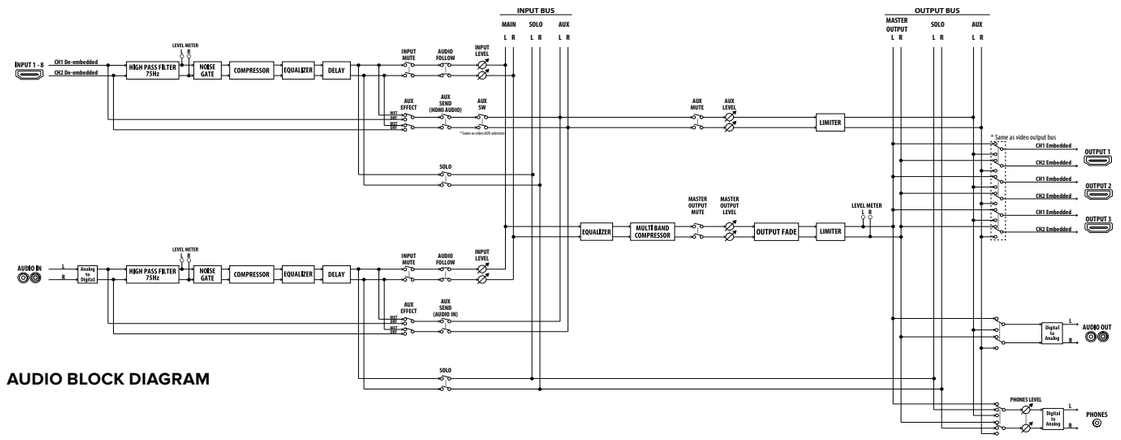


Maximum connectivity

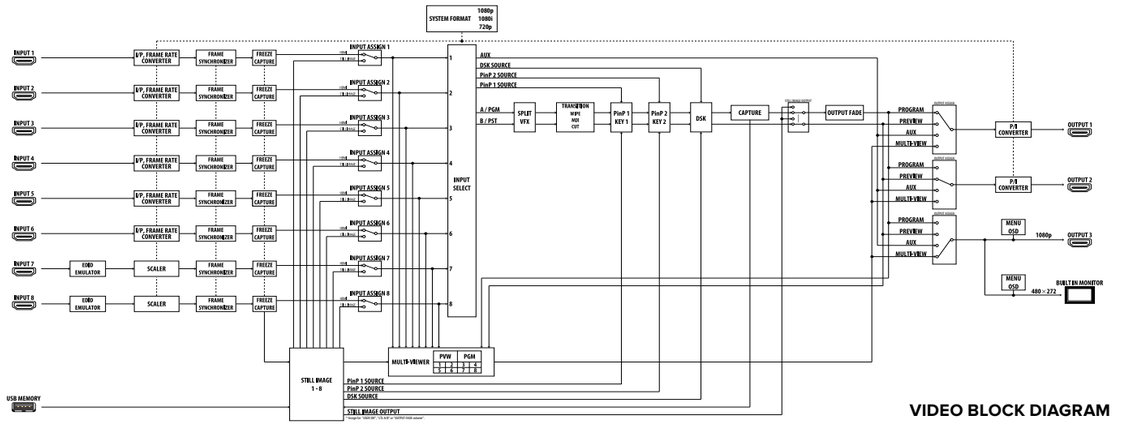
Nearly all modern cameras and digital video devices use HDMI, the most common AV connector on the planet. The V-8HD seamlessly mixes eight HDMI sources with Full HD support, even when the sources have mismatched frame rates and color spaces. And with the built-in scalers on two of the HDMI inputs, you can easily interface with client-provided sources like computers, tablets, smartphones, gaming consoles, and legacy 4:3 devices.

The power of more

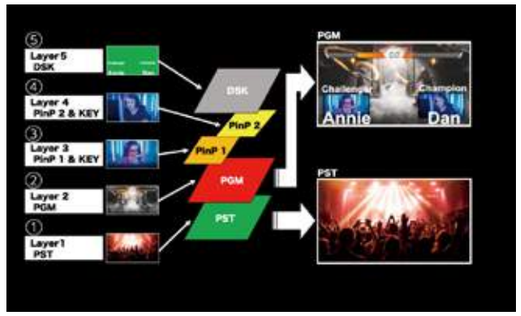
Creative professionals need more video inputs for layered graphics and visual effects, and business professionals often need multiple backup video sources. Having the ability to meet all these needs brings satisfied clients and greater audience engagement. With the V-8HD's generous number of HDMI inputs and outputs, you're able to offer clients a vast amount of creative freedom—without increasing the budget.



AUDIO BLOCK DIAGRAM



VIDEO BLOCK DIAGRAM



Set up layers, effects, and keys

Video effects, layers, and graphics add polish and excitement to any production. With the V-8HD's five composition layers, you'll always keep audiences engaged with visually appealing content. Prepare the content according to client specifications and separate it into layers: Layer 1 and 2: Start by creating a basic background setup for mixing between two sources. Layer 3 and 4: Drop in two picture-in-picture layers with chroma and luminance effects. Layer 5: Add one downstream keyer layer with chroma, luminance, and [Version 2.0] alpha effects or external fill and key inputs.

Automated video switching

The V-8HD makes your job easier with three technology assisted automatic switching modes. Input Scan switches input sources randomly or in sequence, while Preset Memory Scan switches between preset memories. BPM (beats per minute) sync is also available, automatically switching Preview and Program at a specified tempo for tight synchronization with musical cues.

V-8HD iPad remote control utility

The dedicated V-8HD remote control app turns an iPad into an efficient touch interface for the V-8HD. Run essential switching functions, mix audio with virtal faders, change settings and effect parameters quickly, and create up to 24 custom scenes for fast, efficient setup changes.

Record triggering and confirmation

Many technical elements contribute to a successful recording. But forgetting to hit the record button means the difference between getting paid for the job or not. Via HDMI, the V-8HD operator can trigger Atomos recorders to start and stop recording. And some camcorders even display a recording confirmation icon on the input channel of the V-8HD's multi-viewer screen, letting you keep an eye on the recording status while staying focused on other critical tasks.

TAP INTO DEEPER CONTROL WITH VER 2.0

The V-8HD continues to evolve with the Version 2.0 update, adding next-generation cue management and live show automation tools that make tough production tasks simple. The update brings many new features first introduced with the flagship V-160HD, including macros, advanced sequencing, transparent PNG image support, and more. Version 2.0 is a free, user-installable update for all V-8HD owners.

One-touch automation (version 2.0)

The V-8HD's newly developed sequencer makes presets and macros even more powerful, allowing a single operator to execute perfectly timed cues with ease. Up to 1000 steps can be recorded in the sequencer, and each step can include both presets and macros. Simply set up your cues ahead of time in the sequence list and trigger them in order by pressing a button on the panel. With the power of the V-8HD's sequencer, you can tackle the most complex events without ever breaking a sweat.

Instant recall with memories and macros

With the V-8HD, storing and recalling unique looks requires only a few button presses. The 24 preset memories and powerful composition effects engine work together to provide a completely seamless load between different looks, including synchronizing the transition of all effect layers on and off at the Program output. [Version 2.0] The 100 macros go even deeper, allowing you to build and trigger complex action lists that include switching, DSK on/off, audio mixing adjustments, and much more. Our free remote control software for iPad further enhances this workflow, providing a large graphical interface for setting up and previewing actions before you take them live.

SPECIFICATIONS **V-8HD**

VIDEO	
Video Processing	4:2:2 (Y/Pb/Pr), 8-bit
Input Connectors	INPUT 1--6: HDMI type A x 6 * HDCP Supported INPUT 7--8: HDMI type A x 2 * HDCP Supported * Multi-format Supported
Output Connectors	OUTPUT 1--3: HDMI type A x 3 * HDCP Supported
Supported Video Input Formats	INPUT 1-6 720/59.94p, 720/60p *1, *3 720/50p *1, *4 1080/59.94i, 1080/60i, 1080/59.94p, 1080/60p, 1080/29.97p, 1080/30p *2, *3 1080/50i, 1080/50p, 1080/25p *2, *4 1080/23.98p, 1080/24p *2 * The input interlaced video signal is converted to progressive video signal by internal processing. *1 SYSTEM FORMAT = 720p *2 SYSTEM FORMAT = 1080i or 1080p *3 FRAME RATE = 59.94, 60 Hz, 29.97 Hz, 30 Hz *4 FRAME RATE = 50 Hz or 25 Hz INPUT 7-8 480/59.94i, 480/59.94p, 720/59.94p, 720/60p, 1080/59.94i, 1080/60i, 1080/59.94p, 1080/60p, 1080/29.97p, 1080/30p *1 576/50i, 576/50p, 720/50p, 1080/50i, 1080/50p, 1080/25p *2 1080/23.98p, 1080/24p VGA (640×480/60Hz), SVGA (800×600/60Hz), XGA (1024×768/60Hz) WXGA (1280×800/60Hz), SXGA (1280×1024/60Hz) FWXGA (1366×768/60Hz), SXGA+ (1400×1050/60Hz) UXGA (1600×1200/60Hz), WUXGA (1920×1200/60Hz) * The refresh rate is the maximum value of each resolution. * Conforms to CEA-861-E,VESA DMT Version 1.0 Revision 11. * 1920 x 1200/60 Hz: Reduced blanking * The input interlaced video signal is converted to progressive video signal by internal processing. *1 FRAME RATE = 59.94 Hz or 60 Hz *2 FRAME RATE = 50 Hz
Still Image	Bitmap File (.bmp) Maximum 1920 x 1080 pixels, 24-bit color, uncompressed. PNG File (.png) Maximum 1920 x 1080 pixels, 24-bit color JPEG File .jpg .jpeg) Maximum 1920 x 1080 pixels, 24-bit color * It can be stored up to 8 files to the internal memory. * It can be exported to the USB memory. * PNG alpha channel supported (Exclusive with alpha bus or AUX bus)
Output formats	OUTPUT 1-2: 720/59.94p *1, *4, 720/60p *1, *5, 720/50p *1, *8, 1080/59.94i *2, *4, 1080/60i *2, *5, 1080/50i *2, *8, 1080/59.94p *3, *4, 1080/60p *3, *5, 1080/29.97p *3, *6, 1080/30p *3, *7, 1080/50p *3, *8, 1080/25p *3, *9, 1080/23.98p *3, *10, 1080/24p *3, *11, *1 SYSTEM FORMAT = 720p, *2 SYSTEM FORMAT = 1080i, *3 SYSTEM FORMAT = 1080p, *4 FRAME RATE = 59.94 Hz, *5 FRAME RATE = 60 Hz, *6 FRAME RATE = 29.97 Hz, *7 FRAME RATE = 30 Hz, *8 FRAME RATE = 50 Hz, *9 FRAME RATE = 25 Hz, *10 FRAME RATE = 23.98 Hz *11 FRAME RATE = 24 Hz OUTPUT 3: 1080/59.94p *1, 1080/60p *2, 1080/29.97p *3, 1080/30p *4, 1080/50p *5, 1080/25p *6, 1080/23.98p *7, 1080/24p *8, *1 FRAME RATE = 59.94 Hz, *2 FRAME RATE = 60 Hz, *3 FRAME RATE = 29.97 Hz, *4 FRAME RATE = 30 Hz, *5 FRAME RATE = 50 Hz *6 FRAME RATE = 25 Hz, *7 FRAME RATE = 23.98 Hz, *8 FRAME RATE = 24 Hz
Video Effects	Transition: CUT, MIX (DISSOLVE/FAM/NAM), WIPE (8 types) Composition: PinP x 2 (SQUARE, CIRCLE, DIAMOND), SPLIT (2 types), Keyer x 2 (Luminance Key, Chroma Key), DSK (Luminance Key, Chroma Key, Alpha Key *1, External Key *1) Others: Flip horizontal, Flip vertical, Still Image Capture, Still Image Playback, Output fade (Audio, Video: WHITE or BLACK), Test pattern output *1 Exclusive with alpha bus or AUX bus

AUDIO	
Audio Processing	Sampling rate: 24 bits/48 kHz
Audio formats	Linear PCM, 24 bits/48 kHz, 2ch
Audio Effects	Delay, High pass filter, Compressor, Noise gate, Equalizer, Multi-band compressor, Limiter, Test tone output

CONNECTORS	
Input Connectors	INPUT 1--8: HDMI Type A x 8 AUDIO IN: RCA phono type
Output Connectors	OUTPUT 1--3: HDMI Type A x 3 AUDIO OUT: RCA phono type PHONES: Stereo miniature type
Other Connectors	USB MEMORY: USB A type (for USB flash drive) REMOTE:USB B Type (for remote control from iPad) CTL/EXP:1/4-inch TRS phone type
Other Functions	Preset Memory (24 scenes), Macro Control (100 types), Sequencer Control, Panel lock function, EDID Emulator, Auto Switching, Auto Input Detect, Rec Control

AUDIO INPUT/OUTPUT CHARACTERISTICS	
Input Level	AUDIO IN: -10 dBu (Maximum: +8 dBu)
Input Impedance	AUDIO IN: 38 k ohms
Output Level	AUDIO OUT: -10 dBu (Maximum: +8 dBu) PHONES: 92 mW + 92 mW (32 ohms)
Output Impedance	AUDIO OUT: 1 k ohm PHONES: 10 ohms

OTHERS	
Display	4.3 inches TFT Color LCD: 480 x 272 dots
Power Supply	AC Adaptor
Current Draw	3.3 A
Power Consumption	39.6 W
Operating Temp.	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	317 (W) x 193 (D) x 70 (H) mm 12-1/2 (W) x 7-5/8 (D) x 2-13/16 (H) inches
Weight	2.0 kg / 4 lbs 7 oz * Excluding AC adaptor
Accessories	Owner's Manual, AC adaptor, Power cord

* 0 dBu = 0.775 Vrms

V-160HD

STREAMING VIDEO SWITCHER

The new standard in hybrid event switching

- Portable hybrid event switcher with comprehensive features and connectivity
- Seven selectable output modes: Program, Sub-Program, Aux, Preview, and three multi-view options
- Eight-layer video effects engine
- Powerful live production automation with sequencing, macros, and preset memories
- Extensive device control with Bluetooth, USB, RS-232, and LAN
- Wireless and wired camera tally support
- Eight 3G SDI inputs with frame rate converters
- Eight 1080p HDMI inputs with frame rate converters, including four with real-time scalers
- Seven total outputs across SDI, HDMI, and USB-C streaming
- 40-channel digital audio mixer with effects and processing
- 16-slot still store function supports screen capture or uploaded BMP, JPEG, and PNG images via alpha channel in the internal non-volatile memory
- PTZ control with support for multiple brands and mixed protocols running at once
- Remote control software for iPad, macOS, and Windows

Hybrid to the max

The V-160HD combines the robust hardware needed to flawlessly execute live productions with the livestreaming capabilities found in computer-based systems. While software workflows are fine for online-only events, the V-160HD delivers the pro essentials you need for both the in-person and streaming components of a live hybrid event, complete with the ability to tailor the content for each audience.
On-demand signal processing means you never have to worry about issues like computer CPU overhead, latency, and output delay on live audience screens. Integrated connectivity standards like SDI, HDMI, XLR, and USB-C eliminate the need to build out costly infrastructure and conversion processes. The comprehensive interface provides hands-on controls that can be learned quickly by a single operator.
Presets, macros, and advanced sequencing features let you set up and automate complex switching tasks with one touch.

Stream live

The V-160HD uses the same connection technology as webcams,* allowing you to stream events at 30/60 FPS in Full HD** and reach a worldwide audience. Simply connect the USB-C output to a computer and start streaming with Zoom, Microsoft Teams, YouTube, Facebook Live, or any platform that can use a webcam as its source. Everything is plug and play, with no driver installation needed.

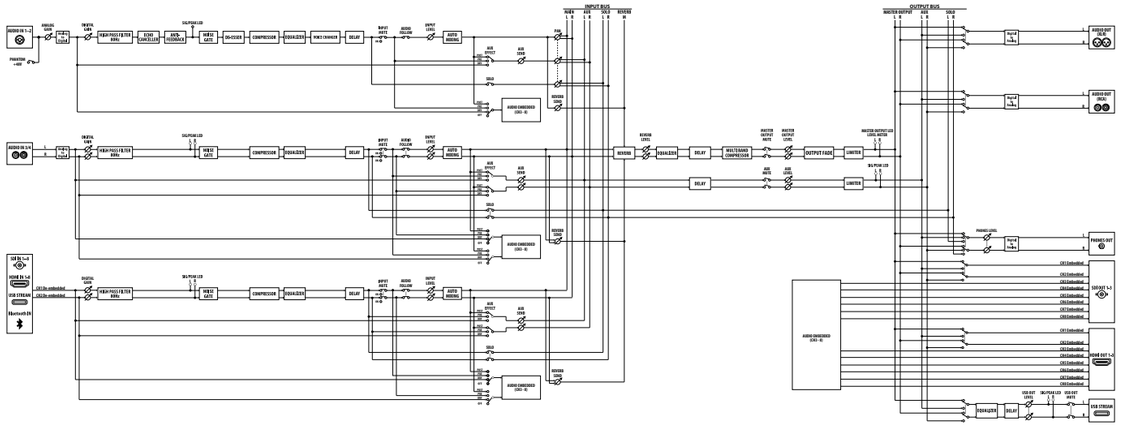
*USB video class (UVC) and USB audio class (UAC) compliant.
**YUV2 (uncompressed) and Motion JPEG (compressed) formats supported.

One-touch automation

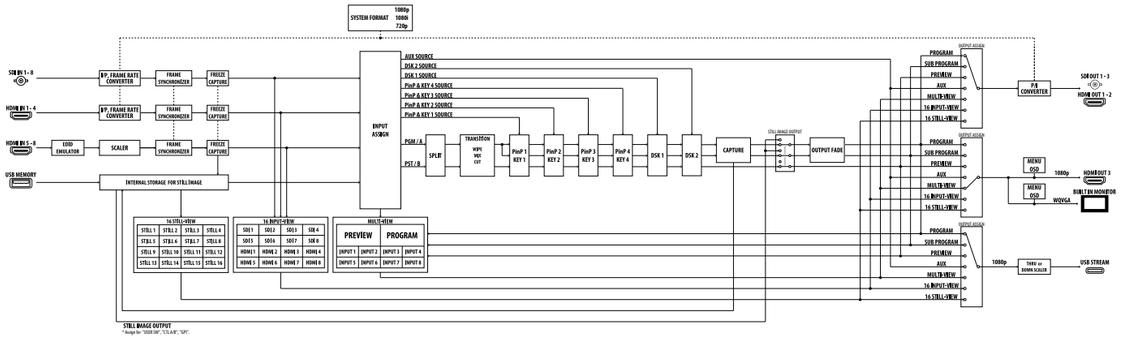
The V-160HD's newly developed sequencer makes presets and macros even more powerful, allowing a single operator to execute perfectly timed cues with ease. Up to 1000 steps can be recorded in the sequencer, and each step can include both presets and macros. Simply set up your cues ahead of time in the sequence list and trigger them in order using the Next button on the panel. With the power of the V-160HD's sequencer, you can tackle the most complex events without ever breaking a sweat.

HDMI and SDI connectivity

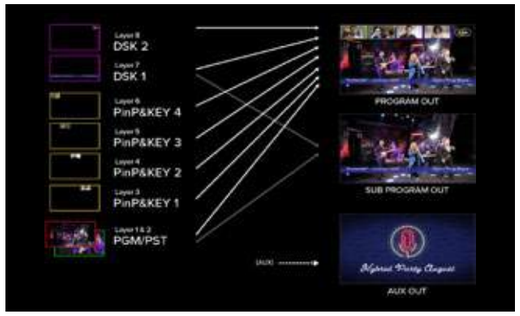
The V-160HD supports HDMI for common A/V devices plus SDI for long cable runs and high-end cameras. Seamlessly mix eight HDMI sources and eight SDI sources in Full HD, even with mismatched frame rates and color spaces. And with built-in scalers on four of the HDMI inputs, you can easily interface with client-provided sources like computers, tablets, smartphones, gaming consoles, and legacy 4:3 devices.



AUDIO BLOCK DIAGRxAM



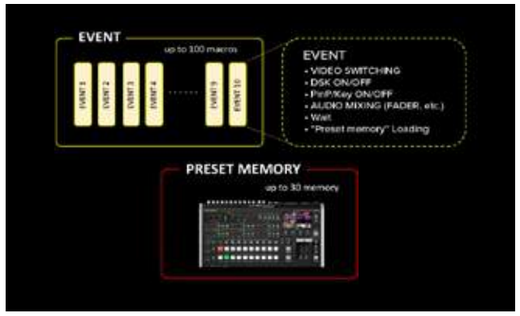
VIDEO BLOCK DIAGRAM



Powerful video effects engine

Video effects and graphics are must-haves to bring polish and excitement to any production. The V-160HD's effects engine features eight composition layers that can be assigned to the Program and Sub-Program outs, so you'll always keep audiences engaged with visually appealing content. With up to four picture-in-picture windows, downstream key layers, 16 still store slots with transparent PNG image support, and more, you can manage the creative needs of any client.

