Roland

PROFESSIONAL
AUDIO AND VIDEO EQUIPMENT
2016 - 2017

AUDIO

DIGITAL CONSOLES
DIGITAL SNAKES
PERSONAL MIXER/
MULTI-CHANNEL RECORDER
AUDIO RECORDERS

VIDEO

VIDEO MIXERS/SWITCHERS
VIDEO CONVERTERS

Bringing Professional Audio and Video Together

Welcome to the Roland Professional Audio and Video Equipment catalog.

Roland has introduced many innovative products to the professional market over the past few years and has built a strong trust across many users and installations around the world. Through continuous development and a clear focus on professional audio/video products, Roland is committed to providing unique solutions to improve workflow and maximize creative possibilities.

We offer solutions to many markets including: Broadcast • Education • Legal • Live Production • Sports • Theater • Theme Park • Videography • Visual Performance • Worship.

NEW PRODUCTS

O·H·R·C·A

Live Mixing Console M-5000C

Expansion Interface

XI-REAC

XI-DANTE

XI-MADI

XI-WSG

P.5

Configurable architecture, pristine 96kHz sound quality, expandable protocols and flexible workflow.

V-1200HD

Multi-format Video Switcher

V-1200HD

Multi-format Video Switcher

V-1200HDR

Control Surface

P.33

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

V-1HD

HD Video Switcher

P.39

Compact and portable HDMI supported video switcher.

DIGITAL CONSOLES

O·H·R·C·A [M-5000]

NEW

O·H·R·C·A [M-5000C]

M-300

M-200i

DIGITAL SNAKES

S-4000 series

S-2416

S-1608/S-0816

S-0808

S-4000M

S-MADI

W100S-R/SC-W100S/SC-W20F

PERSONAL MIXER/ MULTI-CHANNEL RECORDER

M-48

S-4000D

R-1000

AUDIO RECORDERS

AR-3000SD

AR-200R

R-88

R-44

R-26

VIDEO MIXERS/SWITCHERS

XS-84H/XS-83H/XS-82H

NEW

V-1200HD/V-1200HDR

V-800HD

V-40HD

NEW

V-1HD

V-4EX

VR-50HD

VR-3EX

VIDEO CONVERTERS

VC-1-SH

VC-1-HS

VC-1-DL

VC-1-SC

HT-TX01

HT-RX01

APPLICATIONS

- Live Mixing FOH/Monitor
- Audio Production/Broadcasting
- Personal Mixing
- Fixed Installation
- Large-scale Video Production
- Web Streaming and Capture/Archiving
- Video Recording

LINE UP OF DIGITAL CONSOLES

MADI CONNECTION

Dante™ CONNECTION

WSG WAVES SOUNDGRID CONNECTION

O·H·R·C·A

Open High Resolution Configurable Architecture

O·H·R·C·A delivers 128 freely definable audio paths, flexible user interface and workflow at a pristine 24-bit 96kHz sound quality. In addition to REAC, the console also supports Dante, MADI and WAVES SoundGrid offering the power of adaptability to the world of live audio mixing.

Live Mixing Console **M-5000**
Live Mixing Console **M-5000C**

V-Mixer

Live Mixing Console

The V-Mixers are easy-to-use as analog consoles and equipped with a LCD display offering flexible workflow.

M-300

M-200i

REAC CONNECTION

REAC (Roland Ethernet Audio Communication) technology, based on 100base-TX, enables multiple components to be easily integrated using Cat5e/6 cable. With just a single inexpensive cable, 40 input × 40 output channels of 24-bit uncompressed audio data (including level and control information) are transferred.

Digital Snake

S-4000S-0832

S-2416

S-0816

S-0808

S-4000M

S-4000R

All of the Roland Digital Snakes deliver 24-bit 96 kHz high-quality sound. Not only connecting multiple snakes together is possible, you can also connect them to O·H·R·C·A or a V-Mixer to achieve a system.

Personal Mixer

M-48

S-4000D

The next generation live personal mixer offers musicians the flexibility to control exactly what they want to listen to.

Recorder

R-1000

The stand-alone recorder R-1000 records up to 48 tracks of 24-bit audio (48 kHz; 24 tracks at 96 kHz). It suits for many applications by connecting to Digital Snakes, O·H·R·C·A and V-Mixers.

	 M-5000	 M-5000C
Mixing Channels	Up to 128 CH (combination of INPUT CHANNEL, MAIN, SUBGROUP, AUX, MIX-MINUS, MATRIX, MONITOR, COMM, OSC, HEADPHONES)	
Inputs	Max 300 ports (96 kHz), Max 460 ports (48 kHz/44.1 kHz), CONSOLE: 16, AES/EBU: 4, REAC: 40 x 2, EXPANSION SLOT: 80 x 2 (96 kHz), 160 x 2 (48 kHz/44.1 kHz), USB AUDIO: 16, DOCK: 2, USB RECORDER: 20, FX 1L-8R: 16, TALKBACK: 2, OSC: 2	
Outputs	[M-5000] Max 296 [288] ports (96 kHz), Max 456 [448] ports (48 kHz/44.1 kHz), CONSOLE: [M-5000] 16 [8], AES/EBU: 4, REAC: 40 x 2, EXPANSION SLOT: 80 x 2 (96 kHz), 160 x 2 (48 kHz/44.1 kHz), USB AUDIO: 16, DOCK: 2, USB RECORDER: 2, FX 1L-8R: 16	
Internal Processing	72 bits (fixed point, bus summing)	
Signal Processing	AD/DA Conversion: 24 bit, Sampling Rate: 96 kHz, 48 kHz, 44.1 kHz	
Connectors	INPUT: 16 (XLR), TALKBACK MIC: 1 (XLR), AES/EBU IN: 2 (XLR) OUTPUT: 16 [8] (XLR), AES/EBU OUT: 2 (XLR), REAC: 3 (A, B, SPLIT/BACKUP, RJ-45 EtherCon), WORLD CLOCK: 2 (IN, OUT, BNC type)	
Effects	Dynamics: 128 × 2, Delay: 128, PEQ: 4-band PEG, GEQ: 31-band GEQ × 32, Stereo Multi-effects: 8	
Others	DCA: 24, USB: Memory/Recorder/Playback, REAC Mode: Master/Slave/Split, Control Software: M-5000 RCS, iPad Control Application: M-5000 Remote	

* [ ]: M-5000C

		 M-300	 M-200i
Input	Mixing Channels	32	32
	Return Channels	-	-
	Dynamics Channel	32	32
	Delay	-	-
	PEQ	4-band PEQ	4-band PEQ
Effects	EQ	4 x 31-band GEQ * Maximum 8 using FX	4 x 31-band GEQ * Maximum 8 using FX
	Built-in Effect (Stereo/Dual mono)	4	4
Output	AUX bus	8	8
	MATRIX bus	4	4
	MAIN bus	L, C, R	L, R
	PEQ	8-band PEQ	4-band PEQ
	Limiter	Limiter	Limiter/Comp
	Delay	0 to 400 msec	0 to 400 msec
Console/ Others	DCA	4	8
	Input Connectors	12 [XLR (x4), RCA (x4), TRS Phone (x4)]	24 [XLR (x16), RCA (x2), TRS Phone (x6)]
	Output Connectors	10 [XLR (x4), TRS Phone (x4), S/PDIF (Optical)]	14 [XLR (x8), TRS Phone (x4), AES/EBU]
	USB Recorder/Player	Yes	Yes
	REAC MODE	Master/Split	Master/Slave/Split
	Rackmount	10U	10U
	PC/Mac control	M-300 RCS	M-200i RCS
	iPad control	M-300 Remote	M-200i Remote

O·H·R·C·A M-5000/M-5000C | Live Mixing Console

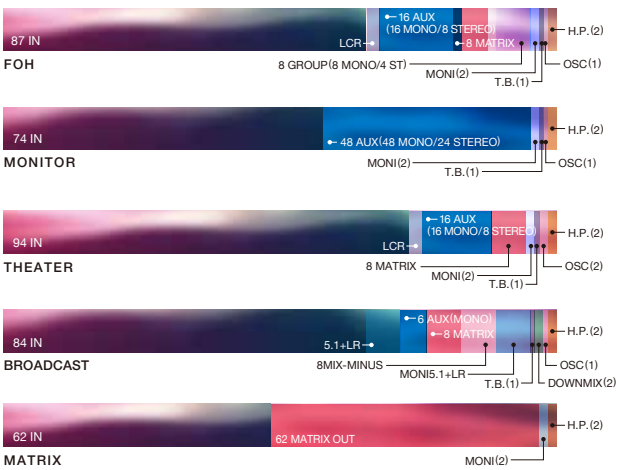
Configurable architecture, pristine 96kHz sound quality, expandable protocols and flexible workflow.

M-5000

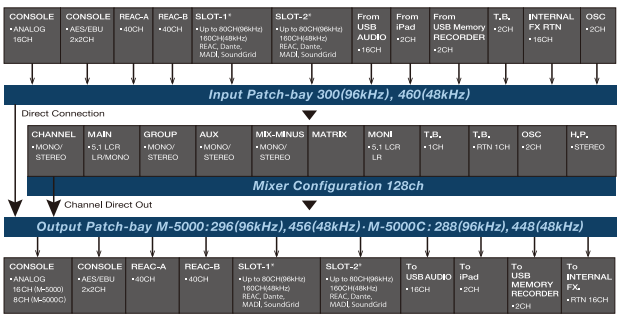
NEW M-5000C

O·H·R·C·A has achieved a revolutionary new internal architecture that gives the operator free rein to define their own mixer structure. With 128 available audio paths, input channels, auxes, Matrix buses, subgroup buses, MIX-MINUS buses, or other input output needs can be allocated to match the need at hand. This enables O·H·R·C·A to accommodate a diverse array of uses, including FOH duties, monitor mixing, theater applications, broadcasting, and more.

●Examples of Configurable Architecture



Up to 300 inputs/296 outputs (M-5000) and 300 inputs/288 outputs (M-5000C) at 96kHz (and more at 48kHz) are managed in separate patchbays*. Any input can be patched to any or multiple outputs, including control of gain and phantom power (REAC only), without having to be patched through a mixing channel. O·H·R·C·A makes it possible to control an enormous number of input and output channels across multiple protocols and formats.



* When all the local analog/digital/REAC input and output ports and two expansion slots being used. Every optional expansion interface offers audio transmission of 80ch at 96kHz, and 160ch at 48kHz. The actual number of input and output may differ according to the sampling frequency and the number of expansion interface that is being used.

The console uses a 12" full-color touch screen enabling fast operation with "touch and turn" control. The M-5000 features three banks of eight faders, plus one bank of four assignable faders, 28 faders in all. The M-5000 has 20 faders, two banks of eight faders and one bank of four assignable faders. A horizontally scrollable five-layer design (Input Channel, DCA and User 1 to 3) has been adopted for the fader banks. Each eight-fader bank is equipped with an Isolate function that enables scrolling and layer switching independently or in tandem with other fader banks.

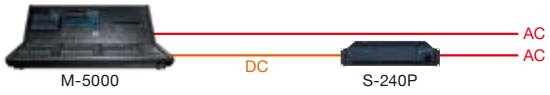
Image of the M-5000

Four assignable faders and a user-assignable section let you assign key channels, buses and parameters for quick access.

In addition to analog input and output ports, the console is equipped with AES/EBU ports and REAC-A, REAC-B, SPLIT/BACKUP ports on the rear panel. What's more, it provides two slots for optional expansion interfaces such as REAC, MADI, Dante and WAVES SoundGrid.

In addition to the AC connection, the console is equipped with a DC input connector. Redundant power is made possible by connecting an optional S-240P power unit to the DC input connector.

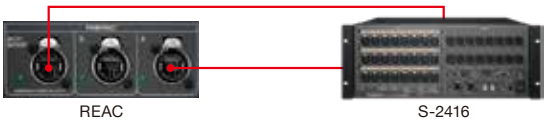
●Redundant Power Supply



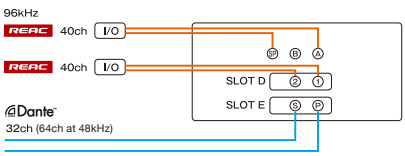
External Power Supply Unit
S-240P

The REAC ports support redundant audio transmission. Automatic switching to the backup line takes place in the event of trouble on the main line. By installing REAC, Dante or MADI cards in the expansion slots, similar audio redundancy is also possible.

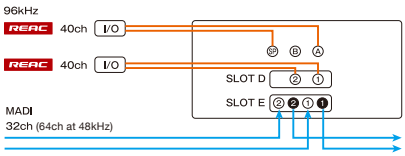
●Redundant Audio Transmission



Redundant Transmission with REAC and Dante



Redundant Transmission with REAC and MADI



As befits this flagship model, it starts with a high sampling rate of 96kHz. The discrete circuitry was precisely designed with careful component selection and circuit architecture, separation of analog and digital sound modules, 72-bit linear summing circuit, and more.

Audio processing is optimized by using FPGAs that make high-speed computation for the mixing section possible and high-precision custom DSPs for the effects section. A 72-bit linear capacity is ensured for the summing circuit that determines the sound quality of digital mixing. The effects section also adopts our own innovative 32-bit floating-point processing optimized for computational accuracy, enhancing both dynamic range and precision. What's more, the equalizer generates zero noise even when parameters are changed.

O·H·R·C·A

Using the dedicated remote control software the M-5000 RCS to operate the console from a computer (Mac/Windows) is possible. This enables use of a second display for viewing even more windows such as a large meter view of inputs and outputs.

●M-5000 RCS

The console features a 16-in/16-out USB Audio Interface function enabling 16-channel recording and 16-channel playback using an ASIO compliant DAW. It also supports recording and playback of 2-track WAV files with a USB flash drive. What's more, the expansion slots enable recording from Dante, MADI and SoundGrid.

Connecting the R-1000 delivers playback and recording of up to 24 channels at 96kHz (48 channels at 48kHz). This enables the operator to put R-1000 output on standby at the SUB input (TR) on the M-5000 for virtual rehearsals.

The dedicated M-5000 Remote app supports remote control from an iPad. Any of three methods can be used for connecting the iPad: a) wired hookup using the Dock connector, b) through a router connected to the LAN port, or c) direct ad-hoc connection using a Wireless USB LAN Adapter.

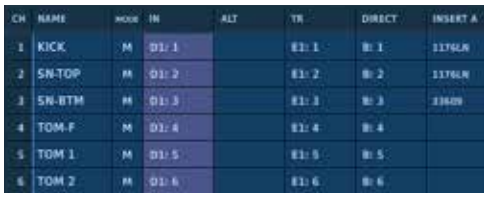
M-5000 Remote
Dedicated iPad app for remote control
Free download from Apple Store

The M-5000 offers an Engineering Monitor function that mirrors the musician's personal mixer M-48 enabling the engineer to check the mix and hear exactly what the musician is hearing.

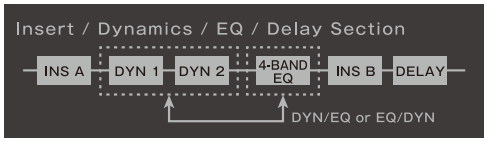
●M-48 Manager

●M-48 Setup Screen

■ Three input connectors can be set for each input channel of the console: primary input (IN), alternate (ALT) and track input (TR). Assigning the main vocal mic to "IN" and a backup mic to "ALT" allows for instant switch-over on the CH EDIT screen in the event of a mic failure.



■ Two independent Dynamics, a 4-band EQ, and a signal Delay are provided for both inputs and outputs. The sequence of the Dynamics section and the EQ section can be reordered.



■ Channel Link function that allows up to 12 Group settings permits freely linking parameters for multiple channels. Linkable channel parameters can be registered for each Group enabling operations such as individually linking EQ, Dynamics, and other parameters allowing setup of parameters for multiple channels in a single operation.

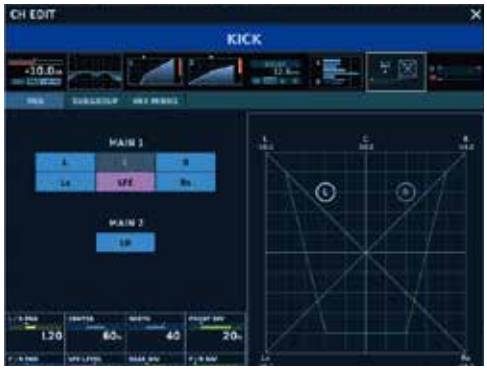
■ Up to 32 31-band GEQs or 8-band PEQs can be used simultaneously. You can assign several GEQs to a GEQ group to make curve settings of channels or buses with the same property all at once.

■ Both input channels and output buses can be set as either mono or stereo(except MATRIX).

■ The M-5000 is provided with eight stereo effect systems, each can freely select from among 22 high-quality effect types. Not only can you use Reverb, Delay, Multi-band Dynamics, and Dynamic EQ, you can also use effects models leading Roland effect processors including the SRV-2000 and SDE-3000.

■ Two 31-band real-time analyzers are provided. One is built into the console, and the other one can be used in the M-5000 RCS.

■ Both Main Out and Monitor Out support 5.1 surround/LCR/LR output and inserting effects. Stereo Downmix Funtion is provided for the Main Output.



O·H·R·C·A

The M-5000 is equipped with a Sub-Group bus for using POST Fader to send signals from the desired channels. As on the other output buses, Dynamics, EQ, Delay and Insert Effects can be used to adjust the sound.

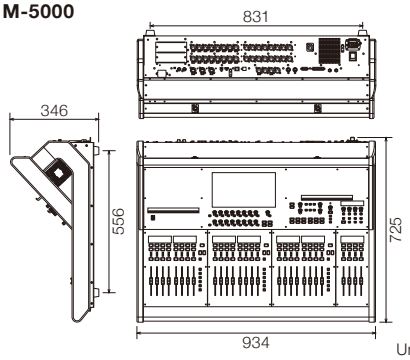
The monitor features two stereo Solo buses.

Pressing and holding the Solo In Place button for at least two seconds activates the function. Switching on a solo on an input channel during Solo In Place mutes the other input channels and outputs only the solo-on input channel to the routing destination.

The rear panel is equipped with eight GP I/O input connectors (including TRS phone jacks) and 12 GP I/O output connectors for external control.

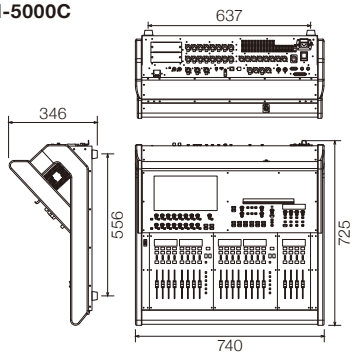
Support for world clock input and output.

