



 Roland

# V-800HD MK II

MULTI-FORMAT VIDEO SWITCHER



# V-800HD MK II

## MULTI-FORMAT VIDEO SWITCHER

A refreshed interface for improved workflow with the versatile multi-format V-800HD video switcher. Newly added AUX bus delegation layer switches enhance both visibility and operability.



## 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 output (2 SDI + 2 DVI + RGB + Composite)
- Dedicated multi-view monitor output
- High quality 4:4:4/10 bit processing
- 1080p/i, WUXGA 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 memories
- AUX bus switch **MK II**

# Stellar Image Quality at 1080p (3G-SDI)



Supports 1080p video signals at bit rates as high as 3 Gbps — twice the rate of conventional HD.

Asserts all the vividness of high-realism, high-detail camera and computer sources.

Interlaced 1080/60i



Progressive (1080/60p)



## True Multi-format Performance



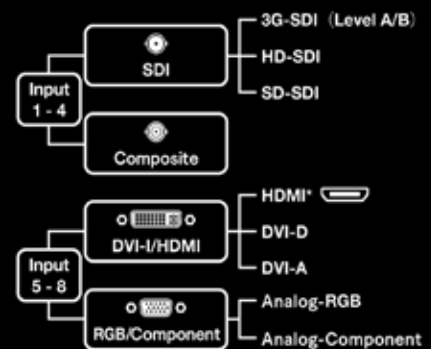
There's no need to convert the input source to match the video output format. The built-in scalers up-convert and down-convert any video source to the optimal resolution.

	Video (SDI/DVI-I/HDMI/Composite)	PC (DVI-I/RGB)
SD	480/59.94i	640x480/60Hz
	576/50i	800x600/60Hz
HD	480/59.94p	1024x768/60Hz
	576/50p	1280x768/60Hz
	720/59.94p	1280x1024/60Hz
	720/50p	1366x768/60Hz
	1080/59.94i	1400x480/60Hz
	1080/50i	1600x1200/60Hz
	1080/50p	1920x1200/60Hz

## Full Range of Connectivity

The V-800HD MK II supports a large number of input formats, from analog to digital, with all the necessary connectors.

The SDI connectors accommodate 3G, HD, and SD. The DVI-I connectors pull full duty for DVI-D, DVI-A and even HDMI using a simple HDMI/DVI adapter. The Mini D-Sub 15 pin type connector accommodates SD/HD component as well as computer input via RGB.



## Equipped with AUX bus switch



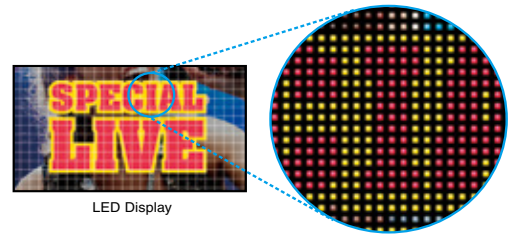
There's no need to convert the input source to match the video output format. The built-in scalers up-convert and down-convert any video source to the optimal resolution.



# A New Design Ideal for Live Performances and Events

## 4:4:4/10-bit Internal Processing

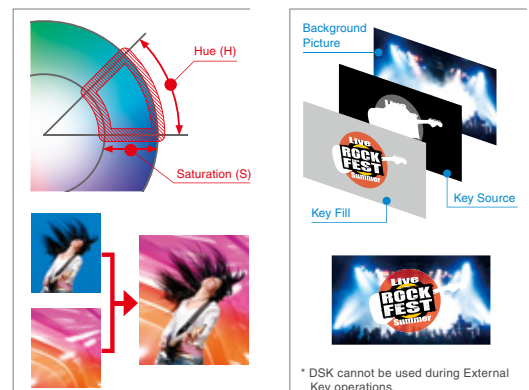
The V-800HD MK II uses 4:4:4/10-bit internal signal processing. This lets you achieve compositing and output with no reduction in high-detail RGB signals driven from a computer. The result is a sharp, unblurred display of video and text, even on large screens and LED displays. The V-800HD MK II delivers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