For example:
Layers 1-2: Start with a mixable live background video layer.
Layers 3-6: Place four picture-in-picture layers or chroma/luminance key effects.
Layers 7-8: Add two downstream keyers with support for fill and key inputs.



Instant recall

Storing and recalling custom looks can be accomplished with just a few button presses on the V-160HD. The 30 preset memories and powerful effects engine work together to provide seamless scene changes, including synchronizing the transition of all composition layers at the program output. The 100 macros go even deeper, allowing you to build and fire off complex action lists that include switching, DSK on/off, audio mixing adjustments, PTZ camera movements, and much more. Our free remote control software for macOS, Windows, and iPad further enhances this workflow, providing a large graphical interface for setting up and previewing actions before you take them live.

Extensive PTZ camera support

Robotic PTZ (pan-tilt-zoom) cameras eliminate the need for multiple camera operators, provide great production coverage with studio-grade broadcast quality, and can be placed in discreet locations thanks to their small size. The V-160HD includes built-in support to directly control select Canon, JVC, Panasonic, Sony, PTZOptics, Avonic, and VISCA-compatible PTZ LAN cameras. Mix and match different brands as you like, and operate up to 16 PTZ cameras simultaneously.

V-160HD iPad remote control utility

The dedicated V-160HD remote control app turns an iPad into an efficient touch interface for the V-160HD. Run essential switching functions, mix audio with virtual faders, change settings and parameters quickly and create up to 30 custom scenes for fast, efficient setup changes.

SPECIFICATIONS **V-160HD**

VIDEO	
Video Processing	4:2:2 (Y/Pb/Pr), 8-bit
Input Connectors	HDMI IN 1--4: HDMI type A x 4, * HDCP Supported HDMI IN 5--8: HDMI type A x 4, * HDCP Supported * Multi-format Supported SDI IN 1--8: BNC type x 8 * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M
Output Connectors	HDMI OUT 1--3: HDMI type A x 3 * HDCP Supported SDI OUT 1--3: BNC type x 3 * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M, USB STREAM: USB Type-C (TM), PREIVEW: HDMI type A
Supported Video Input Formats	HDMI IN 1--4, SDI IN 1--8 720/59.94p *1, *3, 720/50p *1, *4 1080/59.94i, 1080/59.94p, 1080/60p, 1080/29.97p, 1080/30p *2, *3 1080/50i, 1080/50p, 1080/25p *2, *4 1080/23.98p, 1080/24p *2 * The input interlaced video signal is converted to progressive video signal by internal processing. *1 SYSTEM FORMAT = 720p *2 SYSTEM FORMAT = 1080i or 1080p *3 FRAME RATE = 59.94 Hz *4 FRAME RATE = 50 Hz HDMI IN 5--8 480/59.94i, 480/59.94p, 720/59.94p, 1080/59.94i, 1080/59.94p, 1080/60p, 1080/29.97p, 1080/30p *1 576/50i, 576/50p, 720/50p, 1080/50i, 1080/50p, 1080/25p *2 1080/23.98p, 1080/24p VGA (640×480/60Hz), SVGA (800×600/60Hz), XGA (1024×768/60Hz) WXGA (1280×800/60Hz), SXGA (1280×1024/60Hz) FWXGA (1366×768/60Hz), SXGA+ (1400×1050/60Hz) UXGA (1600×1200/60Hz), WUXGA (1920×1200/60Hz) * The refresh rate is the maximum value of each resolution. * Conforms to CEA-861-E,VESA DMT Version 1.0 Revision 11. * 1920 x 1200/60 Hz: Reduced blanking * The input interlaced video signal is converted to progressive video signal by internal processing. *1 FRAME RATE = 59.94 Hz, *2 FRAME RATE = 50 Hz
Still Image	Bitmap File (.bmp) Maximum 1920 x 1080 pixels, 24-bit color, uncompressed. PNG File (.png) Maximum 1920 x 1080 pixels, 24-bit color JPG File (.jpg) Maximum 1920 x 1080 pixels, 24-bit color * It can be stored up to 16 files in the internal memory. * * It can be exported in the USB flash drive. * PNG alpha channel supported.
Output formats	HDMI OUT 1--2, SDI OUT 1--3: 720/59.94p *1, *4, 720/60p *1, *5 720/50p *1, *6, 1080/59.94i *2, *4, 1080/60i *2, *5, 1080/50i *2, *6 1080/59.94p *3, *4, 1080/60p *3, *5, 1080/50p *3, *6 *1 SYSTEM FORMAT = 720p, *2 SYSTEM FORMAT = 1080i, *3 SYSTEM FORMAT = 1080p, *4 FRAME RATE = 59.94 Hz, *5 FRAME RATE = 60 Hz, *6 FRAME RATE = 50 Hz HDMI OUT 3: 1080/59.94p *1, 1080/60p *2, 1080/50p *3 *1 FRAME RATE = 59.94 Hz, *2 FRAME RATE = 60 Hz, *3 FRAME RATE = 50 Hz SUSB STREAM: 1080/59.94p, 720/59.94p, 640×480/59.94p *1 1080/29.97p, 720/29.97p, 640×480/29.97p *2, 1080/50p, 720/50p, 640×480/50p *3, 1080/25p, 720/25p 640×480/25p *4 *Uncompressed format (YUV2) and Compressed format (Motion JPEG) supported. *1 FRAME RATE(USB OUT) = 59.94 Hz, *2 FRAME RATE(USB OUT) = 29.97Hz, *3 FRAME RATE(USB OUT) = 50Hz *4 FRAME RATE(USB OUT) = 25Hz
Video Effects	Transition: CUT, MIX (DISSOLVE/FAM/NAM), WIPE (8 types), SPLIT (2 types) Composition: PinP x 4 (SQUARE, CIRCLE, DIAMOND), Keyer x 4 (Luminance Key, Chroma Key), DSK x 2 (Luminance Key, Chroma Key, Alpha Key, External Key) Others: Flip horizontal, Flip vertical, Still Image Capture, Still Image Playback, Output fade (Audio, Video: WHITE or BLACK), Test pattern output

AUDIO	
Audio Processing	Sample rate: 24 bits/48 kHz
Audio formats	USB STREAM (input/output): Linear PCM, 24 bits/48 kHz, 2ch Bluetooth (input): Linear PCM, 24 bits/48 kHz, 2ch HDMI IN: Linear PCM, 24 bits/48 kHz, 2ch HDMI OUT: Linear PCM, 24 bits/48 kHz, 8ch SDI IN: Linear PCM, 24 bits/48 kHz, 2ch (Conforms to SMPTE 299M) SDI OUT: Linear PCM, 24 bits/48 kHz, 8ch (Conforms to SMPTE 299M)
Input Connectors	Analog: AUDIO IN 1--2: Combo type (XLR, 1/4-inch TRS phone), phantom power DC 48 V (unloaded maximum), 14 mA (maximum load), AUDIO IN 3/L, 4/R: RCA phono type Digital: USB STREAM: USB Type-C (TM) Bluetooth HDMI IN 1--8: HDMI type A x 8, SDI IN 1--8: BNC type x 8
Output Connectors	Analog: AUDIO OUT: XLR type, AUDIO OUT: RCA phono type PHONES: Stereo 1/4-inch phone type Digital: USB STREAM: USB Type-C (TM), HDMI OUT 1--3: HDMI type A x 3, SDI OUT 1--3: BNC type x 3
Input Level	AUDIO IN 1, 2: -60--+4 dBu (Maximum: +24 dBu) AUDIO IN 3/L, 4/R: -10 dBu (Maximum: +10 dBu)
Input Impedance	AUDIO IN 1, 2: 9.4 k ohms (ANALOG GAIN 0<24 dBu), 74.4 k ohms (ANALOG GAIN >24dBu), AUDIO IN 3/L, 4/R: 47 k ohms
Output Level	AUDIO OUT (XLR): +4 dBu (Maximum: +24 dBu), AUDIO OUT (RCA): -10 dBu (Maximum: +10 dBu), PHONES: 92 mW + 92 mW (32 ohms)
Output Impedance	AUDIO OUT (XLR): 600 ohms, AUDIO OUT (RCA): 1 k ohm PHONES: 10 ohms
Audio Effects	Auto Mixing, Delay, Reverb, High pass filter, Echo canceller, Anti-feedback, Noise gate, De-esser, Compressor, Equalizer, Voice changer, Multi-band compressor, Limiter, Test tone output

OTHERS	
Other Connectors	USB MEMORY: USB A type (for USB flash drive) USB STREAM: USB Type-C (TM) (for remote control from PC and iPad) Bluetooth: for remote control from iPad CTL/EXP:1/4-inch TRS phone type (for remote control from foot switch and expression pedal), TALLY/GPIO: DB-25 type (Female)(Tally/GPO: 16, GPI: 8), RS-232: DB-9 type (Male) (for Remote Control) LAN CONTROL: RJ45 100BASE-TX (for Remote Control), Reference IN/THRU: BNC type * Black Burst (Sync to frames), Bi-Level, Tri-Level
Other Functions	Preset Memory (30 types), Macro Control (100 types), Sequencer Control Panel lock function,EDID Emulator, Auto Switching, Auto Input Detect Smart Tally, Remote Camera Control, Rec Control
Bluetooth	Ver 4.2 Profile Support: A2DP (Audio), GATT (MIDI over Bluetooth Low Energy), Codec: SBC (Support to the content protection of the SCMS-T method)
Display	4.3 inches TFT Color LCD: 480 x 272 dots
Power Supply	AC adaptor
Current Draw	2.5 A
Power Consumption	55 W
Operation Temp.	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	437 (W) x 253 (D) x 103 (H) mm, 17-1/4 (W) x 10 (D) x 4-1/16 (H) inches 480 (W) x 253 (D) x 103 (H) mm, 18-15/16 (W) x 10 (D) x 4-1/16 (H) inches * When rack mount angles are fitted.
Weight	3.9 kg, 8 lbs 10 oz, excluding AC adaptor
Dimensions	Startup Guide, Leaflet "USING THE UNIT SAFELY", AC adaptor Power cord, Rack-mount angle x 2, Rack-mount angle mounting screw x 6
Options (sold separately)	Footswitch: BOSS FS-5U, FS-6, FS-7, Expression Pedal: EV-5, BOSS FV-500L, FV-500H

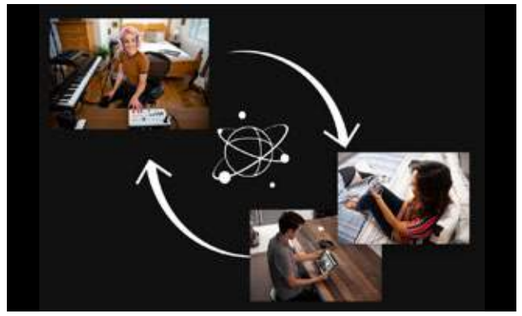
* 0 dBu = 0.775 Vrms

VR-1HD

AV STREAMING MIXER VER 1.2

VR-1HD makes it easier than ever to broadcast live

- Three HDMI inputs that accept HD and computer video resolutions
- Two-studio quality XLR microphone inputs and line input
- Mic input for a goose neck microphone making it easy for hands-free and headset-free performances
- Scene switching functionality, with five pre-set scenes that can be included in any live stream
- Audio Effects functionality allows sound effects, jingles and theme songs in videos/performances
- Auto Switching modes make it easy to put on a one-person show
- Functions as its own audio engineer with automatic mixing functions and built in “equalizers”, “gates” and “compressors” to balance out changes in volume when speaking or singing to ensure professional sound performance
- Voice Changer effect from Roland’s VT series of Voice Transformers can instantly transform any performer’s sound
- Stream performances and presentations easily through a computer’s USB 3.0 ports



Real engagement in real time

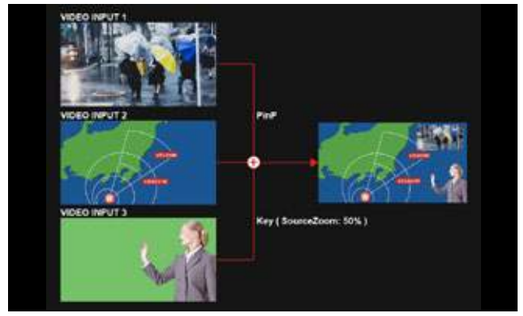
If you’re a content creator seeking maximum engagement, livestreaming outperforms uploaded video by a significant margin; audiences are larger, watch for longer and post more comments. Roland’s VR-1HD lets you broadcast dynamic multi-camera livestreams, complete with amazing picture and sound that easily outshines ‘standard’ livestreams from a mobile phone or static webcam. Whether you’re a creator, gamer, commentator or presenter, it’s the easy way to livestream with high production standards. And since you’re going to get more comments, ensure they’re good ones with the VR-1HD.

Your ‘plug and play’ broadcast studio

The VR-1HD has three “worry-free” HDMI inputs, and each one accepts a variety of HD and computer-based video resolutions. This lets you connect, switch and stream different sources including cameras, presentations, gameplay and even smartphones and tablets without having to think about it. The audio from these sources can be blended with the two studio-quality XLR microphone inputs and dedicated line input. Best of all, as the VR-1HD is designed for live broadcasting, its dedicated controls and top-mounted mic input (with gooseneck mic) let you go hands-free and headset-free while livestreaming.

Switch to superior livestreams

When preparing a video for uploading, your editing software can add some impressive layering options, including professional transitions that make ‘live-switched’ videos look boring by comparison. The VR-1HD has built-in Scene Switching to instantly jump between scenes that contain preset arrangements of layered sources, displayed within customizable inset windows. Set-up the scenes in advance and recall them via the five scene preset buttons, to make your livestreaming way more interesting.



Stand out from the crowd

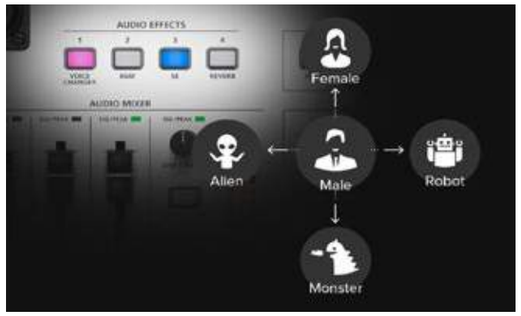
Chroma keying and green screens place a subject in front of a background that isn't really there and is a high-end visual effect found in movies and used by weather people. Stand out from the crowd of live streamers to broadcast live from the beach or another planet or use chroma key technology to teach and promote your products all from the comfort of your home.

SYSTEM PROGRAM VER 1.2

Improve live streaming creative capabilities, the VR-1HD ver. 1.20 update includes Chroma Key visual effects for background replacement, motion scene switching for fluid transitions between complex scenes, and a unique Picture by Picture layout to show two video sources side by side.

Audio engineer inside too

Put audio on auto-pilot and relax, thanks to the VR-1HD's Auto Mixing function. Just like having a sound engineer, you can ensure that different audio inputs aren't competing, while also checking that the sound remains balanced. You can even set certain inputs to take priority so when the host starts to speak, the other audio levels are automatically reduced. Audio from your input sources can automatically change when you switch video sources, by engaging the Audio Follows Video function.



Radically transform your voice

Derived from Roland's VT series, the VR-1HD's Voice Changer effect can be applied to the mic inputs, and each input even has its own Voice Changer settings, so people can sound like someone else — or something else — entirely... male can sound like a female, a female can sound like a male, and anyone can sound like a robot, a monster or an alien.

Connect to your computer, connect to your audience

The VR-1HD uses the same connection technology as webcams, so just hook up to your computer via USB 3.0 and fire up the live casting or recording software. Then jump straight into a professionally produced, Full HD broadcast on your favorite platform, including Twitch, YouTube or FB Live.

RCS

The VR-1HD RCS software is designed to control the VR-1HD using a computer. By connecting the VR-1HD to your computer via USB, you will be able to copy settings (backup) or update the system software of the VR-1HD in addition to remote controlling the unit from your computer.

Video follows audio

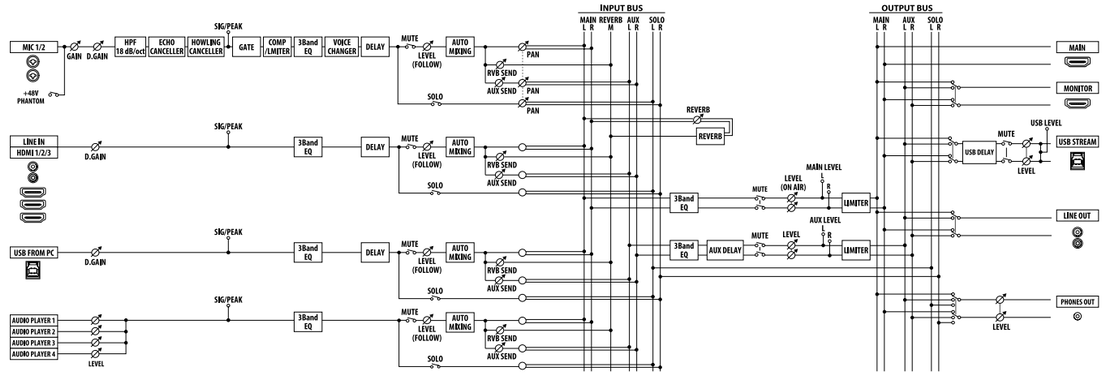
The VR-1HD switches cameras based on who's speaking into their microphone. If both people talk at once, or if no one is speaking, the VR-1HD can switch to a wide shot showing both presenters.

Beat sync switching

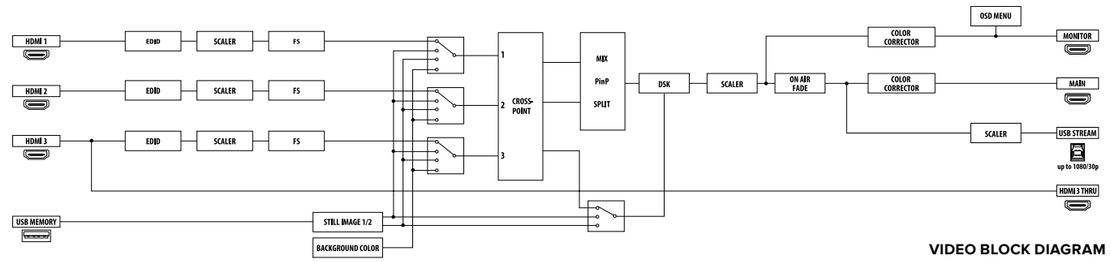
Start playing music and the VR-1HD will switch to different camera inputs based on your playing tempo or the music in your DJ performance—letting you act as your own VJ.

Auto scan

For extended live streams with no operator, set the VR-1HD to switch between sources in a pre-defined order, or randomly, at your chosen rate of time.