M-5000



Unit: mm

M-5000C



Unit: mm

SPECIFICATIONS O·H·R·C·A

PROCESSING	
Mixing Channels	Up to 128 CH (combination of INPUT CHANNEL, MAIN, SUBGROUP, AUX, MIX-MINUS, MATRIX, MONITOR, COMM, OSC, HEADPHONES)
Inputs	Max 300 ports (96 kHz), Max 460 ports (48 kHz/44.1 kHz) **CONSOLE:** 16, **AES/EBU:** 4, **REAC:** 40 x 2, **EXPANSION SLOT:** 80 x 2 (96 kHz), 160 x 2 (48 kHz/44.1 kHz), **USB AUDIO:** 16, **DOCK:** 2, **USB RECORDER:** 20, **FX 1L-8R:** 16, **TALKBACK:** 2, **OSC:** 2
Outputs	[M-5000] Max 296 ports (96 kHz), Max 456 ports (48 kHz/44.1 kHz) [M-5000C] Max 288 ports (96 kHz), Max 448 ports (48 kHz/44.1 kHz) **CONSOLE:** [M-5000] 16, [M-5000C] 8, **AES/EBU:** 4, **REAC:** 40 x 2, **EXPANSION SLOT:** 80 x 2 (96 kHz), 160 x 2 (48 kHz/44.1 kHz), **USB AUDIO:** 16, **DOCK:** 2, **USB RECORDER:** 2, **FX 1L-8R:** 16
Internal Processing	72 bits (fixed point, bus summing)
Signal Processing	**AD/DA Conversion:** 24 bit **Sampling Rate:** 96 kHz, 48 kHz, 44.1 kHz
Connectors	
Input Connectors	**INPUT jacks (1-16):** XLR-3-31 type (balanced, phantom power), **TALKBACK MIC 2 jack:** XLR-3-31 type (balanced, phantom power), **AES/EBU IN jacks (1/2, 3/4):** XLR-3-31 type, **OUTPUT jacks [M-5000] (1-16), [M-5000C] (1-8):** XLR-3-32type (balanced), **PHONES 1 jack:** Stereo 1/4 inch phone type, **PHONES 2 jack:** Stereo miniature phone type, **AES/EBU OUT jacks (1/2, 3/4):** XLR-3-32 type, **REAC ports (A, B, SPLIT/BACKUP):** RJ-45 EtherCon type, REAC SPLIT/BACKUP port supports REAC EMBEDDED POWER., **WORD CLOCK connector (IN, OUT):** BNC type, **RS-232C connector:** DB-9 type, **MIDI connector (OUT/THRU, IN), USB port (MEMORY):** USB type A, **USB WLAN ADAPTOR port:** USB type A, **USB COMPUTER port:** USB type B, **LAN port:** RJ45 type, **DOCK CABLE port:** 10-pin mini DIN type, **GP I/O port:** DB-25 type, **FOOT SWITCH jacks (1, 2):** 1/4-inch TRS phone type V/500 mA, **LAMP jacks:** [M-5000] XLR-4-31 type × 2, [M-5000C] XLR-4-31 type × 1, LAMP power DC+12 V/ 500 mA, **EXT.POWER DC IN jack:** XLR-4-32 type * XLR type: 1 GND, 2 HOT, 3 COLD * Phantom power: DC +48 V (unloaded maximum), 14 mA (maximum load)(All XLR type inputs)

Input/Output Characteristics	
Input Impedance	**INPUT jacks (1-16):** 7 k ohms **TALKBACK MIC 2 jack:** 4 k ohms (Phantom: ON)
Nominal Input Level (Variable, typ.)	**INPUT jacks (1-16):** -65 to -10 dBu (Pad: OFF), -45 to +10 dBu (Pad: ON) **TALKBACK MIC 2 jack:** -65 to -10 dBu
Non Clip Maximum Input level (1 kHz, typ.)	**INPUT jacks (1-16):** +8 dBu (Pad: OFF), +28 dBu (Pad: ON) **TALKBACK MIC 2 jack:** +8 dBu
Output Impedance (typ.)	**OUTPUT jacks [M-5000] (1-16), [M-5000C]:** 600 ohms **PHONES jacks (1, 2):** 45 ohms
Recommended Load Impedance	**OUTPUT jacks [M-5000] (1-16), [M-5000C]:** 10 k ohms or greater **PHONES jacks (1, 2):** 32 ohms or greater
Minimum Load Impedance	**PHONES jacks (1, 2):** 16 ohms
Nominal Output Level (typ.)	**OUTPUT jacks [M-5000] (1-16), [M-5000C] (1-8):** +4 dBu (Load impedance: 10 k ohms)
Non Clip Maximum Output level (1 kHz, typ.)	**OUTPUT jacks [M-5000] (1-16), [M-5000C] (1-8):** +22 dBu (10 k ohms load) **PHONES jacks (1, 2):** 500 mW + 500 mW (40 ohms load)
Others	
Display	Graphic color LCD 800 x 600 dots (touch screen) Graphic organic light emitting display 256 x 64 dots: [M-5000] Fader Bank Display x 7, [M-5000C] Fader Bank Display x 5, User Assignable Display x 1
Power Consumption	180 W
Dimensions	[M-5000] 934 (W) x 725 (D) x 346 (H) mm, 36-13/16 (W) x 28-9/16 (D) x 13-5/8 (H) inches [M-5000C] 740 (W) x 725 (D) x 346 (H) mm, 29-3/16 (W) x 28-9/16 (D) x 13-5/8 (H) inches
Weight	[M-5000] 36 kg, 79 lbs 6 oz, [M-5000C] 32 kg, 70 lbs 9 oz
Operation Temperature	+5 to +40 degrees Celsius, +41 to +104 degrees Fahrenheit
Accessories	Owner's manual, Power cord, Dock cable, REAC connector cover x 3, Ferrite core x 6, Cover, [M-5000]Tablet sheet x 2, [M-5000C]Tablet sheet x 1

* For the diagram of the M-5000/M5000C, please refer to page 56-57.

Audio expansion interfaces for the O·H·R·C·A M-5000/M-5000C

XI-REAC | REAC Expansion Interface

XI-DANTE | Dante Expansion Interface

XI-MADI | MADI Expansion Interface

XI-WSG | Waves SoundGrid Expansion Interface

SPECIFICATIONS XI-REAC

			M-5000/M-5000C
Audio	Channels	Input	40 channels × 2
		Output	40 channels × 2
	Sampling Frequency		96/48/44.1 kHz
Connectors			REAC ports (1, 2): RJ-45 EtherCon type
Indicators			REAC x 2
Power Consumption			1.7 W
Dimensions			120 (W) x 185 (D) x 40 (H) mm, 4-3/4 (W) x 7-5/16 (D) x 1-5/8 (H) inches * Protruding parts not included.
Weight			160 g, 6 oz

SPECIFICATIONS XI-DANTE

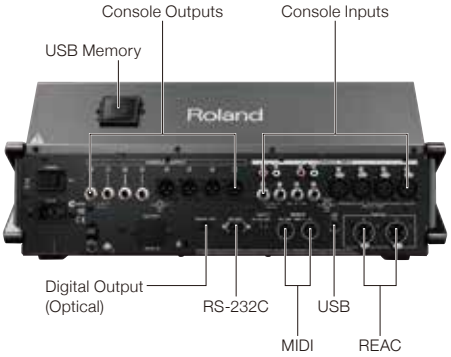
			M-5000/M-5000C
Audio	Channels	Input	Up to 64 channels
		Output	Up to 64 channels
	Sampling Frequency		96/48/44.1 kHz
	Data Length		24 bits
Connectors			PRIMARY port, SECONDARY port: RJ-45 EtherCon type
			CONTROL port: RJ-45 type
Indicators			LINK/ACT × 2, 1G × 1
Power Consumption			5.0 W
Dimensions			120 (W) x 185 (D) x 40 (H) mm, 4-3/4 (W) x 7-5/16 (D) x 1-5/8 (H) inches * Protruding parts not included.
Weight			192 g, 7 oz

SPECIFICATIONS XI-MADI

			M-5000/M-5000C
Audio	Channels	Input	Up to 64 channels input/output x 2 (48 kHz, 44.1 kHz, 64 ch mode)
			Up to 32 channels input/output x 2 (96 kHz, 64 ch mode)
		Output	Up to 64 channels input/output x 2 (48 kHz, 44.1 kHz, 64 ch mode)
			Up to 64 channels input/output x 2 (48 kHz, 44.1 kHz, 64 ch mode)
	Sampling Frequency		96/48/44.1 kHz
	MADI Channel Mode	Input	64 ch, 56 ch
		Output	64 ch, 56 ch
	Data Length		24 bits
Connectors			Coaxial MADI IN/OUT (1, 2) connectors
			Optical MADI IN/OUT (1, 2) connectors: SC duplex multi mode type
			VIDEO SYNC IN connector: BNC type
Power Consumption			7.0 W
Dimensions			120 (W) x 185 (D) x 40 (H) mm, 4-3/4 (W) x 7-5/16 (D) x 1-5/8 (H) inches * Protruding parts not included.
Weight			250 g, 9 oz

V-Mixer M-300 | Live Mixing Console

A powerful and compact digital mixing console



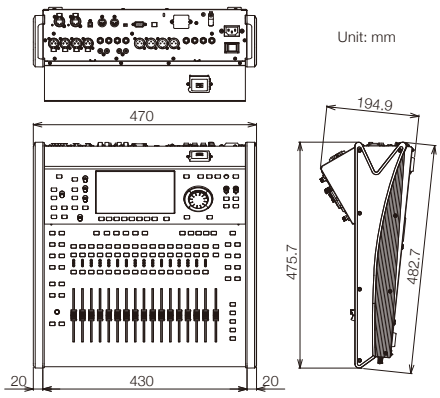
- **32 mixing channels, L/C/R outputs, 8 AUX buses, 4 Matrices**
- **Built-in REAC ports allows flexible system expansion**
- **4-band PEQ and dynamics on all channels**
- **11 different built-in multi-effects/ PEQ and delay on all outputs**
- **100 mm motorized faders**
- **24bit AD/DA for high-quality sound remotely controllable from a PC**
- **Record to /playback from USB flash memory**
- **Perfectly integrates with the Digital Snake for simple and high-quality audio transmission, distribution, splits and merging**
- **Construct a flexible and powerful system by adding the Personal Mixing System, multi-channel recording and other REAC components**

Version 1.5 Software Highlights

- **4 x 31-band mono GEQs**
- **New effects added to Effect Library**
- **Audio Cross Fade between Scene Changes**
- **Channel Screen for each DCA Group**
- **New User Account functionality**
- **Additional RS-232C commands**
- **Supports Roland Wireless USB Adapter and iPad Control App**

USB memory recorder/player

Record the output of the V-Mixer Main, assigned AUX bus or MATRIX bus directly to a USB memory drive connected to the built-in USB port. A mix produced with the V-Mixer is saved as an uncompressed WAV file, without the need for an external recorder. WAV files on the USB memory drive can also be played back on the V-Mixer and used for pre/post show music or background music/ tracks. User settings and mixer data can also be saved to a USB memory drive. The USB recording function is available on all V-Mixer Consoles.



M-300 RCS - Remote control software for PC/Mac

Free download from the Roland website

Option

RA-10U
Rackmount Angle
Rackmountable to 19-inch rack (EIA)

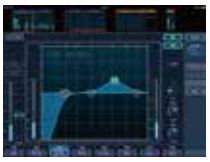
M-300 Remote

Application for remotely controlling the Roland M-300 V-Mixer live mixing console.

Available on the App Store

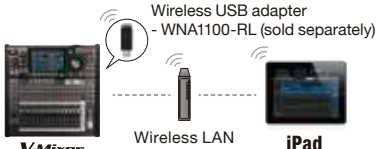
●Channel Strip

●Channel EQ



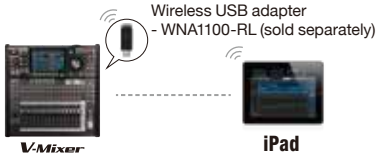
●Graphic EQ

●Wireless LAN connection



Using a Wireless USB adapter, connect the M-300 to a wireless LAN device such as a router to establish a wireless connection with an iPad.

●Ad-Hoc connection



Connect the M-300 directly to an iPad without using wireless devices such as a router.

SPECIFICATIONS M-300

PROCESSING	
Channels, Buses, I/O	MIXING CHANNEL: 32 channels BUSES: MAIN L/C/R, 8 AUX buses, 4 MATRIX buses INPUT: 12 ports (Max 92 ports when using REAC devices) OUTPUT: 10 ports (Max 90 ports when using REAC devices)
AD/DA Conversion	24-bit/48.0 kHz or 44.1 kHz
Network Latency	2.8 mS (typ.) * Total System Latency of audio signal from S-1608 inputs to outputs via M-300's REAC ports (A or B). * Sample Rate: 48.0 kHz * Effects: No insert effects
CONNECTORS	
CONSOLE INPUT jacks (1 to 4)	XLR-3-31 type (balanced, phantom power)
CONSOLE INPUT jacks (5 to 8)	1/4 inch Phone type (balanced)
CONSOLE INPUT jacks (9 to 12)	RCA Pin type
CONSOLE OUTPUT jacks (1 to 4)	XLR-3-32 type (balanced)
CONSOLE OUTPUT jacks (5 to 8)	1/4 inch Phone type (balanced)
PHONES jack	Stereo 1/4 inch phone type
DIGITAL OUT jack	Optical type
REAC port	RJ-45 EtherCon type x 2
USB port	Type A x 1, Type B x 1
Remote Connectors	RS-232C connector: 9-pin D-sub type MIDI connectors (OUT/THRU, IN): 5-pin DIN type
Other Connectors	Grounding terminal AC INPUT connector
INPUT/OUTPUT CHARACTERUSTUCS	
Frequency Response	CONSOLE OUTPUT jacks (1 to 8): -2 dB / +0 dB (20k ohms load, +4 dBu) PHONES jack: -3 dB / +0 dB (40 ohms load, 150 mW)
Total Harmonic Distortion + Noise	CONSOLE OUTPUT jacks (1 to 8): 0.05 % (typ., +4 dBu) PHONES jack: 0.05 % (typ., 40 ohms load, 130 mW)
Dynamic Range	CONSOLE OUTPUT jacks (1 to 8): 105 dB (typ.)
Cross Talk@ 1 kHz	CONSOLE INPUT jacks (1 to 4): -80dB (Pad: ON, Input sens: +4 dBu, typ.) CONSOLE INPUT jacks (5 to 12): -80dB (Input sens: +4 dBu, typ.) CONSOLE OUTPUT jacks (1 to 8): -100 dB (typ.) * Sampling frequency is 48 kHz or 44.1 kHz.

Nominal Input Level (Variable)	CONSOLE INPUT jacks (1 to 4): -65 to -10 dBu (Pad: OFF) or -45 to +10 dBu(Pad: ON) CONSOLE INPUT jacks (5 to 12): -28 to +4 dBu
Input Impedance	CONSOLE INPUT jacks (1 to 4): 14 k ohms CONSOLE INPUT jacks (5 to 12): 10 k ohms
Non Clip Maximum Input level	CONSOLE INPUT jacks (1 to 4): +8 dBu (Pad: OFF) or +28 dBu (Pad: ON) CONSOLE INPUT jacks (5 to 12): +22 dBu
Nominal Output Level	CONSOLE OUTPUT jacks (1 to 8): +4 dBu (Load impedance: 10 k ohms)
Output Impedance	CONSOLE OUTPUT jacks (1 to 8): 600 ohms PHONES jack: 100 ohms
Recommended Load Impedance	CONSOLE OUTPUT jacks (1 to 8): 10 k ohms or greater PHONES jack: 8 ohms or greater
Non Clip Maximum Output level	CONSOLE OUTPUT jacks (1 to 8): +22 dBu (1 kHz, 10 k ohms load) PHONES jack: 150 mW + 150 mW (Typ., 1 kHz, 40 ohms load)
Residual Noise Level (IHF-A, typ.)	-88 dBu (All faders: Min)
Equivalent Input Noise Level (E.I.N.)	-126 dBu (Main Fader: Unity, Channel faders: Unity only one channel, Preamp gain: Max)
OTHERS	
Display	800 x 480 dots Wide VGA TFT color screen with backlight
Power Supply	AC 115 V, 117 V, 220 V, 230 V, 240 V (50/60 Hz)
Power Consumption	50 W
Dimensions	470.0 (W) x 482.7 (D) x 194.9 (H) mm 18-1/2(W) x 19(D) x 7-1/4(H) inches
Weight	9.8 kg 21 lbs 10 oz

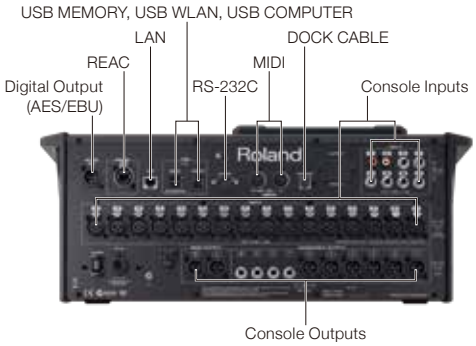
(0dBu=0.775Vrms)

* XLR type: 1 GND, 2 HOT, 3: COLD
* phantom power: DC+48V(unloaded maximum), 14mA(maximum load) (All XLR type inputs)
* When a REAC Splitter S-4000D or a switching hub is used in-line with REAC cables, the network latency will increase by the amount of processing delay introduced by the splitting device itself. The actual delay is dependant upon the specifications of the splitting device, though the maximum delay amount for a single splitting device should be about 200microseconds.
* For the diagram of the M-300, please refer to page 58.

V-Mixer M-200i | Live Mixing Console

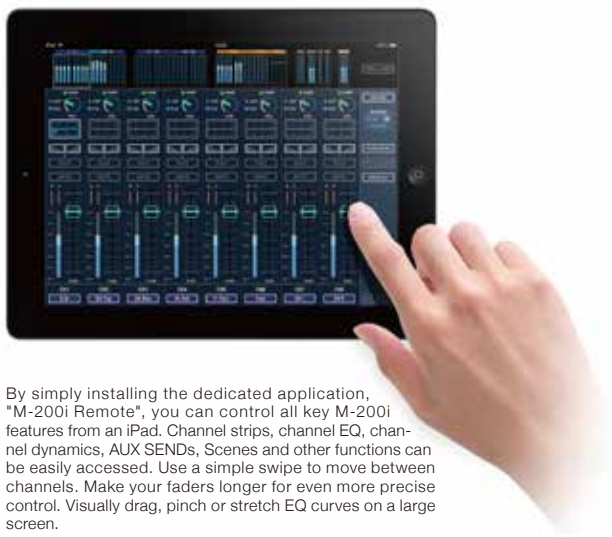
Comprehensive iPad Control Meets Professional Mixing Console

* iPad not included



- **32-channel digital mixer (controllable with or without iPad)**
- **17 motorized faders, dedicated buttons and knobs for key functions**
- **24 onboard inputs and 14 outputs - expandable up to 64 x 54**
- **Fully featured, comprehensive iPad control for all major functions**
- **Wireless and wired iPad control (two at same time)**
- **Easily expandable to include personal mixing and multi-channel playback/record**
- **Multi-channel recording up to 40 channels**

M-200i Remote - M-200i Remote Control Application for the iPad

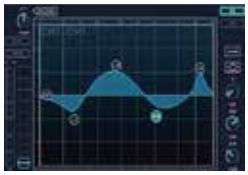


By simply installing the dedicated application, "M-200i Remote", you can control all key M-200i features from an iPad. Channel strips, channel EQ, channel dynamics, AUX SENDs, Scenes and other functions can be easily accessed. Use a simple swipe to move between channels. Make your faders longer for even more precise control. Visually drag, pinch or stretch EQ curves on a large screen.

Available on the App Store

●Channel Strip

●Channel EQ



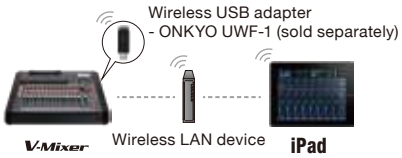
●Channel Edit

Three types of wireless connections

The M-200i and an iPad can be connected wirelessly by attaching the "WNA1100-RL" (sold separately) dedicated wireless USB adapter or connecting with a wireless LAN device directly.

