V-1200HD Multi-format Video Switcher

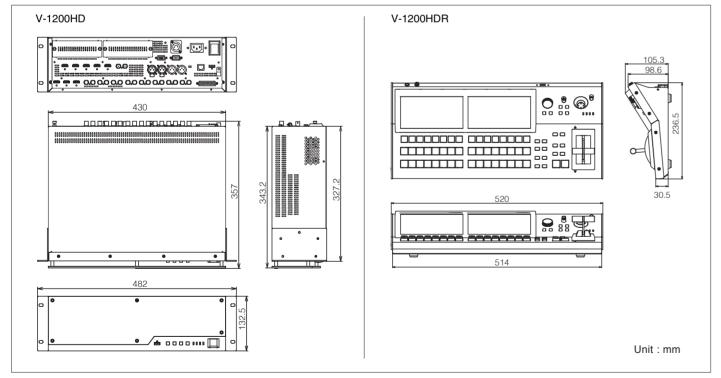
Video 4: 4: 4 (Y/Pb/Pr / RGB), 10-bit /		Output Connectors	3G/HD/SD-SDI: BNC type x 4 (Ch1-4), HDMI x 2, AUDIO OUT (XLR/TRS) L (1/2),R (3/4) * Analog Audio or AES/EBU	
Processing	4: 2: 2 (Y/Pb/Pr), 10-bit	Input Level and	AUDIO IN: -68+4dBu (Maximum: +22dBu, 4k ohms)	
	3G/HD/SD-SDI: BNC type x 10 * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M, 259M-C HDMI: type A x 2 (HDMI INPUT 12) * HDCP Not supported HDMI: type A x 2 (HDMI INPUT 34) * HDCP Supported., Multi-format Supported.	Impedance		
Input Connectors		Output Level and Impedance	AUDIO OUT: +4dBu (Maximum: +22dBu, 600 ohms)	
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 12) * HDCP Supported HDMI: type A x 2 (HDMI OUTPUT MULTI-VIEW 1 * HDCP Not required, 1080/59.94p) (HDMI OUTPUT MULTI-VIEW 2 * HDCP Required, 1080/59.94p)	Formats	SDI: Linear PCM, 24bits, 48kHz, 16ch * Conforms to SMPTE 299M, SMPTE272M-C HDMI: Linear PCM, 24bits, 48kHz, 2ch AES/EBU: Linear PCM, 24bits, 48kHz, 4ch	
	SDI: 480/59.94i, 576/50i, 720/59.94p, 720/50p, 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, 1080/59.94j, 1080/50p, 1024x768/60*1, 1280x200/60*1, 1280x800/60*1, 1366x768/60*1, 1280x1024/60*1, 1400x1050/60, 1600x1200/60, 1920x1080/60, 1920x1200/60 * Conforms to CEA-861-E, VESA DMT Version 1.0 Revision 11 * The output format of HDMI1, 2 and SDI is always the same. * 1 Output refresh rate is 75 Hz when frame rate is set to 50 Hz. Frame rate: 59.94 (NTSC) or 50 (PAL) MULTI-VIEW 1—2: 1080/59.94p	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		
Formats		Expansion Slot	Slot: 2, Internal video bus: Input 2, Output 2 / Internal audio bus: Input 16ch, Output 16ch * 2 slots total	
		Phase adjustment	±1080 Lines	
		Reference	Input: BNC type x 1 Output/Through: BNC type x 1 * Black Burst (Sync to frames), Bi-Level, Tri-Level * Through when using an Input.	
	ME: 1 M/E, 1.5 M/E, 2 M/E (9 patterns) Transition: Mix, NAM* , FAM* , Cut, Wipe, Slide*, Squeeze* * PGM/PST only Composition (Keyer): 4 channels * The number of composition depends on M/E, PinP, Chroma Key, Luminance Key, External Key supported AUX: 2 * The number of AUX depends on M/E Others: Output Fade, Freeze, Capture, Composition Edit, SDI Output Patchbay			
Effects (4:2:2 Processing)		External Connectors	RS-232: D-Sub 9 pin type x 1 * for Remote Control * 9600/38400bps, Data 8bit, Stop 1bit, Parity None, Flow XONXOFF, ASCII Code Set RS-422: D-Sub 9 pin type x 1 * for VISCA Control TALLY/GPIO: D-sub 25 pin type x 1 (Input: 8, Output: 16)	
Effects	M/E: 1 M/E, Matrix, Scaler Input: 4 (4:2:2 Processing outputs x 2, HDMI INPUT 3, HDMI INPUT 4)* Transition: Mix, Cut* Keyer: Luminance Key (1 M/E)* Others: HDCP Supported, Output Fade, Output Cropping, Signal Generator* * The function depends on M/E		LAN: R145 100Base-TX (Connect to V-1200HDR or Computer (V-1200HDRCS)), Maximum: V-1200HD x 4, V-1200HDR or V-1200HDRCS x 4 USB: A type x 2 USB Mrmory / Use for future expansion	
(4:4:4 Processing)		Memory	8 * Last Memory Function	
		User Function Button	32 * 16 buttons x 2 banks	
Still Image Multiviewer	Still Image Inputs: 2, Internal Memory: 16, Maximum 1920x1080 pixels Format: Windows Bitmap File (.bmp) 24 bit per pixel, uncompressed, Portable Network Graphic File (.png) * Alpha channel Supported. MULTI-VIEW 1 (4:2:2 Processing): 16/10 screens, Audio Level, Label, Tally * HDCP Not required MULTI-VIEW 2 (4:4:4 Processing): 4 screens, Audio Level, Label, Tally, OSD Setup Menu	Remote Camera Control	RS-422: D-Sub 9 pin type x 1 Protocol: VISCA * 9600/38400bps, Data 8bit, Stop 1bit, Parity None, Flow None, Maximum: 4 Units	
		Remore Controler	V-1200HDR Control Surface * Option V-1200HD RCS * Windows7 or later / Mac OSX	
		Power Supply	AC 100V, DC 24V/10A (XLR-4-32 type) * Redundant Power Supply * 240W	
Proc. Amp.	* HDCP Required Equipped with all inputs	Operation Temperature	+0 to +40 degrees Celsius +32 to +104 degrees Fahrenheit	
Audio		Dimensions	Width: 430 mm / Depth: 357 mm / Height: 132.5 mm * EIA-3U rack mount size	
Processing	Sampling Rate : 24 bits/48 kHz	Weight	9.0 kg	
Input Connectors	3G/HD/SD-SDI: BNC type x 4 (Ch7-10), HDMI x 4, AUDIO IN (XLR/TRS) L (1/2),R (3/4) * Analog Audio or AES/EBU	Accessories	Power Cord, Rack Mount Angle (2), Input Template, Owner's Manual	

