

### H/PGM-CTR

PinP: This adjusts the horizontal display position of the inset screen. Split: This adjusts the vertical and horizontal position of the video displayed above or on the left.

### V/PST-CTR

PinP: This adjusts the vertical display position of the inset screen. Split: This adjusts the vertical and horizontal position of the video displayed below or on the right.

### PINP 1, PINP 2 SPLIT

This switches PinP or split video composition on and off. When the feature is turned on, the button lights up.

### AUDIO INPUT LEVEL

These adjust the volume level for AUDIO IN 1-5/6.

### MASTER OUTPUT

This adjusts the volume level for master out.

### MASTER OUTPUT LEVEL METER

This displays the volume level for master out.

### MENU

This switches between displaying or hiding the menu. The menu appears on the unit's built-in display and on the multi-view monitor (p. 10) connected to the MULTI-VIEW connector.

### VALUE

Turning: This selects a menu item or changes a setting value. Pressing: This accepts the selected menu item or applies changes to a setting. It also executes operations.

### MIX, WIPE 1 WIPE 2

These select video transition effects. The selected button lights up.

### DSK

This switches DSK composition on or off. When on, the [DSK] button lights up.

### AUX/MEMORY

### CROSS-POINT

These select the video to output.

### CUT/AUTO

These make the preset video (the video to output next) the final output.

### AUDIO INPUT LEVEL

These adjust the volume level for AUDIO IN 1-5/6.

### RS-232 CONNECTOR

A remote-control device (such as a computer that supports RS-232) can be connected here to remotely control the V-60HD.

### SDI OUT 1 AND 2 CONNECTORS, HDMI OUT 1 AND 2 CONNECTORS

This outputs the results of video mixing (the final-output video), preview video (the video to be output next), or AUX-bus video. Connect them to devices such as projectors, video recorders, or external displays.

### DC IN JACK

Connect the included AC adapter to this jack.

### CONTROL PORT

You use "V-60HD RCS" dedicated software to operate the V-60HD remotely from a connected computer.

### MULTI-VIEW CONNECTOR

This outputs the input/output video list, the audio level meter, and the OSD menu. You connect a multi-view monitor here.

### HDMI IN 5 AND 6 CONNECTORS RGB/COMPONENT IN 6 CONNECTOR

These connectors input video signals from video cameras, video recorders, and other video equipment.

### SDI IN CONNECTORS

These connectors input video signals from video cameras, video recorders, and other video equipment.



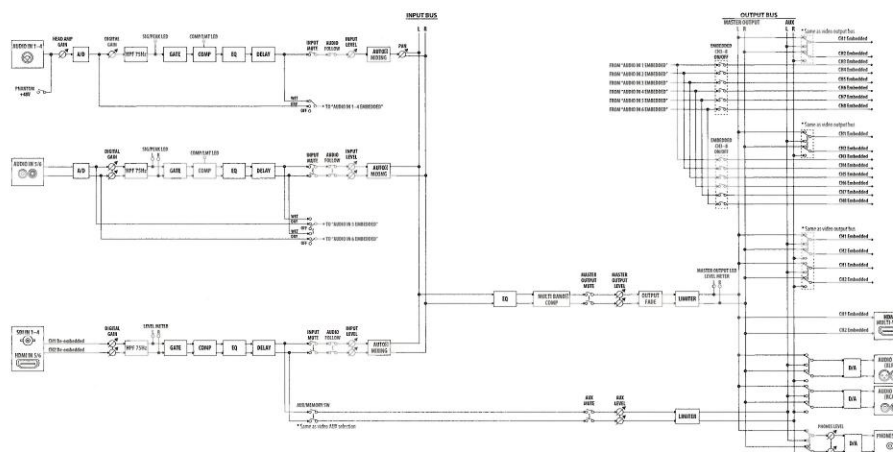
## Plug-n-Play Production Switcher with Audio for Live Event and Streaming

- 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 Outputs – 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