AUDIO BLOCK DIAGRAM



VIDEO BLOCK DIAGRAM

SPECIFICATIONS **VR-1HD**

VIDEO	
Processing	4:4:4 (Y/Pb/Pr), 10-bit
Input Connectors	VIDEO INPUT 1--3 connectors: HDMI type A x 3 * HDCP Supported. * Multi-format Supported
Output Connectors	MAIN connector: HDMI type A * HDCP Supported MONITOR connector: HDMI type A * HDCP Supported THRU connector: HDMI type A * HDCP Supported USB STREAM port: USB B type
Input formats	480/59.94i, 576/50i, 480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p, VGA (640 x 480/60 Hz), SVGA (800 x 600/60 Hz), XGA (1024 x 768/60 Hz), HD (1280 x 720/60 Hz), WXGA (1280 x 800/60 Hz), SXGA (1280 x 1024/60 Hz), FWXGA (1366 x 768/ 60 Hz), SXGA+ (1400 x 1050/60 Hz), UXGA (1600 x 1200/60 Hz), FHD (1920 x 1080/60 Hz), WUXGA (1920 x 1200/60 Hz) * The refresh rate is the maximum value of each resolution * Conforms to VESA DMT Version 1.0 Revision 11 * 1920 x 1200, 60 Hz: Reduced blanking * The video signal frame rate can be selected at the SYSTEM menu (59.94 Hz or 50 Hz)
Output formats	MAIN, MONITOR connectors: 720/59.94p, 720/50p, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p, XGA (1024 x 768/60 Hz) (*1), WXGA (1280 x 800/60 Hz) (*1), SXGA (1280 x 1024/60 Hz) (*1), FWXGA (1366 x 768/60 Hz) (*1), SXGA+ (1400 x 1050/60 Hz) (*1), UXGA (1600 x 1200/60 Hz) (*1), FHD (1920 x 1080/60 Hz), WUXGA (1920 x 1200/60 Hz) * The video signal frame rate can be selected at the SYSYTEM menu (59.94 or 50). (*1) Output refresh rate is 75 Hz when frame rate is set to 50 Hz. USB STREAM port: 854 x 480/29.97p, 854 x 480/25p, 854 x 480/59.94p, 854 x 480/50p, 720/29.97p, 720/25p, 720/59.94p, 720/50p, 1080/29.97p, 1080/25p * The video signal frame rate can be selected at the SYSTEM menu (59.94 Hz or 50 Hz)
Still Image	Maximum Size: 1920 x 1200 pixels Format: Windows Bitmap File (.bmp) 24 bit per pixel, uncompressed * It can be loaded up to 2 files from USB memory at startup.
Video Effects	Scene: PinP, Split Transition: Black fade, Mix fade Key Composition: Luminance key Other: Still Image playback, Output fade (Audio, Video: WHITE or BLACK), Test pattern output

0 dBu=0.775 Vrms

AUDIO	
Audio Processing	Sample rate: 48 kHz, 24 bits
Audio formats	VIDEO INPUT 1--3 connectors: Linear PCM, 48 kHz, 24 bits, stereo USB STREAM port: Linear PCM, 48 kHz, 16 bits, stereo
Input Connectors	VIDEO INPUT 1--3 connectors: HDMI type A MIC IN 1--2 jacks: Combo type (XLR, 1/4-inch TRS phone), phantom power (DC 48 V, 10 mA Max) LINE IN jacks: RCA phono type USB STREAM port: USB B type
Output Connectors	MAIN connector: HDMI type A MONITOR connector: HDMI type A LINE OUT jacks: RCA phono type USB STREAM port: USB B type PHONES jack: Stereo miniature phone type
Nominal Input Level	MIC IN 1--2 jacks: -60--+4 dBu (Maximum input level: +28 dBu) LINE IN jacks: -10 dBu (Maximum input level: +8 dBu)
Input Impedance	MIC IN 1--2 jacks: Minimum 10 k ohms (balanced, HEAD AMP GAIN: 0--+17 dBu), Minimum 5 k ohms (balanced, HEAD AMP GAIN: +17--+64 dBu) LINE IN jacks: 15 k ohms
Nominal Output Level	LINE OUT jacks: -10 dBu (Maximum input level: +8 dBu) PHONES jack: 92 mW + 92 mW (32 ohms)
Output Impedance	LINE OUT jacks: 1 k ohms PHONES jack: 10 ohms
Audio Effects	Auto mixing, Echo canceller, Howling canceller, EQ, Delay, Compressor, HPF, Gate, Reverb, Limiter, Voice changer
Audio Player	Number of Players: 4 Data Format: WAV (Linear PCM, 48 kHz, 16 bits stereo/44.1 kHz, 16 bits, stereo)

COMMON SECTION	
Connectors	USB MEMORY port (HOST): USB A type (For USB flash drive, Still image, Audio player) USB STREAM port (DEVICE): USB B type (For USB-VIDEO (USB 3.0), USB-AUDIO stereo (USB 2.0): 1 IN/1 OUT, Remote control) DC IN jack
Functions	Scene memory : 5, Panel lock function, EDID emulator, Auto switching (Auto scan, Beat sync switching, Video follow audio)
Power Supply	AC Adaptor
Current Draw	2 A
Power Consumption	24 W
Operating Temp.	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	314 (W) x 169 (D) x 66 (H) mm, 12-3/8 (W) x 6-11/16 (D) x 2-5/8 (H) inches
Weight	1.6 kg, 3 lbs 9 oz
Accessories	Startup Guide, Leaflet "USING THE UNIT SAFELY", AC adaptor, Power cord

VR-4HD

HD AV MIXER VER 2.1

All-in-one HD AV mixer with built-in USB 3.0 for web streaming and recording

- All-in-one portable production solution
- Easy to use with dedicated hardware controls and audio faders and integrated touch screen preview monitor
- 6 input, 4-Channel Video Switcher
- Supports HDMI, RGB/Component, and Composite Video Inputs Up to 1080p
- Input 4's scaler now supports a wider range of video and VESA resolutions
- Built-in Scaler via CH4
- Automatic switching modes [Ver.2.0]
- 18-channel digital audio mixer with XLR, TRS, and RCA jacks along with audio from HDMI inputs
- Embedding and de-embedding of audio with delay settings
- Auto Mixing and Echo Canceling function
- Composition effects including DSK (Downstream Keyer), picture-in-picture etc.
- Capturing a still Image from input video on channel 4 [Ver.1.5]
- Built-in touch quad-input multi-viewer with audio metering
- External multi-view output through HDMI
- HDCP Support
- USB3.0 video/audio output up to 1080/30p (uncompressed) and Audio Loopback feature
- Software control using VR-4HD RCS application for Mac and PC and remote control via USB connection [Ver.1.5]
- Sending a still image to the VR-4HD by VR-4HD RCS
- Tally, GPIO connections

The VR-4HD is a complete HD studio in a compact and portable package that replaces several different pieces of complex A/ V equipment. Designed with single-person operation in mind, the VR-4HD enables easy switching and mixing of sound and video using advanced video and audio Digital Signal Processing (DSP) along with dedicated hardware controls, faders, buttons and touch screen interface. It beautifully integrates a digital audio mixer, video switcher, multi-viewer touch screen and USB video/audio streaming interface into a stand-alone device. This portable live HD production solution is ideal for schools, churches, council meetings, corporate events, sports, training sessions, or any other live event.

Easy operation for professional results

The VR-4HD features professional quality broadcast controls and switches ensuring more accurate and faster operation than interfaces based on a computer style mouse and keyboard. The ability to simultaneously switch video with the push of a button and adjust audio with the push of a fader is invaluable and puts all essential features at the operator's fingertips. The built-in multi-view screen is also a touch screen interface for accessing set-up parameters, making it extremely easy to adjust picture-in-picture settings by dragging the inset window onto the screen.

Compositing effects

The VR-4HD includes DSK (Downstream Keying), Picture-in-Picture (PinP), Split and Quad composting effects ideal for creating news style broadcasts and corporate presentation content. The DSK function is great for overlaying titles, song lyrics or logos onto incoming video sources that can be switched in the background while text or images remain displayed.The DSK supports both Luminance Keying (Black / White) and Chroma Keying (Blue / Green) for compositing two videos in one screen using Picture-in-Picture, or for using the split function.

Support for today and yesterday's video sources

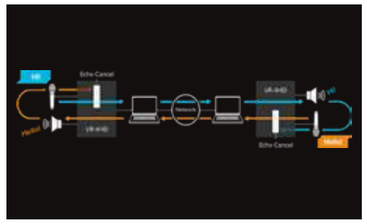
The VR-4HD has three dedicated HDMI input connectors compatible with a variety of equipment and support 1080p/1080i/720p video resolution. The fourth input includes a scaler to support both video and computer resolutions and also supports analog RGB and component input so older devices can be used as sources without the need for external conversion equipment. Both progressive and interlace signals can be input allowing for both 1080i and 1080p signals to be used at the same time.

Great video needs great audio

Achieving great sounding audio for video productions is easy with the VR-4HD which features Roland's award winning digital signal processing and advanced features including auto-mixing, echo cancel and delay for perfect lip-sync between audio and video. The VR-4HD's audio mixer can mix the four XLR microphone inputs, stereo RCA and 1/8 mini connector along with the audio embedded in the four HDMI inputs. The final mix can be output via XLR, RCA and also embedded into the HDMI ouput.

SYSTEM PROGRAM VER 2.1

System Update Ver. 2.100 includes Mix-minus (Audio Loop Back) on the USB bus. Mix-minus is often used to prevent echoes back out to the livestream audience.



Unique loop-back audio capability

A unique loop-back audio capability is included with the USB 3.0 port that can bring in audio from a connected PC using a conferencing software, such as Skype, and return audio to the PC without any howling or echo thanks to the included Echo Cancelation feature. This makes the VR-4HD an ideal web conferencing tool that allows for multiple video and audio sources to be used with free online webconference softwares.

Auto Mixing function

The included Auto-Mixing function makes mixing multiple speakers at conferences and panels simple and easy by automatically managing the levels of the microphones across the multiple people speaking. and can even give priority for volume Volume priority can be assigned to an event moderator who can always be heard above the other participants.

USB 3.0 for recording and streaming

Recording or webcasting from the VR-4HD is easily achieved by connecting to a PC or Mac using the built-in USB 3.0 connection. Up to Full 1080p uncompressed resolution can be output from the VR-4HD. The VR-4HD embeds the audio mix with the video program and delivers at the selected resolution. The free VR Video Capture application for Mac and PC provides an easy and effective way to capture uncompressed video with high resolution audio. The VR Video Capture application can also capture compressed video for easy and immediate delivery of content to online video sites or internal corporate servers.

Remote control

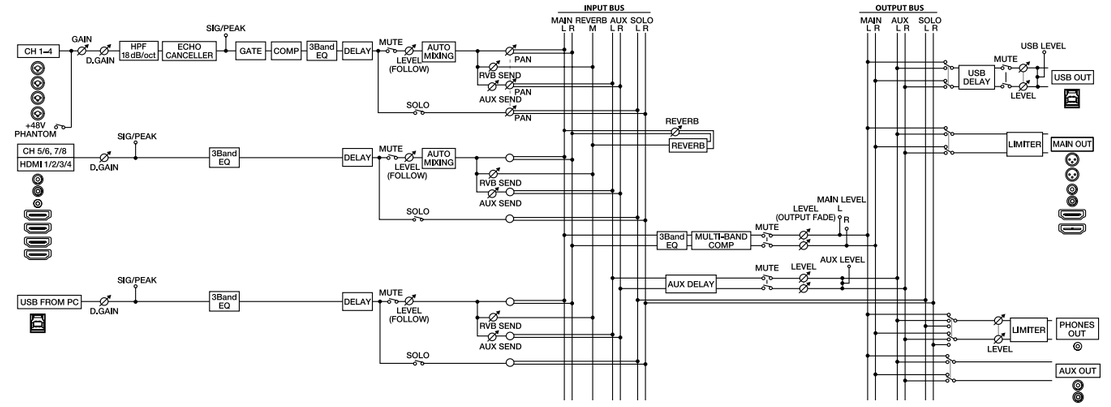
The VR-4HD RCS software is designed to control the VR-4HD using a computer. By connecting the VR-4HD to your computer via USB, you will be able to copy settings (backup) or update the system software of the VR-4HD in addition to remote controlling the unit from your computer. The VR-4HD can be operated remotely from a computer, touch panel, or other external control device through RS-232C. The VR-4HD is equipped with a D-Sub 9-pin TALLY/GPIO connector. In addition to tally input/output functions, this provides functionality for control signal input and output, and you can use it to transmit and receive.

Videography and webcast

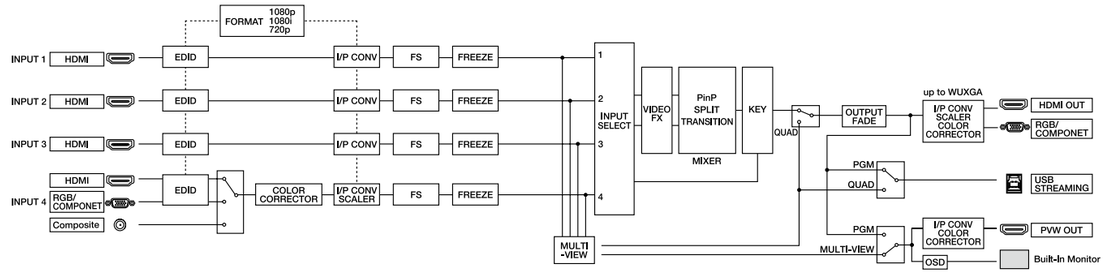
Education

Event and meeting

Video conference



AUDIO BLOCK DIAGRAM



VIDEO BLOCK DIAGRAM

SPECIFICATIONS **VR-4HD**

VIDEO	
Processing	4:2:2 (Y/Pb/Pr), 8-bit
Input Connectors	INPUT 1-3: HDMI Type A (19 pins) x 3 * HDCP Supported INPUT 4: HDMI Type A (19 pins) x 1 * HDCP Supported RGB/COMPONENT (Mini D-sub 15-pin type) x 1 COMPOSITE (RCA phono type) x 1 * INPUT 4: HDMI , RGB/COMPONENT or COMPOSITE selected.
Output Connectors	MAIN OUT: HDMI Type A (19 pins) x 1 * HDCP Supported RGB/COMPONENT (Mini D-sub 15-pin type) x 1 PREVIEW OUT: HDMI Type A (19 pins) x 1 * HDCP Supported USB3.0: USB B type x 1
Input formats	HDMI INPUT 1-3: 720/59.94p, 720/50p (SYSTEM FORMAT: 720p) 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p (SYSTEM FORMAT: 1080i, 1080p) INPUT 4: HDMI, RGB/COMPONENT: 480/59.94i, 576/50i, 480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p VGA (640 x 480/60 Hz), SVGA (800 x 600/60 Hz), XGA (1024 x 768/60 Hz) WXGA (1280 x 768/60 Hz), SXGA (1280 x 1024/60 Hz) FWXGA (1366 x 768/60 Hz), SXGA+ (1400 x 1050/60 Hz) UXGA (1600 x 1200/60 Hz) , WUXGA (1920 x 1200/60 Hz) COMPOSITE: 480/59.94i, 576/50i * The refresh rate is the maximum value of each resolution. * Conforms to VESA DMT Version 1.0 Revision 11. * 1920 x 1200/60 Hz: Reduced blanking * The input interlaced video signal is converted to progressive video signal by internal processing. * The video signal frame rate can be selected at the SYSTEM menu (59.94 Hz or 50 Hz).
Output formats	MAIN OUT (HDMI, RGB/COMPONENT): 480/59.94i, 576/50i, 480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/59.94i, 1080/50i 1080/59.94p, 1080/50p VGA (640 x 480/60 Hz), SVGA (800 x 600/60 Hz), XGA (1024 x 768/60 Hz) WXGA (1280 x 768/60 Hz), SXGA (1280 x 1024/60 Hz) FWXGA (1366 x 768/60 Hz), SXGA+ (1400 x 1050/60 Hz) UXGA (1600 x 1200/60 Hz) , WUXGA (1920 x 1200/60 Hz) PREVIEW OUT: 720/59.94p, 720/50p (SYSTEM FORMAT: 720p) 1080/59.94i, 1080/50i (SYSTEM FORMAT: 1080i) 1080/59.94p, 1080/50p (SYSTEM FORMAT: 1080p) USB3.0: 720/29.97p, 720/25p (SYSTEM FORMAT: 720p) 1080/29.97p, 1080/25p (SYSTEM FORMAT: 1080i, 1080p) * The MAIN OUTPUT format of HDMI and RGB/COMPONENT is always the same. When an interlaced format is selected, component signal is output from the RGB/COMPONENT connector. When a non-interlaced format is selected, RGB signal is output from the RGB/COMPONENT connector. * The video signal frame rate can be selected at the SYSTEM menu (59.94 Hz or 50 Hz).
Video Effects	Transition: CUT, MIX (DISSOLVE/FAM/NAM/MOSAIC), WIPE (30 types) Effects: NEGATIVE, EMBOSS, COLORIZE, COLORPASS, POSTERIZE, SILHOUETTE, MONOCOLOR, FINDEDGE (8 types) Composition: PinP, SPLIT, QUAD, KEY (Luminance Key, Chroma Key)

AUDIO	
Audio Processing	Sampling rate: 24 bits/48 kHz
Audio formats	HDMI: Linear PCM, 24 bits/48 kHz, 2 ch USB: Linear PCM, 16 bits/48 kHz, 2 ch
Input Connectors	AUDIO IN 1-4 (XLR/TRS combo type, phantom power) AUDIO IN 5-6 (RCA phono type) AUDIO IN 7/8 (Stereo miniature type) USB B type (stereo)
Phantom Power	DC 48 V (unloaded maximum), 10 mA (maximum load) * Current value per channel
Output Connectors	AUDIO OUT: L, R (XLR type) L, R (RCA phono type) AUX OUT: L, R (RCA phono type) USB: USB B type (stereo) PHONES: Stereo miniature type
Signal Level and Impedance	XLR/TRS combo type Input Signal Level: -60--+4 dBu (Maximum: +22 dBu) Input Impedance: 10 k ohms (GAIN 0--23 dB), 5 k ohms (GAIN 24--64 dB) RCA phono type: Input Signal Level: -10 dBu (Maximum: +8 dBu) Input Impedance: 15 k ohms Output Signal Level: -10 dBu (Maximum: +8 dBu) Output Impedance: 1 k ohm XLR type: Output Signal Level: +4 dBu (Maximum: +22 dBu) Output Impedance: 600 ohms Miniature type: Input Signal Level: -15 dBu (Maximum: +3 dBu) Input Impedance: 15 k ohms Headphones: Output Signal Level: 75 mW + 75 mW Output Impedance: 32 ohms
Audio Effects	Auto Mixing, Echo Cancel, EQ, Delay, Compressor, HPF, Gate, Reverb, Multi-Band Compressor, Limiter

OTHERS	
Other Connectors	RS-232: D-sub 9-pin type Tally/GPIO: Mini D-sub 15-pin type USB 3.0/2.0 (device): USB B type, USB-VIDEO (Super-Speed), USB-AUDIO 2 IN/2 OUT (Full-Speed), remote control from PC
Display	Graphic Color LCD, 320 x 240 dots, touch panel
Other Functions	MEMORY (8 types), FREEZE (input video captured) OUTPUT FADE (Audio, Video: WHITE or BLACK)
Power Supply	AC 115 V, AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)
Current Draw	3 A
Power Consumption	36 W
Operating Temp.	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	339 (W) x 217 (D) x 87 (H) mm, 13-3/8 (W) x 8-9/16 (D) x 3-7/16 (H) inches
Weight (excl. AC adapt.)	2.4 kg, 5 lbs 5 oz
Accessories	Owner's manual, AC adaptor, Power cord

0 dBu=0.775 Vrms

VR-50HD MK II

MULTI-FORMAT AV MIXER VER 2.0

Mark II, inspired by you

- Aux output for dedicated record, streaming, or confidence monitor feeds
- New high-quality audio preamps and converters for crystal-clear sound
- Updated user interface for fast, trouble-free operation
- Automatic audio mixing, adaptive noise reduction and automatic video switching functions to support single operators
- Direct control of select PTZ cameras from JVC, Panasonic, Sony, PTZOptics, Avonic and VISCA compatible over LAN

All-in-one convenience and ultra-flexible connectivity

The powerful VR-50HD MK II is a completely self-contained AV solution, consolidating video switching, digital audio mixing, multi-viewer touchscreen control, and USB AV streaming into a single unit that's simple to run. And with the comprehensive rear patch panel, it's quick and easy to make on-the-fly input assignments to cross-points on the switcher.

Separate feeds for separate needs

Live streams, HD recording and the presenter comfort monitor often have separate visual needs from the main program output. The VR-50HD MK II has you covered, allowing you to send any of the connected input devices to a dedicated AUX output without affecting the main PGM destination. Use the AUX assignment panel buttons to switch the source, or synchronize the AUX output with the PGM (mixer) output to act as a built-in distribution amp.

Redesigned interface for free-flowing operation

The VR-50HD MK II not only does more, it's also easier to operate via a redesigned user interface. Drilling down into menus while switching is a thing of the past, thanks to dedicated broadcast-style buttons for AUX, PinP, and Still sources. Select, Solo, and Mute buttons are included for all audio channels, speeding up the monitoring process. And with the large touchscreen multi-view monitor, you can view and assign inputs, display up to four still images, execute preview/program functions, and much more.

Pro sound made easy

The VR-50HD MK II offering a number of automation functions that allow a single operator to switch video and mix pro-level audio at the same time. Use Auto Mixing to balance audio levels, Video Follows Audio to switch cameras based on sound input, and Anti-Feedback to automatically tame howling mic feedback. Adaptive noise reduction helps with noise canceling and hum suppression. The VR-50HD MK II is also equipped with a variety of standard audio production inputs, including four XLR/TRS combo jacks with 48 V phantom power, four stereo pairs (two ¼-inch and two RCA), and embedded audio from 3G/HD/SD-SDI and HDMI.

SYSTEM PROGRAM VER 2.0

Free VR-50HD MK II Ver.2.0 update adds Adaptive Noise Reduction and Loudness AGC, and LAN based PTZ camera control.

Integrated Multi-PTZ camera control

Robotic pan-tilt-zoom (PTZ) cameras eliminate the need for multiple camera operators, provide great production coverage with studio-grade broadcast quality, and can be placed in discreet locations thanks to their small size. The VR-50HD MK II includes built-in support to directly control select JVC, Panasonic, Sony, PTZOptics, Avonic and VISCA compatible PTZ LAN cameras, so you don't need to employ a dedicated PTZ camera controller or operator. Up to six PTZ cameras can be operated at once via the LAN port.

Intelligence built in

The VR-50HD MK II is equipped with a number of intelligent audio mixing and video switching functions to enhance your workflow. See the VR-50HD MK II's intelligent functions in action.