This product is a Class A digital device under FCC part 15. "VISCA" is a trademark of Sony Corporation.

V-1200HDR Control Surface

Display	7 inch Graphic color LCD (touch screen) x 2	Power Supply	AC Adaptor DC 12V / Secondary AC Adaptor DC 9 V to 16 V (XLR-4-32 type) , DC 12V / 2.5	
Video input	HDMI (type A) x 2 * HDCP Supported	Operation Temperature	+0 to +40 degrees Celsius +32 to +104 degrees Fahrenheit	
Video output	HDMI (type A) x 1 * Use for future expansion	Dimensions	Width: 514 mm / Depth: 236.5 mm / Height: 105.3 mm	
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) (headphones) 80mW + 80mW, 35 ohms Internal stereo speakers	Weight	4.3 kg	
		Accessories	AC Adaptor, Power Cord, Owner's Manual	

■ Dimensions



Roland proav.roland.com/v1200hd

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Preliminary

MULTI-FORMAT VIDEO SWITCHER V-1200HD

Hybrid Engine 2 M/E Switcher and Processor for Broadcast and Live Event















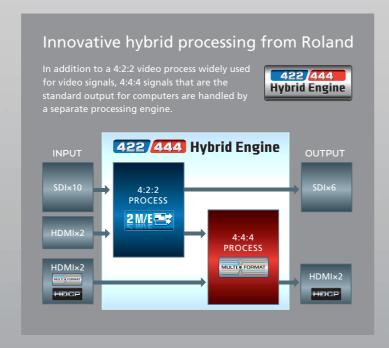
Roland

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.