Crisp output per pixel

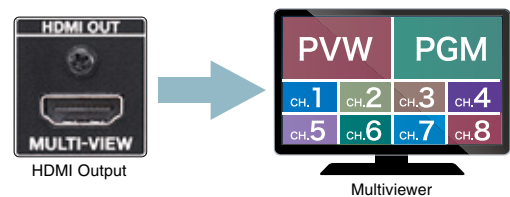
## Newly Developed Key-compositing Engine

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 saturation. 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. This attractively composites colorful CG titles and gradation/transparency clips, enabling you to achieve visual effects that are even more impressive.



## Multiviewer Output for Source Monitoring

The multiviewer output allows you to monitor the status of all input sources plus the Program and Preview outputs. The convenient HDMI connector makes it possible to use an affordable HD monitor.



- \* Use an HDMI monitor that supports HDCP and 60p signals.
- \* SDI and composite inputs are displayed at the original source frame rate.
- \* DVI-I/HDMI and RGB/Component inputs are displayed using a reduced frame rate.
- \* Still images imported from USB memory are not displayed on the source monitor.

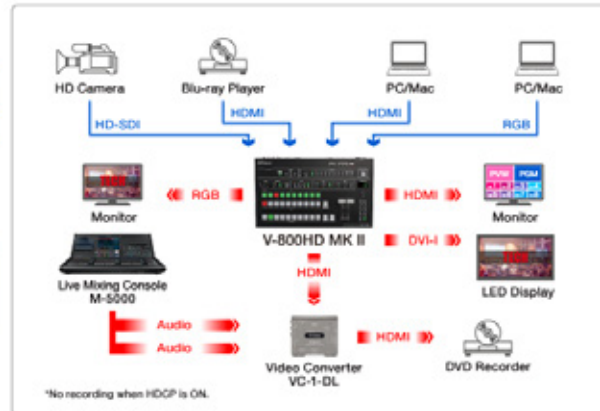
## Built-in HDCP Mode

When playing back a Blu-ray disc that contains commercial content or digital broadcast programming, the digital output is encoded using HDCP (High-bandwidth Digital Content Protection), which is one means of copyright protection. This means that switchers that are not HDCP-compatible will not display or pass-through such video content, even in cases where permission for use in a live event was obtained from the copyright holder. To resolve this problem, the V-800HD MK II features a dedicated mode that officially supports HDCP.



\* In HDCP mode, no video signals are output from the analog or SDI connectors.

# LIVE EVENT PRODUCTION



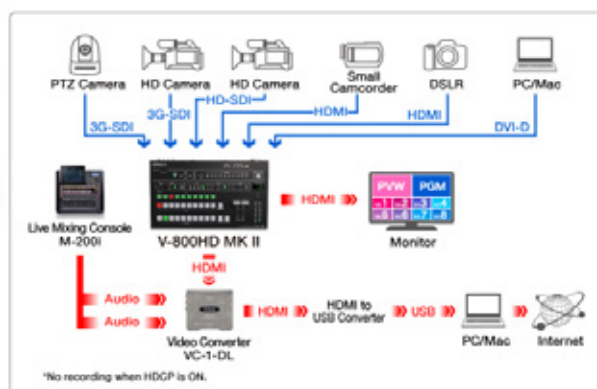
## Lectures, Meetings and Presentations

The V-800HD MK II's 4:4:4/10 bit processing ensures pixel accurate color making it the ideal switcher for large screens over 300 inches and ensures the crisp detail of hi-resolution data sources are sharply output to today's low dot pitch LED displays. The new AUX bus selection layer makes it easier than ever to send a source to a second output destination such as a confidence monitor, presenter notes display, second display or overflow rooms.