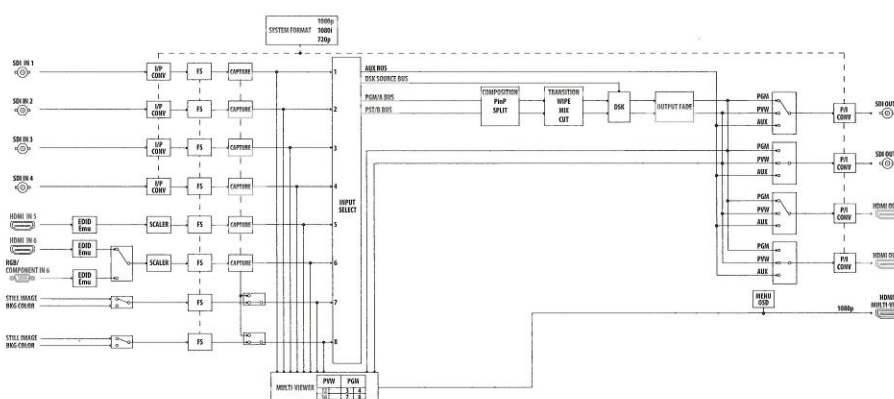


## BLOCK DIAGRAM

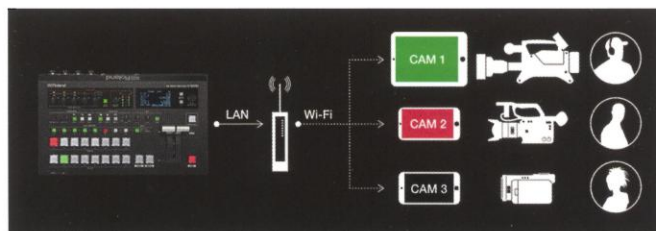
### AUDIO



### VIDEO



## Smart Tally



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

## Remote Control

An easy-to-use software application V-60HD RCS for Mac or PC provides setup and control information for the Roland V-60HD through a network port. The V-60HD is equipped with an RS-232 port for control and operation remotely from a touch panel or other programmable interface device.



## AUDIO

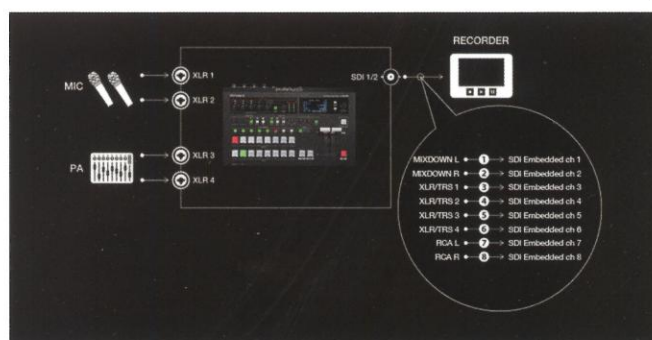
### Audio Mixer with preamp and dynamics

The V-60HD powerful preamp and dynamics effects include a high-pass filter, gate, compressor, 3-band EQ, delay and ability to select audio follows video channel so audio passes through when a specific video source is selected. Dynamics can be adjusted from the onscreen menu or accessed through the powerful Remote-Control Software for Windows or Mac.

### Auto mixing

The included Auto-Mixing function ensures the correct mix for multiple panel participants at conferences by automatically adjusting levels across multiple audio sources. A priority weighting assignment that is channel specific can be set giving the moderator or priority audio channel a higher volume level while using the Auto-Mixing function allowing the operator to focus on video switching and production.

### Discrete Multi-Channel Audio Embedding



Assign up to eight analog audio inputs a separate audio embed channel on SDI 1 and 2 outputs, for a separate mix pre-effect (dry) or post-effect (wet) for correcting audio problems post live event.



The V-60HD simplifies your set-ups and combines the best of both worlds that includes SDI inputs for camera sources and scaled HDMI inputs for data, computer, tablet and other video sources. The combination of powerful audio features that include multi-channel embedded audio, XLR and RCA analog inputs, de-embedded audio from digital SDI or HDMI sources plus a variety of video connections with a Program and Aux Bus makes the V-60HD ideal for a variety of live event production and streaming applications.



## Video composition

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.

## AUX bus

A dedicated AUX bus can be assigned to any of the four discrete SDI or HDMI outputs providing seamless switching from the 8-input channels (4 SDI, 2 HDMI or 1 RGB and 2 Still Images). Dedicated AUX layer cross-point buttons ensures quick operation and seamless switching.

## 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
Output Connectors	RGB/COMPONENT IN 6: HD DB-15 type x 1 * INPUT 6: HDMI or RGB/COMPONENT selected. * Multi-format Supported
	SDI OUT 1--2: BNC type x 2 * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M
Input formats	HDMI OUT 1--2: HDMI type A x 2 HDMI MULTI-VIEW: HDMI type A x 1 * HDCP Supported
	SDI IN 1--4: Conforms to SMPTE 296M, SMPTE 274M 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 SYSTEM menu (59.94 or 50).
Still Image	HDMI IN 5: HDMI/RGB/COMPONENT 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 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 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).
	Windows(R) Bitmap File (.bmp) * Maximum 1920 x 1080 pixels, 24-bit color, uncompressed. * It can be stored up to 2 files in the internal memory.
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 or 50).
	HDMI MULTI-VIEW 1080/59.94p, 1080/50p

(0dBu=0.775Vrms)

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 type 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