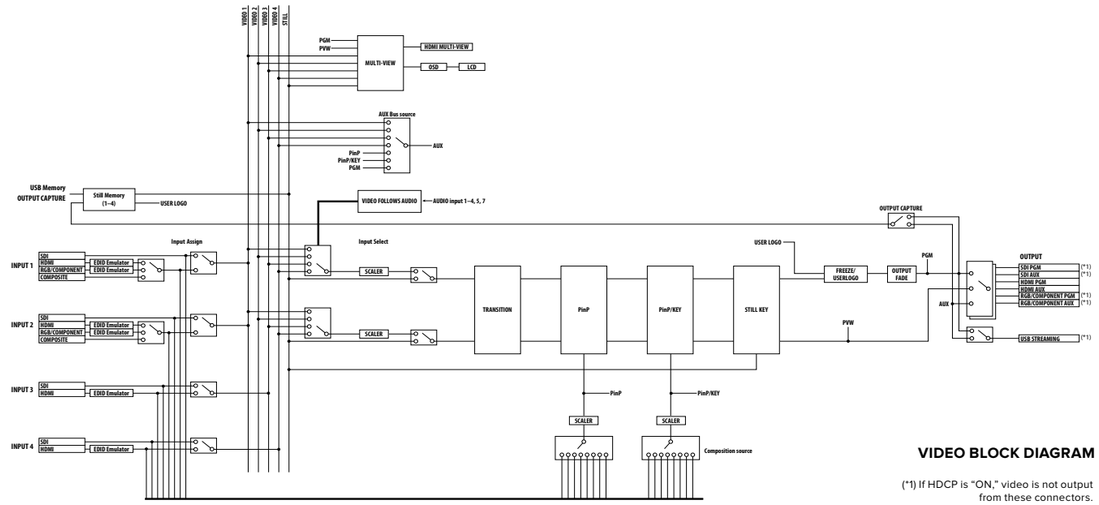
Four-layer composition and still store

Place keyed video on picture-in-picture, or superimpose a still image* on top of all layers and switch these effects on/off at any time.

*Still position and size compositing cannot be adjusted.
*Still images are stored in volatile memory.

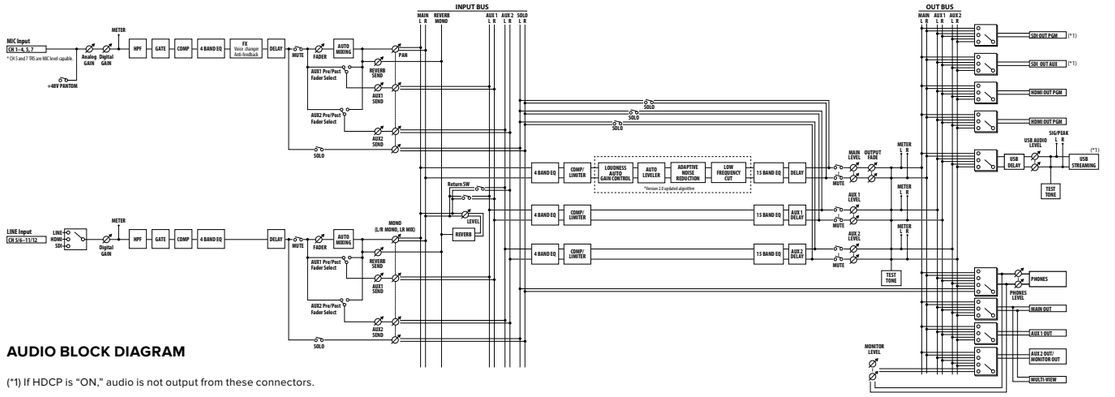
Easy, uncompressed streaming output with USB 3.0

The VR-50HD MK II uses the same connection technology as webcams, allowing you to capture and share events to reach a worldwide audience. Simply plug into a computer via USB 3.0 and use any streaming service that's able to use a webcam as its source. Everything is plug-and-play, with no software to download or drivers to install. For recording to a web-ready full HD AV file, use Roland's free VR Capture software for Mac/Windows.



VIDEO BLOCK DIAGRAM

(*1) If HDCP is "ON," video is not output from these connectors.



AUDIO BLOCK DIAGRAM

(*1) If HDCP is "ON," audio is not output from these connectors.

SPECIFICATIONS **VR-50HD MK II**

VIDEO	
Processing	4:4:4 (RGB), 10-bit, 4:4:4 (Y/Pb/Pr), 10-bit
Input Connectors	SDI IN 1--4 connectors: BNC type x 4 (INPUT 1--4) * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M, 259M-C. HDMI IN 1--4 connectors: HDMI type A x 4 (INPUT 1--4) * HDCP Supported RGB/COMONENT IN 1--2 connectors: HD DB-15 type x 2 (INPUT 1--2) COMPOSITE IN 1--2 connectors: BNC type x 2 (INPUT 1--2) * INPUT 1--2: Select SDI, HDMI, RGB/COMPONENT or COMPOSITE using menu.
Output Connectors	HSDI OUT (PGM, AUX) connectors: BNC type x 2 (PGM OUT, AUX OUT) * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M, 259M-C HDMI OUT (PGM, AUX, MULTI-VIEW) connectors: Type A x 3 (PGM OUT, AUX OUT, MULTI-VIEW OUT) * HDCP SupportedAnalog RGB/HD-Component: Mini D-sub 15-pin type x 2 (PGM OUT, AUX OUT)
Input/Output Level and Impedance	Composite (COMPOSITE IN): 1.0 Vp-p 75 ohms Analog RGB (RGB/COMPONENT IN, RGM/COMPONENT OUT): 0.7 Vp-p 75 ohms (H, V: 5 VTTL) Analog HD (RGB/COMPONENT IN, RGB/COMPONENT OUT): 1.0 Vp-p 75 ohms (Sync-Signal: Bi-Level/Tri-Level)
Supported Video Formats	SDI (SDI IN, SDI OUT): 480/59.94i, 576/50i, 720/59.94p, 720/50p, 1080/23.98p (*3), 1080/24p (*3), 1080/29.97p (*3), 1080/30p (*3), 1080/25p (*3), 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p * Conforms to SMPTE 274M, SMPTE 296M, ITU-R BT.601-5. HDMI (HDMI IN, HDMI OUT) (*1): 480/59.94i, 576/50i, 480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/23.98p (*3), 1080/24p (*3), 1080/29.97p (*3), 1080/30p (*3), 1080/25p (*3), 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p 1024 x 768/60 Hz (*2), 1280 x 720/60 Hz, 1280 x 800/60 Hz (*2), 1280 x 1024/60 Hz (*2), 1400 x 1050/60 Hz, 1920 x 1080/60 Hz HDMI (HDMI OUT MULTI-VIEW only) (*1): 1080/59.94p Component (RGB/COMPONENT IN, RGB COMPONENT OUT): 480/59.94i, 576/50i, 480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p RGB (RGB/COMPONENT IN, RGB/COMPONENT OUT) (*1): 1024 x 768/60 Hz (*2), 1280 x 720/60 Hz (*2), 1280 x 800/60 Hz (*2), 1280 x 1024/60 Hz (*2), 1400 x 1050/60 Hz, 1920 x 1080/60 Hz Composite (COMPOSITE IN): NTSC, PAL *Note *1 Conforms to CEA-861-E or VESA DMT Version 1.0 Revision 11. *2 Output refresh rate is 75 Hz when frame rate is set to 50 Hz. * The video signal frame rate must match the unit's frame rate setting. *3 Only input format is supported. * The output format of HDMI and RGB/Component is alwaysthe same. When a Video format is selected, component signal is output from the RGB/COMPONENT connector. When a RGB format is selected, RGB signal is output from the RGB/COMPONENT connector. USB-VIDEO (USB STREAMING): 480/29.97p, 576/25p, 480/59.94p, 576/50p, 720/29.97p, 720/25p, 720/59.94p, 720/50p, 1080/29.97p, 1080/25p, 1080/59.94p, 1080/50p Still Image: Windows(R) Bitmap File (.bmp) * Maximum 1920 x 1080 pixels, 24-bit per pixel, uncompressed. * It can be loaded up to 4 files from USB memory.
Effects	Transition: Mix, Cut, Wipe (9 patterns) Composition: PinP, Chrominance Key, Luminance Key Others: Output Fade, Output Freeze, User Logo

SYSTEM RECOMMENDATIONS	
Windows	8.0 or higher
Mac	OS X 10.7 and higher * When recording data in the HD size, use OS X 10.8.5 or later.
Common	Ivy Bridge Core i5 and higher 8GB Memory or more USB 3.0 (supported USB3.0 Intel Chipset e.g. 7Series)

0 dBu=0.775 Vrms

AUDIO	
Audio Processing	Sampling Rate: 24 bits, 48 kHz
Audio formats	SDI (SDI IN, SDI OUT): Linear PCM, 24 bits, 48 kHz, 2 ch * SMPTE 299M, SMPTE 272M-C HDMI (HDMI IN, HDMI OUT): Linear PCM, 24 bits, 48 kHz, 2 ch USB-AUDIO (USB STREAMING): Linear PCM, 16 bits, 48 kHz, 2 ch
Input Connectors	AUDIO IN 1--4 jacks: Combo type (XLR, 1/4-inch TRS phone), balanced, phantom power (DC 48 V, 10 mA Max) AUDIO IN 5--8 jacks (1/4-inch TRS phone type) (LINE 1--2) * AUDIO IN 5 and 7 are mic level capable. (MIC 5, 7) AUDIO IN 9--12 jacks (RCA phono type) (LINE 3--4)
Output Connectors	AUDIO OUT MAIN (L, R) jacks: XLR type AUDIO OUT AUX 1 (L, R) jacks: RCA phono type AUDIO OUT AUX 2/MONITOR (L, R) jacks: 1/4-inch TRS phone type PHONES jack: Stereo 1/4-inch phone type PHONES jack: Stereo miniature type
Nominal Input Level	AUDIO IN 1--4 jacks: -64 to +4 dBu (Maximum input level: +24 dBu) AUDIO IN 5, 7 jacks: -64 to +4 dBu (Maximum input level: +24 dBu) AUDIO IN 6, 8 jacks: +4 dBu (Maximum input level: +24 dBu) AUDIO IN 9--12 jacks: -10 dBu (Maximum input level: +9 dBu)
Input Impedance	AUDIO IN 1--4 jacks: 30 k ohms, AUDIO IN 5--8 jacks: 30 k ohms AUDIO IN 9--12 jacks: 7 k ohms
Nominal Output Level	AUDIO OUT MAIN L-R jacks: +4 dBu (Maximum output level: +24 dBu) AUDIO OUT AUX 1 jacks: -10 dBu (Maximum output level: +8 dBu) AUDIO OUT AUX 2/MONITOR jacks: +4 dBu (Maximum output level: +24 dBu) Headphones: 72 mW + 72 mW (32 ohms load) Headphones: 72 mW + 72 mW (32 ohms load)
Output Impedance	AUDIO OUT MAIN L-R jacks: 600 ohms, AUDIO OUT AUX 1 jacks: 1 k ohms AUDIO OUT AUX 2/MONITOR jacks: 600 ohms, Headphones: 30 ohms
Residual Noise Level (IHF-A, typ.)	U-92 dBu (All faders: Min) -89 dBu ([MAIN] Fader: Unity, Channel faders: Unity only one INPUT1 channel, Preamp gain: Min) -60 dBu ([MAIN] Fader: Unity, Channel faders: Unity only one INPUT1 channel, Preamp gain: Max) * Input 150 ohms terminate * Output Connector: AUDIO OUT MAIN (L, R) jacks§AUDIO OUT AUX 2/ MONITOR jacks -100 dBu (All faders: Min) -98 dBu ([MAIN] Fader: Unity, Channel faders: Unity only one INPUT1 channel, Preamp gain: Min) -74 dBu ([MAIN] Fader: Unity, Channel faders: Unity only one INPUT1 channel, Preamp gain: Max) * Input 150 ohms terminate * Output Connector: AUDIO OUT AUX 1 (L, R) jacks
Audio Effects	Auto mixing, Anti-feedback, 4-Band EQ, Delay, Compressor, HPF, Noise Gate, Reverb, Limiter, Voice changer, 15-Band EQ, Adaptive Noise Reduction, Low Frequency Cut, Loudness AGC, and Auto Leveler Channel Effects(common): HPF, Compressor, Noise Gate, 4-Band EQ, Delay Channel Effects(FX Block): Anti-feedback, Voice changer Master Effects: 4-Band EQ, Compressor, Limiter, Reverb, 15-Band EQ

COMMON SECTION	
Remote Control	RS-232C connector: D-sub 9 pin type LAN connector: RJ45 100BASE-TX
USB Interface	USB MEMORY port (HOST): USB A type for USB MEMORY(USB flash drive, Still image) USB port (HOST): USB A type(Use for future expansion) USB STREAMING port (DEVICE): USB B type for USB-VIDEO(SuperSpeed/Hi-Speed), USB-AUDIO (Full-Speed)
Other Functions	Preset Memory (8 types), Panel lock function, EDID emulator Auto switching (Video follows audio), Remote Camera Control
Display	7 inch Graphic color LCD 800 x 480 dots (touch screen)
Power Supply	AC Adaptor, Secondary AC Adaptor DC 9 V to 16 V (XLR-4-32 type)
Current Draw	2.8 A
Power Consumption	67 W
Operating Temp.	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	437 (W) x 325 (D) x 125 (H) mm, 17-1/4 (W) x 12-13/16 (D) x 4-15/16 (H) inches
Weight	5.9 kg kg, 13 lbs 1 oz
Accessories	Startup Guide, Leaflet "USING THE UNIT SAFELY", AC adaptor Power cord, Ground Cord

AeroCaster Switcher

iOS APP

Wireless video and media expansion for your Roland switcher

- Use your iPad to expand your Roland hardware with up to five simultaneous video sources
- Wirelessly share screens from computers and mobile devices via the Google Chrome web browser
- Switch between cameras and scenes with a variety of transition effects
- Use the camera on the host iPad as a fifth video source
- Supports wireless camera connections from up to four supported iOS and Android smartphones and tablets
- Supports video resolution up to 1080p at 30 FPS over Wi-Fi
- Save and recall 30 scenes with titles, graphics, or picture-in-picture windows
- Media pool for integrating videos, photos, and graphics from your iPad library

AeroCaster Switcher is a free iPad app that expands the production power of supported Roland A/V hardware with cable-free video connectivity over a wireless network. Connect your iPad to an HDMI input and switch wireless camera feeds from iOS and Android smartphones and tablets, as well as screen shares from computers and mobile devices. Use images from up to four wireless devices simultaneously, plus the camera on the host iPad. Roland's advanced video technology is also included in the app, allowing you to add graphics, titles, video clips, photos, effects, and more to your feed.

Enhance your productions with the cameras everyone carries

AeroCaster Switcher lets you take advantage of the high-quality cameras in today's smartphones and tablets and make anyone in the production crew a camera operator. Cut to unique handheld angles or use widely available mobile device mounts to grab up-close captures of hands-on presentations. The possibilities are endless!

Quick and easy set up

Simply download the AeroCaster Camera app* on each smartphone or tablet you want to use, connect them to the AeroCaster Switcher app over the local Wi-Fi network, and place the camera for the perfect shot. You have complete control of the available camera functions on each device from the iPad, including focus, zoom, exposure, stabilization, white balance, and more.

What you need to get started

To get started with the Aerocaster you need to have a supported Roland video switcher or A/V streaming mixer, a supported Apple iPad with the Aerocaster Switcher app installed and a supported smarthphone or tablet with the Aerocaster Camera app installed. You will also need to have the official Apple HDMI adaptor for your iPad model. A fast and stable Wi-Fi network connection is also required for best results.

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Screen sharing made simple

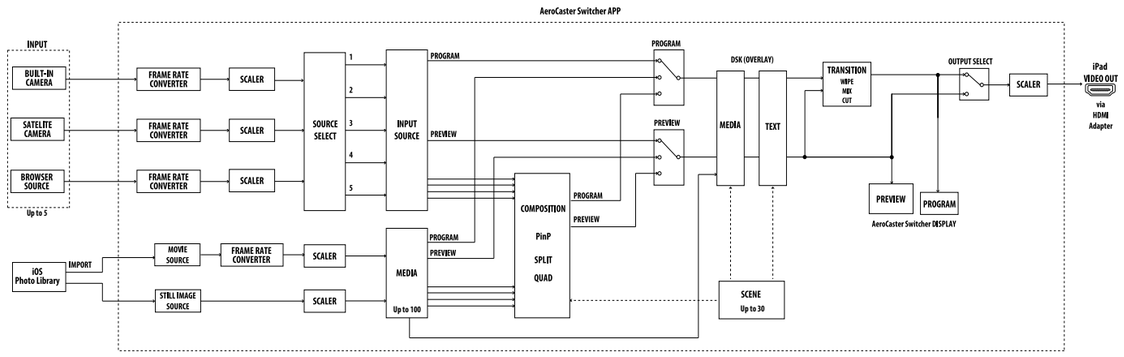
AeroCaster Switcher also provides a simple BYOD solution for wireless HD screen sharing. Presenters and panelists can connect via the Google Chrome browser on their computers and mobile devices. Screen sharing is fast and easy with an internet connection and Wi-Fi, with no cables, video adaptors, or dongles required.

Scenes and visual effects

Aerocaster Switcher includes powerful production tools to manage your wireless sources independently from your Roland switcher. Via an intuitive interface, you can create up to 30 scene presets with text overlays, graphics (including transparent PNG files), picture-in-picture windows, or split-screen views. During an event, it's easy to select scenes, camera sources, or media content. A selection of cuts, cross-dissolves, and wipes are also on hand for smooth transitions.

Add local content

AeroCaster Switcher also gives you the ability to bring video clips, photos, and graphics into your productions. It's simple to add media from your iPad library—tap the plus icon in the AeroCaster media pool, select the desired media, and tap again to show it live.



VIDEO BLOCK DIAGRAM

SPECIFICATIONS **AEROCASTER SWITCHER**

VIDEO	
Video Input	Satellite camera, Browser source, Built-in camera (iPad). * 5 inputs in total * Satellite cameras can be used with AeroCaster Camera or Web browser. * Need to install the "AeroCaster Camera" App on your iPhone. * "Browser source" use PC or mobile devices (iOS, Android OS) via Google Chrome web browser. * Codec:H.264 Bitrate:Up to 20Mbps
Video Processing	RGB 4:4:4, 8-bit, 1080/60p * Depends on iPad internal processing * Video input will be converted automatically.
Input Formats	Up to 1080/30p * Automatically adjusts resolution and frame rate according to network bandwidth.
Output Formats	Up to 1080/60p * Reccommend Apple USB-C Digital AV Multiport Adapter or Apple Lightning-Digital AV Adapter.
Still image and video playback	Up to 100. * Use still images and videos saved in the iPad. * File format conforms to iOS Photo Library. * PNG alpha channel supported
Scene	Up to 30. * Text, Media (Overlay), PinP, SPLIT, QUAD are either can be registered.
Audio	Incompatible
Other Functions	Satellite camera control (Zoom, Exposure, White Balance, Focus, LED Light, Stabilization) * Depends on the iPhone or iPad used

OPERATING CONDITIONS	
Aero Caster Switcher (for iPad)	Operating System: iOS 14 or later CPU: Apple A12 processor or better
Aero Caster Camera (for iPhone, iPad)	Operating System: iOS 13 or later CPU Apple A10 processor or better (iPhone 7 or higher recommended)

* In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.

USB VIDEO CAPTURE

UVC-01

Plug-and-play for flawless recordings and livestreams

- High-quality HDMI to USB 3.0 video encoder
- Plug-and-play USB webcam operation for Mac and Windows computers
- Seamlessly works with all Roland V-series switchers with an HDMI output
- Also works with most HDMI-equipped cameras and camcorders
- Uncompressed 1080p HD at 60 FPS for engaging livestreams
- Dedicated analog audio line input for live music versatility
- Powered via USB

For online content creators, musicians, and gamers to businesses, schools, and houses of worship, livestreaming is an essential medium for communicating with people around the world. With the UVC-01, it's never been easier to add high-quality livestreaming capabilities to your Roland V-series video switcher or favorite HDMI-equipped camera or camcorder. Just connect to the UVC-01 via HDMI, plug into your computer's USB 3.0 port, and start streaming to Facebook Live, YouTube, and other popular platforms. Offering plug-and-play operation in a rugged, pocket-size design, the UVC-01 is ready for action everywhere you go.

SPECIFICATIONS **UVC-01**

VIDEO	
Input Connectors	HDMI IN connector: HDMI type A * Multi-format Supported * HDCP Not Supported
Output Connectors	USB STREAM port: USB 3.0 B type
Input Formats	480/59.94i, 576/50i, 480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p, VGA (640 x 480/60 Hz), SVGA (800 x 600/60 Hz), XGA (1024 x 768/60 Hz), HD (1280 x 720/60 Hz), WXGA (1280 x 800/60 Hz), SXGA (1280 x 1024/60 Hz), FWXGA (1366 x 768/60 Hz), SXGA+ (1400 x 1050/60 Hz), UXGA (1600 x 1200/60 Hz), FHD (1920 x 1080/60 Hz) * The refresh rate is the maximum value of each resolution. * Conforms to VESA DMT Version 1.0 Revision 11.
USB Video Output Format	YUY2 (Uncompressed)
USB Video Output Resolution	1920 x 1200, 1920 x 1080, 1680 x 1050, 1600 x 1200, 1600 x 900, 1440 x 900, 1366 x 768, 1360 x 768, 1280 x 1024, 1280 x 960, 1280 x 800, 1280 x 720, 1152 x 864, 1024 x 768, 1024 x 576, 960 x 540, 856 x 480, 800 x 600, 768 x 576, 720 x 576, 720 x 480, 640 x 480, 640 x 360, 320 x 240 * The maximum frame rate is 60 fps.