●Cable LAN connection

●Wireless LAN connection



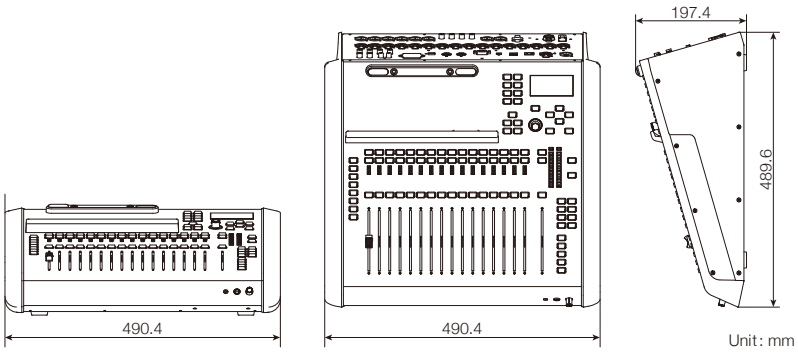
●Ad-Hoc connection

Options

M-200i RCS
Remote Control Software
Free download from the Roland website

M-UF2G
2 GB USB Flash Memory

RA-10U
Rackmount Kit



Unit: mm

SPECIFICATIONS M200i

Processing	
Channels/Buses	CHANNELS: 32 BUSES: MAIN L/R, 8 AUX, 4 MATRIX
Inputs/Outputs	INPUTS: 24 (64 when using optional REAC devices) OUTPUTS: 14 (Max 54 ports when using REAC Devices)
Signal Processing	AD/DA Conversion: 24 bit Sample Rate: 48.0 kHz or 44.1 kHz
Console Latency	2.0 mS (typ.) *1 * Total Latency of audio signal from M-200i's console inputs to M-200i's outputs. * Sample Rate: 48.0 kHz * Effects: No insert effects
Network Latency	2.5 mS (typ.) *1 * Total System Latency of audio signal from S-1608 inputs to outputs via M-200i's REAC ports. * Sample Rate: 48.0 kHz * Effects: No insert effects
Connectors	
Inputs/Outputs/ Others	INPUT jacks (1 to 16): XLR-3-31 type (balanced, phantom power) INPUT jacks (17 to 22): 1/4 inch Phone type (balanced) INPUT jacks (23 to 24): RCA Phono type ASSIGNABLE OUTPUT jacks (1 to 6): XLR-3-32 type (balanced) ASSIGNABLE OUTPUT jacks (7 to 10): 1/4 inch Phone type (balanced) MAIN OUTPUT jacks (L, R): XLR-3-32 type (balanced) PHONES jacks: Stereo 1/4 inch phone type, Miniature phone type AES/EBU OUT jack: Optical type REAC port: RJ-45 EtherCon type RS-232C connector: 9-pin D-sub type MIDI connectors (OUT/THRU, IN): 5-pin DIN type USB MEMORY port: USB Type A USB WLAN ADAPTOR port: USB Type A USB COMPUTER port: USB Type B LAN port: RJ45 type DOC CABLE port: 10-pin mini DIN type DC IN jack Grounding terminal * XLR type: 1 GND, 2 HOT, 3: COLD * Phantom power: DC +48 V (unloaded maximum), 14 mA (maximum load, All XLR type inputs)
Input/Output Characteristics	
Frequency Response	ASSIGNABLE OUTPUT jacks (1 to 10): -2 dB/+0 dB (20k-ohms load, +4 dBu, typ.) MAIN OUTPUT jacks (L, R): -2 dB/+0 dB (20k-ohms load, +4 dBu, typ.) PHONES jack: -3 dB/+0 dB (40 ohms load, 150 mW, typ.) * Sample Rate: 48.0 kHz or 44.1 kHz * Input Connector: INPUT 1 to 24 (Pad: ON, Input sens: +4 dBu, 20 Hz to 20 kHz)
Total Harmonic Distortion + Noise	ASSIGNABLE OUTPUT jacks (1 to 10): 0.05 % (+4 dBu, typ.) MAIN OUTPUT jacks (L, R): 0.05 % (+4 dBu, typ.) PHONES jack: 0.05 % (40 ohms load, 150 mW, typ.) * Sample Rate: 48.0 kHz or 44.1 kHz * Input Connector: INPUT 1 to 24 (Input sens: +4 dBu, 20 Hz to 20 kHz)
Dynamic Range	ASSIGNABLE OUTPUT jacks (1 to 10): 102 dB (typ.) MAIN OUTPUT jacks (L, R): 102 dB (typ.) * Sample Rate: 48.0 kHz or 44.1 kHz * Input Connector: INPUT 1 to 24 (Input sens: +4 dBu, 20 Hz to 20 kHz)
Crosstalk @ 1 kHz	INPUT jacks (1 to 24): -80 dB (Input sens: +4 dBu, IHF-A, typ.) ASSIGNABLE OUTPUT jacks (1 to 10): -88 dB (typ.) MAIN OUTPUT jacks (L, R): -88 dB (typ.) * Sample Rate: 48.0 kHz or 44.1 kHz
Nominal Input Level (Variable)	INPUT jacks (1 to 16): -65 to +4 dBu INPUT jacks (17 to 24): -28 to +4 dBu
Input Impedance	INPUT jacks (1 to 16): 14 k-ohms INPUT jacks (17 to 24): 10 k-ohms
Non Clip Maximum Input level	INPUT jacks (1 to 24): +22 dBu (1 kHz, 20 k-ohms load, typ.)
Nominal Output Level	ASSIGNABLE OUTPUT jacks (1 to 10): +4 dBu (Load impedance: 10 k-ohms, typ.) MAIN OUTPUT jacks (L, R): +4 dBu (Load impedance: 10 k-ohms, typ.)
Output Impedance	ASSIGNABLE OUTPUT jacks (1 to 10): 600 ohms (typ.) MAIN OUTPUT jacks (L, R): 600 ohms (typ.) PHONES jack: 49 ohms (typ.)
Recommended Load Impedance	ASSIGNABLE OUTPUT jacks (1 to 10): 10 k-ohms or greater MAIN OUTPUT jacks (L, R): 10 k-ohms or greater PHONES jack: 40 ohms or greater
Minimum Load Impedance	PHONES jack: 16 ohms
Non Clip Maximum Output level	ASSIGNABLE OUTPUT jacks (1 to 10): +22 dBu (1 kHz, 10 k-ohms load, typ.) MAIN OUTPUT jacks (1 to 10): +22 dBu (1 kHz, 10 k-ohms load, typ.) PHONES jack: 150 mW + 150 mW (1 kHz, 40 ohms load, typ.)
Others	
Display	Graphic LCD 132 x 64 dots with backlight
Current Draw	3.6 A
Dimensions	Desktop: 491 (W) x 490 (D) x 198 (H) mm Desktop: 19-3/8 (W) x 19-5/16 (D) x 7-13/16 (H) inches
Weight	9.8 kg, 21 lbs 10 oz
Accessories	DOCK CABLE, TABLET STAND, AC Adaptor, Power Cord, Owner's Manual

(0dBu=0.775Vrms)

*1: When a REAC Splitter S-4000D or a switching hub is used in-line with REAC cables, the network latency will increase by the amount of processing delay introduced by the splitting device itself. The actual delay is dependant upon the specifications of the splitting device, though the maximum delay amount for a single splitting device should be no more than 200 microseconds.

* For the diagram of the M-200i, please refer to page 59.

Digital Snake S-4000 series

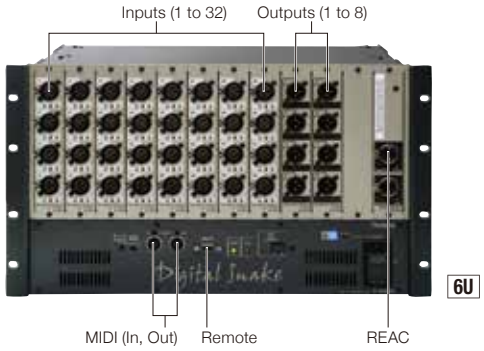
S-4000S-3208 | 32 x 8 Modular Stage Unit **S-4000S-0832** | 8 x 32 Modular Stage Unit

S-4000H | 8 x 32 FOH Unit **S-4000R** | Remote Controller

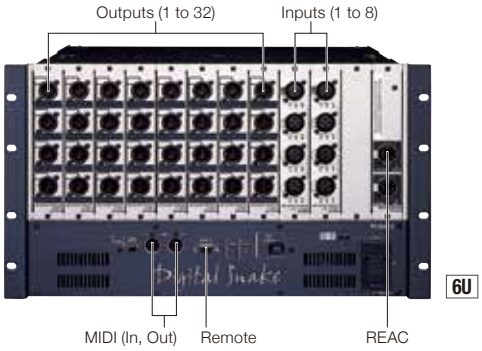
Simple and flexible digital snake units provide superb sound quality

REAC

S-4000S-3208 Front Panel

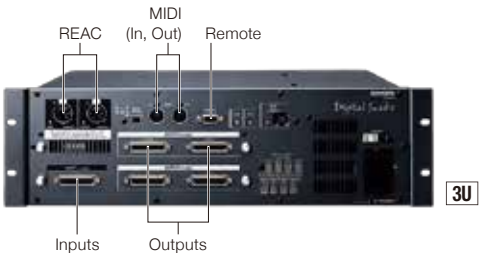


S-4000S-0832 Front Panel



S-4000S-3208/0832 Rear Panel

S-4000H Front Panel



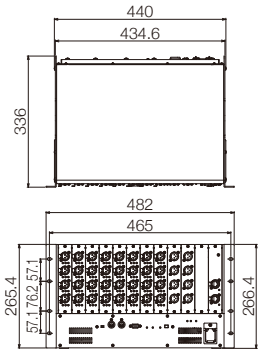
S-4000H Rear Panel

S-4000R Top Panel

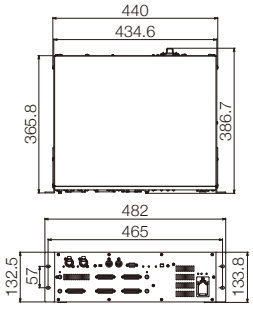
S-4000R Rear Panel

- Superb quality pre-amps on each input channel
- S-4000S-3208/S-4000S-0832 can be used as I/O units of a V-Mixer for full digital mixing system
- S-4000S-3208 with S-4000H or S-4000S-0832 enables configuration of an individual digital transfer system
- Two REAC ports (one primary, one redundant) provide system reliability
- RS-232C interface for S-4000R Remote Controller or computer control
- MUTE ALL OUTPUTS button for noise-free connection of audio sources
- Connection port for optional redundant power supply (S-240P)
- S-4000R provides easy remote control of all input gain adjustments, phantom power and PAD settings

S-4000S-3208/0832 Dimensions

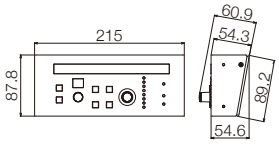


S-4000H Dimensions



Unit: mm

S-4000R Dimensions



S-4000S-MR | Digital Snake Modular Rack Chassis **SI-AD4** | 4-channel Analog Input Module **SO-DA4** | 4-channel Analog Output Module

SI-AES4 | 4-channel Digital Input Module **SO-AES4** | 4-channel Digital Output Module **S-240P** | External Power Supply Unit

High quality options provide system flexibility

REAC

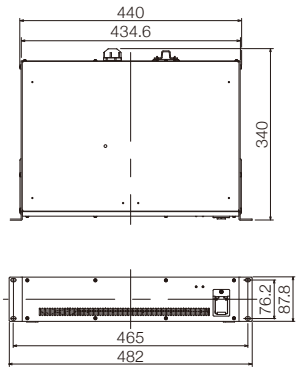
S-4000S-MR Front Panel

S-4000S-MR Rear Panel

S-240P Front Panel

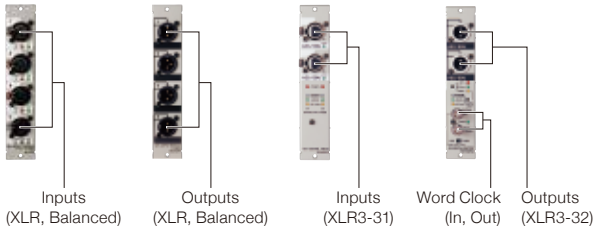
S-240P Rear Panel

S-240P Dimension



Unit: mm

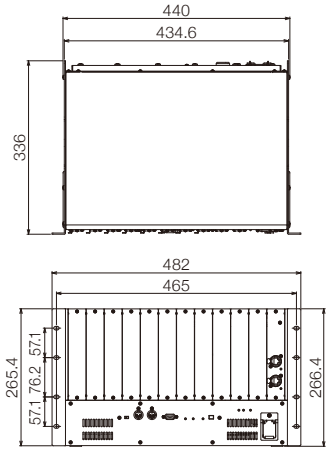
SI-AD4 SO-DA4 SI-AES4 SO-AES4



- **S-4000S-MR is modular rack chassis with no pre-installed In/Out modules; Designed for custom configurations such as 24x16 and 40x0**
- **SI-AD4 - 4-Channel Analog Input Module provides high quality pre-amps on each input channel with phantom power**
- **SO-DA4 - 4-Channel Analog Output Module provides high quality D/A converter**
- **SI-AES4 - 4-Channel Digital Input Module allows input of up to 96 kHz AES/EBU signal using the built-in sampling rate converter**
  * No support for double wire
- **SO-AES4 - 4-Channel Digital Output Module allows output of up to 96 kHz AES/EBU signal using the built-in sampling rate converter, and also supports synchronization with an external word clock**
  * No support for double wire
- **S-240P supplies redundant DC power to an S-4000S or S-4000H; Outputs DC 24 V 6 A power**

* S-4000S-MR can be customized in blocks of 8 channels when combined with the modules from the SI/SO series, which have both analog and digital I/O. Audio transmission and power supply redundancy is possible.

S-4000S-MR Dimension



Unit: mm

Digital Snake S-4000 series

SPECIFICATIONS S-4000S-3208

Number of Channels	32 inputs/8 outputs
AD/DA Conversion	24-bit/44.1 kHz, 48 kHz, 96 kHz
Frequency Response	-2 dB/+0 dB (@ +4 dBu, 20 Hz to 20 kHz)
Total Harmonic Distortion + Noise	0.05 % or less (Pad: On, Input Gain: +4 dBu, 22 to 20 kHz)
Dynamic Range	110 dB
Cross Talk	-80 dB
Nominal Input Level	-65 to -10 dBu (PAD: Off), -45 to +10 dBu (PAD: On) (1 dB step, Max. +28 dBu)
PAD	20 dB On/Off
Input Impedance	20 k-ohms
Nominal Output Level	+4 dBu (Max. +22 dBu)
Output Impedance	150-ohms
Recommended Load Impedance	10 k-ohms or greater
Residual Noise Level (IHF-A, typ.)	-90 dBu
Equivalent Input Noise Level (E.I.N.)	-128 dB
Network Latency	375 microseconds when using REAC cable only (AD - REAC - DA Latency: about 1.2 ms)
Memory	10
Connectors	**Input:** 32 (XLR type, balanced, phantom power, 4 ch input module x 8), **Output:** 8 (XLR type, balanced, 4 ch output module x 2), **REAC:** MAIN, BACKUP (RJ-45 EtherCon type), **Remote Connector:** 1 (RS-232C, DB-9 type), **MIDI Connectors:** IN, OUT (5-pin DIN type)
AC Power Supply	AC 115 V, 117 V, 220 V, 230 V, 240 V (50/60 Hz)
Power Consumption	130 W
Phantom Power	+48 V/14 mA (each input on SI-AD4, remote controlled)
Dimensions	482 (W) x 336 (D) x 266 (H) mm 19 (W) x 13-1/4 (D) x 10-1/2 (H) inches
Weight	17.0 kg, 37 lbs. 8 oz.

SPECIFICATIONS S-4000S-0832

Number of Channels	8 inputs/32 outputs
AD/DA Conversion	24-bit/44.1 kHz, 48 kHz, 96 kHz
Frequency Response	-2 dB/+0 dB (@ +4 dBu, 20 Hz to 20 kHz)
Total Harmonic Distortion + Noise	0.05 % or less (Pad: On, Input Gain: +4 dBu, 22 to 20 kHz)
Dynamic Range	110 dB
Cross Talk	-80 dB
Nominal Input Level	-65 to -10 dBu (PAD: Off), -45 to +10 dBu (PAD: On) (1 dB step, Max. +28 dBu)
PAD	20 dB On/Off
Input Impedance	20 k-ohms
Nominal Output Level	+4 dBu (Max. +22 dBu)
Output Impedance	150-ohms
Recommended Load Impedance	10 k-ohms or greater
Residual Noise Level (IHF-A, typ.)	-90 dBu
Equivalent Input Noise Level (E.I.N.)	-128 dB
Network Latency	375 microseconds when using REAC cable only (AD - REAC - DA Latency: about 1.2 ms)
Memory	10
Connectors	**Input:** 8 (XLR type, balanced, phantom power, 4 ch input module x 2), **Output:** 32 (XLR type, balanced, 4 ch output module x 8), **REAC:** MAIN, BACKUP (RJ-45 EtherCon type), **Remote Connector:** 1 (RS-232C, DB-9 type), **MIDI Connectors:** IN, OUT (5-pin DIN type)
AC Power Supply	AC 115 V, 117 V, 220 V, 230 V, 240 V (50/60 Hz)
Power Consumption	130 W
Phantom Power	+48 V/14 mA (each input on SI-AD4, remote controlled)
Dimensions	482 (W) x 336 (D) x 266 (H) mm 19 (W) x 13-1/4 (D) x 10-1/2 (H) inches
Weight	17.0 kg, 37 lbs. 8 oz.

SPECIFICATIONS S-4000H

Number of Channels	8 inputs/32 outputs
AD/DA Conversion	24-bit/44.1 kHz, 48 kHz, 96 kHz
Frequency Response	-2 dB/+0 dB (@ +4 dBu, 20 Hz to 20 kHz)
Total Harmonic Distortion + Noise	0.05 % or less (Input Gain: +4 dBu, 22 to 20 kHz)
Dynamic Range	110 dB
Cross Talk	-80 dB
Nominal Input Level	+4 dBu (Max. +22 dBu)
Input Impedance	30 k-ohms
Nominal Output Level	+4 dBu (Max. +22 dBu)
Output Impedance	600-ohms
Recommended Load Impedance	10 k-ohms or greater
Residual Noise Level (IHF-A, typ.)	-90 dBu
Equivalent Input Noise Level (E.I.N.)	-128 dB
Network Latency	375 microseconds when using REAC cable only (AD - REAC - DA Latency: about 1.2 ms)
Memory	10
Connectors	**Input:** 1 (DB-25 type, balanced, 8-channels), **Output:** 4 (DB-25 type, balanced, 32-channels each), **REAC:** MAIN, BACKUP (RJ-45 EtherCon type), **Remote Connector:** 1 (RS-232C, DB-9 type), **MIDI Connectors:** IN, OUT (5-pin DIN type)
Power Supply	AC 115 V, 117 V, 220 V, 230 V, 240 V (50/60 Hz)
Power Consumption	70 W
Dimensions	482 (W) x 387 (D) x 133 (H) mm 19 (W) x 15-1/4 (D) x 5-1/4 (H) inches
Weight	9.4 kg, 20 lbs. 12 oz.

SPECIFICATIONS S-4000R

Connector	**Remote Connector:** 1 (RS-232C, DB-9 type)
Power Supply	Supplied from connected device. (S-4000S, S-4000H; through the remote cable)
Dimensions	215 (W) x 87 (D) x 55 (H) mm 8-1/2 (W) x 3-7/16 (D) x 2-3/16 (H) inches
Weight	0.8 kg, 1 lbs. 13 oz.