- 10 SDI and 4 HDMI inputs, and 6 SDI and 2 HDMI outputs
- 4:2:2/4:4:4 hybrid engine
- The 4:2:2/10-bit processor is 2 M/E switcher that is able to switch 2 M/E, 1.5 M/E, and 1 M/E.
- The 4:4:4/10-bit multi-format processor supports live presentation, split-screen, and matrix output.
- 4K switching mode
- Up to 92 Inputs/Outputs 16-channel audio mixer
- Control of up to 4 remote cameras
- Optional control surface with T-bar and dual displays.
- All switcher functions can be operated from a computer using remote control software, V-1200HD RCS
- Input/output expandable via expansion slots





Flexible M/E

The 4:2:2 engine's variety of M/E modes allows for more creative freedom.

☐ 2 M/E Mode ^{2M/E}

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. Each of the two M/Es can be output independently allowing for applications such as simultaneous transmission of captions in two different languages.



□ 1.5 M/E Mode

This is the highest-performance operation style, capable of using PGM/PST rows as the final stage in addition to 1 M/E. All four keyers can be used in 1 M/E. You can freely change the priority of each keyer, and even copy keyers. This mode enables complex mixing operations such as a video source plus 4-layers of composition and transition functions to another single video source.



□ 1 M/F Mode

This is a simple operation style using 1 M/E + 4 keys. In addition to using PGM/PST rows on the main line, you can use two AUX buses. This mode allows discrete video feeds to be switched and routed to additional outputs making the V-1200HD the ideal primary switcher for a number of broadcast and live performance applications.



☐ 4K Switching Mode

* Future upgrade

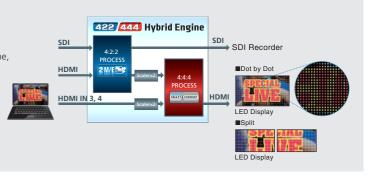
This functions as a 4K/60p routing switcher by combining four SDI inputs or outputs to achieve a single 4K source. Installing an XI-SDI SDI expansion card enables 4K routing of up to three inputs and two outputs

- * 4K HDMI input/output is not supported.
- * M/Es and keyers cannot be used.



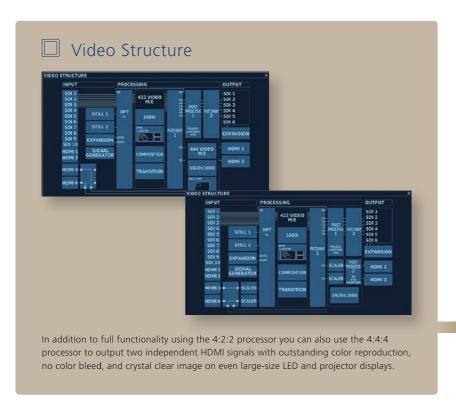
4:4:4 Multi-Format Processor

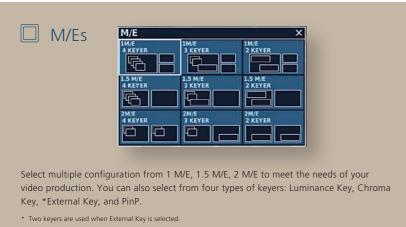
There are two scalers between the 4:2:2 engine and the 4:4:4 engine, and two scalers between HDMI IN 3 and 4 and the 4:4:4 engine. These enable switching, self key composition, and matrix output. When using HDMI direct in and out, all processing is done using 4:4:4 10-bit that supports RGB and computer signals.