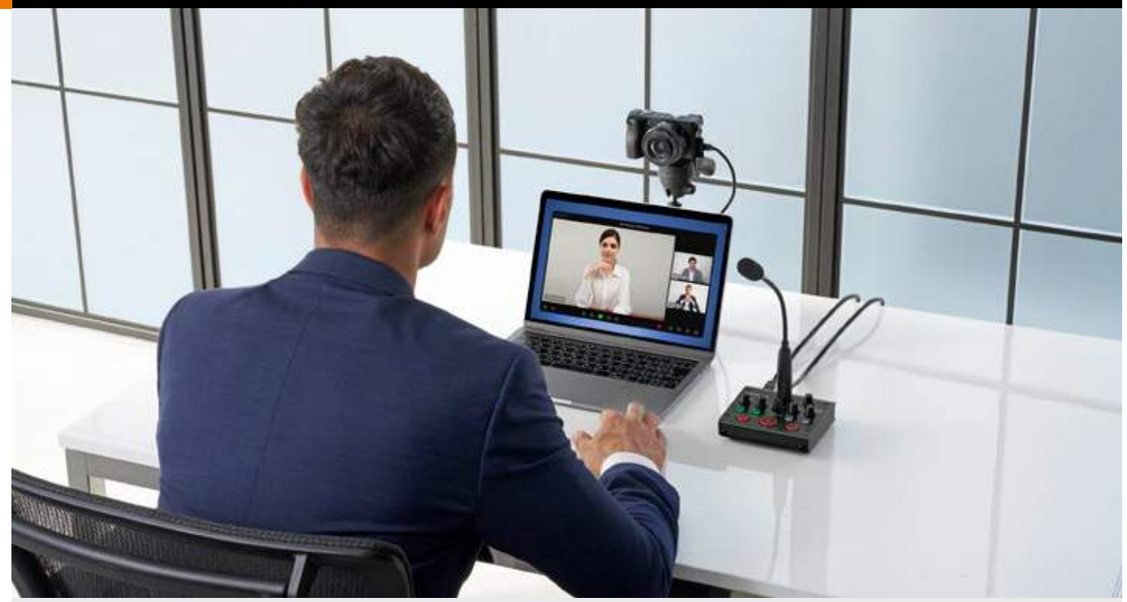
* 0 dBu=0.775 Vrms

AUDIO	
Audio formats	HDMI IN connector: Linear PCM, 48 kHz / 44.1 kHz, 24 bits / 20 bits / 16 bits, stereo USB STREAM port: Linear PCM, 48 kHz, 16 bits, stereo
Input Connectors	HDMI IN connector: HDMI type A AUX IN jack: Stereo miniature phone type
Output Connectors	USB STREAM port: USB 3.0 B type
Nominal Input Level	AUX IN jack: -10 dBu (Maximum input level: +8 dBu)
Input Impedance	AUX IN jack: 10 k ohms

OTHERS	
Power Supply	Supplied from the computer via USB
Current Draw	500 mA
Operation Temperature	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	90 (W) x 37 (D) x 23 (H) mm 3-9/16 (W) x 1-1/2 (D) x 15/16 (H) inches
Weight (excluding AC adaptor)	96 g, 4 oz
Accessories	Owner's Manual, USB 3.0 Cable

UVC-02

WEB PRESENTATION DOCK



Look and sound your best in video meetings and presentations

- Convenient and affordable desktop docking station to upgrade your business streaming with pro-level audio and video
- Inputs for a DSLR or other high-quality camera, an XLR microphone, and stereo audio sources
- HDMI video input supports embedded sound and features automatic scaling for different video resolutions
- Studio-grade sound with Roland's acclaimed digital audio technology
- Plug and play operation—automatically appears as a webcam and audio source in your favorite streaming software
- Enhance your streams with professional audio processing, sound effects, and the unique Voice Change effect
- Hands-on control of volume levels plus audio and video muting
- Assignable buttons for customizable control, configurable with free UVC-02 software for macOS and Windows

Video streaming for business and pleasure has become a regular part of life. But you'll never look and sound your best with the webcam and microphone in your average computer. The Roland UVC-02 Web Presentation Dock helps you bridge the gap, providing a simple and affordable way to level up your video presentations with higher quality audio/visual gear and more control.

Present with confidence

The UVC-02 is a compact broadcast control center that fits comfortably on your desktop. It allows you to connect a high-quality HDMI camera, pro microphone, and other audio sources and send them directly to meeting and streaming platforms on your computer via a single USB cable. And with an array of hands-on knobs and switches at your fingertips, you can easily control the action without ever touching your mouse or computer keyboard.

Plug in and play

Once connected to your computer via USB, the UVC-02 is instantly recognized as a webcam and audio source, with no drivers or set up required. That means it's ready to go with popular web meeting software such as Zoom, Microsoft Teams, Webex by Cisco, or any application that uses a webcam as an A/V source for streaming or recording.

Love the sound of your voice

Just like a broadcast studio, the UVC-02 includes a pro-quality equalizer and audio effects to make your voice sound great. Convenient templates are included to get you started, complete with easy controls to tweak the sound until it's just right.

The ultimate webcam upgrade

Connect just about any HDMI-compatible camera and instantly elevate the image quality over your built-in or USB webcam. Many standalone cameras offer HDMI output, from action and point-and-shoot cameras to higher-grade mirrorless and DSLR models. They have much better lenses than any webcam and often include zoom capability to frame your perfect shot.

Superior image quality

Fast, no-fuss setup

Now you see me, now you don't

Get ready to sound great

There's nothing worse than bad audio quality in an online meeting. The UVC-02 ensures your sound starts off strong and stays that way. With a tiny studio-grade mixer and four inputs backed by Roland's pro audio technology, you have a whole new range of sonic superpowers at your command.

Works with professional mics

Pro broadcast and recording studios choose a specific microphone to get the best out of a performer's voice. Now, you can choose the mic type that's right for you and connect it via the XLR input on the UVC-02. Phantom power is also available, allowing you to use a studio-grade condenser mic for the very best sound quality.

Sound monitoring made simple

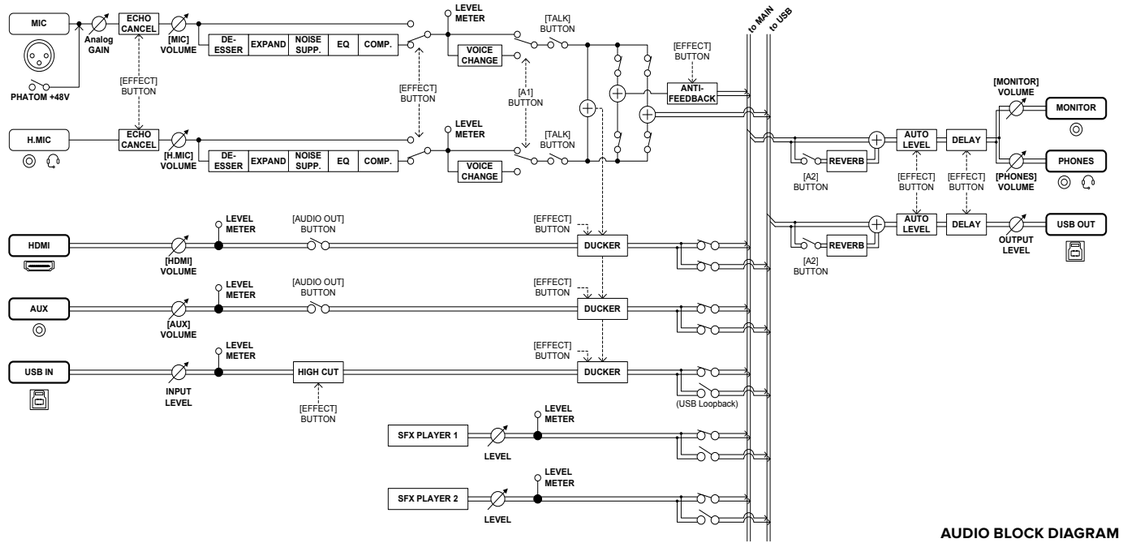
The UVC-02 has a dedicated headphones jack, as well as a stereo monitor output for connecting to external speakers or a recorder. And both have dedicated panel knobs that allow you to reach out and control the listening level with a quick twist. The headphones jack also supports the inline mic on a standard set of earbuds, and there's a dedicated level knob for this as well.

One-touch audio mute

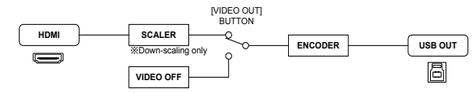
Don't scramble for the un-mute switch in your software as everyone chants, "You're on mute." Just press the large Talk button to instantly turn your audio on or off. And with the button's bright backlight, you'll always know when your sound is live.

Customizable control

Streamline your sessions even further with dedicated UVC-02 software for macOS and Windows. Choose two functions that you use most often—such as PowerPoint slide advance* or a sound effect trigger—and assign them to the A1 and A2 buttons for one-touch operation.



AUDIO BLOCK DIAGRAM



VIDEO BLOCK DIAGRAM

SPECIFICATIONS **UVC-02**

VIDEO	
Input Connectors	HDMI IN: HDMI type A * HDCP not Supported * Multi-format Supported
Input Formats	480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/29.97p, 1080/25p, 1080/59.94p, 1080/50p, SVGA (800 x 600) 60 Hz / 75 Hz, XGA (1024 x 768) 6 0Hz / 75 Hz, WXGA (1280 x 800)60 Hz / 75 Hz, HD (1280 x 720) 60 Hz / 75 Hz, SXGA (1280 x 1024) 60 Hz / 75 Hz, FWXGA (1366 x 768) 60 Hz / 75 Hz, SXGA+ (1400 x 1050) 60 Hz / 75 Hz, UXGA (1600 x 1200) 60 Hz, FHD (1920 x 1080) 60 Hz * The refresh rate is the maximum value of each resolution. * Conforms to CEA-861-E, VESA DMT Version 1.0 Revision 11.
Output Connectors	USB STREAM : USB 3.0 Type-B
USB Video Output Format	YUY2 (Uncompressed), Motion JPEG (Compressed)
USB Video Output Resolution	1920 x 1080, 1280 x 720, 640 x 480 * Maximum frame rate is 60 fps.

AUDIO	
Audio Processing	Sample Rate 48 kHz, 24 bits
Analog Connectors	MIC: XLR type (Balanced, Phantom power DC 48V, 14 mA Max) HEADSET: Stereo miniature phone type (CTIA, PLUG-IN power) AUX IN: Stereo miniature phone type MONITOR OUT: Stereo miniature phone type
Digital Connectors	HDMI IN: HDMI Type A USB STREAM: USB 3.0 Type-B
Nominal Input Level	MIC IN: -54 to -14 dBu (Maximum input level : +4 dBu) HEADSET: -20 dBu (Maximum input level : -2 dBu) AUX IN: -10 dBu (Maximum input level : +8 dBu)
Nominal Output Level	MONITOR OUT: -10 dBu HEADSET: 9 mW + 9 mW (32 ohms load)
Input Impedance	MIC IN: 5.8 k ohms, AUX IN: 10 k ohms HEADSET: 1 k ohms
Output Impedance	MONITOR OUT: 1 k ohms HEADSET: 22 ohms
Digital Audio Format	HDMI IN: Linear PCM, 48 kHz / 44.1 kHz, 24 / 20 / 16 bits, Stereo USB STREAM: Linear PCM, 48 kHz, 16 bits, Stereo
Audio Effects	Anti-Feedback, Echo Canceller, Ducker, Voice Changer, Reverb, Noise Suppressor, Equalizer, Expander, Compressor, Delay
Audio File Player	Number of tracks: 2, Data Formats : WAV (Linear PCM, 48 kHz, 16 bits, stereo / mono) Maximum Time: 5 seconds / track

COMMON	
Other functions	MIC Mute (TALK button), Audio Mute (AUDIO OUT button) Video Off (VIDEO OUT button), Slideshow Control
Power Supply	Supplied from the computer via USB
Current Draw	900 mA (4.5 W)
Operation Temperature	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	124 (W) x 117 (D) x 52 (H) mm 4-15/16 (W) x 4-5/8 (D) x 2-1/16 (H) inches
Weight	460 g, 1 lb 0.3 oz (excluding AC adaptor)
Accessories	Leaflet "Read Me First", USB 3.0 Cable

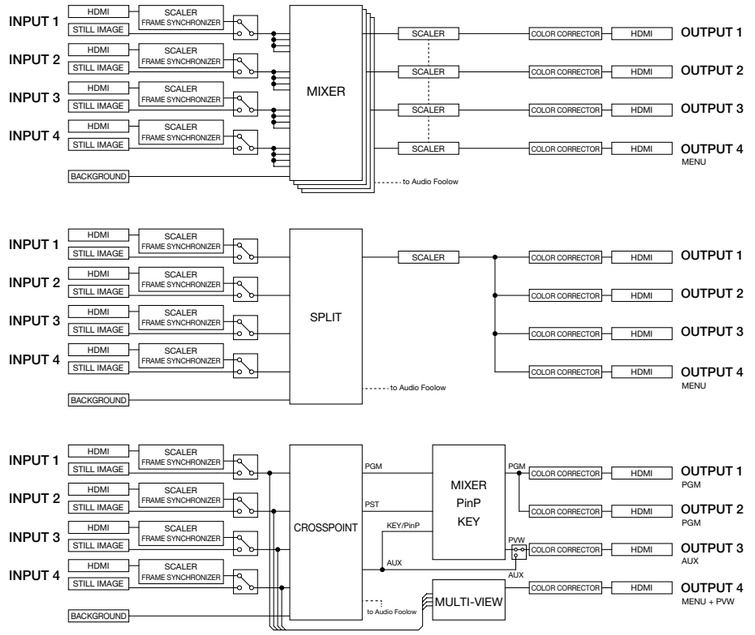
* 0 dBu=0.775 Vrms

XS-1HD

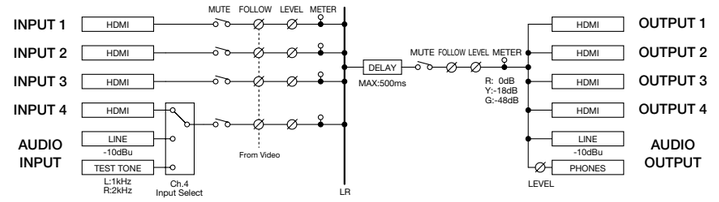
MULTI-FORMAT MATRIX SWITCHER

A versatile and compact switcher with multi-screen output and video compositing

- A table-top matrix switcher, with a similar width to a a 13” laptop, equipped with four HDMI inputs and outputs
- High-quality 10-bit 4:4:4 processing
- Frame synchronizer and scaler on all inputs
- Still images can be loaded from a USB flash drive
- Three operation modes
- Matrix Mode allows switching of 4 sources to any of 4 outputs
- Switcher Mode allows PinP, key-compositing, and dissolve transitions
- Split Mode allows PinP of up to three inset windows
- Built-in eight-channel digital audio mixer handles audio from four HDMI signals and stereo analog input
- Built-in EDID emulator, and HDCP-compliant



VIDEO BLOCK DIAGRAM



AUDIO BLOCK DIAGRAM

SPECIFICATIONS **XS-1HD**

VIDEO		
Processing		4:4:4 (Y/Pb/Pr, RGB), 10 bits / 4:2:2 (Y/Pb/Pr), 10 bits
Input Connectors		HDMI: HDMI type A x 4 (HDMI INPUT 1--4) *HDCP Supported
Output Connectors		HDMI: HDMI type A x 4 (HDMI OUTPUT 1--4) *HDCP Supported
Formats		480/59.94i (*1), 576/50i (*1), 480/59.94p (*1), 576/50p (*1), 720/59.94p, 720/50p, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p, 800×600/60 (*1), (*2), 1024×768/60 (*2), 1280×720/60 (*2), 1280×800/60 (*2), 1366×768/60 (*2), 1280×1024/60 (*2), 1400×1050/60 (*2), 1600×1200/60, 1920×1080/60, 1920×1200/60 RB *Conforms to CEA-861-E,VESA DMT Version 1.0 Revision 11 *Frame rate is 59.94 Hz (NTSC) or 50 Hz (PAL).
Effects	Output Mode	Switcher, Split, Matrix
	Transition	Mix, Cut (*3)
	Composition (Keyer)	1 (*3)
	Others	HDCP Supported, Test Pattern Generator
Still Image	Internal Memory	1
	Maximum Size	1920×1200
	Format	Windows Bitmap File (.bmp) 24 bit per pixel, uncompressed

(*1) Input only.
(*2) Output refresh rate is 75 Hz when frame rate is set to 50 Hz.
(*3) These effects depends on Output Mode.

AUDIO		
Processing	Sampling Rate	24 bits/48kHz
Input Connectors	HDMI	HDMI type A x 4
	AUDIO IN	RCA pin type
Output Connectors	HDMI	HDMI type A x 4
	AUDIO OUT	RCA pin type
	PHONES	Stereo mini type
Input Level	AUDIO IN	–10dBu (Maximum: +8dBu)
Input Impedance	AUDIO IN	15kΩ
Output Level	AUDIO OUT	–10dBu (Maximum: +8dBu)
	PHONES	72mW + 72mW (32Ω)
Output Impedance	AUDIO OUT	1kΩ
	PHONES	10Ω
Formats		HDMI: Linear PCM, 24 bits, 48 kHz, 2 ch
Others	Mixer	4 ch (Delay : Maximum 500 ms, Audio Follow)
	Test Tone Generator	

OTHERS		
External Connectors	REMOTE	RS-232 DB-9 type (Male) x 1 *for Remote Control
	USB MEMORY	USB A type x 1 (USB Memory)
Preset Memory		16 *Auto Memory Function
Power Supply		AC Adaptor
Current Draw		2.1A
Power Consumption		25W
Dimensions		328 (W) x 117 (D) x 57 (H) mm
Weight		1.2kg
Accessories		Owner's Manual, AC adaptor, Power cord

XS-42H

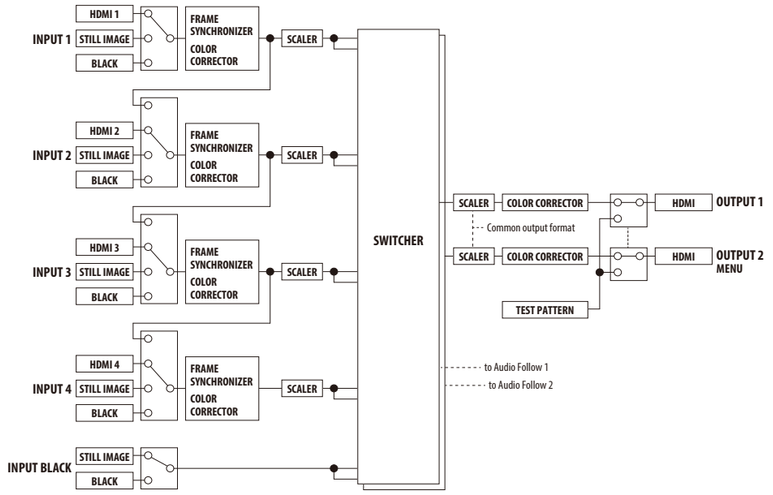
MATRIX SWITCHER VER 1.2

Meet. Share. Repeat.

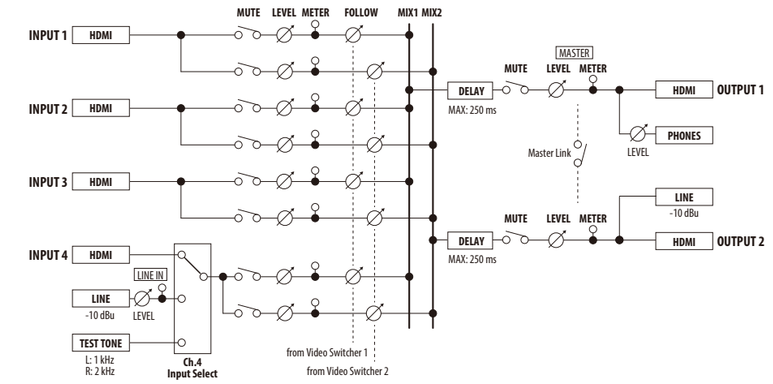
- Switch up to 4 HDMI inputs to 1 or 2 displays
- Content displays automatically with Auto Input Detection
- Run and switch the meeting from a web browser on a tablet, phone or PC (connected to same network)
- Automatic switching of audio along with video
- Arrange meeting presets for recalling common meeting set-ups with the push of a button

SYSTEM PROGRAM VER 1.2

The Ver.1.2 update simplifies the XS-42H experience with WebRCS User Mode, streamlines workflow using shortcuts, adds Audio Delay effect, and prevents tampering with Panel Lock.