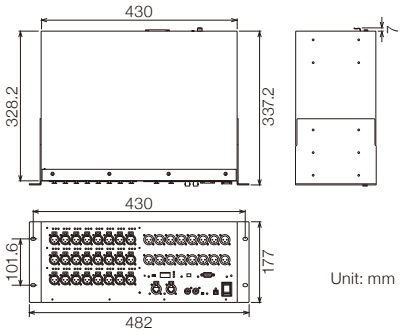
SPECIFICATIONS S-4000S-MR

Connectors	**REAC:** MAIN, BACKUP (RJ-45 EtherCon type), **Remote Connector:** 1 (RS-232C, DB-9 type), **MIDI Connectors:** IN, OUT (5-pin DIN type)
Network Latency	375 microseconds when using REAC cable only (AD - REAC - DA Latency: about 1.2 ms)
Memory	10
Power Supply	AC 115 V, 117 V, 220 V, 230 V, 240 V (50/60 Hz)
Power Consumption	130 W
Dimensions	482 (W) x 336 (D) x 266 (H) mm 19 (W) x 13-1/4 (D) x 10-1/2 (H) inches

S-2416 | Stage Unit

A new standard in digital stage units

4U



Unit: mm

- **24 input x 16 output analog + 8 input x 8 output digital (AES/EBU) = 32 input x 24 output**
- **2 REAC ports to either cascade additional snake or for redundant connection**
- **Newly developed high-grade mic preamps**
- **4U adjustable front or rear rack-mount design**
- **Supports 24-bit 96 kHz, 48 kHz, or 44.1 kHz sample rates**
- **Word clock in & out**
- **Remote control via any V-Mixer console, R-1000, S-4000R dedicated remote unit, and S-4000RCS via USB (Windows/Mac)**

Main Functions

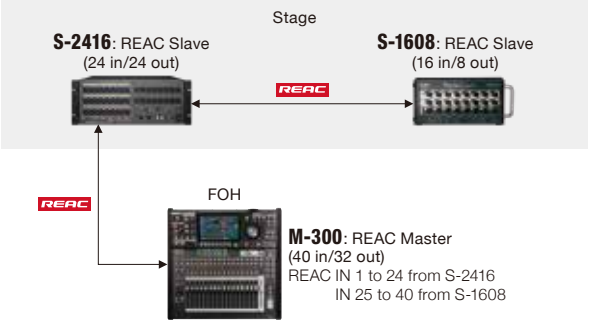
- Two REAC connectors, enabling support for redundant transmission

- DIP switches for easily adjusting the configuration

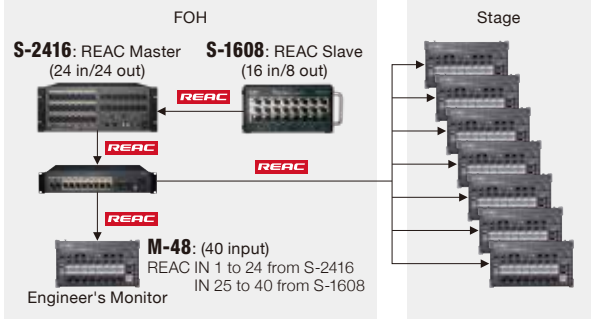
- AES/EBU ports provide a digital input/output environment

- Front/back adjustable rack mounting for greater freedom in installation

Cascade Connection Example (REAC Slave Mode)



Cascade Connection Example (REAC Master Mode)



SPECIFICATIONS S-2416

Number of Channels	32 in 24 out
AD Conversion	Sample Rate: 96.0 kHz, 48 kHz, 44.1 kHz Signal Processing: 24 bits
DA Conversion	Sample Rate: 96.0 kHz, 48 kHz, 44.1 kHz Signal Processing: 24 bits
Frequency Response	-2 dB/+0 dB (@ +4 dBu, 10 Hz to 40 kHz, Sample Rate: 96 kHz, typ.)
Total Harmonic Distortion + Noise	0.007 % (Pad: Off, Input Gain: -10 dBu, 20 Hz to 20 kHz, typ.)
Dynamic Range	INPUT jacks (1 to 24): 110 dB (typ.)
Channel Separation @ 1kHz	INPUT jacks (1 to 24): 103 dB (Input Gain: +4 dBu, IHF-A, typ.) OUTPUT jacks (1 to 16): 110 dB (typ.)
Nominal Input Level (Variable)	-65 to -10 dBu (PAD: Off) -45 to +10 dBu (PAD: On)
Non Clip Maximum Input level	INPUT jacks (1 to 24): +28 dBu (1 kHz, 10 k ohms load, typ.)
Input Impedance	INPUT jacks (1 to 24): 7 k ohms
Nominal Output Level	OUTPUT jacks (1 to 16): +4 dBu (Load impedance: 10 k ohms, typ.)
Maximam Output Level	OUTPUT jacks (1 to 16): +22 dBu (Load impedance: 10 k ohms, typ.)
Output Impedance	OUTPUT jacks (1 to 16): 600 ohms (typ.)
Recommended Load Impedance	OUTPUT jacks (1 to 16): 10 k ohms or greater

Residual Noise Level (IHF-A, typ.)	OUTPUT jacks (1 to 16): -84 dBu
Equivalent Input Noise Level (E.I.N.)	INPUT jacks (1 to 24): -128 dB (Input Gain: -65 dBu, IHF-A, typ.)
Network Latency	375 microseconds when using REAC cable only (AD to REAC to DA Latency: about 1.2 ms)
Connectors	INPUT jacks (1 to 24): XLR type, balanced, phantom power OUTPUT jacks (1 to 16): XLR type, balanced AES/EBU connector: DB-25 type REAC port: RJ-45 EtherCon type WORD CLOCK connector: BNC type REMOTE connector: DB-9 type COMPUTER port: USB type B * XLR type: 1 GND, 2 HOT, 3: COLD * phantom power: DC +48 V (unloaded maximum), 14 mA (maximum load) (All XLR type inputs)
Power Consumption	62 W
Dimensions	482 (W) x 348 (D) x 177 (H) mm 19 (W) x 13-3/4 (D) x 7 (H) inches (EIA-1U rack mountable)
Weight	9.7 kg, 21 lbs 7 oz
Operation Temperature	+0 to +40 degrees Celsius +32 to +104 degrees Fahrenheit
Accessories	Power cord, Owner's manual, Rubber foot x 4

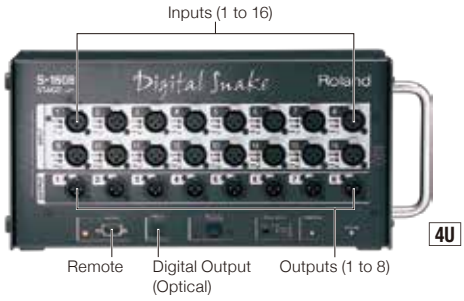
(0dBu=0.775Vrms)

S-1608 | Stage Unit S-0816 | FOH Unit

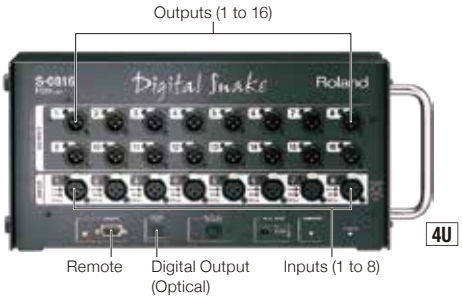
Compact and portable, 16x8 Digital Snake offers many flexible configurations for any installation

REAC

S-1608 Front Panel

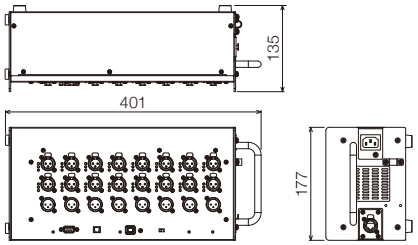


S-0816 Front Panel



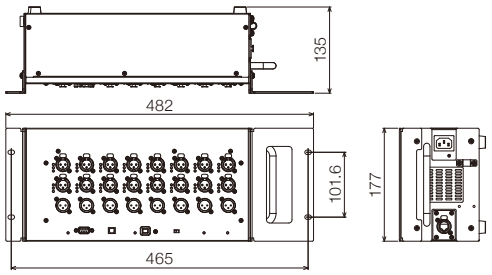
- **16 x 8 Ch high quality 24-bit/96 kHz digital audio transmission via Cat5e cable**
- **Compact, floor-based or rack-mountable design**
- **REAC low latency digital audio transmission system**
- **Connect as I/O unit of V-Mixer for full digital mixing system**
- **Remote controllable preamps using an S-4000R or free downloadable RCS software for PC**
- **Easy and affordable splits and recording options**

S-1608/S-0816 dimension



Unit: mm

S-1608/S-0816 with rack mount bracket dimension



Unit: mm

SPECIFICATIONS S-1608/S-0816

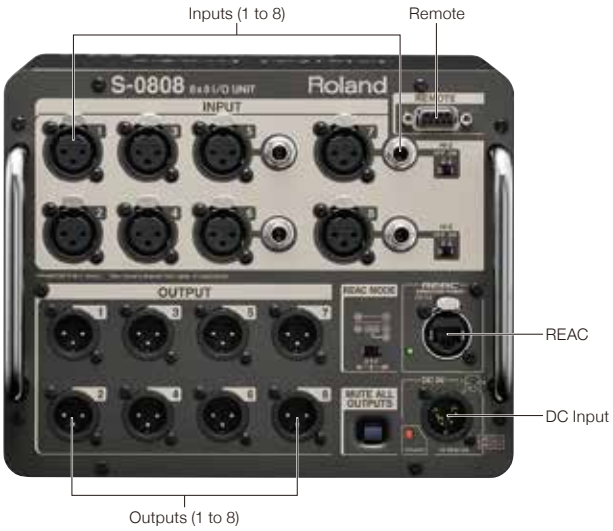
Number of Channels	S-1608: 16 inputs/8 Outputs S-0816: 8 Inputs/16 Outputs
AD/DA Conversion	24-bit/44.1 kHz, 48 kHz, 96 kHz
Frequency Response	-2 dB/+0 dB (@ +4 dBu, 20 Hz to 20 kHz)
Total Harmonic Distortion + Noise	0.05 % or less (PAD: On, Input Gain: +4 dBu, 22 Hz to 20 kHz)
Dynamic Range	110 dB
Cross Talk	-80 dB or less (Input Gain: +4 dBu, typ.)
Nominal Input Level	-65 to -10 dBu (PAD: Off), -45 to +10 dBu (PAD: On) (1 dB step, Max. +28 dBu)
PAD	20 dB On/Off
Input Impedance	14 k-ohms
Nominal Output Level	+4 dBu (Max. +22 dBu)
Output Impedance	600-ohms
Recommended Load Impedance	10 k-ohms or greater
Residual Noise Level (IHF-A, typ.)	-80 dBu or less
Equivalent Input Noise Level	-128 dB
Network Latency	375 microseconds when using REAC cable only (AD - REAC - DA Latency: approx 1.2 ms)

S-1608 Connectors	**Input:** 16 (XLR type, balanced, phantom power), **Output:** 8 (XLR type, balanced), **Digital Output connector:** 1 (Optical type), **REAC Connector:** 1 (RJ-45 EtherCon type), **Remote Connector:** 1 (RS-232C, DB-9 type)
S-0816 Connectors	**Inputs:** 8 (XLR type, balanced, phantom power), **Outputs:** 16(XLR type, balanced), **Digital Output connector:** 1 (Optical type), **REAC Connector:** 1 (RJ-45 EtherCon type), **Remote Connector:** 1 (RS-232C, DB-9 type)
Power Supply	AC 115 V, 117 V, 220 V, 230 V, 240 V (50/60 Hz)
Power Consumption	45 W
Phantom Power	+48 V (each input, remote controlled)
Dimensions	401.0 (W) x 135.0 (D) x 177.0 (H) mm 15-13/16 (W) x 5-3/8 (D) x 7 (H) inches
Weight	5.5 kg, 12 lbs. 3 oz. (Including rack mount bracket)

* When a REAC Splitter S-4000D or a switching hub is used in-line with REAC cables, the network latency will increase by the amount of processing delay introduced by the splitting device itself. The actual delay is dependant upon the specifications of the splitting device, though the maximum delay amount for a single splitting device should be about 200 microseconds.

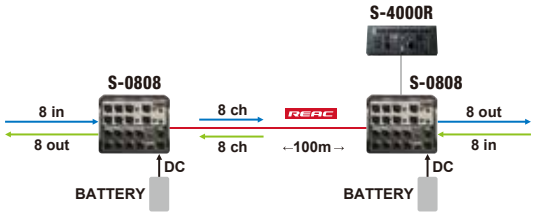
S-0808 | 8 x 8 I/O Unit

Enjoy flexibility using external battery operation or power supplied over REAC

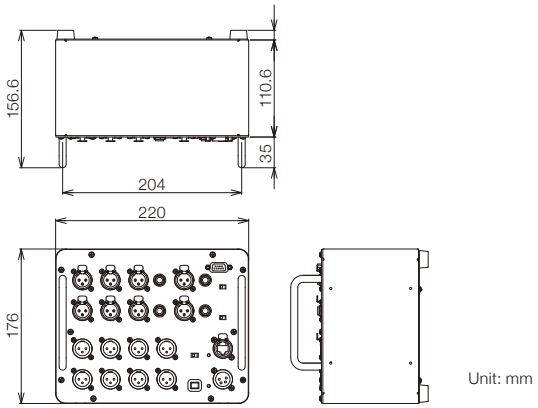


- **Compact and light weight 8 input/8 output Digital Snake**
- **High quality, fully discreet preamp**
- **Eliminate the need for direct boxes by using the TRS or Hi-Z inputs**
- **Power options – REAC Embedded Power and External Battery enabling a variety of setups**
- **Preamp gain, PAD and Phantom Power can be controlled by S-4000R, S-4000RCS software and V-Mixer M-480/M-380**

Battery-Powered 8 x 8 Snake



An 8 input, 8 output simple digital snake system – ideal when AC power is not convenient or available.



SPECIFICATIONS S-0808

Number of Channels	8 inputs/8 outputs
AD/DA Conversion	24-bit/44.1 kHz, 48 kHz, 96 kHz
Frequency Response	-2 dB/+0 dB (@ +4 dBu, 20 Hz to 20 kHz)
Total Harmonic Distortion + Noise	0.04 % or less (PAD: On, Input Gain: +4 dBu, 22 Hz to 20 kHz)
Dynamic Range	110 dB
Cross Talk	-80 dB or less (Input Gain: +4dBu, typ.)
Nominal Input Level	-65 to -10 dBu (PAD: Off), -45 to +10 dBu (PAD: On) (1 dB step, Max.+28 dBu)
PAD	20 dB On/Off
Input Impedance	7 k-ohms
Nominal Output Level	+4 dBu (Max.+22 dBu)
Output Impedance	600-ohms
Recommended Load Impedance	10k-ohms or greater
Residual Noise Level (IHF-A, typ.)	-80 dBu or less
Equivalent Input Noise Level	-128 dB
Network Latency	375 microseconds when using REAC cable only (AD - REAC - DA Latency: approx 1.2 ms)

Connectors	Input 1 to 8 (XLR type, balanced, phantom power), Input 5 to 8 (TRS Phone type, balanced) Output 1 to 8 (XLR type, balanced), REAC Embedded Power x 1 (RJ-45 EtherCon type), Remote Connector x 1 (RS-232C, DB-9 type) DC Input x 1 (XLR 4-pin type, Supports DC 12 to 18 V)
Power Supply	External Battery (DC 12 to 18 V) or REAC Embedded Power
Power Consumption	26 W (DC 12 V)
Phantom Power	+48 V/Max. 14mA (each input, remote controlled)
Dimensions	220 (W) x 176 (D) x 156.6 (H) mm 8-11/16 (W) x 6-15/16 (D) x 6-3/16 (H) inches
Weight	2.9 kg, 6 lbs. 7 oz.

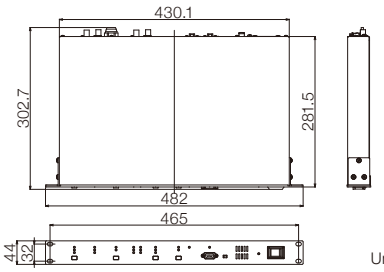
* TRS takes priority if XLR and TRS are simultaneously input to INPUT 5 to 8.
* TRS of INPUT 7/8 turns to unbalanced when Hi-Z is turned on.

* When a REAC Splitter S-4000D or a switching hub is used in-line with REAC cables, the network latency will increase by the amount of processing delay introduced by the splitting device itself. The actual delay is dependant upon the specifications of the splitting device, though the maximum delay amount for a single splitting device should be about 200 microseconds

S-MADI | REAC MADI Bridge

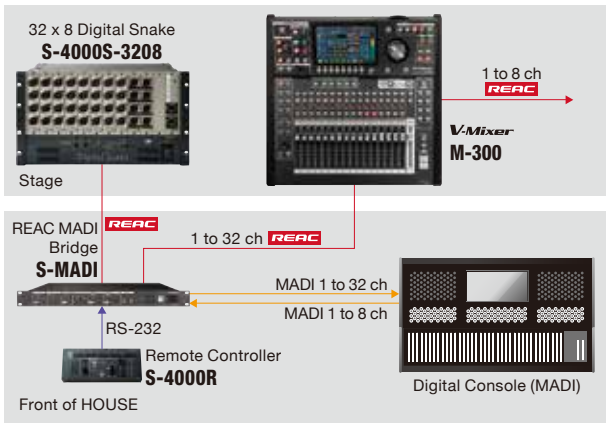
Expand audio system possibilities with REAC and MADI

- **Bi-directional format conversion between REAC and MADI**
- **BNC and Optical MADI ports**
- **Supports REAC Embedded Power and Split out for connecting and power additional devices (e.g., M-48 Personal Mixer, S-0808)**
- **Support for 44.1/48kHz**
- **Preamp and personal mixing control with S-4000RCS (Remote Control Software)**
- **Clock source can be selected from REAC, MADI or Word Clock**

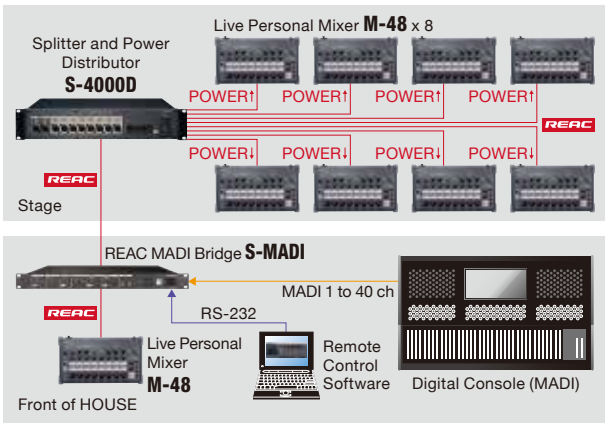


Unit: mm

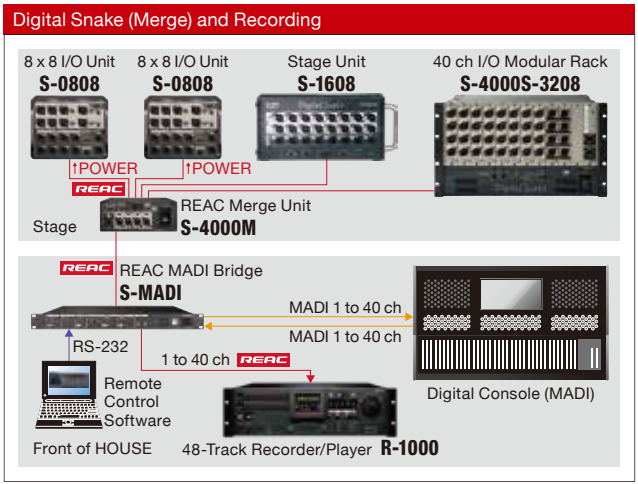
Digital Snake with Monitor Position



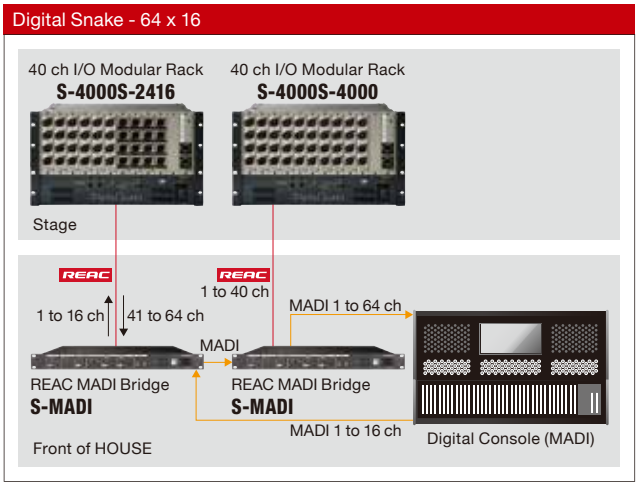
Personal Mixing



Digital Snake (Merge) and Recording



Digital Snake - 64 x 16



SPECIFICATIONS S-MADI

Sampling Frequency	48 kHz/44.1 kHz
MADI Channel Mode	64 Ch/56 Ch
Connectors	**Front Panel:** REMOTE (D-sub 9-pin type, RS-232C) **Rear Panel:** REAC MAIN (RJ-45 EtherCon type), REAC SPLIT OUT (REAC EMBEDDED POWER, RJ-45 EtherCon type), WORD CLOCK IN (BNC type), WORD CLOCK OUT (BNC type), Coaxial MADI IN (BNC type), Coaxial MADI OUT (BNC type), Optical MADI IN/OUT (SC duplex type)