## Hall, Theater, Church

The V-800HD MK II is also a powerful solution for installation in facilities that have both professional and in-experienced operators. Complex settings can be recalled with a one-touch memory recall and a straight forward interface makes it easy to step-up and operate without training. Two still images are assignable to the cross points from a choice of 16 internal stored images. This is useful for displaying corporate or institution logos and safety slides. The V-800HD MK II also makes it easy to create up to 3 "angles" from a single camera source with the high-resolution scaling of the multi-zoom function.

# LIVE STREAMING PRODUCTION



## Webcast Switching

Modern webcasts require a variety of camera and computer sources of a variety of formats. The V-800HDMKII simultaneously supports video resolutions of 1080i, 1080p, 720p, 480i/p and computer data resolutions of up to WUXGA allowing for high quality webcast requirements. The built-in PnP and Key Compositing features are ideal for creating informative training instruction and news webcasts.

# High-end Performance for Every Situation



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## SCALING

### Scalers You Can Use Any Way You Like

The V-800HD MK II features scalers that let you make settings independently for every input source. With these, you can take input sources of different resolutions and adjust to any sizing and resolution including odd-sized LED walls. You can freely scale digital, analog RGB, and component sources.

#### ■ Scaling Sample



2

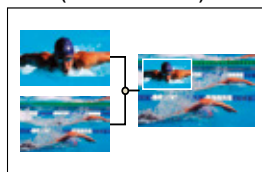
## PINP/KEY/DSK (DOWN STREAM KEYER)

### A Full Range of Keyers

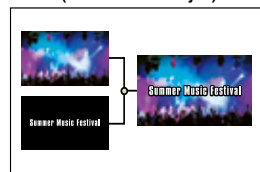
In addition to the newly designed Picture-in-Picture (PinP), Luminance Key, Chroma Key, and DSK for 4:4:4/10-bit input, you can also use an External Key.

\* DSK cannot be used during External Key operations.

#### ■ PinP (Picture in Picture)



#### ■ DSK (Downstream Keyer)



3

## AUX BUS

### AUX BUS MK II

New selector switch on AUX bus. It is possible to output a completely different image from the main bus switching image. You can send the image after the position adjustment by the scaler from the switch on the front panel in a cut change.

4

## USB MEMORY

### USB Port for Importing Still Images

The V-800HD MK II can store up to 16 still images imported from a USB memory device.



5

## MEMORY

### Memory Banks Supporting Worry-free Configuration Recall

You can save eight sets of panel settings in each of eight banks, for a total of 64 sets. Pre-saving complex settings in this way lets you call them up instantly when they're needed.

6

## INPUT

### Assignable Cross-points For the Layout You Want

You can assign video sources to cross-points in any order you like instead of having to use the numerical order of the connectors on the rear panel. This lets you reorder and shift video feeds when sudden changes in camera lines or differences in format create blanks between cross-points.

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## TRANSITION

### Carefully Selected Transition Patterns

The simple design makes selecting a transition pattern as easy as pressing an icon-marked button. You can also set the length of transition times precisely, using either seconds or frames.





### DVI-I/HDMI Input

Up to WUXGA, 1080p

A slider switch selects either DVI-D or DVI-A. Support for HDMI is also possible through use of a simple HDMI/DVI adapter. Supports HDCP input.



### COMPOSITE Input

480i or 576i

The V-800HD MK II lets you use four analog composite inputs.