VIDEO BLOCK DIAGRAM



AUDIO BLOCK DIAGRAM

SPECIFICATIONS **XS-42H**

VIDEO	
Processing	4:4:4 (Y/Pb/Pr, RGB)/10 bits, 4:2:2 (Y/Pb/Pr)/10 bits
Input Connectors	HDMI: HDMI type A x 4 (HDMI INPUT 1--4), * HDCP Supported
Output Connectors	HDMI: HDMI type A x 2 (HDMI OUTPUT 1--2), * HDCP Supported
Formats	480/59.94i (*1), 576/50i (*1), 480/59.94p (*1), 576/50p (*1), 720/59.94p, 720/50p, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p, 800 x 600/60 (*1), 1024 x 768/60 (*2), 1280 x 720/60 (*2), 1280 x 800/60 (*2), 1366 x 768/60 (*2), 1280 x 1024/60 (*2), 1400 x 1050/60 (*2), 1600 x 1200/60, 1920 x 1080/60, 1920 x 1200/60 RB *Conforms to CEA-861-E,VESA DMT Version 1.0 Revision 11 *Frame rate is 59.94 Hz (NTSC) or 50 Hz (PAL). (*1) Input only. (*2) Output refresh rate is 75 Hz when frame rate is set to 50 Hz.
Composition	Layer: 1
Transition	Black-insert, Mix, Cut
Still Image	Internal Memory: 1 Maximum Size: 1920 x 1200 pixels Format: Windows Bitmap File (.bmp) 24 bit per pixel, uncompressed

* 0 dBu=0.775 Vrms

AUDIO	
Sample Rate	48 kHz, 24 bits
Input Connectors	HDMI: HDMI type A x 4, AUDIO INPUT: RCA pin type
Output Connectors	HDMI: HDMI type A x 2, AUDIO OUTPUT: RCA pin type PHONES: Stereo mini type
Input Level	AUDIO INPUT: -10 dBu (Maximum: +8 dBu)
Input Impedance	AUDIO INPUT: 15 k ohms
Output Level	AUDIO OUTPUT: -10 dBu (Maximum : +8 dBu) PHONES: 72 mW + 72 mW (32 ohms)
Output Impedance	AUDIO OUTPUT: 1 k ohm PHONES : 10 ohms
Formats	HDMI: Linear PCM, 24 bits, 48 kHz, 2 ch
Processing	Mixer: 4 ch x 2 (Delay: Maximum 250 ms, Audio Follow)

OTHERS	
External Connectors	REMOTE RS-232: DB-9 type (Male) x 1 LAN: RJ45 x 1 USB: USB A type x 1 (Use for future expansion) USB MEMORY: USB A type x 1 (Use for USB Memory)
Functions	Scene Memory: 10 Test Pattern Generator Test Tone Generator EDID Emulator
Power Supply	AC Adaptor
Current Draw	2.1 A
Power Consumption	25 W
Operation Temperature	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	242 (W) x 125 (D) x 44 (H) mm 9-9/16 (W) x 4-15/16 (D) x 1-3/4 (H) inches
Weight	1.2 kg, 2 lbs 11 oz
Accessories	Owner's Manual, Leaflet "USING THE UNIT SAFELY", AC adaptor, Power cord, Rubber feet (4 pcs.), Rack mount angle set

XS-62S

HD VIDEO SWITCHER VER 3.0

Rackmount switcher for live production and fixed installations with PTZ camera control

- 4 SDI inputs (with de-interlacer)
- 2 HDMI inputs (scaled)
- RGB/COMPONENT/COMPOSITE input (scaled) – shared with HDMI input 6
- 2 SDI outputs – assignable to PGM, PVW, AUX
- 2 HDMI outputs – assignable to PGM, PVW, AUX
- 1 HDMI output (scaled / multi-view) – multi-view or scaled output
- TALLY/GPIO
- RS-232 – remote control
- RS-422 – PTZ control (VISCA)
- LAN – remote control and Smart Tally (PTZ Control (VISCA)

Video switcher, converter, audio mixer – all in one product

The XS-62S is a compact 1U rack mount, compact 6-channel video switcher with audio mixer and PTZ camera control capabilities for both permanent installs and on-site events. This powerful, integrated solution supports a wide range of applications including presentation and performance and special event venues, corporate AV conferences, classrooms for e-learning and more.

Live production studio

The XS-62S makes it easy to create content with an all-in-one switching and audio mixing system that streamlines the production process. The XS-62S is easy to use from either the front panel controls or remote control software from a PC or Mac. Programmable presets allow one-touch recall of preset camera positions and angles, and the audio auto mixer takes care of audio mixing in the background, so the operator can focus on switching video.

Performance venue / church

XS-62S is the ideal solution for hotel meeting rooms and banquet halls, houses of worship and live performance venues. The XS-62S Matrix Mode makes it easy to send different content to 2 to 3 screen destinations, from a single switcher all while mixing program audio and controlling PTZ remote cameras.

Live streaming and video conference

The XS-62S is also suitable for live streaming and web conferencing systems. In this type of application, you could be using multiple PTZ cameras and PCs. With the XS-62S this can easily be operated by a small team or even a single person. PTZ camera control eliminates the need for individual camera operators, since everything can be controlled from the XS-62S while video is being switched by the same operator.

Multi PTZ & remote camera control

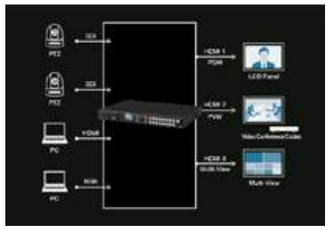
When LAN based PTZ cameras are called into action, take control using the XS-62S or powerful RCS. Seamlessly integrate JVC, Panasonic, Sony, PTZOPtics, Avonic and VISCA compatible professional pan-tilt-zoom (PTZ) robotic cameras to streamline workflow without the need for a dedicated controller. For a gaming-like experience, pick up a USB gamepad and conquer a team of PTZ cameras. The RCS can connect to certain Canon handheld camcorders via LAN connection. Start & stop recording and tally light is supported.

SYSTEM PROGRAM VER 3.0

The Ver.3.0 update enhances workflows and expands control. The XS-62S can capture stills directly from PGM.
Additional frame-rate support on SDI inputs includes 60p, 30p, 25p, 24p and 23.98p. Take control of even more PTZ cameras over IP using universal VISCA protocols. Analog Audio input 1-6 can is assignable to AUX output.

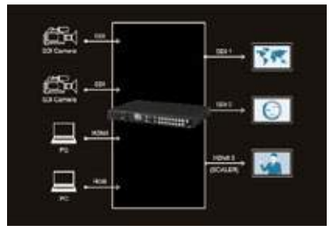
PGM / PST mode

PGM/PST Mode operates as a traditional video switcher complete with video compositions that enable grouping multiple images on one screen. You can create compotitions by combining DSK for layering titles and graphics as well PinP inset of video. Compositions can be previewed before sending to Program on the Preview output and can be sent to Program by pressing the TAKE button.



DISSOLVE mode

Video switching and composition with cross dissolve to the PGM bus are possible in Dissolve Mode. Disolve Mode is easily operated from the front panel and is suitable for a system where the user directly operates the main unit in a meeting space or event. The AUX bus is also available in Dissolve Mode, making it possible to output different video from the PGM bus and PST bus.



MATRIX mode

Individual video input signals can be output to three different destinations on three buses. This mode is effective for routing signals and is ideal for events and using multiple screens. Switching the video is with black frame.

SPECIFICATIONS **XS-62S**

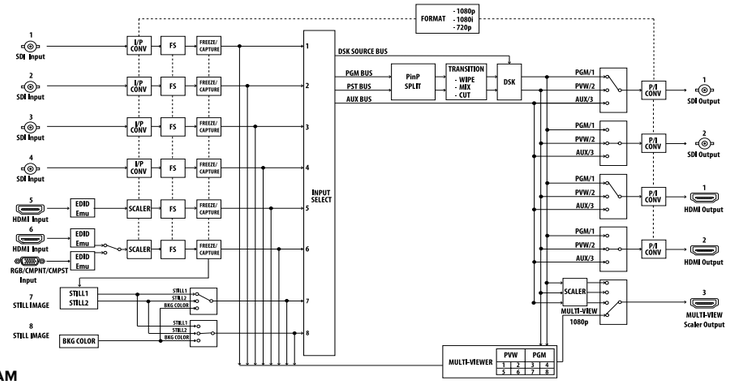
VIDEO	
Processing	4:2:2 (Y/Pb/Pr), 8-bit
Input Connectors	SDI IN 1--4: BNC type x 4 * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M HDMI IN 5--6: HDMI type A x 2 * HDCP Supported * Multi-format Supported RGB/COMPONENT/COMPOSITE IN 6: HD DB-15 type x 1 * Select either HDMI or RGB/COMPONENT or COMPOSITE for the INPUT 6 connector. * Multi-format Supported
Output Connectors	SDI OUT 1--2: BNC type x 2 * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M HDMI OUT 1--3: HDMI type A x 3 * HDCP Supported
Analog Input Level, Impedance	RGB: 0.7Vp-p, 75ohms (H, V:5VTTL) COMPONENT: 1.0Vp-p, 75ohms(Bi-level sync/Tri-level sync) COMPOSITE: 1.0Vp-p (Y), 0.286Vp-p (C: NTSC), 0.3Vp-p (C: PAL), 75ohms
Input formats	SDI IN 1--4 connectors (Conforms to SMPTE 296M, SMPTE 274M) (SYSTEM FORMAT = 720p): 720/59.94p, 720/50p (SYSTEM FORMAT= 1080i or 1080p): 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p * The input interlaced video signal is converted to progressive video signal by internal processing * The video signal frame rate can be selected at the SYSTEM menu (59.94 Hz or 50 Hz) HDMI IN 5--6, RGB/COMPONENT/COMPOSITE IN 6: 480/59.94i, 576/50i, 480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p, VGA (640 x 480, 60 Hz), SVGA (800 x 600, 60 Hz), XGA (1024 x 768, 60 Hz), WXGA (1280 x 800, 60 Hz), SXGA (1280 x 1024, 60 Hz), FWXGA (1366 x 768, 60 Hz), SXGA+ (1400 x 1050, 60 Hz), UXGA (1600 x 1200, 60 Hz), WUXGA (1920 x 1200, 60 Hz) * The refresh rate is the maximum value of each resolution. * Conforms to VESA DMT Version 1.0 Revision 11. * 1920 x 1200, 60 Hz: Reduced blanking * The input interlaced video signal is converted to progressive video signal by internal processing * The video signal frame rate can be selected at the SYSTEM menu (59.94 Hz or 50 Hz) RGB/CMPNT/CMPST IN 6 (When inputting COMPOSITE signals): 480/59.94i, 576/50i
Still Image	Bitmap File (.bmp): Maximum 1920 x 1080 pixels, 24-bit color, uncompressed. PNG File (.png): Maximum 1920 x 1080 pixels, 24-bit color * It can be stored up to 2 files in the internal memory. * PNG alpha channel not supported.
Output formats	SDI OUT 1--2: Conforms to SMPTE 296M, 274M HDMI OUT 1--2: 720/59.94p, 720/50p (System Format = 720p) 1080/59.94i, 1080/50i (System Format = 1080i), 1080/59.94p, 1080/50p (System Format = 1080p) * The video signal frame rate can be selected at the SYSTEM menu (59.94 Hz or 50 Hz)
	HDMI OUT 3 (MULTI-VIEW): 1080/59.94p, 1080/50p HDMI OUT 3 (SCALER): 480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/59.94p, 1080/50p, SVGA (800 x 600, 60 Hz)(*1), XGA (1024 x 768, 60 Hz)(*1), WXGA (1280 x 800, 60 Hz)(*1), SXGA (1280 x 1024, 60 Hz)(*1), FWXGA (1366 x 768, 60 Hz)(*1), SXGA+ (1400 x 1050, 60 Hz)(*1), UXGA (1600 x 1200, 60 Hz), WUXGA (1920 x 1200, 60 Hz) * Select either MULTI-VIEW or SCALER for the HDMI OUT 3 connector * The video signal frame rate can be selected at the SYSTEM menu (59.94 Hz or 50 Hz) * 1920 x 1200, 60 Hz: Reduced blanking (*1) Output refresh rate is 75 Hz when frame rate is set to 50Hz
Video Effects	Output Mode: PGM-PST, DISSOLVE, MATRIX Transition: CUT, MIX (DISSOLVE/FAM/NAM) *2, WIPE (30 types) *2 Composition: PinP (SQUARE, CIRCLE, HEART, DIAMOND) *2, SPLIT (4 types) *2, DSK (Luminance Key, Chroma Key) *2 Other: Flip horizontal, Still Image Capture, Still Image Playback, Test pattern output, Input Freeze (*2) These effects depend on Output Mode

AUDIO	
Audio Processing	Sampling rate: 24 bits/48 kHz
Audio formats	SDI IN: Linear PCM, 24 bits/48 kHz, 2 ch (Conforms to SMPTE 299M) SDI OUT: Linear PCM, 24 bits/48 kHz, 8 ch (Conforms to SMPTE 299M) HDMI IN, HDMI OUT: Linear PCM, 24 bits/48 kHz, 2 ch
Input Connectors	SDI IN 1--4: BNC type x 4 HDMI IN 5--6: HDMI Type A x 2 AUDIO IN 1--4: 1/4-inch TRS phone type AUDIO IN 5--6: RCA phono type
Output Connectors	SDI OUT 1--2: BNC type x 2 HDMI OUT 1--3: HDMI type A x 3 AUDIO OUT: XLR type, RCA phono type PHONES: Stereo 1/4-inch phone type
Input Level	AUDIO IN 1--4: -60--+4 dBu (Maximum input level: +22 dBu) AUDIO IN 5--6: -10 dBu (Maximum input level: +8 dBu)
Input Impedance	AUDIO IN 1--4: 10 k ohms (HEAD AMP GAIN: 0--+23 dBu), 5 k ohms (HEAD AMP GAIN: +24--+64 dBu) AUDIO IN 5--6: 15 k ohms
Output Level	AUDIO OUT: +4 dBu (XLR type, Maximum input level: +22 dBu), -10 dBu (RCA phono type, Maximum input level: +8 dBu) PHONES: 92 mW + 92 mW (32 ohms)
Output Impedance	AUDIO OUT: 600 ohms (XLR type), 1 k ohm (RCA phono type) PHONES: 10 ohms
Audio Effects	Auto Mixing, EQ, Delay, Compressor, HPF, Gate, Reverb, Multi-Band Compressor, Limiter

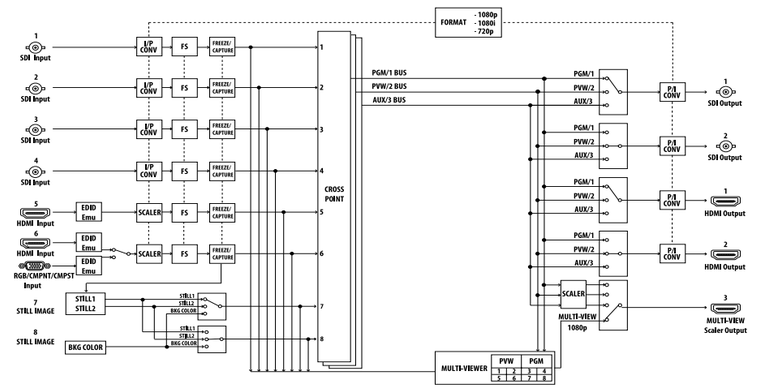
OTHERS	
Other Connectors	USB MEMORY port (for USB flash drive): USB A type TALLY/GPIO: DB-25 type (Female) RS-232: DB-9 type (Male, for remote control) RS-422: DB-9 type (Female, for VISCA control) CONTROL: RJ45, 100BASE-TX (For remote control)
Other Functions	Preset Memory (8 types), Panel Lock Function, EDID Emulator, Smart Tally Remote Camera Control
Display	Graphic LCD 128 x 64 dots
Power Supply	AC Adaptor
Current Draw	2.6 A
Power Consumption	31.0 W
Operating Temp.	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	481 (W) x 333 (D) x 44 (H) mm, 118-15/16 (W) x 13-1/8 (D) x 1-3/4 (H) inches
Weight (excl. AC adapt.)	3.6 kg, 7 lbs 15 oz
Accessories	Owner's Manual, AC adaptor, Power cord, Rubber Foot x 4

(0dBu=0,775Vrms)

VIDEO BLOCK DIAGRAM

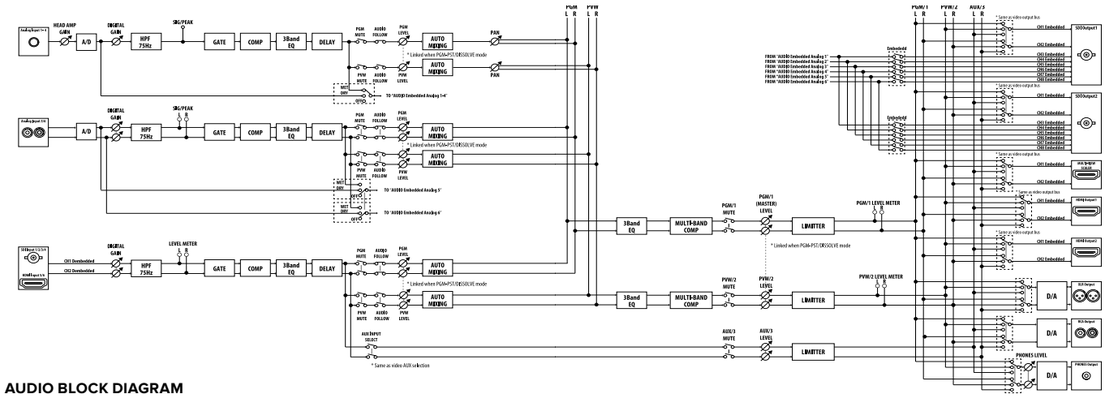


DISSOLVE MODE



MATRIX MODE

AUDIO BLOCK DIAGRAM



VP-42H

VIDEO PROCESSOR VER 1.2

Everything you need, on a single screen

- Combine up to four HDMI video sources on to a single output
- Connect and switch multiple resolutions simultaneously
- Motion Scene Switching for fluid transitions between complex screen sets
- Simple set-up and remote switching with browser-based network control
- Audio management and connection to external audio devices
- Keyer function for overlays and advanced compositions

The Roland VP-42H Video Processor layers and arranges multiple video sources to a single screen with dynamic transitions for effective and engaging presentations, digital signage and meeting applications.

Large event presentations

LED walls and projections make a big impact at corporate events, and the VP-42H can customize the display of the various data sources needed for presentations. With 10bit 4:4:4 video processing for pixel accurate color, the VP-42H ensures that detailed data sources such as spreadsheets are sharp and clear for the audience to read. And as you've got their attention, impress the audience with smooth and dynamic Motion Scene Switching. It makes everything look more exciting—even spreadsheets.

Digital signage processor

Create engaging digital signage with multiple content layers, overlays and motion-based transitions. The VP-42H can automatically switch between scenes, based on a preset interval, for exciting, eye-catching displays. And you can make it all happen from just about anywhere in the world, by connecting remotely and updating the VP-42H via a web browser.

Meeting rooms

Combine information from multiple sources including video conferences and presentations. Have all the key info on the same screen and easily switch between views to improve the delivery of information in meetings. And Motion Scene Switching makes transitioning between sources very impressive—especially when showing clients.

Video production multi-viewer

The VP-42H is a highly flexible multi-viewer for video production. Most multi-viewers simply provide a quad display but the VP-42H enables custom sizing for each source window, and scenes can be set up for instant access to a variety of multi-view configurations. The VP-42H can also de-embed audio being transported over HDMI, routing the audio to local speakers for improved monitoring.

VP-42H SYSTEM PROGRAM VER 1.2

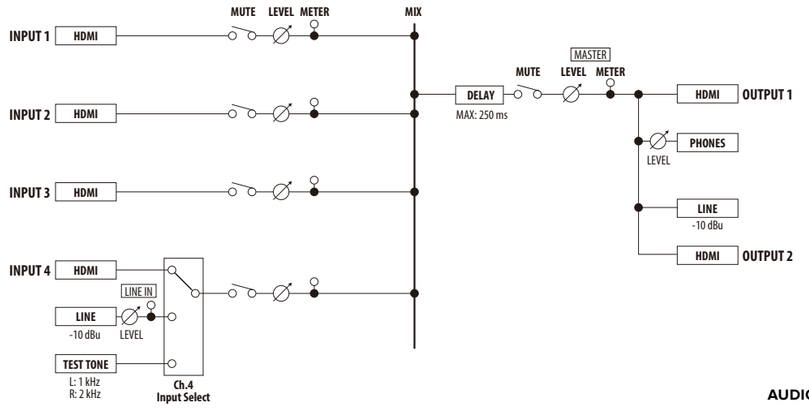
The Ver.1.2 update simplifies the VP-42H experience with WebRCS User Mode, streamlines workflow using shortcuts, adds Chroma Key video effect, and prevents tampering with Panel Lock.