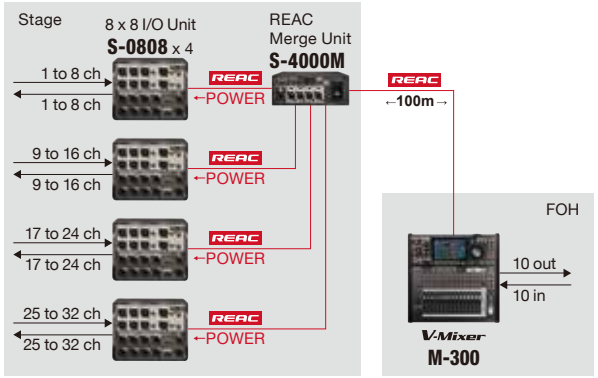
Power Supply	AC 115 V, AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)
Current Drew	0.7 A (REAC Embedded Power: Maximum)
Dimensions	482.0 (W) x 302.7 (D) x 44.0 (H) mm 19 (W) x 11-15/16 (D) x 1-3/4 (H) inches
Weight	3.5 kg/7 lbs 12 oz

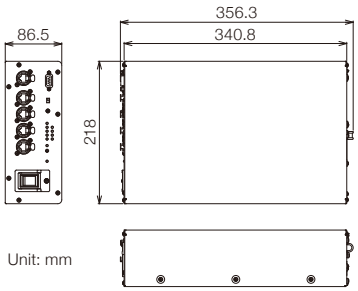
S-4000M | REAC Merge Unit

Enables distributed input/output possibilities by merging up to four REAC devices

- Merge up to 4 REAC devices into a single REAC stream
- Power REAC devices supporting embedded power
- Automatically assign input channels using the Auto Map function
- Patch input and output assignments using S-4000RCS software or the V-Mixer
- Configure and power up to four S-0808 Digital Snakes for a 16 input x 16 output point-to-point snake system

Live Stage Mixing Snake System (32 x 32)





SPECIFICATIONS S-4000M

Connectors	REAC (RJ-45 EtherCon type) x 1 REAC EMBEDDED POWER (RJ-45 EtherCon type) x 4 REMOTE (RS-232C, DB-9 type) x 1
Indicators	REAC EMBEDDED POWER: Red x 4 LINK: Green x 5 POWER: Blue x 1 AUTO MAP SLAVE UNITS: Red x 1
Switches	POWER x 1, MODE x 1, AUTO MAP SLAVE UNITS x 1
Power Supply	AC 115 V, AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)
Power Consumption	1.6A/AC 115 V/AC 117V 0.9A/AC 220 V/AC 230 V/240 V (At max output of REAC EMBEDDED POWER)
Dimensions	218.0 (W) x 356.3 (D) x 86.5 (H) mm 8-5/8 (W) x 14-1/16 (D) x 3-7/16 (H) inches
Weight	3.0 kg, 6 lbs 10 oz
Accessories (Included)	Power Cord x 1, REAC Connector Cover x 5, Ferrite Core x 5, Rubber Foot x 4, Fastening Screw x 4, Owner's Manual x 1

S-4000D | REAC Splitter and Power Distributor

A REAC Splitter that supplies audio and embedded power to M-48 or S-0808

- Equipped with 10 REAC ports including 8 ports of REAC Embedded Power
- Automatic detection of REAC products. Power is not supplied if the device is not compatible with REAC Embedded Power

W100S-R | REAC Cable

100 meter Cat5e Cable for REAC signal transmission on reel

- Crossover Ethernet cable with Neutrik® Ethercon connectors on both ends
- Compact and lightweight cable reel with SC-W100S cable pre-rolled

SC-W100S/SC-W20F | REAC Cable

100/20 meter Cat5e Cable for REAC signal transmission

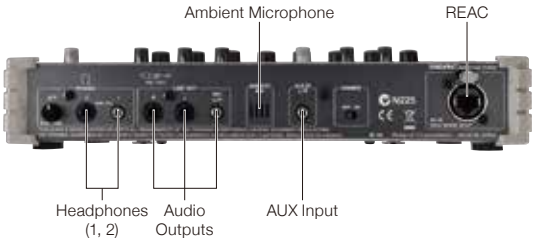
- Crossover Ethernet cable with Neutrik® Ethercon connectors on both ends

Roland

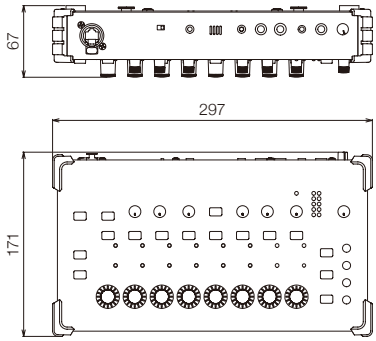
M-48 | Live Personal Mixer

The “next generation” live personal mixer offers musicians the flexibility to control exactly what they want to listen to

REAC

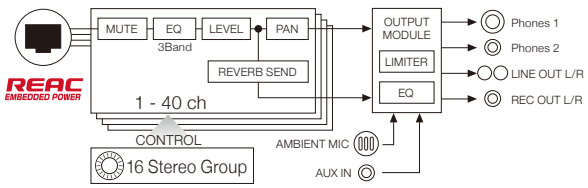


- **Enables control of up to 40 audio channels via 16 stereo groups**
- **Provides the highest level of sound monitoring quality for both headphones and IEMs (In-ear Monitors) as well as for wedge and powered monitors**
- **Built-in ambient mic aids in communicating with other musicians as well as enabling a stage/room “presence”**
- **REAC Embedded Power transfers both power and 40 channels of audio to the M-48 via a single Cat5e/6 cable**
- **Volume, Pan, 3-band EQ and built-in Reverb per group – all instantly adjustable by convenient encoder knobs**



Unit: mm

Block Diagram

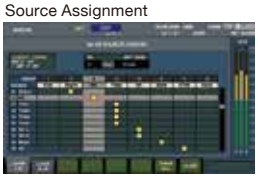


M-48 Setup

●A complete Monitoring System with the V-Mixer
The V-Mixer is equipped with all the remote management software, memory recall, providing a simple and flexible setup.

Setup Display

Source Assignment



●Connect to an existing Analog/Digital Console
Connect M-48s to your existing console using a Digital Snake front-end or the S-MADI for MADI capable digital consoles.

Setup and manage the M-48 on PC using the S-4000RCS Remote Control Software when using with an existing console.

SPECIFICATIONS M-48

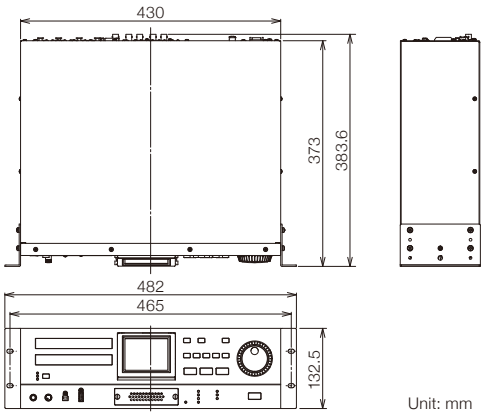
Number of Input Channels	43 (40 in, STEREO AUX in, 1 AMBIENT MIC in)
Number of Output Channels	4 (STEREO LINE out, STEREO PHONES out)
AD/DA Conversion	24-bit/96.0 kHz, 48.0 kHz, 44.1 kHz
Nominal Input Level	**AUX IN L/R:** -16 dBu (at max volume)
Input Impedance	**AUX IN L/R:** 10 k-ohms
Non Clip Maximum Input level	**AUX IN L/R:** +2 dBu
Nominal Output Level	**LINE OUT L/R:** -6 dBu (LINE OUT Vol: Unity, Load impedance: 10 k-ohms), **LINE OUT REC L/R:** -12 dBu (LINE OUT Vol: Unity, Load impedance: 10 k-ohms)
Output Impedance	**PHONES jacks (1, 2):** 10 ohms **LINE OUT L/R jacks:** 600 ohms **LINE OUT REC L/R jack:** 1 k ohms
Recommended Load Impedance	**PHONES jacks (1, 2):** 16-ohms or greater (Composition impedance of 1 and 2), **LINE OUT L/R jacks:** 10 k-ohms or greater, **LINE OUT REC L/R jack:** 10 k-ohms or greater

Non Clip Maximum Output level	**PHONES jacks (1, 2):** 250 mW + 250 mW (1 or 2, 1 kHz, 40-ohms load), **LINE OUT L/R jacks:** +12 dBu (1 kHz, 10 k-ohms load), **LINE OUT REC L/R jack:** +6 dBu (1 kHz, 10 k-ohms load)
Connectors	**REAC port:** RJ-45 EtherCon type **AUX IN L/R jack:** Stereo miniature phone type **LINE OUT L/R jacks:** 1/4-inch TRS phone type **LINE OUT REC L/R jack:** Stereo miniature phone type **PHONES jacks:** Stereo miniature phone type and Stereo 1/4-inch phone type
Power Supply	REAC Embedded Power (S-4000D or S-4000M is needed for supplying power)
Power Consumption	13 W
Dimensions	297 (W) x 171 (D) x 67 (H) mm 11-3/4 (W) x 6-3/4 (D) x 2-11/16 (H) inches
Weight	1.5 kg, 3 lbs. 5

R-1000 | 48-Track Recorder/Player

Capture. Playback. Soundcheck. Rehearse.
Ideally suited for many configurations and applications

- **Records up to 48 tracks of 24-bit audio in BWF (WAV format)**
- **Approximately 20 hours recording (44.1/48 kHz) using the removable 500GB HDD**
- **Removable HDD ensures smooth integration with any DAW**
- **Plays up to 48 tracks of 24-bit audio via REAC**
- **Easy and intuitive operation using Built-in LCD monitor, any V-Mixer or a PC/Mac with R-1000RCS software**



Unit: mm

Option

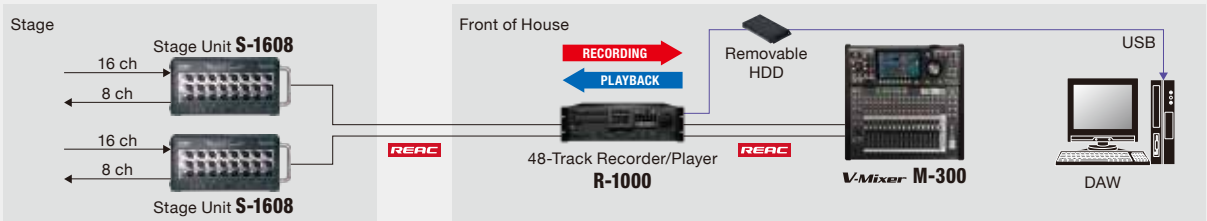
HDD-500G
HARD DISK DRIVE UNIT (500GB)
Dedicated removable hard disk drive for 20 hours recording (44.1/48kHz)

SSD-128G
SOLID STATE DRIVE UNIT (128G)
Dedicated removable solid state drive for 5 hours recording (44.1/48kHz)

System Example

The R-1000 is a 48-channel multi-track recording and playback system for live concerts and productions. Utilizing the benefit of bi-directional audio with REAC, the R-1000 can be connected between the V-Mixer and the Digital Snake for recording, sound check, rehearsals and training exercises without the need to repatch.

Recording, Sound Check, Backing Track & Playback System (V-Mixer)



* Recording and Playback can not be done simultaneously.

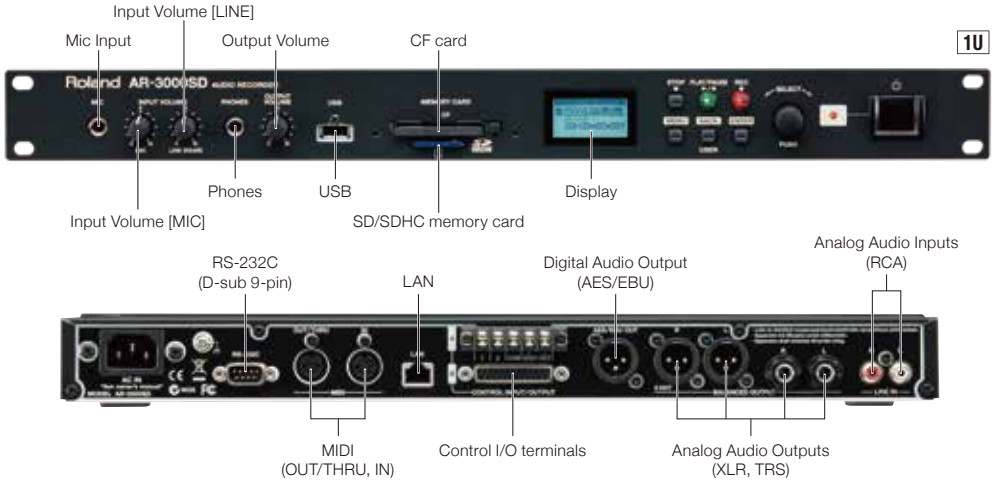
SPECIFICATIONS R-1000

Tracks	48 maximum (44.1/48.0 kHz), 24 maximum (96.0 kHz)
DA Conversion	Sample Rate: 44.1/48.0/96.0 kHz, Signal Processing: 24 bits
Data type	BWF (Broadcast Wave Format) Sample Rate: 44.1/48.0/96.0 kHz Bit Depth: 24 bits
Media	Removable hard disk
Connectors	USB connector (EXTERNAL STORAGE): USB type A (Support mass storage) USB connector (PC): USB type B (Support USB-MIDI) MONITOR OUT jacks (1, 2): XLR-3-32 type (Balanced) PHONES jack: Stereo 1/4 inch phone type REAC ports (A, B, C, D): RJ-45 EtherCon type RS-232C connector: 9-pin D-sub type MIDI connectors (IN, OUT/THRU): 5-pin DIN type GPI jack: 1/4-inch phone type VIDEO SYNC (BLACK BURST) jacks (IN/THRU): BNC type WORD CLOCK jacks (IN/THRU): BNC type SMPTE (LTC) IN jack: BNC type Grounding terminal AC INPUT connector * XLR type: 1 GND, 2 HOT, 3: COLD

Recording Time	24 bit/44.1 kHz/48 Tracks: 500 GB/1300 min 24 bit/48.0 kHz/48 Tracks: 500 GB/1200 min 24 bit/96.0 kHz/24 Tracks: 500 GB/1200 min * These recording times are approximate. Your actual results may vary somewhat. * If multiple projects and songs exists, the total recordable time will be less than these.
Display	320 x 240 dots backlit TFT color touch screen
Power Supply	AC 115 V, AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)
Dimensions	482.0 (W) x 383.6 (D) x 132.5 (H) mm 19 (W) x 15-1/8 (D) x 5-1/4 (H) inches
Weight	7.3 kg, 16 lbs 2 oz.

AR-3000SD | Audio Recorder

A dependable digital audio recorder/player featuring programmable timer and LAN control.



- **24-bit recording and playback at 96 kHz for higher sound quality**
- **Built-in yearly programmable timer**
- **Bulit-in web server for control**
- **External control of playback using the connection terminals (GPIO)**
- **Trigger via USB keypad, MIDI, RS-232C, LAN-Telnet, GPI, Programmable Timer**
- **Send MIDI or RS-232C messages**
- **AR Series Card Data Editor, ARE-3000**
- **High durable SD/SDHC Memory Card using SLC (Single Level Cell), SD-4G**

AR-200R | Audio Recorder

1/2 1U rack space digital audio recorder/player

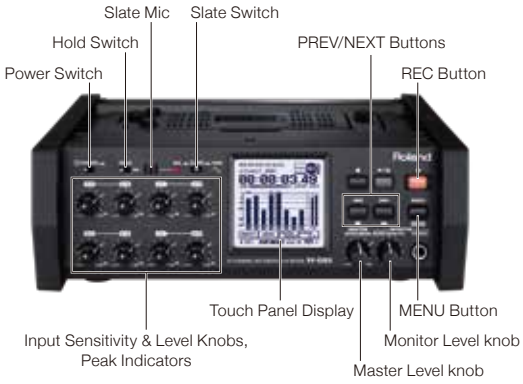
SPECIFICATIONS AR-3000SD

Recorder Part	
Data Type (Recording)	<WAV> Sampling frequency: 32 k, 44.1 k, 48 k, 96 kHz, Bit depth: 16, 24 bits, Channels: mono, stereo <MP3 (MPEG-1 audio layer 3)> Sampling frequency: 32 k, 44.1 k, 48 kHz, Bit rate: 128 k, 192kbps, 320 kbps, Channels: stereo <MP3 (MPEG-1 audio layer 3)> Sampling frequency: 32 k, 44.1 k, 48 kHz, Bit rate: 64 k, 96kps, 160 kbps, Channels: mono <Standard MIDI Files (Format 0)>
Data Type (Playback)	<WAV> Sampling frequency: 8 k, 16 k, 22.05 k, 32 k, 44.1 k, 48 k, 96 kHz, Bit depth: 16, 24 bits, Channels: mono, stereo <MP3 (MPEG-1 audio layer 3)> Sampling Frequency: 32 k, 44.1 k, 48 kHz, Bit rate: 32 k--320 kbps or VBR (Variable Bit Rate), Channels: mono, stereo <RDAC (Roland Digital Audio Coding)> RDAC Grade (Sampling frequency): 8 k, 16 k, 22.05 k, 32 k, 44.1 k, 48 kHz, RDAC Mode: MODE1, MODE2, MODE3, LINEAR (16-bit linear), H-LINEAR (24-bit linear), RDAC Type (Channels): mono, stereo <Standard MIDI Files (Format 0)> <RS-232C command>
Number of phrases	Maximum 4000 phrases (using 1000 x 2 phrases format CF card and SD/SDHC memory card)
Maximum Recording Time	171 hours (using 1GB CF card and SD-04G 4GB SDHC memory card, MP3, 64 kbps, mono) * This recording time is approximate. Actual results may vary somewhat. * When recording in stereo files, the maximum recording time would be shorter than above.
Input/Output	
MIC jack	1/4-inch TRS phone type (balanced, unbalanced connection is possible) Input Sense: -43 dBu (unbalanced) Nominal Input Level: -38 dBu (INPUT VOLUME - MIC at 8 position, unbalanced) Maximum Input Level: -5 dBu (unbalanced) Input Impedance: 2 k ohms Recommended Source Impedance: 1 k ohms or less
LINE IN jacks (MONO/L, R)	RCA phono type (unbalanced) Input Sense: -15 dBu, Nominal Input Level: 0 dBu (INPUT VOLUME - LINE at 5 position), Maximum Input Level: +20 dBu, Input Impedance: 20 k ohms, Recommended Source Impedance: 2 k ohms or less
BALANCED OUTPUT jacks (L, R)	XLR type (balanced), 1/4-inch TRS phone type (balanced) Nominal Output Level: +10 dBu (OUTPUT VOLUME at 5 position) Maximum Output Level: +22 dBu Output Impedance: 600 ohms Recommended Load Impedance: 10 k ohms or greater
MONO OUT (CONTROL INPUT/ OUTPUT B connector)	DB-25 type (unbalanced) Nominal Output Level: +4 dBu, Maximum Output Level: +16 dBu, Output Impedance: 300 ohms, Recommended Load Impedance: 10 k ohms or greater
PHONES jack	Stereo 1/4-inch phone type Maximum Output Level: 90 mW + 90 mW (1 kHz, 40 ohms load, typ.), Output Impedance: 100 ohms, Recommended Load Impedance: 30 ohms or greater
AES/EBU OUT jack	XLR type (conforms to IEC 60958-4)
Residual Noise Level	BALANCED OUTPUT: -80 dBu or less (Input short, INPUT VOLUME - MIC at 0 position, INPUT VOLUME - LINE at 5 position, OUTPUT VOLUME at 5 position, IHF-A, typ.)
Display	Graphic LCD 128 x 64 dots
Power Consumption	18 W
Dimensions	482 (W) x 310 (D) x 44 (H) mm 19 (W) x 12-1/4 (D) x 1-3/4 (H) inches, (EIA-1U rack mountable)
Weight	3.3 kg, 6 lbs 14 oz
Accessories	Owner's Manual, Power cord, Rubber Foot x 4, Card Protector x 1 (with 2 Screws)