### RGB/COMPONENT Input

Up to WUXGA, 1080p

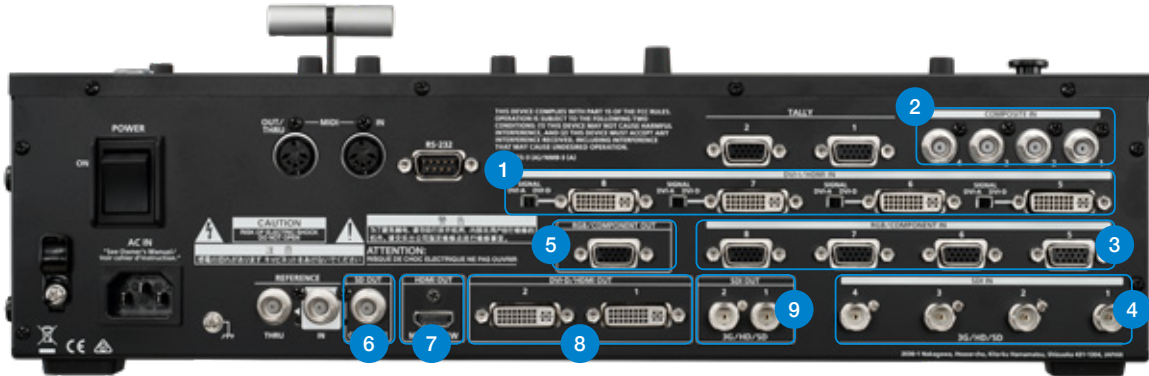
Using a conversion cable lets you input analog component signals in addition to VGA type output from a computer.



### SDI Input

Up to 1080p

The V-800HD MK II supports three formats of digital video signals: 3G, HD, and SD.



### RGB/Component Output

Up to WUXGA, 1080p

The V-800HD MK II can accommodate projectors and other video devices that accept only analog input. What's more, the built-in scalers let you specify resolutions that differ from the main output resolution.



### SD Output

480i or 576i

This provides a constant down-scaled composite signal regardless of the main output resolution.



### Multiviewer Output

1080/60p with HDCP

Monitor your active input sources along with Program and Preview.



### DVI-D/HDMI Output

Up to WUXGA, 1080p

The V-800HD MK II is equipped with two DVI-D/HDMI outputs for connecting displays/projectors and is HDCP-compatible.



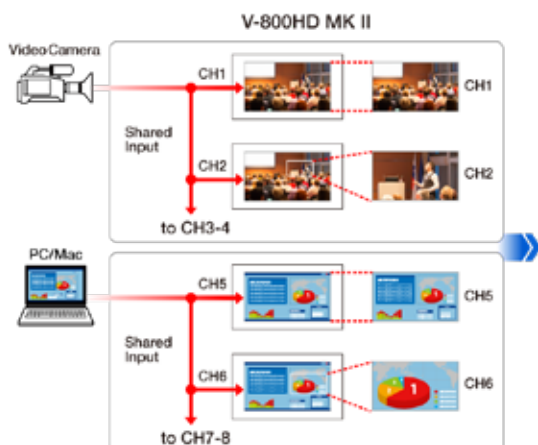
### SDI Output

Up to 1080p

Two SDI outputs are provided supporting 3G, HD, and SD signals. 3G-SDI Level A/Level B compatible

## Multi-zoom

Using the shared input function, you can assign the video on channel 1 to channels 2 through 4 and the video on channel 5 to channels 6 through 8. The scaler for each input can zoom into any position in the video image enabling a virtual multi-camera environment. This gives the appearance that you have additional cameras connected.



\*Only the source of the previous adjacent channel can be shared.

## MIDI control

You can use MIDI to interlink the V-800HD MK II with other products including the Roland V-Mixing system and even another V-800HD MK II.

### Operation in Tandem with an Audio Mixer

Connect the V-800HD MK II to a V-Mixer console to achieve a true "audio follows video" solution. When you take a video source live, you can have the audio level instantly recalled to sources.



### Achieving Switching for 3D Video

Operating two V-800HD MK II units in tandem makes it possible to perform switching for 3D video split into two left and right video signals.