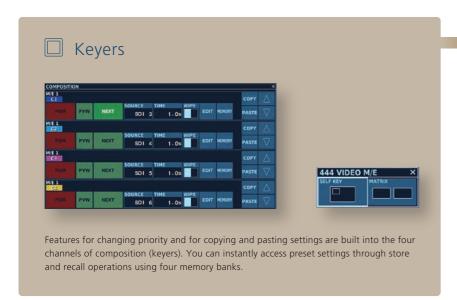


Processing

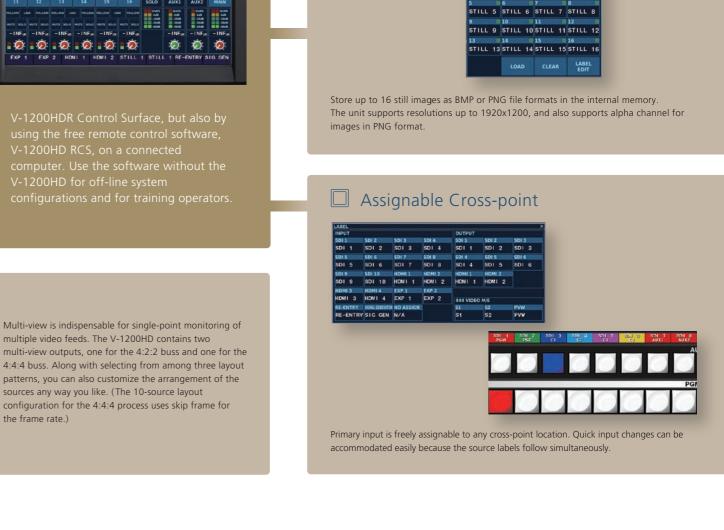
An innovative and flexible system designed to easily realize your full creative potential.











☐ Still Memory

☐ Audio Structure

* Audio input is supported by SDI inputs 7 through 10.

· O · O · O · O · O

Input and output of up to 92 channels of audio embedded in SDI and HDMI signals is

possible. Full 16-channel support is provided for SDI audio. A 16-channel audio mixer

equipped with EQ, reverb, and delay is also built-in. Powerful patchbay functionality

control of source feeds as a hub not just for video, but for audio as well.

lets you select 16 sources to be assigned to the audio mixer and also accomplish central

A dedicated V-1200HDR controller provides fast and accurate operation. Dual touch monitors provide quick and easy operation.

Headphones Output

All the functionality required for operation of a high-end switcher, in an efficient compact size.

CONTROL SURFACE V-1200HDR

Positioner

Dual Touch Monitors

These dual touch monitors let you display different GUIs on the left and right. Incoming video signals from the HDMI connectors on the rear panel can also be displayed.



V-1200HD menus shown on the left and



● The V-1200HD's multi-view output shown on

Cross-point View

Cross-points for primary inputs are freely assignable to any location. The name of the source appears at the bottom of the display, reducing operation errors.

AUX Bus Switches

Select AUX outputs as well as inputs for composition and user presets. Functions can be accessed via the delegation block to the right.

16 Cross-Points

This broad range of cross-point switches affords a commanding view of 16 sources at one time. This is also switchable to either PGM/PST or flip/flop according to operator preference.

Redundant Power

In addition to an AC adapter, the unit can be powered by 12V battery. Connecting both at the same time provides redundant power.

V-1200HD



Value Knob

The value knob allows you to precisely adjust parameter settings and enables fast operation with "touch and turn" control

TRANSITION TYPE

For future feature expansion

Audio Master Volume

This adjusts the volume level of



cameras.



The Positioner is for the three X, Y, and Z

parameters when adjusting position and size for PinP and controlling remote

Layout Buttons

Four LAYOUT buttons are used to select preset menus on the dual displays.

M/E Transition Selection

Designed in the style of a 1 M/E interface, the control panel also accommodates 2 M/F operations

T-bar

The large T-bar provides manual precise mixing and transition control.



Transition Block

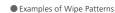
Transition buttons provide accurate, full control of operations for the next take.