(0dBu=0.775Vrms)

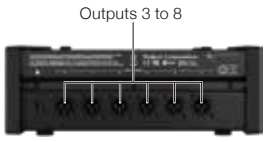
R-88 | 8-Channel Recorder and Mixer

Seamless integration of recording, mixing and an audio interface - a new dimension in professional portable recording

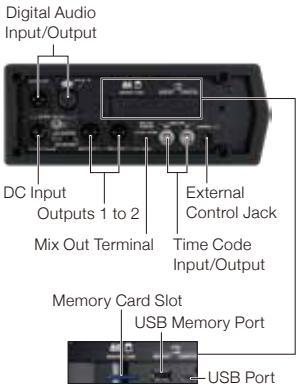


Right Side Panel

Rear Panel



Left Side Panel

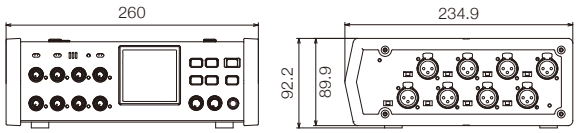


- **Simultaneous recording of 8 channels + stereo mix (up to 96kHz)**
- **Up to 24 bit/192 kHz uncompressed linear PCM recording (up to 4 channels)**
- **8 XLR inputs, 8 XLR outputs, AES/EBU input/output**
- **Built-in 8 channel mixer with 3-band EQ and MS microphone decoder**
- **Built-in 10 in/8 out USB audio interface to use with any common DAW (up to 96 kHz)**
- **Touch Panel Display for intuitive navigation**
- **SMPTE time code In/out for video sync**
- **BWF and iXML embedded metadata (SCENE, TAKE, TIME CODE RATE)**
- **Polyphonic WAV Function - ability to save 2, 4, 6 or 8 channels in a single file**
- **Selectable input delay per channel - adjustable by 0.05 - 20 ms - ideal for surround micing**
- **Option Carrying Bag - CB-R88**

Recording Time using 32GB SDHC memory card — Unit: hours

	16 bits/ 44.1 kHz	24 bits/ 44.1 kHz	16 bits/ 48 kHz	24 bits/ 48 kHz	16 bits/ 88.2 kHz	24 bits/ 88.2 kHz	16 bits/ 96 kHz	24 bits/ 96 kHz	16 bits/ 192 kHz	24 bits/ 192 kHz
1ch	100	67	92	61	50	33	46	30	23	15
2ch	50	33	46	30	25	16	23	15	11	7.7
4ch	25	16	23	15	12	8.4	11	7.7	5.7	3.8
8ch	12	8.4	11	7.7	6.3	4.2	5.7	3.8	—	—
10ch	10	6.7	9.2	6.1	5	3.3	4.6	3	—	—

* These recording times are approximate. Actual results may vary somewhat.
* If more than one recorded file exists, the total recordable time will be less.



SPECIFICATIONS R-88

Recorder Part	
Channels	8 channels + 2 channels (stereo mix from built-in mixer) (Sampling Frequency 44.1, 48, 88.2 and 96 kHz), 4 channels (Sampling Frequency 192 kHz)
Data Type	**Format:** BWF (mono, stereo) **Sampling Frequency:** 44.1, 48, 88.2, 96, 192 kHz **Bit Depth:** 16, 24 bits **Meta Data:** Origination Time, Frame Rate, etc.
Recording Media	**SDHC Memory Card:** 4 to 32 GB, **SD Memory Card:** 2 GB
Pre-Recording	OFF, 1, 2, 3, 4, 5 second(s)
Mixer Part	
Mixing Channels	**Input:** 8 channels, **Output:** 2 channels (stereo)
Channel Strip	3-band equalizer, Fader, Pan, MS microphone decoder
Master	Fader, Limiter
Audio Input Part	
Signal Processing	**AD Conversion:** 24 bits
AD Dynamic Range	120 dB or greater ([SENS] knob = +4 dBu)
Channel Effects	Limiter, Low Cut, MS microphone decoder
IN 1 to 8 jacks (Analog Inputs)	XLR type (Phantom powered) **Nominal Input Level (chooses with [SENS] knob):** -56, -50, -44, -38, -32, -26, -20, -14, -8, -2, +4 dBu (LEVEL KNOB MODE = INPUT: Changes with the [LEVEL] knob positions in the range of –infinity to +8 dB.) **Maximum Input Level:** +26 dBu **Input Impedance:** **Mic Input ([SENS] knob = -56 to -20 dBu):** 3.4 k-ohms, **Line Input ([SENS] knob = -14 to +4 dBu):** 5.6 k-ohms * When sampling frequency is 192 kHz, IN 5 to 8 jacks are inactive.
DIGITAL IN jack	XLR type (AES/EBU, conforms to IEC 60958-4) * When using Digital Input, IN 1 to 2 jacks are inactive.
Phantom Power	48 +/-4 V, 10 mA per 1 channel (8 channels of phantom power available simultaneously)
Audio Output Part	
Signal Processing	**DA Conversion:** 24 bits
OUT 1 to 2 jacks (Analog Outputs)	XLR type **Output Buses:** Channel 1 to 2, Channel 3 to 4, Channel 5 to 6, Channel 7 to 8, Stereo mix from built-in mixer **Output Level:** +4 dBu/-60 dBu **Maximum Output Level:** +24 dBu **Output Impedance:** 600 ohms
OUT 3 to 8 jacks (Analog Outputs)	XLR type **Output Buses:** Channel 1 to 2, Channel 3 to 4, Channel 5 to 6, Channel 7 to 8, Stereo mix from built-in mixer **Output Level:** +4 dBu **Maximum Output Level:** +24 dBu **Output Impedance:** 600 ohms * When sampling frequency is 192 kHz, OUT 5 to 8 jacks are inactive.
MIX OUT jack (Analog Outputs)	Stereo miniature phone type **Output Buses:** Stereo mix from built-in mixer **Maximum Output Level:** 2 Vrms/-30 dBu **Output Impedance:** 1 k-ohm
DIGITAL OUT jack	XLR type (AES/EBU, conforms to IEC 60958-4) **Output Buses:** Stereo mix from built-in mixer
Others	
Dimensions	260 (W) x 235 (D) x 93 (H) mm 10-1/4 (W) x 9-1/4 (D) x 3-11/16 (H) inches
Weight (including batteries)	2.7 kg 6 lbs

(0dBu=0.775Vrms)

Roland

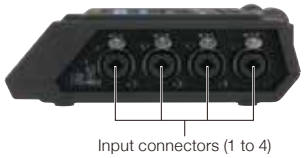
R-44 | 4-Channel Portable Recorder

A compact, solid-state, four channel portable audio recorder

Front Panel

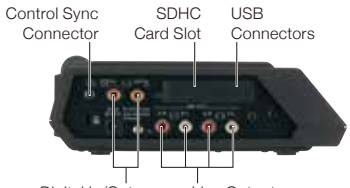
Headphone Jack

Right Side Panel



Input connectors (1 to 4)

Left Side Panel



- **Up to 24-bit 192 kHz uncompressed linear PCM recording (2 channels)**
- **SD or SDHC card as the recording media for quiet and reliable field recording**
- **Built-in limiter, low-cut filter, and studio class effects**
- **Pre-recording function**
- **Synchronized operation of 2 units enables up to 8 channels of recording**
- **Built-in stereo microphones and monitor speakers**
- **High-contrast Organic LED display**
- **Three types of power options: AC adaptor, external battery, or standard AA batteries**
  * Four hours of operation is possible with NiMH.
  * 44.1 kHz/16-bit/Stereo Recording, alkaline batteries, Phantom power: OFF.

Recording Time using 8 GB SDHC card (Unit: minute)

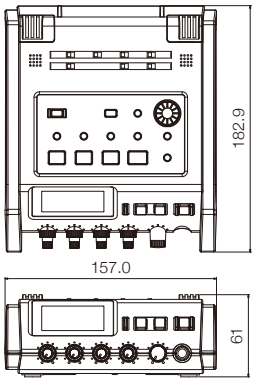
●Stereo Recording

Sampling Rate	Sampling Frequency			
	44.1 kHz	48 kHz	96 kHz	192 kHz
16-bit	755	694	347	173
24-bit	503	462	231	115

●4 channel Recording

Sampling Rate	Sampling Frequency			
	44.1 kHz	48 kHz	96 kHz	192 kHz
16-bit	377	347	173	—
24-bit	251	231	115	—

* Recording times are approximate. Actual results may vary.
* If more than one recorded file exists, the total recordable time will be less than listed.



Unit: mm

Option

CB-R44
Carrying Bag
Easy cable connection and media exchange.

SPECIFICATIONS R-44

Channels	4
Signal Processing	Sampling Bit Rate: 16/24-bit Sampling Frequency: 44.1 kHz/48 kHz/88.2 kHz/96 kHz/ 192 kHz (Limited to Stereo x 1 at 192 kHz) * 16 or 24-bit sampling rate can be selected with any frequency
Data Type	WAV/BWF
Recording Media	SDHC memory card (compatible with 64 MB to 32 GB)
Analog Input	Ch1 to 4: XLR/TRS Combo type, XLR type (phantom powered), TRS type (balanced/unbalanced), Stereo Built-in Microphones
Analog Output	Ch1 to 4: RCA Pin type (line output) Headphone: Stereo Phone type (1/4 inch)
Digital In/Out	RCA Pin type (IEC 60958-3)
Input Impedance	XLR: 4 k-ohms or greater (balanced) TRS: 6 k-ohms or greater (balanced)
Nominal Input Level (Input Level Knob: Center)	11 steps: -56, -50, -44, -38, -32, -26, -20, -14, -8, -2, +4 dBu (Input sense knob: -Inf. to +8 dB)
Maximum Input	+24 dBu (Input Sens Knob: +4 dBu)
Recommended Load Impedance	Line: 4 k-ohms or greater, Headphone: 16-ohms or greater
Output Level	Line Output: -20 dBu (fixed), Headphone: 40 mW + 40 mW
Total Harmonic Distortion + Noise Line (THD+N)	Output: 0.02 % (Input Sens: +4 dBu)

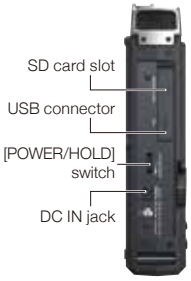
Noise Level	Line Output: -100 dBu (Input Sens: +4 dBu, Input Level: Center)
Residual Noise Level	Line Output: -103 dBu (Input Sens: +4 dBu, Input Level: Minimum)
Frequency Response	20 Hz to 40 kHz (0/-3 dB) Dynamic Range AD: 100 dB, DA: 104 dB
Phantom Power	48 V + or -4 V, 8 mA per 1 channel (20 mA or less in all channels)
USB Port	Mini-B Type Connecter * USB 1.1 or 2.0 High Speed (Mass Storage Class)
Control Sync	Jack Stereo Mini Type Jack, Word clock sync and start/stop remote control of 2 units * Remote control function does not guarantee the exact same REC start time
Display	128 x 64 dot organic LED
Power Supply	AC adaptor (PSB-1U), AA type battery x 4 (Alkaline or NiMH)
Current Draw	1.2 A
Dimensions	157 (W) x 183 (D) x 61 (H) mm, 6-3/16 (W) x 7-1/4 (D) x 2-7/16 (H) inches
Weight	1.3 kg, 2 lbs 14 oz (including batteries)
System Requirements	Microsoft® Windows® Vista®/XP/2000, Mac OS X 10.2 or later

R-26 | Portable Recorder

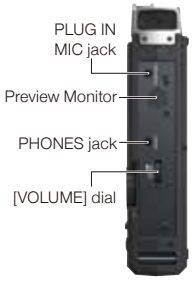
Up to six channels of simultaneous recording using two built-in stereo mics (XY and Omni) as well as two XLR/TRS inputs

Rear Panel

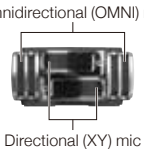
Left Side Panel



Right Side Panel



Top



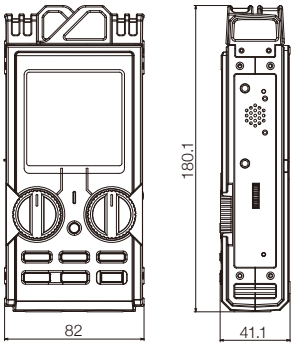
Bottom

- **Two types of built-in stereo microphones (omnidirectional and directional) that can be used in various combinations**
- **Two XLR/TRS combo inputs with 48 V phantom power plus an input for a stereo plug-in powered mic**
- **Supports up to six channels (three stereo channels) of simultaneous recording**
- **Large LCD touchscreen display for intuitive navigation**
- **Large input-level knobs for fine adjustment**
- **Built-in Hi-Speed USB interface for use as an audio interface or external storage**
- **Loop-Back function; combine this with the built-in or external mics for the optimum streaming setup (only with Audio Interface function)**
- **Bundled with SONAR LE software (PC)**

Recording Time (Unit: hour)

Data Format		Memory Size		
		2 GB	8 GB	32 GB
WAVE/BWF	16-bit, 44.1 kHz STEREO	3.0	12.2	48.9
	24-bit, 96.0 kHz STEREO	0.9	3.7	15.0
	16-bit, 44.1 kHz 4 CH	1.5	6.1	24.5
	24-bit, 96.0 kHz 4 CH	0.5	1.9	7.5
	16-bit, 44.1 kHz 6 CH	1.0	4.1	16.3
	24-bit, 96.0 kHz 6 CH	0.3	1.2	5.0
MP3	128 kbps	33	134	539
	320 kbps	13	53	215
WAVE/BWF + MP3	16-bit + 128 kbps 44.1 kHz	2.8	11.2	44.9
	16-bit + 128 kbps 48.0 kHz	2.5	10.4	41.5

* Each recording time is approximate. The times may change depending on the card specifications.
* In the case of plural files, the recording time will be shorter than the above.



Unit: mm

Option

OP-R26CW
Cover/Windscreen Set for R-26
This custom-designed accessory set includes an easy-to-use cover, a strap, and a windscreen for outdoor recording with the R-26.

SPECIFICATIONS R-26

RECORDER PART	
Tracks	6 (3 stereo)
Signal Processing	AD/DA conversion: 24 bits, 96.0/88.2/48.0/44.1 kHz
Data Type	<For Recording> WAVE/BWF: Sampling Rate 96.0/88.2/48.0/44.1 kHz, Bit Depth 24/16 bits, MP3 (MPEG-1 Audio Layer 3): Sampling Rate 48.0/44.1 kHz, Bit Rates 320/160/128 kbps, WAVE + MP3: Sampling Rate 48.0/44.1 kHz, Bit Depth 16 bits, Bit Rates 128 kbps <For Playback> WAVE/BWF: Sampling Rate 96.0/88.2/48.0/44.1 kHz, Bit Depth 24/16 bits, MP3 (MPEG-1 Audio Layer 3): Sampling Rate 48.0/44.1 kHz, Bit Rates 32 - 320 kbps or VBR (Variable Bit Rate)
Memory Card	SD Card (SDHC format compatible)
INPUT/OUTPUT	
Audio Inputs	Internal Stereo Microphone: Omnidirectional (OMNI) mic, Directional (XY) mic, Analog Input 1/L, 2/R (XLR/TRS Combo type): XLR type (phantom powered), 1/4-inch TRS phone type (balanced/unbalanced), Plug-in powered mic Input: Stereo miniature phone type
Audio Output	Phones (Stereo miniature phone type)
Nominal Input Level (Variable) * Input Level Knob: Center	Analog Input 1/L, 2/R: +4/-2/-8/-14/-20/-26/-32/-38/-44/-50/-56/-62 dBu Plug-in powered mic Input: LOW -7.5 dBu, MID -21 dBu, HIGH 26 dBu
Input Impedance	Analog Input 1/L, 2/R: 5 k ohms, Plug-in powered mic Input: MID/HIGH 3 k ohms, LOW 2 k ohms
Maximum Input	Analog Input 1/L, 2/R: +24 dBu (SENS = +4 dBu) Plug-in powered mic Input: +4 dBu (SENS = LOW)
Output Level	35 mW + 35 mW (In case 16 ohms load)
Recommended Load Impedance	16 ohms or greater
Frequency Response	20 Hz - 40 kHz
Phantom Power	48 V ± 4 V, 10 mA or less in all channels
USB Interface	Mini-B type connector, USB mass storage device class, USB audio (Hi-Speed USB)
OTHERS	
Power Supply	AC adaptor, Alkaline dry battery LR6 (AA) type x 4, Rechargeable Ni-MH battery (AA, HR6) X 4
Current Draw	500 mA
Dimensions	82.0 (W) x 180.1 (D) x 41.1 (H) mm 3-1/4 (W) x 7-1/8 (D) x 1-5/8 (H) inches
Weight	0.37 kg, 14 oz (excluding batteries)

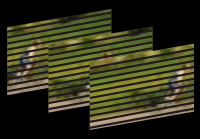
(0dBu=0.775Vrms)

VIDEO MIXERS/SWITCHERS

		Video Switchers							
		 V-1200HD/V-1200HDR		 V-800HD		 V-40HD		 V-1HD	
		MULTI FORMAT, 3G bps 1080/60p, HDCP, AUDIO EMBEDDING		MULTI FORMAT, 3G bps 1080/60p, HDCP		MULTI FORMAT, WUXGA 1080/60p, HDCP, AUDIO EMBEDDING		1080p PROGRESSIVE, HDCP, AUDIO EMBEDDING	
Internal Video Processing	Y/Pb/Pr	1080p 4:4:4/10bit		1080p 4:4:4/10bit		1080p 4:2:2/10bit		1080p 4:2:2/8bit	
	RGB	4:4:4/10bit		4:4:4/10bit		4:4:4/10bit * 4:4:4/8bit output processing		-	
Video Format	Video	Up to 1080p		Up to 1080p		Up to 1080p		Up to 1080p	
	RGB	Up to 1920×1200 (WUXGA)		Up to 1920×1200 (WUXGA)		Up to 1920×1200 (WUXGA)		-	
Number of Connectors	SDI	10 in	6 out	4 in	2 out	-	-	-	-
	DVI-D	4 in *1	2 out *1	4 in	2 out	-	-	-	-
	HDMI	4 in	2 out	-	-	4 in	2 out	4 in	2 out
	HDBaseT	-	-	-	-	-	-	-	-
	DVI-A	-	-	4 in	-	-	-	-	-
	RGB/Component	-	-	4 in	2 out	4 in	2 out	-	-
	S-Video	-	-	-	-	-	-	-	-
	Composite	-	-	4 in	1 out	4 in	1 out	-	-
Still Image		16		Yes		-		-	
Layer Composition		6 (Composition, Back ground, 4:4:4)		3 (Back ground, PinP/Key, DSK)		3 (Back ground, PinP/Key, DSK)		2 (Back ground/PinP/Key)	
Monitor	Built-in Monitor	-		-		-		-	
	External Multi Viewer Output	HDMI 1080p×2 (4:2:2, 4:4:4)		HDMI 1080p		HDMI 1080p		HDMI 1080p	
Audio	Analog	1 stereo input	1 stereo output	-	-	1 stereo input	-	1 stereo input	1 stereo output
	Digital	1 stereo input	1 stereo output	-	-	4 stereo inputs	3 stereo outputs	-	-
USB Streaming (Video and Audio)		-		-		-		-	
Wireless Control		-		-		-		-	

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

Both level-A and level-B 3G-SDI are supported. 1080p video at different kinds of frame rate are also supported.