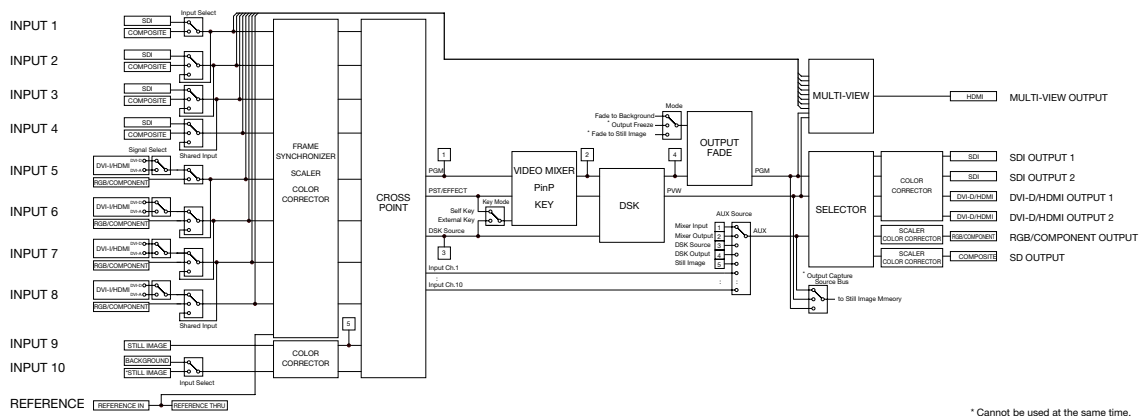


# Specification

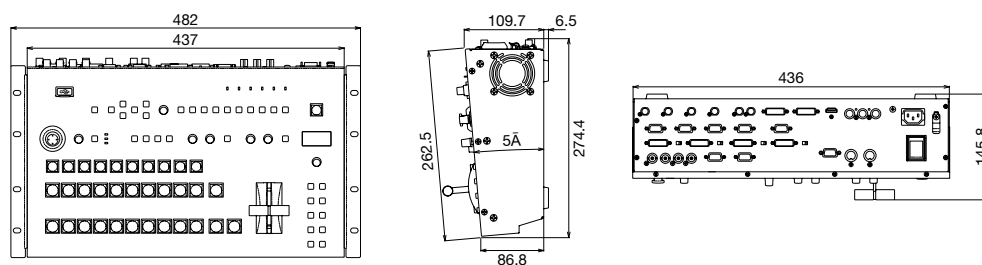
Video Processing	
Processing	4 : 4 : 4 (Y/Pb/Pr, RGB), 10-bit
Supported Formats	Video <ul style="list-style-type: none"> <li>480/59.94i, 576/50i, 480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/59.94i, 1080/50i, 1080/59.94p, 1080/50p</li> <li>*SDI and Composite input can input the same frame rate as a setup menu setting.</li> </ul>
	PC <ul style="list-style-type: none"> <li>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, 1920×1080/60Hz, 1920×1200/60Hz (*2)</li> <li>*Conforms to VESA DMT Version 1.0 Revision 10</li> <li>*1 Output refresh rate is 75 Hz when frame rate is set to 50 Hz</li> <li>*2 Reduced blanking</li> <li>*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.</li> </ul>
	Still <ul style="list-style-type: none"> <li>Windows Bitmap File (.bmp)</li> <li>*Maximum 1900 x 1200 pixels, 24-bit per pixel, uncompressed</li> </ul>
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) × 4 *Combined use with Analog RGB
	SD Composite (BNC type) × 4 *Select Composite or SDI using menu per
Analog RGB	Mini D-sub 15-pin type × 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 × 2 *Conforms to SMPTE 424M (Level-A, Level-B), 292M, 259M-C
DVI-I/HDMI	DVI-I type × 2, HDMI × 1 (for multi-view monitor)
Analog Video	HD Component (Mini D-sub 15-pin type) × 1 *Combined use with Analog RGB
	SD Composite (BNC type) × 1 *Combined use with Analog Video (HD) *Does not synchronize with Reference Input.
Analog RGB	Mini d-sub 15-pin type × 1 *Combined use with Analog Video (HD)
Other Connectors	
Tally	Mini D-sub 15-pin type × 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 × 1
USB port (host)	A type × 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
Operation Temperature	+0 to +40 degrees Celsius +32 to +104 degrees Fahrenheit
Accessories	Owner's Manual, Power cord, Rack-mount angle × 2

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

# Block diagram



# Dimensions



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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.)

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