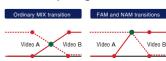








Along with standard MIX, NAM and FAM transitions are also built in. With NAM, mixing proceeds from the picture's brightest areas, and FAM transitions from the picture on bus A to bus B with additive compositing



Delegation Block

In addition to four composition inputs, the AUX bus buttons also function as switches for two AUX buses and two user presets.



screens

Connect the main V-1200HD unit's multi-view

outputs to the V-1200HDR's HDMI inputs to display

the multiview content on the V-1200HDR's built-in

An Ethernet cable connects the console and the main-unit

control panels or with the V-1200HDR RCS

* Use a Cat 5e or higher cable for connection

processors. Using an Ethernet hub lets you connect up to four

(remote control software) to the V-1200HD at the same time

Multi-format support for a diverse range of inputs and outputs. Two expansion slots are provided for even more compatibility.



loading settings for the V-1200HD as well as for

TALLY/GPIO Connector

Connect a video monitor capable of tally input or a tally light system to illuminate the tally lamps

LAN Port

An Ethernet cable connects the console and the main-unit processors. Using an Ethernet hub lets you connect up to four control panels or computers installed with V-1200HDR RCS (remote control software) to the V-1200HD at the same time.

SDI Input

The ten SDI inputs support 3G, HD, and SD. All inputs are equipped with color correction.

* SDI IN 7 through 10 each support 16 channels of embedded audio input.

The six SDI outputs support 3G, HD, and SD. Each output is individually switchable to PGM, FTB, and still

* SDI OUT 1 through 4 can each embed

SDI Output

4:2:2 HDMI Input

Dedicated HDMI inputs for 4:2:2 processor with color space selection and color correction (no support for HDCP)

HDMI IN 1 and 2 each support the uppe

Either two analog channels or four AES/EBU channels are selectable for the XLR audio input/output connectors. (Input and output share a common

XLR Audio Inputs

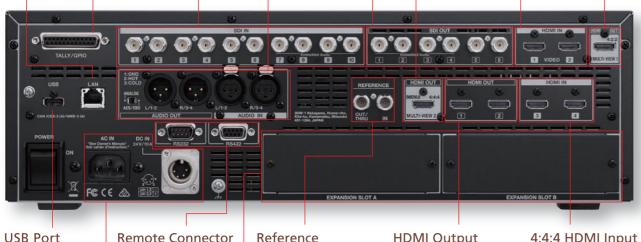
Multi-view Output 2

Video in the 4:4:4 processor can be monitored via MULTI-VIEW 2. Use an HDCP-compatible display for nitorina is recommended

Multi-view Output 1

Video in the 4:2:2 processor can be monitored via MULTI-VIEW 1. An ordinary computer display can be used for monitoring.

HDMI IN 1 and 2 each support the upper



For future feature

Remote Connector

The RS-422 connector is VISCA*-compatible, and can be used to control up to 4 cameras.

Reference

Black burst, 2-value, and 3-value input are supported. In addition to loop-through, installing a generator for output is also supported

HDMI Output



to HDMI outputs.

The 4:4:4 processes is output

4:4:4 HDMI Input



The 4:2:2 and 4:4:4 processes can both use HDMI inputs. You can scale inputs to the 4:2:2 processor. The 4:4:4 processor supports HDCP as well.

* HDMI IN 3 and 4 each support the upper two channels of embedded audio input.

* 4:2:2 processor doesn't support HDCP.

Application

The flexible workflow and functionality supports a wide variety of live production applications.

■ Broadcast Studios



A wide variety of video effects enhances broadcast studio productions.

Composition with freely selectable priority can be accomplished using the four scaler-equipped keyers. The system also features high-end Chroma Key, as well as the External Key essential for title compositing. In addition to PGM and PVW output, two AUX buses are usable for output (when in the 1M/E mode).

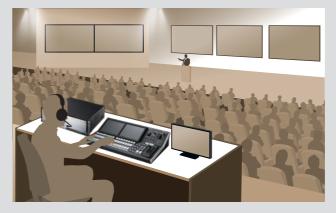
■ Live-performance Production



Multiple M/E choices allow for a diverse range of video production applications in one switcher.

The V-1200HD is ideal as a main switcher for concert recording and for a live feed. Through a variety of multi-view functions, even a large number of sources can be checked at a glance. The M/E configuration can be varied as desired to meet the needs of the production. Control up to four remote cameras, ensures creative productions even with limited camera operators.