Interlaced (1080/60i)


Progressive (1080/60p)

The Multi-Format Performance

Roland's multi-format technology enables high-quality video switching of images in different sizes regardless of the format.

Support for Copyright-protected (HDCP) Video

Mixing and Compositing HDCP protected HDMI (DVI) signals are supported. It is also possible to input signals with or without HDCP at the same time.

* To display HDCP protected video, the monitor, projector or other display equipment must be HDCP-compatible.

Support for Workflow Combining Video and Audio

Not only embedding audio to HDMI and SDI output video but also de-embedding audio from the video signals is possible.

USB Web Streaming Output

The USB output enables video and audio web streaming. USB 3.0/2.0: Output uncompressed 1080/60p video and audio. USB 2.0: Output compressed video and audio.

	Matrix AV Switchers			AV Mixers	
						
	V-4EX	XS-84H	XS-83H	XS-82H	VR-50HD	VR-3EX
	480p/576p HDCP USB2.0 for Video / Audio AUDIO EMBEDDING	MULTI FORMAT WUXGA 1080/60p Roland Wireless HDCP AUDIO PROCESSOR	MULTI FORMAT WUXGA 1080/60p Roland Wireless HDCP AUDIO PROCESSOR	MULTI FORMAT WUXGA 1080/60p Roland Wireless HDCP AUDIO PROCESSOR	MULTI FORMAT 3G bps 1080/60p HDCP USB3.0/2.0 Video and Audio AUDIO EMBEDDING	480p/576p HDCP USB2.0 for Video / Audio AUDIO EMBEDDING
	480p 4:2:2/8bit	1080p 4:2:2/10bit	1080p 4:2:2/10bit	1080p 4:2:2/10bit	1080p 4:4:4/10bit	480p 4:2:2/8bit
	-	4:4:4/10bit	4:4:4/10bit	4:4:4/10bit	4:4:4/10bit	-
	Up to 1080p	Up to 1080p	Up to 1080p	Up to 1080p	Up to 1080p	Up to 1080p
	Up to 1920×1200 (WUXGA)	Up to 1920×1200 (WUXGA)	Up to 1920×1200 (WUXGA)	Up to 1920×1200 (WUXGA)	Up to 1920×1200 (WUXGA)	Up to 1920×1200 (WUXGA)
	- -	- -	- -	- -	4 in 2 out	- -
	- -	- -	- -	- -	- -	- -
	4 in 1 out	8 in 4 out	8 in 3 out	8 in 2 out	4 in 2 out	4 in 1 out
	- -	- 4 out	- 3 out	- 2 out	- -	- -
	- -	- -	- -	- -	- -	- -
	1 in -	8 in -	8 in -	8 in -	2 in 2 out	1 in -
	1 in -	8 in *1 -	8 in *1 -	8 in *1 -	- -	- -
	4 in 1 out	8 in *1 -	8 in *1 -	8 in *1 -	2 in -	4 in 1 out
	-	Yes	Yes	Yes	Yes	-
	2 (Back ground, PinP/Key)	Up to 4	Up to 4	Up to 4	4 (Back ground, PinP, PinP/Key, DSK)	3 (Back ground, PinP/Key, DSK)
	3.5inch with touch control	-	-	-	7inch with touch control	3.5inch with touch control
	HDMI 480p	HDMI 1080p	HDMI 1080p	HDMI 1080p	HDMI 1080p	HDMI 480p
	1 stereo input -	8 stereo inputs 4 stereo outputs	8 stereo inputs 3 stereo outputs	8 stereo inputs 2 stereo outputs	4 mono inputs and 4 stereo inputs 2 stereo outputs	4 mono inputs and 2 stereo inputs 1 stereo output
	4 stereo inputs 2 stereo outputs	8 stereo inputs 4 stereo outputs	8 stereo inputs 3 stereo outputs	8 stereo inputs 2 stereo outputs	4 stereo inputs 5 stereo outputs	4 stereo inputs 2 stereo outputs
	USB 2.0	-	-	-	USB 3.0	USB 2.0
	-	Yes	Yes	Yes	-	-

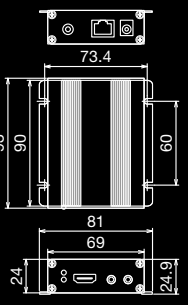
*1 Conversion cable required

HT-TX01 | HDBaseT Transmitter

Conversion of HDMI and RS-232 signals to HDBaseT signals. Support for resolutions up to 1080/60p, WUXGA

HT-RX01 | HDBaseT Receiver

Conversion of HDBaseT signals to HDMI and RS-232 signals. Support for resolutions up to 1080/60p, WUXGA



Unit: mm

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.

Operation 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

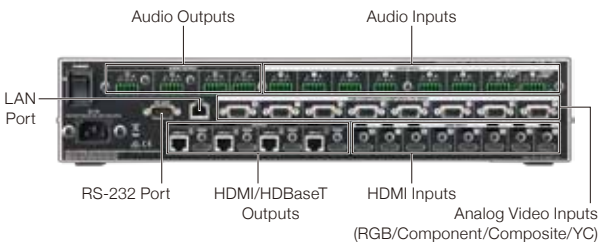
* In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.

XS-84H/83H/82H | Multi-Format Matrix Switchers

All-in-one Matrix Switcher featuring multi-screen output and compositing functions with intuitive direct control of audio and video from hardware, connected computer or wirelessly from tablet computer.

WUXGA 1080/60p | HDCP | AUDIO PROCESSOR | MULTI FORMAT | HDBT | Roland Wireless Connect

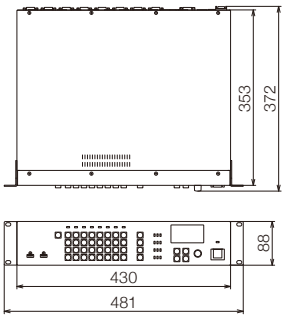
XS-84H 8-in x 4-out



XS-83H 8-in x 3-out

XS-82H 8-in x 2-out

- **Support for maximum resolution of WUXGA and 1080p. 8 digital inputs and 8 analog inputs. 2, 3 or 4 outputs according to the application.**
  * Outputs configurable to HDMI or HDBaseT
- **Supports HDMI/HD component/RGB/composite/S-video and audio inputs.**
- **4 built–in scalers and video processor enable split-picture and compositing functions.**
- **16ch stereo digital audio mixer with 8 HDMI inputs and 8 analog inputs**
- **Remote control of an external device via HDBaseT**
- **Bezel compensation function that improves the precision of displaying one picture across multiple screens**
- **Remote Control via the dedicated computer software XS-80H RCS and iPad application XS-80H Remote**



Unit: mm

PC Remote Control Software

By connecting the XS series to a computer via a LAN cable or through RS-232C, you can use the dedicated software XS-80H RCS to remotely control the unit. You can also make all the settings off-line and later upload to the unit via USB flash drive.

Wireless Control from an iPad

Using a wireless USB adapter or connecting a Wi-Fi router to the LAN port lets you operate the unit remotely from an iPad insalled with the XS-80H Remote application. The application can be used to directly make the settings of video and audio, and recall presets. The tab names, displayed items, background picture can be changed.

●Controllable Functions (Examples)

· Preset Change · Video Switching · Audio Volume Adjusting

HDMI/HDBaseT Outputs

The XS series includes both HDMI and HDBaseT outputs. When using a LAN cable, up to WUXGA/1080p video signal, digital audio signal and RS-232 command can be transmitted over 100 meters.

* Please use a shielded Cat5e or higher LAN cable. Transmission distance depends on the quality of the cable.

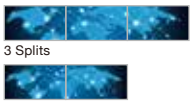
Video Processing

●Output Mode

The series provides a variety of output modes for video output. Selecting an output mode recalls preset values for video output, after recalling you can change video output settings to fit your application.

MATRIX MODE

SPAN MODE



3 Splits

2 Splits

ROTATION MODE

90 degrees rotation and across screens

MULTI MODE (4 Windows)

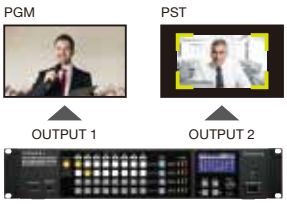
* When changing the layout

4K MODE

Real Time Operation

●PGM/PST MODE

You can preview the video to be output next and then output it with a cross dissolve transition by pressing the OFF button. The series offers two programs/two previews and three programs/one preview option for the XS-84H, two programs/one preview for the XS-84H and XS-83H. You can also display a guide on the preview output picture to confirm the position and size of the video to be output next.



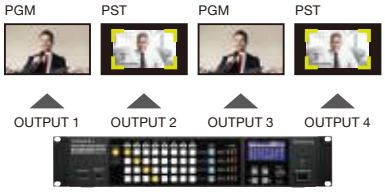
PGM/PST MODE

●Switch multiple outputs at the same time

This can be done by two ways.

Output Link Function
You can match any two output buses together and switch them simultaneously.

Double Tap Transition
You can also use the double tap mode for the transition operation to pre-select the next source and switch multiple outputs at the same time.



2 PGM/PST

SPECIFICATIONS XS-82H/XS-83H/XS-84H

Video	
Video Processing	4:4:4 (Y/Pb/Pr), 10-bit
Input Connectors	**HDMI:** Type A (19 pins) x 8 (INPUT 1–8) * HDCP Supported **RGB/Component/Composite/S-Video:** HD DB-15 type x 8 (INPUT 1–8)
Output Connectors	<XS-82H> **HDMI:** Type A (19 pins) x 2 (OUTPUT 1–2) **HDBaseT:** RJ-45 x 2 (OUTPUT 1–2) * HDCP Supported <XS-83H>**HDMI:** Type A (19 pins) x 3 (OUTPUT 1–3) **HDBaseT:** RJ-45 x 3 (OUTPUT 1–3) * HDCP Supported <XS-84H>**HDMI:** Type A (19 pins) x 4 (OUTPUT 1–4) **HDBaseT:** RJ-45 x 4 (OUTPUT 1–4) * HDCP Supported
Input Level and Impedance	<RGB/Component> **Signal Level:** 1.0 Vp-p (Luminance), 0.7Vp-p (Chroma), **Impedance:** 75 ohms <Composite/S-Video> **Signal Level:** 1.0 Vp-p (Luminance), 0.286 Vp-p (Chroma, NTSC), 0.3 Vp-p (Chroma, PAL), **Impedance:** 75 ohms
Input Formats	**HDMI:** up to 1080p/59.94, up to 1920 x 1200/60 **Component:** up to 1080p/59.94 **RGB:** up to 1920 x 1200/60 * Reduced Blanking **Composite:** 480i/59.94, 576i/50 **S-Video:** 480i/59.94, 576i/50 **Still Image:** Windows Bitmap File (.bmp) * Maximum 1920 x 1200 pixels, 24-bit per pixel, uncompressed. It can be stored up to 4 files in the internal memory.
Output Formats	**HDMI:** up to 1080p/59.94, up to 1920 × 1200/60 **HDBaseT:** up to 1080p/59.94, up to 1920 × 1200/60
Video Effects	**Transition:** Quasi-seamless switching, Seamless switching (Dissolve mode, PGM/PST mode) **Mode:** Matrix, Multi (Up to 4 Windows), Span, Left and right 90 degrees rotation, 4K, Dissolve (2 types), PGM/PST (3 types) **Others:** Flip vertically, Flip horizontally, Output fade, Test pattern output (Colorbar, Hatch,etc)
Audio	
Audio Processing	**Sampling Rate:** 24 bits/48 kHz, 8ch
Input Connectors	**Digital:** HDMI Type A (19 pins) x 8 **Analog:** 5-pin euroblock type x 8
Output Connectors	<XS-82H> **Digital:** HDMI Type A (19 pins) x 2 **Analog:** 5-pin euroblock type x 2 <XS-83H> **Digital:** HDMI Type A (19 pins) x 3 **Analog:** 5-pin euroblock type x 3 <XS-84H> **Digital:** HDMI Type A (19 pins) x 4 **Analog:** 5-pin euroblock type x 4
Input Level and Impedance	<Ch1–2> **Signal Level:** -60 to +4 dBu (Maximum: +22 dBu) **Impedance:** Gain 0 to 23 = 10 k ohms, Gain 24 to 60 = 5 k ohms <Ch3–8> **Signal Level:** +4 dB (Maximum: +22 dBu) **Impedance:** 8.5 k ohms
Output Level and Impedance	<Ch1–4> **Signal Level:** +4 dBu (Maximum: +22 dBu) **Impedance:** 600 ohms
Audio Formats	**HDMI:** Linear PCM, 24 bit, 48 kHz, 8 ch
Audio Effects	16 stereo inputs and 4 outputs digital audio mixer **Input:** High-pass filter, Mono, 4-band parametric equalizer, Compressor/Ducking, Gate **Output:** 4-band parametric equalizer, Compressor/Gate, Down mix, Lip-sync Delay (1 msec units, max 170 msec) **Others:** Test tone output, Synchronized/unsynchronized audio and video function
Other jacks	
RS-232C	9 pins D-sub type x 1
LAN	RJ-45 x 1
USB	A type x 2 (for USB memories, for WNA1100-RL/ONKYO UWF-1)
Others	
Display	Graphic LCD 128 x 64 dots
Power Supply	AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)
Power Consumption	**XS-82H:** 55 W/0.5 A (117 V), 55 W/0.4 A (220 V, 230 V, 240 V) **XS-83H:** 60 W/0.6 A (117 V), 60 W/0.4 A (220 V, 230 V, 240 V) **XS-84H:** 70 W/0.6 A (117 V), 70 W/0.5 A (220 V, 230 V, 240 V)
Operation Temperature	**Operation Temperature:** +0 to +40 degrees Celsius +32 to +104 degrees Fahrenheit **Storage Temperature:** -20 to +80 degrees Celsius -4 to 176 degrees Fahrenheit
Operation Humidity/ Storage Humidity	20% to 90% (non-condensing)
Dimensions	481 (W) x 353 (D) x 88 (H) mm 18-15/16 (W) x 13-15/16 (D) x 3-1/2 (H) inches * EIA-2U rack mountable
Weight	6.0 kg, 13 lbs 4 oz
Accessories	Power Cord, Euroblock Plug x 12, Rubber Foot x 5, Owner's Manual

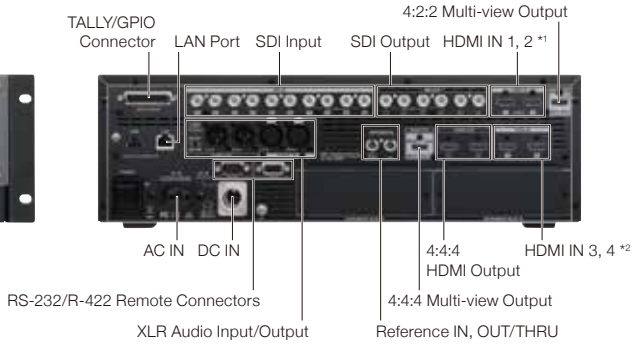
* 0 dBu=0.775 Vrms
* In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.
* For the diagram of the XS series, please refer to page 61.

V-1200HD/V-1200HDR | Multi-Format Video Switcher

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

NEW

V-1200HD



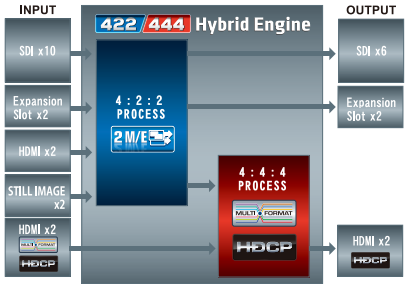
*1: For 4:2:2 process only. *2: Support for both 4:4:4 process and 4:2:2 process.

- 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.
- 4K switching mode *1
- 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
- Input/output expandable via expansion slots *1

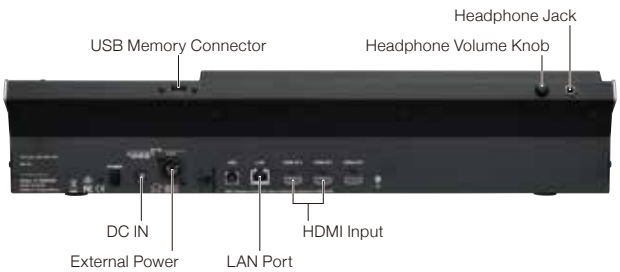
*1: Features to be added by planned firmware update.

Innovative hybrid processing from Roland

In addition to a 4:2:2 video process widely used for video signals, 4:4:4 signals that are the standard output for computers are handled by a separate processing engine 4:2:2 signals can be upsampled to 4:4:4 signals.



V-1200HDR



- Dedicated control surface for the V-1200HD
- 7" dual touch monitors
- 2 HDMI inputs

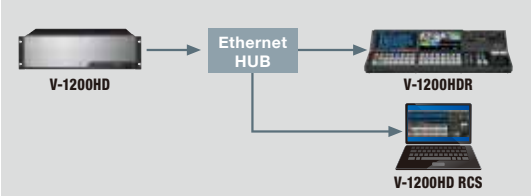
V-1200HD RCS (Free Download)

- Dedicated remote control software for Windows and Mac OSX
- Support for off-line setup

V-1200HDR and V-1200HD RCS

Using an Ethernet hub lets you connect up to two controllers, V-1200HDR units or computers on which the dedicated remote control software V-1200HD RCS is installed, to the V-1200HD.

●Setup Example



* Use a Cat5e or higher cable for connection.

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

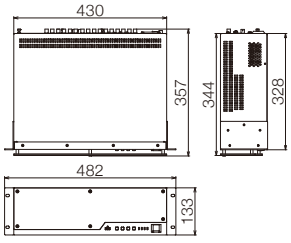
SPECIFICATIONS V-1200HDR

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.
Weight	4.3 kg, 9 lbs 8 oz
Accessories	AC Adaptor, Owner's Manual

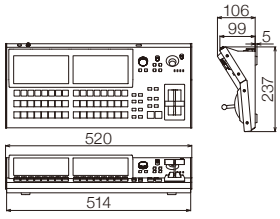
Audio	
Processing	**Sampling Rate:** 24 bits/48 kHz
Input Connectors	**3G/HD/SD-SDI:** BNC type x 4 (Ch7-10), HDMI x 4, AUDIO IN (XLR) L (1/2), R (3/4) * Analog Audio or AES/EBU
Output Connectors	**3G/HD/SD-SDI:** BNC type x 4 (Ch1-4), HDMI x 4, AUDIO OUT (XLR) L (1/2), R (3/4) * Analog Audio or AES/EBU
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.
Dimensions	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
Weight	9.0 kg, 19 lbs 14 oz
Accessories	Power Cord, Rubber Feet x 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.
* For the diagram of the V-1200HD, please refer to page 60.