Maximum effect, minimum effort

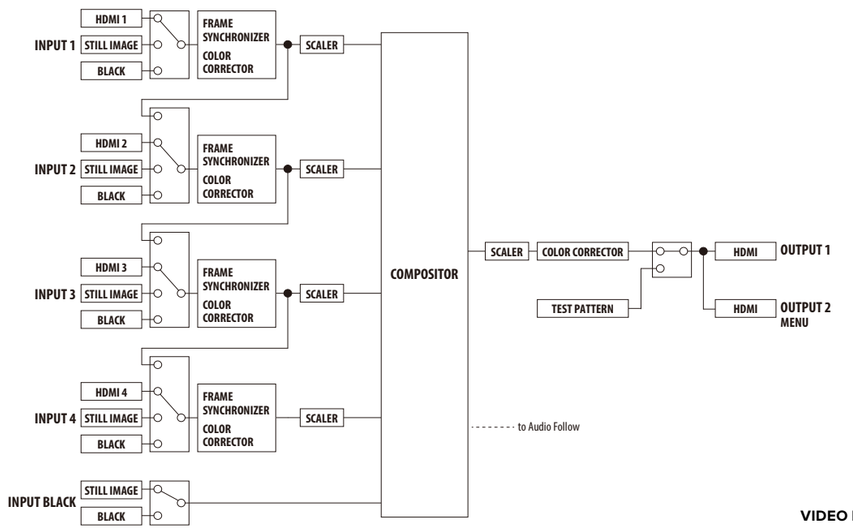
The VP-42H goes way beyond typical switchers. You can instantly switch between 'scenes' containing preset arrangements of layered sources in customizable inset windows. The VP-42H smoothly transitions between current and next scenes by automatically moving and resizing the windows to their new positions. And highly impressive scene changes that used to take hours to program now happen at the touch of a button.

Flexible audio capability

The Roland VP-42H includes stereo RCA outputs for de-embedding audio from connected HDMI sources and outputting it to other devices such as speakers and mixers. Levels for each source can be set by the internal audio mixer, and if the VP-42H is being used as a compositor for recording or streaming, the audio from an external mixer or other sources can be connected to the RCA inputs and embedded into the HDMI output signal.



AUDIO BLOCK DIAGRAM



VIDEO BLOCK DIAGRAM

Simple, solid switching

Not all events require creative display and advanced scene transition capabilities. For simpler scenarios, the VP-42H functions as a true cross-dissolve seamless switcher, with a keyer to create overlays and the ability to display still images via USB drive—perfect for logos and safety slides.

Fast and convenient browser-based setup

Quickly configure scenes by using the web browser interface for your network-connected VP-42H. Each input's layer can be scaled, cropped, zoomed and positioned by simply clicking and dragging. So even at a large event, a VP-42H connected to a big display will be up and running in seconds, letting you use a wirelessly connected tablet to set up compositions in no time.

Customizable compositions

Traditionally, layering and switching multiple sources within a single display is complicated and expensive, requiring highly skilled operators to keep it all working. This has pushed the technology out of reach for most event producers—until now. The Roland VP-42H video processor offers customizable compositions for up to four inputs, with motion-based scene switching for a stunning visual impact.

SPECIFICATIONS **VP-42H**

VIDEO	
Processing	4:4:4 (Y/Pb/Pr, RGB)/10 bits, 4:2:2 (Y/Pb/Pr)/10 bits
Input Connectors	HDMI: HDMI type A x 4 (HDMI INPUT 1--4), * HDCP Supported
Output Connectors	HDMI: HDMI type A x 2 (HDMI OUTPUT 1--2), * HDCP Supported
Formats	480/59.94i (*1), 576/50i (*1), 480/59.94p (*1), 576/50p (*1), 720/59.94p, 720/50p, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p, 800 x 600/60 (*1), 1024 x 768/60 (*2), 1280 x 720/60 (*2), 1280 x 800/60 (*2), 1366 x 768/60 (*2), 1280 x 1024/60 (*2), 1400 x 1050/60 (*2), 1600 x 1200/60, 1920 x 1080/60, 1920 x 1200/60 RB *Conforms to CEA-861-E,VESA DMT Version 1.0 Revision 11 *Frame rate is 59.94 Hz (NTSC) or 50 Hz (PAL). (*1) Input only. (*2) Output refresh rate is 75 Hz when frame rate is set to 50 Hz.
Composition	Layer: 4 (Picture in Picture x 4) *Layer 1 is Picture in Picture with Keyer.
Transition	Black-insert, Mix, Cut, Motion
Still Image	Internal Memory: 1 Maximum Size: 1920 x 1200 pixels Format: Windows Bitmap File (.bmp) 24 bit per pixel, uncompressed

* 0 dBu=0.775 Vrms

AUDIO	
Sample Rate	48 kHz, 24 bits
Input Connectors	HDMI: HDMI type A x 4, AUDIO INPUT: RCA pin type
Output Connectors	HDMI: HDMI type A x 2 *2 Output is the same audio. AUDIO OUTPUT: RCA pin type PHONES: Stereo mini type
Input Level	AUDIO INPUT: -10 dBu (Maximum: +8 dBu)
Input Impedance	AUDIO INPUT: 15 k ohms
Output Level	AUDIO OUTPUT: -10 dBu (Maximum : +8 dBu) PHONES: 72 mW + 72 mW (32 ohms)
Output Impedance	AUDIO OUTPUT: 1 k ohm PHONES : 10 ohms
Formats	HDMI: Linear PCM, 24 bits, 48 kHz, 2 ch
Processing	Mixer: 4 ch (Delay: Maximum 250 ms)

OTHERS	
External Connectors	REMOTE RS-232: DB-9 type (Male) x 1 LAN: RJ45 x 1 USB: USB A type x 1 (Use for future expansion) * USB MEMORY: USB A type x 1 (Use for USB Memory)
Functions	Scene Memory: 10 Test Pattern Generator Test Tone Generator EDID Emulator
Power Supply	AC Adaptor
Current Draw	2.1 A
Power Consumption	25 W
Operation Temperature	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	242 (W) x 125 (D) x 44 (H) mm 9-9/16 (W) x 4-15/16 (D) x 1-3/4 (H) inches
Weight	1.2 kg, 2 lbs 11 oz
Accessories	Owner's Manual, Leaflet "USING THE UNIT SAFELY", AC adaptor, Power cord, Rubber feet (4 pcs.), Rack mount angle set

P-20HD

VIDEO INSTANT REPLAYER VER 1.2

Transform sports production

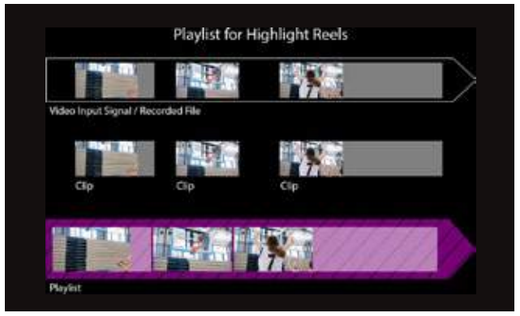
- Slow-motion instant replay and variable speed playback
- Intuitive controls for single-operator sports production
- Simultaneous recording and playback
- Clip playlist builder for creating highlight reels
- Integrated color LCD for preview monitoring
- Capture long events to low cost and widely available SD cards
- Compact, portable, and reliable hardware design
- Ideal for school sports, esports, and sports training

Record and replay at the same time

The P-20HD records directly to high-capacity SD cards, which are widely available and easy to swap out. And as you cue up and replay clips, the game keeps recording in the background, with no gaps in the action. The SD card also holds school logos, sponsor graphics, and other still images. Images can be recalled on cue and layered on top of the recorded clips or displayed at full HD resolution.

Plays well with others

The P-20HD can be seamlessly inserted into a variety of workflows. Use it on its own, or upstream or downstream of any Roland video switcher. Connect two cameras and switch/composite between sources to capture them for replay. Both HDMI inputs feature built-in scalers, providing worry-free connectivity with nearly any video source.



Create highlight and training reels

After the action's over, use the media playlist builder to aggregate clips into curated pro videos, ready for distribution and sharing on your favorite platform. Celebrate the best moments of a game on social media, or distribute practice and training sessions to coaches and players for further evaluation.

Superb audio quality

The P-20HD features the high-quality sound processing that Roland is famous for. Stereo audio I/O is supported via embedded HDMI and analog RCA jacks, and there's a convenient headphones jack for signal monitoring. Onboard EQ, limiter, and delay effects are also available to enhance the sound and eliminate audio and video sync issues.

SYSTEM PROGRAM VER 1.2

The P-20HD continues to evolve with the Version 1.2 update, adding 1080i output, MP4 file export, control by V-60HD, USB Keyboard, external footswitches, LAN, and RS-232, and more improvement. Version 1.2 is a free, user-installable update for all P-20HD owners

One person operation

A pro sports network broadcast has a dedicated team that handles replay duties. With the P-20HD, a single operator can easily mark, cue, and replay clips while managing other elements of a production. Simply register events as clips with button taps while recording, and then instantly play them back with dedicated panel switches. A Version 1.2 Keyboard plus a BOSS footswitch and expression pedal enable you to execute different switcher commands more easily. USB Keyboard supports renaming projects and clips as well.

Direct-access controls

Filled with single-task hardware controls, the P-20HD provides a hands-on experience that lets you get the job done with zero frustration. Dedicated transport buttons include play, pause, forward, rewind, mark in, and mark out. A jog/shuttle wheel with optical encoding provides precise, fluid control to scrub clips for replay and editing, while the T-bar lets you adjust playback speed. Engaging the Speed Range function provides ultra-fine control, perfect for focusing in on tight action and contested plays.

P-20HD Recording Times

SD CARD CAPACITY	RECORDING TIME
16GB	2 hours 50min
32GB	5 hours 45min
64GB	11 hours 30min
128GB	23 hours 00min
256GB	46 hours 00min
512GB	92 hours 00min

Universal file compatibility

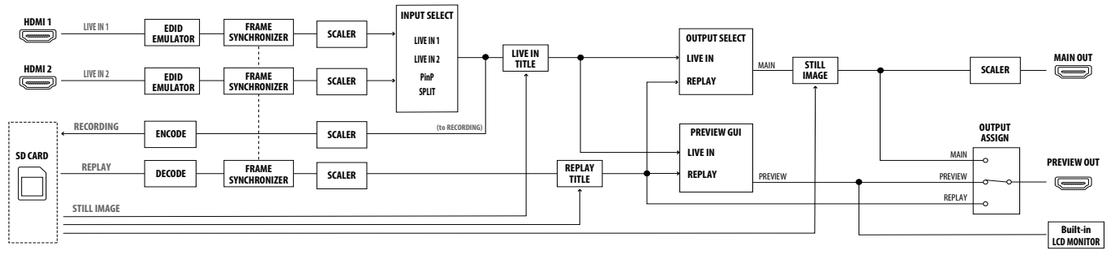
The P-20HD records natively in H.264*, one of the most universally supported file formats available. H.264 maintains high quality even at low bit rates, providing excellent video at reduced file sizes. All of the most popular online video platforms accept H.264 format, letting you upload files created on the P-20HD with no conversion steps in-between. Version 1.2 The P-20HD exports projects and clips in MP4 file format.

Visually engage with fansns

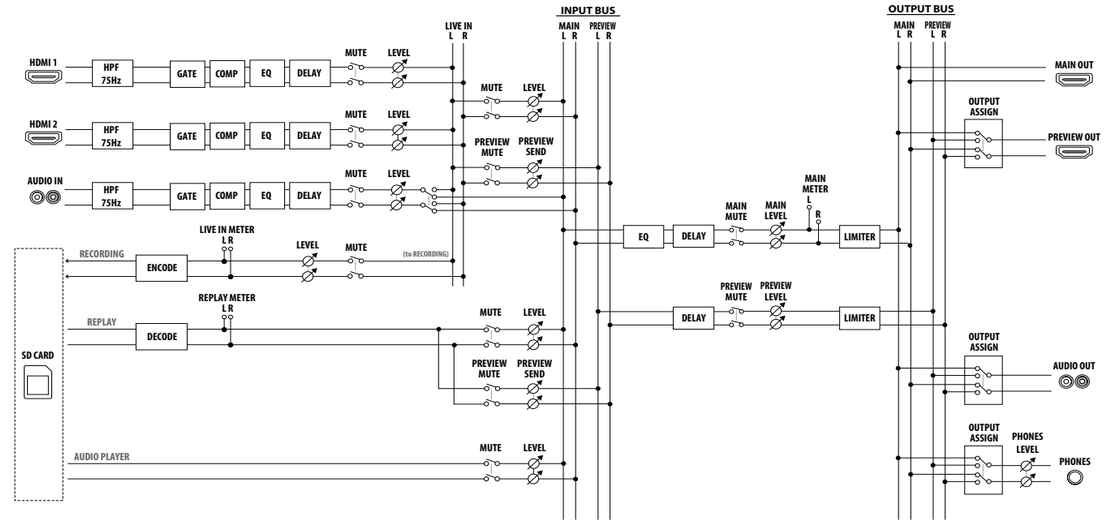
Draw lines or diagram the trajectory of the action to help fans analyze the play and help make commentary easier to understand. Draw with various colors, and shapes, even control the playback speed of the video. Beginning with version 1.10, real-time annotation over video is economical, and simple with the P-20HD and a connected Wacom Tablet*.

Take local sports production to the next level

When watching a sporting event live or on a broadcast stream, today's audiences expect the high production values they see when watching pro teams on network TV. With the P-20HD, adding the magic of instant replay to your workflow has never been more simple and affordable. Using intuitive controls and the integrated color LCD, you can easily cue up replays of important action to let fans relive the moment, either on your streaming feed or live event screens—or both at once.



AUDIO BLOCK DIAGRAM



VIDEO BLOCK DIAGRAM

SPECIFICATIONS **P-20HD**

VIDEO	
Processing	4:4:4 (Y/Pb/Pr, RGB)/10 bits, 4:2:2 (Y/Pb/Pr)/10 bits
Input Connectors	HDMI: HDMI type A x 4 (HDMI INPUT 1--4), * HDCP Supported
Output Connectors	HDMI: HDMI type A x 2 (HDMI OUTPUT 1--2), * HDCP Supported
Formats	480/59.94i (*1), 576/50i (*1), 480/59.94p (*1), 576/50p (*1), 720/59.94p, 720/50p, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p, 800 x 600/60 (*1), 1024 x 768/60 (*2), 1280 x 720/60 (*2), 1280 x 800/60 (*2), 1366 x 768/60 (*2), 1280 x 1024/60 (*2), 1400 x 1050/60 (*2), 1600 x 1200/60, 1920 x 1080/60, 1920 x 1200/60 RB *Conforms to CEA-861-E,VESA DMT Version 1.0 Revision 11 *Frame rate is 59.94 Hz (NTSC) or 50 Hz (PAL). (*1) Input only. (*2) Output refresh rate is 75 Hz when frame rate is set to 50 Hz.
Composition	Layer: 4 (Picture in Picture x 4) *Layer 1 is Picture in Picture with Keyer.
Transition	Black-insert, Mix, Cut, Motion
Still Image	Internal Memory: 1 Maximum Size: 1920 x 1200 pixels Format: Windows Bitmap File (.bmp) 24 bit per pixel, uncompressed

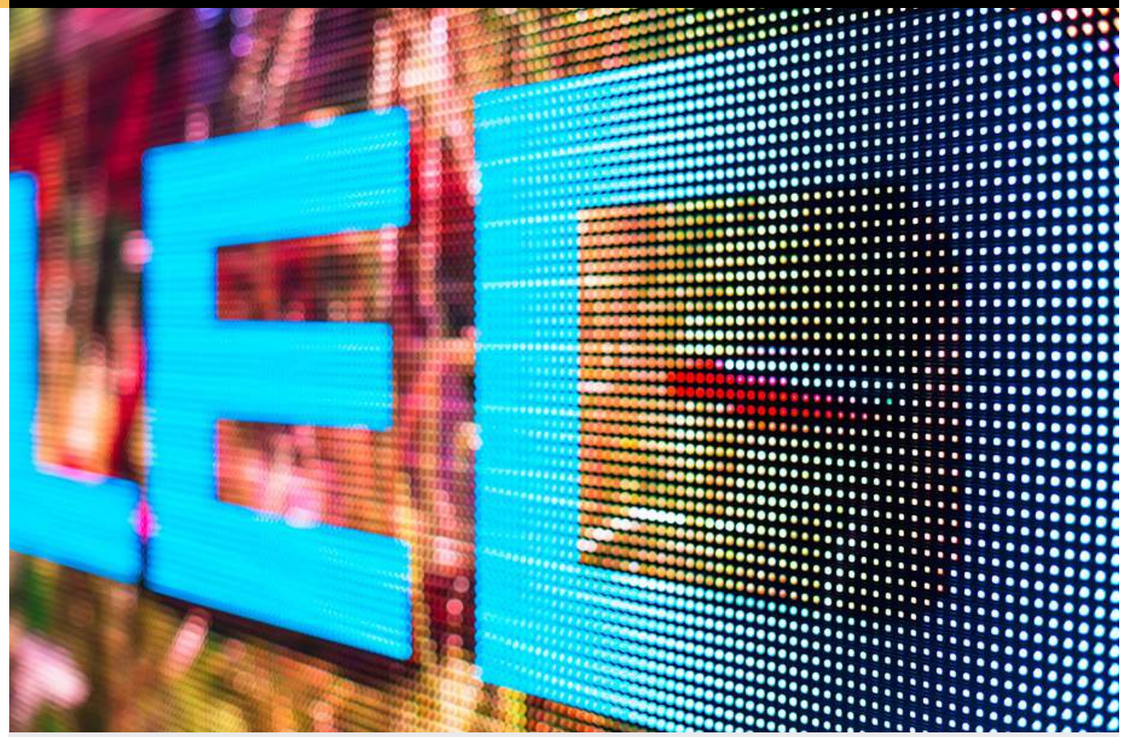
* 0 dBu=0.775 Vrms

AUDIO	
Sample Rate	48 kHz, 24 bits
Input Connectors	HDMI: HDMI type A x 4, AUDIO INPUT: RCA pin type
Output Connectors	HDMI: HDMI type A x 2 *2 Output is the same audio. AUDIO OUTPUT: RCA pin type PHONES: Stereo mini type
Input Level	AUDIO INPUT: -10 dBu (Maximum: +8 dBu)
Input Impedance	AUDIO INPUT: 15 k ohms
Output Level	AUDIO OUTPUT: -10 dBu (Maximum : +8 dBu) PHONES: 72 mW + 72 mW (32 ohms)
Output Impedance	AUDIO OUTPUT: 1 k ohm PHONES : 10 ohms
Formats	HDMI: Linear PCM, 24 bits, 48 kHz, 2 ch
Processing	Mixer: 4 ch (Delay: Maximum 250 ms)

OTHERS	
External Connectors	REMOTE RS-232: DB-9 type (Male) x 1 LAN: RJ45 x 1 USB: USB A type x 1 (Use for future expansion) * USB MEMORY: USB A type x 1 (Use for USB Memory)
Functions	Scene Memory: 10 Test Pattern Generator Test Tone Generator EDID Emulator
Power Supply	AC Adaptor
Current Draw	2.1 A
Power Consumption	25 W
Operation Temperature	+0 to +40 degrees Celsius, +32 to +104 degrees Fahrenheit
Dimensions	242 (W) x 125 (D) x 44 (H) mm 9-9/16 (W) x 4-15/16 (D) x 1-3/4 (H) inches
Weight	1.2 kg, 2 lbs 11 oz
Accessories	Owner's Manual, Leaflet "USING THE UNIT SAFELY", AC adaptor, Power cord, Rubber feet (4 pcs.), Rack mount angle set

VC-100UHD

4K VIDEO SCALER VER 1.2

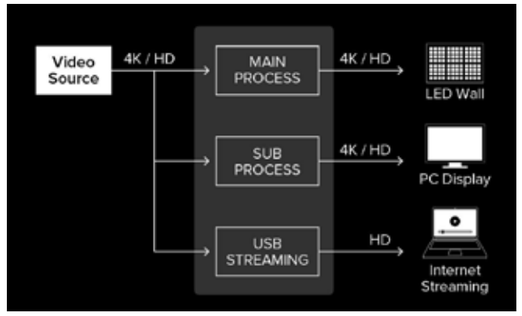


Scale, convert, and stream

- Professional A/V signal management in a compact and robust unit
- Internal YCbCr 4:4:4 10-bit Lossless Processing
- HDMI YCbCr 4:4:4 10-bit Input / Output
- High frame rate support at 100, 120, 144, 200 and 240 Hz with drop frame
- Features 12G-SDI and HDMI 2.0 I/O with Roland's Ultra Scaler video processing technology
- Display processing for multiple audiences: 4K, HD, and web streaming
- USB 3.0 webcam output for livestreaming broadcasts
- Advanced visual effects and image processing
- New region of interest switching by USB numeric keypad
- Professional audio processing with flexible patching
- Front panel menu LCD

ULTRA SCALER

Introducing the Roland VC-100UHD, a next-generation A/V signal management solution for live events, fixed installations, and livestreaming. Built on a reliable hardware platform for mission-critical applications, this powerhouse processor combines multiple single-task technologies in a compact and flexible half-rack design.