Live Events



■ Performance Hall Equipment



Equipped with HDMI input and output with multi-format support. Freely mix computer and video sources and output to a wide range of displays and devices

Along with ten SD/HD-SDI inputs, the V-1200HD features four HDMI inputs Six SD/HD-SDI and two HDMI outputs are also provided. Among these, the two HDMI inputs and outputs offer multi-format support. Computer sources with varying resolutions and frame rates are supported without a need for video converters. The signal is passed directly to the 4:4:4 process, so it can be output, unchanged, at the same high resolution. What's more, using an XI expansion card with a built-in scaler makes it possible to mix digital and analog inputs and outputs.

Supporting a rich range of control as a video/audio hub.

The full-featured routing functionality enables conversion and distribution of a high number of video sources in a variety of formats. The V-1200HD can also achieve remote operation as a video/audio source hub from a variety of control terminals and programs. In addition to just simple video switching, the system also offers functions available only on production switchers, such as distributing PinP video to various locations.

Redundant Power

The V-1200HD accommodates both AC and DC 24V power sources. Connecting both establishes a redundant power supply (with priority given to AC power).

Expansion Slots XIcard

The unit's functionality can be extended through two expansion slots. These make it possible to add input and output for video and audio or even to add fiber-optic support via SFP cartridges.



^{* &}quot;VISCA" is a trademark of Sony Corporation

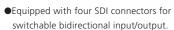
A diverse selection of option cards for video and audio system expansion.



SDI Expansion Interface







- ●Two scalers are built in.
- ●Connect to 4:2:2 engine



DVI Expansion Interface









support for analog RGB, composite, DVI-D,

- and HDMI signals. ●Two scalers are built in.
- ●Connect to 4:2:2 engine



SFP Expansion Interface







- •Base board installable with two SFP modules.
- ●Connect to 4:2:2 engine
- * Support Transmitter/Receiver, Dual/Single Compatible with NON-MSA (SFP, INF-8074i Rev1.0) See pin assign on the next page.



REAC Expansion Interface



- REAC audio interface.
- ●Connect 16 input channels and 16 output channels to the internal audio processor.



DANTE Expansion Interface XI-DANTE

- •Dante audio interface.
- ●Connect 16 input channels and 16 output channels to the internal audio processor.
- * Audinate, the Audinate logo and Dante are trademarks of



MADI Expansion Interface XI-MADI

- MADI audio interface.
- ●Connect 16 input channels and 16 output channels to the internal audio processor.



WAVES SOUNDGRID Expansion Interface XI-WSG

- ●WAVES SOUNDGRID audio interface
- ●Connect 16 input channels and 16 output channels to the internal audio processor



	Transcevier Reciever (Non-MSA)	Dual Transmitter (Non-MSA)	Dual Reciver (Non-MSA)
PIN #	(Video)	(Video)	(Video)
1	VEE	VEE	VEE
2	VEE	NC	Rx2-
3	NC	NC	Rx2+
4	VEE	VEE	VEE
5	SCL	SCL	SCL
6	SDA	SDA	SDA
7	VEE	VEE	VEE
8	RX1_LOS	Tx2+	NC
9	NC	Tx2-	NC
10	NC	Tx2_DIS	NC
11	VEE	VEE	VEE
12	Rx1-	NC	Rx1-
13	Rx1+	NC	Rx1+
14	VEE	VEE	VEE
15	VCC	VCC	VCC
16	VCC	VCC	VCC
17	VEE	VEE	VEE
18	Tx1+	Tx1+	NC
19	Tx1-	Tx1-	NC
20	Tx1_DIS	Tx1_DIS	NC

VC-1 Series Video Converters

Converters enabling input/output expansion and format conversion however you like. These provide support for upgrading systems to achieve low heat generation and lossless conversion.



Scan Converter VC-1-SC

Up/Down/Cross Scan Converter to SDI/HDMI with Frame Sync



HDMI to SDI VC-1-HS

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



FS Delay VC-1-DL

Bi-directional Conversion of video and audio signals from HDMI to SDI or SDI to HDMI with Frame Sync and Delay



SDI to HDMI VC-1-SH

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