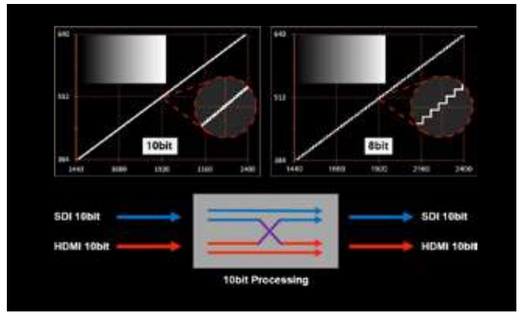


Process images for multiple audiences at once

Using the VC-100UHD, it's a simple task to send 4K and 1080p video to multiple destinations at one time, including pixel-hungry LED walls, tech operator displays and recorders, and USB webcam streams for online viewing. With an ultra-high-definition source signal connected to the 12G-SDI or HDMI 2.0 video inputs, the VC-100UHD will automatically process and convert it to different resolutions, ready for distribution at 12G-SDI, HDMI, and USB 3.0 rear-panel outputs.

Using USB numeric keypad like PTZ cameras

Produce multi-shot productions with a single 4K camera or zoom in and highlight the details of a presentation using the VC-100UHD's built-in Region of Interest (ROI) function. Creating an innovative viewer experience has never been easier; connect any 4K video input source to zoom, move, crop, and scale up to eight regions of interest windows. Switch between the ROI windows using any USB numeric keypad to use it like PTZ camera in the live event operation.



Lossless conversion

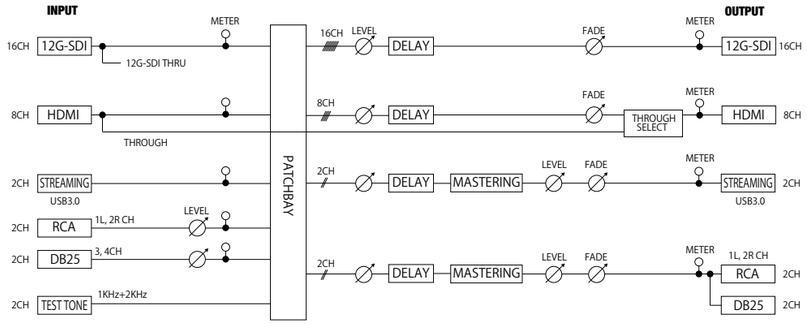
When setting YCbCr4:2:2, 10-bit input / output and 10-bit internal processing maintain the fineness of the color and gradation of the input material. Compared to 8-bit processing, it can display more colors and express a more natural and smooth gradation.

Onboard visual effects and image processing

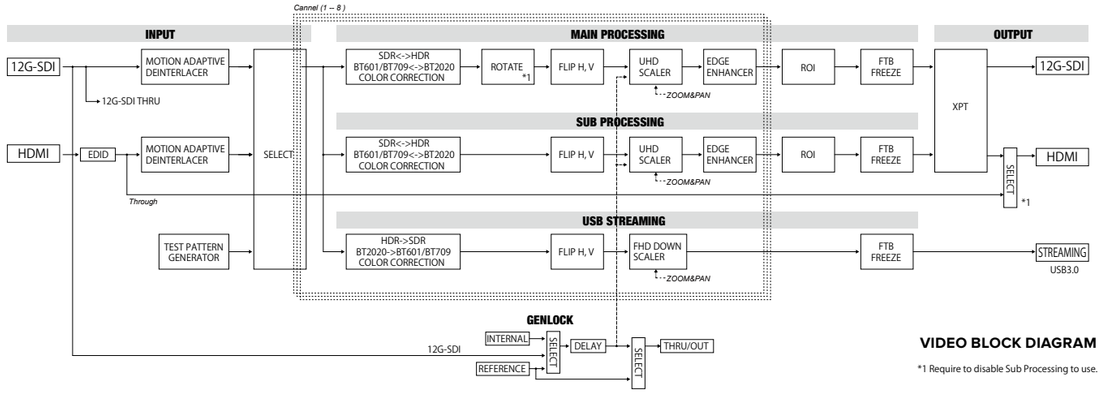
Using the VC-100UHD's built-in visual effects, it's simple to rotate, flip, and mirror images. For example, a portrait image generated by a smartphone can be trimmed and rotated to fit seamlessly on a 16:9 landscape display for digital signage. And with the VC-100UHD's Frame Synchronizer and Genlock features, you can easily re-clock and stabilize video images as needed.

SYSTEM PROGRAM VER 1.3

Version 1.3 brings improvements to internal YCbCr 4:4:4 10-bit lossless processing and now supports RGB/YCbCr 4:4:4 10-bit on HDMI. 720p and 1440p144Hz frame rates have been added. For with 5.1 surround sound processing, C/LFE mapping has been added. Installs that require lower fan noise, automatic adjustment control based on the environment is now supported. Roland's innovative "Region of Interest (ROI)" has been added to 4K inputs with simple switching between ROI windows using a USB numeric keypad.

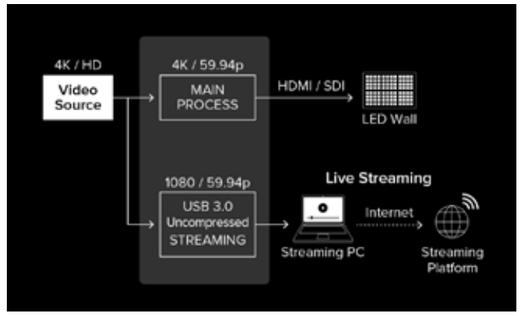


AUDIO BLOCK DIAGRAM



VIDEO BLOCK DIAGRAM

*1 Require to disable Sub Processing to use.



USB 3.0 webcam output for streaming and recording

Reach a worldwide audience and broadcast uncompressed 1080p video at 59.94/50 Hz on popular streaming platforms with the VC-100UHD. The USB 3.0 webcam output offers plug-and-play operation with the latest USB audio/video protocols, so there's no software to download or drivers to maintain. And with Roland's free VR Capture software, you can record your HD livestreams in ProRes 422 (Mac) or MP4 (Windows) formats for editing and distribution.

Front panel graphic LCD

With a high-precision graphic LCD and a sophisticated menu structure, all functions can be operated and set using the VC-100UHD itself without an external control device. On the HDMI input signal status screen, you can check the resolution, frame rate, HDCP status, color space, bit depth, dynamic range, and audio level of each 8 channels input. In addition, the system message log screen makes troubleshooting easier.

SPECIFICATIONS **VC-100UHD**

VIDEO	
Processing	4:4:4 (Y/Pb/Pr), 10-bit
Formats	SDI: 2160p(DCI)/59.94 Hz, 50 Hz (SMPTE ST2048) 2160p(UHD)/59.94 Hz, 50 Hz (SMPTE ST2036) 1080p/59.94 Hz, 50 Hz (SMPTE ST274) 1080i/59.94 Hz, 50 Hz (SMPTE ST274) HDMI: *1 2160p(DCI)/59.94 Hz, 50 Hz (CEA-861-F) 2160p(UHD)/59.94 Hz, 50 Hz (CEA-861-F) 1080p/59.94 Hz, 50 Hz (CEA-861-F) 1080i/59.94 Hz, 50 Hz (CEA-861-F) 4096 x 2160/60 Hz (CEA-861-F) 3840 x 2160/60 Hz (CEA-861-F) 2560 x 1440/60 Hz (VESA CVT Reduced blanking) 1920 x 1200/60 Hz (VESA CVT Reduced blanking) 1920 x 1080/240 Hz (Pixel Clock 556.8 MHz) *2 1920 x 1080/144 Hz (Pixel Clock 346.54 MHz) *2 1920 x 1080/120 Hz (VESA CVT Reduced blanking) *2 1920 x 1080/60 Hz (CEA-861-F) *1 HDCP 1.4, 2.2 supported. *2 Input and through output. USB Streaming: *3 *4 *5 1080p, 720p, 480p/576p *3 UVC (USB Video Class) Uncompressed Video 4:2:2 (Y/Pb/Pr), 8-bit *3 The video signal frame rate can be selected Full or Half. *4 Color Gamut: Rec.601, Rec.709, Dynamic Range: SDR * Color Gamut: Rec.601, Rec.709, Rec.2020 * Dynamic Range: SDR, HDR PQ (HDR10), HDR HLG
Functions	4K Scaler, FHD Down Scaler, Output Fade Output Freeze, Test Pattern Generator, Rotation *6, Flip H, V, Edge Enhancer Motion Adaptive Deinterlacer, Color Correction, Dynamic Range Conversion *6 Require to disable Sub Processing to use.

AUDIO	
Processing	24 bits/48 kHz
Formats	12G-SDI: Linear PCM, 24 bits/48 kHz, 16 ch (SMPTE 299M) HDMI 4K: Linear PCM, 24 bits/48 kHz, 8 ch STREAMING: Linear PCM, 16 bits/48 kHz, 2 ch (UAC (USB Audio Class))
Output Connectors	OUTPUT 1--3: HDMI Type A x 3 AUDIO OUT: RCA phono type PHONES: Stereo miniature type
Input Level	LINE IN: -10 dBu (Maximum: +8 dBu) AUDIO IN: +4 dBu (Maximum: +24 dBu)
Input Impedance	LINE IN: 38 k ohms AUDIO IN: 15 k ohms
Output Level	LINE OUT: -10 dBu (Maximum: +8 dBu) AUDIO OUT: +4 dBu (Maximum: +24 dBu)
Output Impedance	LINE OUT: 1 k ohm AUDIO OUT: 600 ohms
Functions	Output Level, Patchbay, Delay, Mastering, Test Tone Generator

CONNECTORS	
Input Connectors	12G-SDI IN: BNC type (SMPTE 2082, 2081, 424M (SMPTE 425M-AB), 292M, 259M) HDMI 4K IN: HDMI type A STREAMING: USB type B (USB3.0) LINE IN: RCA phono type AUDIO IN: DB-25 female type (Balanced audio 2 ch) REFERENCE IN: BNC type (Black Burst (Sync to fr.), Bi-Level, Tri-Level)
Output Connectors	12G-SDI OUT: BNC type (SMPTE ST2082, ST2081, 424M(SMPTE 425M-AB), 292M, 259M) 12G-SDI THRU: BNC type HDMI 4K OUT: HDMI type A STREAMING: USB type B (USB3.0) LINE OUT: RCA phono type AUDIO OUT: DB-25 female type (Balanced audio 2 ch) REFERENCE THRU/OUT: BNC type (Black Burst)
Other Connectors	USB HOST: USB A type (USB2.0) (for USB flash drive) REMOTE: RJ45 type, 100BASE-TX

OTHERS	
Functions	EDID Emulator Genlock Preset Memory x 8
Display	Graphic LCD 256 x 64 dots
Power Supply	AC Adaptor
Current Draw	2.3 A (DC 24V)
Power Consumption	55 W
Operation Temperature	+0 to +40 degrees Celsius +32 to +104 degrees Fahrenheit
Dimensions	210 (W) x 284.5 (D) x 43 (H) mm, 8-5/16 (W) x 11-1/4 (D) x 1-3/4 (H) inches
Weight (excl. Accessories)	2.2 kg 4 lbs 14 oz
Accessories	Owner's Manual, Leaflet "USING THE UNIT SAFELY", AC adaptor, Power cord, Rubber feet (4 pcs.), Rack mount angle set, DC Plug Stopper

* 0 dBu = 0.775 Vrms

ULTRA SCALER

The ultra-reliable ultra scaler

The VC-100UHD features Roland's revolutionary Ultra Scaler, the same no-compromise, ultra-reliable professional video processor found in the flagship V-600UHD 4K video switcher. Backed by a lightning-fast processing engine, Ultra Scaler delivers premium quality conversion for perfectly synchronized big-screen IMAG and precise dot-by-dot scaling for LED wall displays. Roland's Ultra Scaler supports: 10-bit 4:4:4 pixel-accurate color, Rec. 601, 709 and 2020 wide color gamut, High dynamic range processing and conversion, 1080p high frame rate (HFR) video at 100, 120, 144, 200, and 240 Hz, Native DCI Digital Cinema System 4K (4096) resolution

*HDMI input only

High frame rates? No problem.

High frame rate (HFR) video sources can pose signal workflow challenges for integrated systems, but the VC-100UHD handles them with ease. Thanks to Ultra Scaler technology, system designers can simultaneously deliver 1080p video at rates up to 240 Hz for a gaming monitor, 59.94/50 Hz for an HD video system and LED displays, and 59.94/50 Hz for an HD livestream broadcast.

*HDMI input only

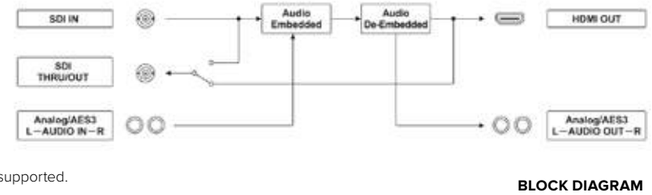
VC-1 Series

VIDEO CONVERTERS

VC-1-SH SDI TO HDMI

Conversion of video and audio signals from SDI input to HDMI output

- SDI to HDMI conversion
- Lossless image conversion
- 3G (Level A and B)/HD/SD SDI
- HDCP support
- Selectable channel for Embedded/De-embedded audio



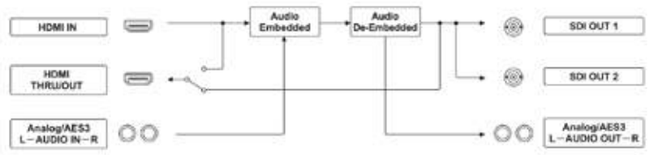
* Up/Down/Cross, Frame rate, I/P, and Aspect ratio conversion are not supported.

BLOCK DIAGRAM

VC-1-HS HDMI TO SDI

Conversion of video and audio signals from HDMI input to SDI output

- HDMI to SDI conversion
- Lossless image conversion
- 3G (Level A and B)/HD/SD SDI
- HDCP support
- Selectable channel for Embedded/De-embedded audio



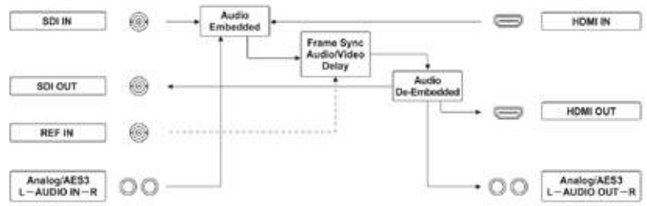
* Up/Down/Cross, Frame rate, I/P, and Aspect ratio conversion are not supported.

BLOCK DIAGRAM

VC-1-DL FS DELAY

Bi-directional conversion of video and audio signals from HDMI to SDI or SDI to HDMI with frame sync and delay

- HDMI to SDI/SDI to HDMI conversion
- Lossless image conversion
- 3G (Level A and B)/HD/SD SDI
- HDCP support
- Selectable Channel for Embedded/De-embedded Audio
- Audio/Video Delay - up to 9 fields (4.5 frames)



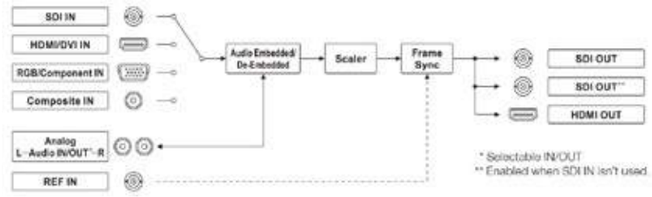
* Up/Down/Cross, Frame rate, I/P, and Aspect ratio conversion are not supported.
* When frame synchronizer is working, CH 3-8 of HDMI and CH 3-16 of SDI audio output are not available.

BLOCK DIAGRAM

VC-1-SC SCAN CONVERTER

Up/down/cross scan converter to SDI/HDMI with frame sync

- 3G (Level A and B)/HD/SD SDI In/Out
- HDMI In/Out
- RGB/Component In
- Composite In
- HDCP support
- Built-in Frame Synchronizer and Scaler
- Up/Down/Cross, Frame Rate*, I/P, and Aspect Ratio conversion
- Audio embedding or De-embedding
- VC-1 RCS, dedicated PC/Mac Software App



BLOCK DIAGRAM

Accessories

SDI CABLES

BLACK SERIES
SDI CABLE

SDI cable designed to transmit high-speed digital signals precisely

SDI cable, 1 m length. Also available in 2 m (RCC-6-SDI), 3 m (RCC-10-SDI), 5 m (RCC-16-SDI), 7.5 m (RCC-25-SDI), 15 m (RCC-50-SDI), 30 m (RCC-100-SDI), and 60 m (RCC-200-SDI) lengths

HDMI CABLES

BLACK SERIES
HDMI CABLE

HDMI cable designed to transmit high-speed digital signals precisely

HDMI 2.0 cable, 1 m length. Also available in 2 m (RCC-6-HDMI), 3 m (RCC-10-HDMI), 5 m (RCC-16-HDMI), and 7.5 m (RCC-25-HDMI) lengths

HT-TX01

HDBaseT
TRANSMITTER

HDBaseT-compatible transmitter for transmitting HDMI signals up to 100 meters over an ethernet cable

Converts HDMI input to HDBaseT signals, maximum 1080/60p and WUXGA support for HDMI, HDCP-compliant, capable of RS-232C transmission

HT-RX01

HDBaseT
RECEIVER

HDBaseT-compatible receiver for transmitting HDMI signals up to 100 meters over an ethernet cable

Converts HDBaseT signals to HDMI output, maximum 1080/60p and WUXGA support for HDMI, HDCP-compliant, capable of RS-232C transmission

SPECIFICATIONS **HT-TX01/HT-RX01**

Input Formats	800 × 600, 1024 × 768, 1280 × 1024, 1366 × 768, 1920 × 1200, 480i, 720p, 1080i, 1080p
Audio Formats	The maximum is PCM 8ch, Dolby Digital, True HD DTS-HD Master Audio
Input Connectors	<HT-TX01> HDMI x 1: Type A 19 pins, <HT-RX01> RJ45 x 1
Output Connectors	<HT-TX01> RJ45 x 1, <HT-RX01> HDMI x 1: Type A 19 pins
Other Connectors	RS-232 x 1
Transmission Distance	The maximum is 100 m (328 ft) * The available distance depends on the quality of the LAN cable. Optical MADI IN/OUT (SC duplex type)

Operating Temperature	0 to 40 degrees C, 32 to 104 degrees F
Operation Humidity	10 to 85 % (no condensation)
Storage Temperature	-20 to 60 degrees C, -4 to 140 degrees F
Storage Humidity	10 to 85 % (no condensation)
Power Supply	AC Adaptor
Current Draw	2 A
Dimensions	81 (W) x 93 (D) x 24 (H) mm, 3-3/16 (W) x 3-11/16 (D) x 1 (H) inches
Weight	300 g, 11 oz

* In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.

CB-BV1

CARRYING BAG

The perfect accessory for your Roland V-1HD or V-1SDI Video Switcher

For Roland V-1HD or V-1SDI Video Switcher, durable exterior materials, fleece interior and foam padding, interior/exterior: black 600D polyester and ripstop nylon

RRC-SP SERIES

BLACK SERIES ROAD CASE

Heavy-duty combo rack for RRC-8SP / RRC-6SP / RRC-4SP / RRC-2SP

Eight/six/four/two-space rackmount road cases, heavy-duty grade recessed hardware, tongue and groove aluminum valances, premium 3/8-inch plywood with rugged black vinyl laminate

RRC-V1200

BLACK SERIES ROAD CASE

Heavy-duty combo rack for the Roland V-1200HD and V-1200HDR

Heavy-duty grade recessed hardware, tongue and groove aluminum valances, high-density foam lining, premium 3/8-inch plywood with rugged black vinyl laminate

Index

Roland

Professional A/V

Roland

Professional A/V

https://proav.roland.com/

Ensuring high quality while protecting the environment: Roland is ISO9001 and ISO14001 certified
At Roland, several group companies have obtained ISO9001 certification. In addition, in January 1999, Roland also received ISO14001 international environmental management system certification. We're actively seeking ways to maintain harmony with the environment. (ISO=International Standardization Organization: an organization for the promotion of standardization of international units and terms. They provide different categories of certification: ISO9001 Series certification is a product quality certification for products that undergo a certain level of quality control from the design stage to the after service stage; ISO14001 Series certification is for environment-related standards. Each member of the Roland Group is striving to obtain certification.)