V-1200HD



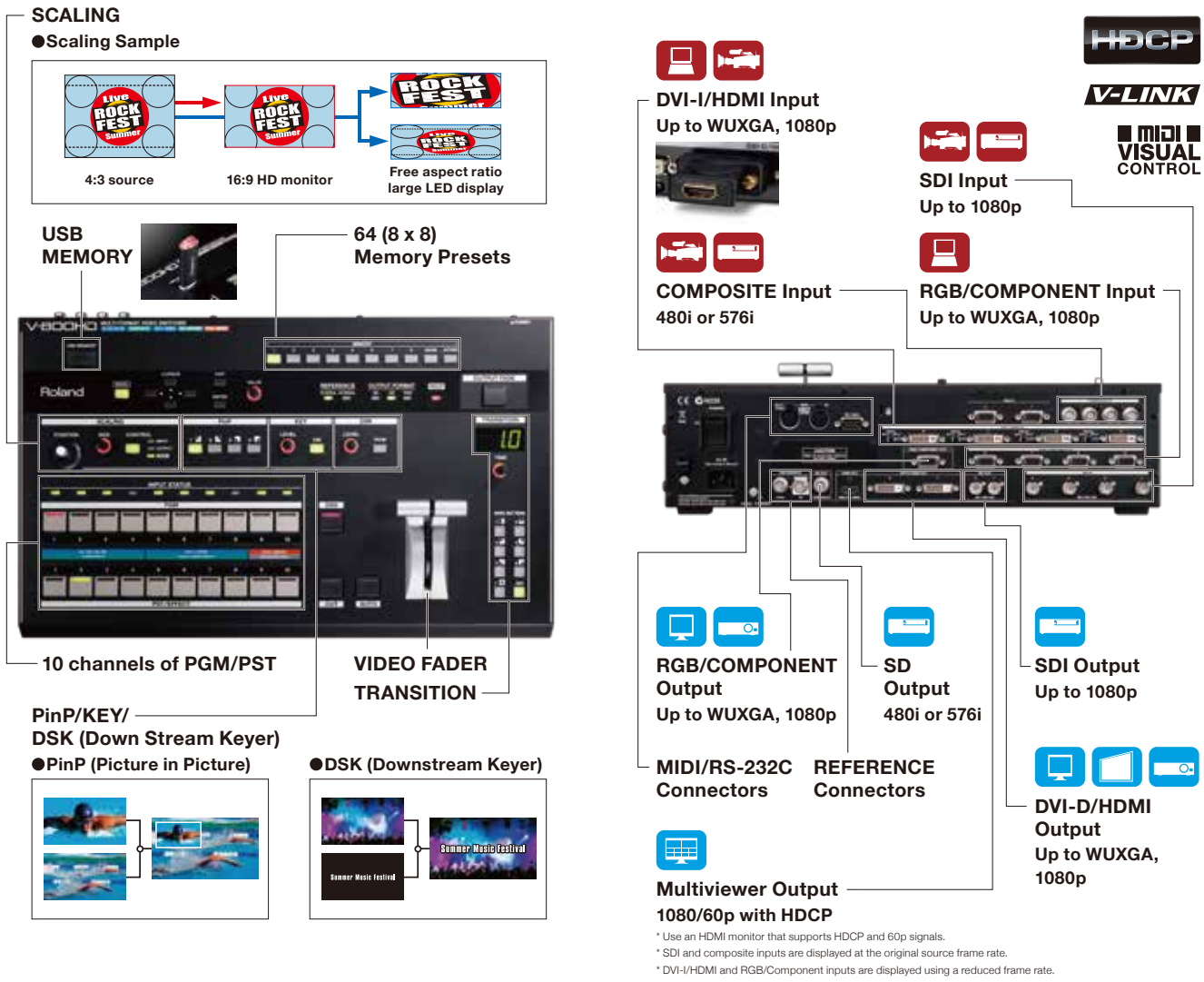
V-1200HDR



Unit: mm

V-800HD | Multi-Format Video Switcher

Eight Multi-Format Channels with Independent Scalers
A Variety of Output Formats including a Built-in Multiviewer

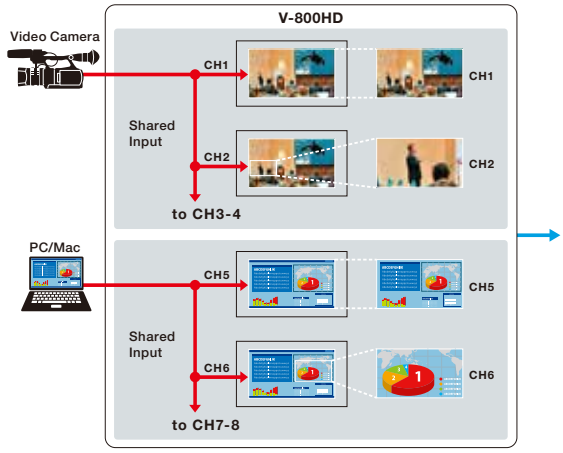


* Use an HDMI monitor that supports HDCP and 60p signals.
* SDI and composite inputs are displayed at the original source frame rate.
* DVI-I/HDMI and RGB/Component inputs are displayed using a reduced frame rate.

- 8 Input (4 SDI/Composite + 4 DVI-I/HDMI/RGB/Component), 6 Output (2 SDI + 2 DVI-D/HDMI + RGB/Component + Composite)
- 4:4:4/10-bit Internal Processing
- 1 M/E (Key, PinP) + DSK
- Built-in frame synchronizers and scalers on all inputs
- SDI support: 3G (Level A and B), HD, and SD
- DVI-D/RGB/HDMI support
- Input status LEDs
- HDCP support
- Live access to two still-image sources
- 10 assignable cross-points
- Multiviewer monitor output (Switch between Y/Cr/Cb and RGB modes)

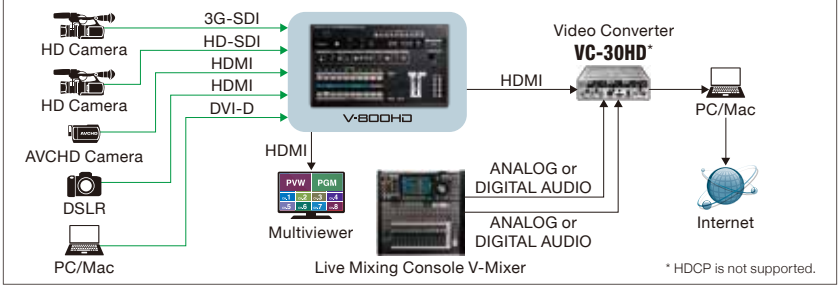
Multi-Zoom

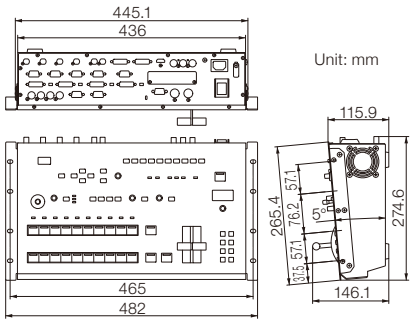
Using the shared input function, you can assign the video on channel 1 to channels 2 through 4 and the video on channel 5 to channels 6 through 8. The scaler for each input can zoom into any position in the video image enabling a virtual multi-camera environment. This gives the appearance that you have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



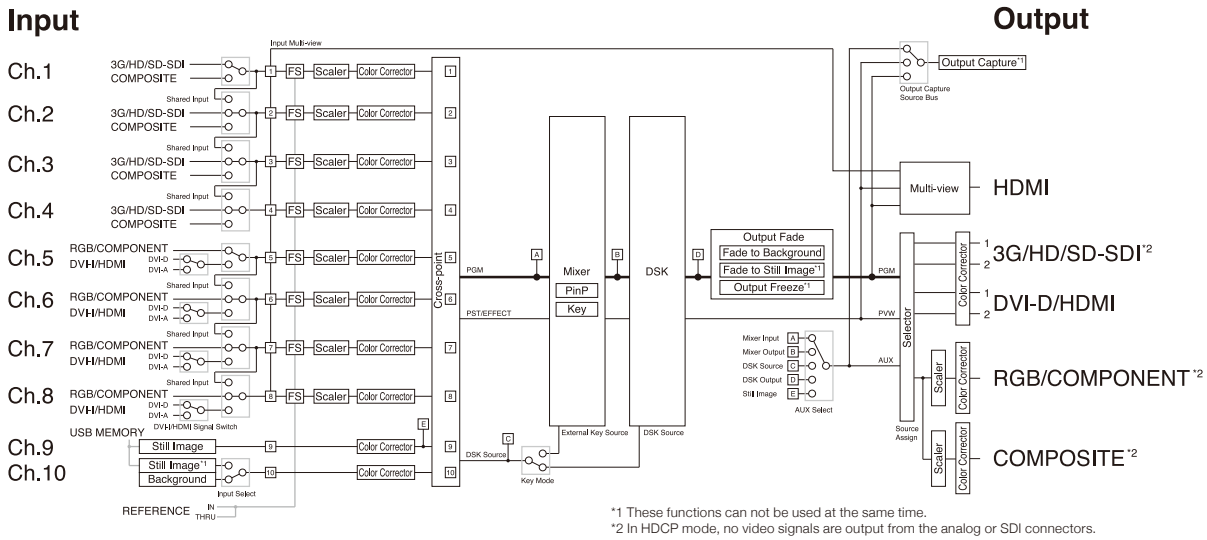
* Only the source of the previous adjacent channel can be shared.

V-800HD with Live Mixing Console and Video Converter





Block Diagram



*1 These functions can not be used at the same time.
*2 In HDCP mode, no video signals are output from the analog or SDI connectors.

SPECIFICATIONS V-800HD

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 * The SDI input can input the same frame rate as a setup menu setting. **PC:** 640 x 480/60 Hz*1, 800 x 600/60 Hz*1 *3, 1024 x 768/60 Hz*1, 1280 x 768/60 Hz*1, 1280 x 1024/60 Hz*1, 1366 x 768/60 Hz*1, 1400 x 1050/60 Hz*1, 1600 x 1200/60 Hz, 1920 x 1080/60 Hz, 1920 x 1200/60 Hz*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 Image:** Windows® Bitmap File (.bmp) * Maximum 1900 x 1200 pixels, 24-bit per pixel, uncompressed

Input/Output Level and Impedance

Composite	1.0 Vp-p, 75 ohms
Analog HD/RGB	0.7 Vp-p, 75 ohms (H, V: 5 VTTL)

Input Connectors

3G/HD/SD-SDI	BNC type x 4 * Conforms to SMPTE 424M (Level-A), 292M, 259M-C
DVI-I/HDMI	DVI-I type x 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 channel
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), 292M, 259M-C
DVI-D/HDMI	DVI-D 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
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): 12V, 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-232C	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 Consumption	75 W
Power Supply	AC 115 V, AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)
Dimensions	482 (W) x 274.6 (D) x 115.9 (H) mm 19 (W) x 10-13/16 (D) x 4-9/16 (H) inches * When rack mount brackets are attached. * EIA-6U rack mount size.
Weight	5.5 kg 12 lbs 3 oz
Accessories	Power Cord, Rack Mount Angle (2), Input Template, Owne's Manual

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

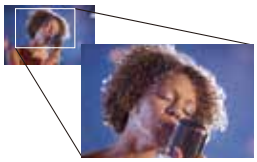
V-40HD | Multi-Format Video Switcher

Four Multi-Format Channels at the Pinnacle of HD Picture Quality

INPUT

SCALING
Zoom and Adjustment.

The V-40HD 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.



INPUT Selectors
Select from among HDMI, RGB/Component, and Composite as the connector for each input.

With just one touch, you can access the video source from any of the three pieces of equipment connected to the respective inputs.

MEMORY
25 (5 x 5) Memory Presets

PinP
Two images can be combined into one video image.

You can select any of four positions for an inset screen: top left, bottom left, top right, or bottom right. You can also freely adjust the size of the inset screen.

WIPE PATTERN
Easy selection of video transition effects.

VIDEO FADER
Switch the sources at the speed you want.

Using the video fader (T-bar) lets you carry out scene transitions, fade-ins, and fade-outs manually at exactly the speed you want.

DSK (Downstream Keyer)
Composite logos and text into output video.

You can overlay logos and text onto composited and switched video. You can also transition between scenes underneath text or logos.

OUTPUT

OUTPUT Selectors
Three types of output formats to choose from.

Select SD, HD, or RGB simply by pressing a button.

Default Settings (can be changed)

SD	480i
HD	1080i
RGB	XGA (1024 x 768)

* You can select other format on the menu.
* The format of PVW OUT cannot be changed. (1920 x 1080/60Hz fixed)

PVW (Preview) Selectors
Chooses the view displayed on a preview monitor.

Select a four-way split screen, PST, PGM or DSK to display.

* The resolution and refresh rate of monitor output is fixed at 1920 x 1080/ 60 Hz (progressive).
* Use an HDMI monitor that supports HDCP and 60p signals.
* When INPUT is selected (four-way split), the sources are displayed using a reduced frame rate.

WUXGA 1080/60p
MULTI FORMAT
AUDIO EMBEDDING
HDCP
V-LINK
MIDI VISUAL CONTROL

INPUT Connectors 1 - 4
Support for three formats per input.

[HDMI] Up to WUXGA, 1080p
[RGB/Component] Up to WUXGA, 1080p
[Composite] 480i or 576i

HDMI inputs support an embedded audio signal.

Output Connectors
Connect monitors, projectors, or recording equipment.

[HDMI] Up to WUXGA, 1080p
[RGB/Component] Up to WUXGA, 1080p
[Composite] 480i or 576i

* In HDCP mode, no video signals are output from the RGB/Component and composite connectors.

CONTROL INTERFACE
[RS-232C]
Use RS-232C for integrated remote control.

It's possible to connect a computer, wall panel or other remote device and use it to control switching, effects, and other operations.

[MIDI]
Controllable via any MIDI device.

A Roland digital audio mixer like the M-200i V-Mixer can link to the V-40HD for audio-follows-video application. Connect another V-40HD for more inputs.

AUDIO INPUT
Mix analog audio into HDMI video.

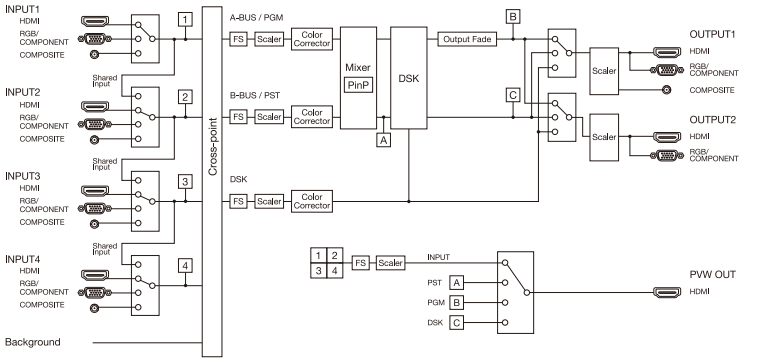
The V-40HD is equipped with inputs for analog audio equipment. This enables you to embed analog audio in the HDMI video output.

USB PORT
For saving the internal memory.

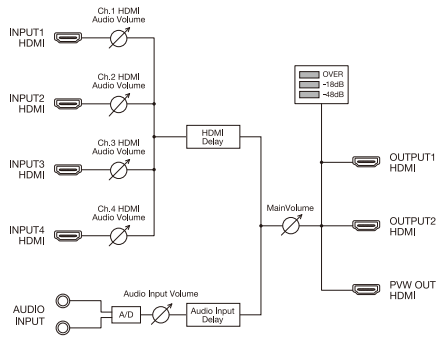
This lets you connect a USB flash drive and save the internal memory to it.

- **4 Inputs (HDMI/RGB/Component)**
- **3 Outputs (HDMI/RGB/Component/Composite + HDMI/RGB/ Component + HDMI)**
- **4:4:4/10-bit Internal Processing (* 4:2:2/8-bit Output Processing)**
- **1 M/E (PinP) + DSK**
- **Built-in frame synchronizers and scalers on all inputs**
- **Input status LEDs**
- **Full HDCP support**
- **Preview monitor output (Four-way split screen for Inputs, PST, PGM, or DSK)**
- **Audio embedding**
- **Up to 12 frames audio delay to align the timing with video for perfect lip sync**
- **Audio follow function**

Block Diagram (Video)

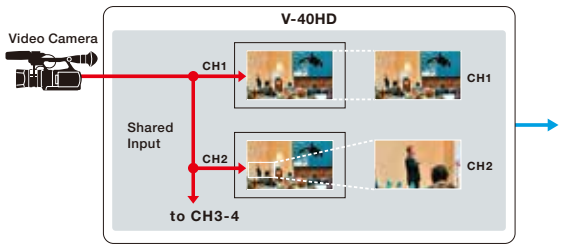


Block Diagram (Audio)

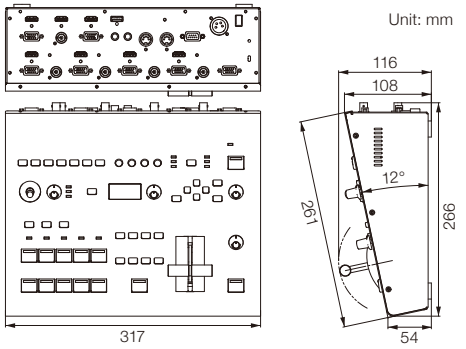


Multi-Zoom

Using the shared input function, you can assign the video on channel 1 to channels 2 through 4. 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.



SPECIFICATIONS V-40HD

Video Processing	
Sampling Rate	4:4:4 (Y/Pb/Pr), 10 bits * Output signal processing is 4:2:2/8-bit.
Audio Processing	
Sampling Rate	24 bits/48 kHz, 2ch
Input Formats	
HDMI 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 640 x 480/60 Hz, 800 x 600/60 Hz, 1024 x 768/60 Hz, 1280 x 768/60 Hz, 1280 x 1024/60 Hz, 1366 x 768/60 Hz, 1400 x 1050/60 Hz, 1600 x 1200/60 Hz, 1920 x 1080/60 Hz, 1920 x 1200/60 Hz * The video signal frame rate must match with the unit's frame rate setting. *1 *2
HDMI Audio	Linear PCM, 24 bits/48 kHz, 2ch
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 640 x 480/60 Hz, 800 x 600/60 Hz, 1024 x 768/60 Hz, 1280 x 768/60 Hz, 1280 x 1024/60 Hz, 1366 x 768/60 Hz, 1400 x 1050/60 Hz, 1600 x 1200/60 Hz, 1920 x 1080/60 Hz, 1920 x 1200/60 Hz * The video signal frame rate must match with the unit's frame rate setting. *1 *2
Composite	NTSC, PAL
Output Formats	
HDMI 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 640 x 480/60 Hz, 800 x 600/60 Hz, 1024 x 768/60 Hz, 1280 x 768/60 Hz, 1280 x 1024/60 Hz, 1366 x 768/60 Hz, 1400 x 1050/60 Hz, 1600 x 1200/60 Hz, 1920 x 1200/60 Hz * The output refresh rates of 640 x 480 to 1400 x 1050 are 75 Hz when the unit's frame rate setting is 50 Hz. *1 *2
HDMI Audio	Linear PCM, 24 bits/48 kHz, 2ch
RGB/Component	480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/59.94p, 1080/50p 640 x 480/60 Hz, 800 x 600/60 Hz, 1024 x 768/60 Hz, 1280 x 768/60 Hz, 1280 x 1024/60 Hz, 1366 x 768/60 Hz, 1400 x 1050/60 Hz, 1600 x 1200/60 Hz, 1920 x 1200/60 Hz * The output refresh rates of 640 x 480 to 1400 x 1050 are 75 Hz when the unit's frame rate setting is 50 Hz. *1 *2
Composite	NTSC, PAL
Preview (HDMI)	**Video:** 1920 x 1080/60 Hz (fixed) * When INPUT is selected, the sources are displayed using a reduced frame rate. **Audio:** Linear PCM, 24 bits/48 kHz, 2ch
Signal Level/Impedance	
RGB/Component	**Signal level:** 0.7Vp-p (H, V: 5VTTL) **Impedance:** 75 ohms
Composite	**Signal level:** 1.0 Vp-p (luminance), 0.286 Vp-p (chroma [NTSC]), 0.3 Vp-p (chroma [PAL]) **Impedance:** 75 ohms
Analog Audio	**Nominal input level:** +4 dBu **Maximum Input Level:** +22 dBu **Impedance:** 15 k-ohms
Video Effects	
Transition	Mix, Cut, Wipe (9 patterns)
Composition	Picture in Picture, DSK (Luminance Key, Chroma Key)
Audio Effects	
Delay	0.0 to 12.0 frames
Others	
Dimensions	317 (W) x 266 (D) x 108 (H) mm 12-1/2 (W) x 10-1/2 (D) x 4-1/4 (H) inches
Weight	3.4 kg, 7 lbs 8 oz (excluding AC Adaptor)

(0dBu=0.775Vrms)

*1: Conforms to VESA DMT Version 1.0 Revision 11
*2: 1920 x 1200/60 Hz: Reduced blanking

Roland

V-1HD | HD Video Switcher

Compact and portable entry model of full HD supported video switcher

1080p PROGRESSIVE

HDCP

AUDIO EMBEDDING

NEW

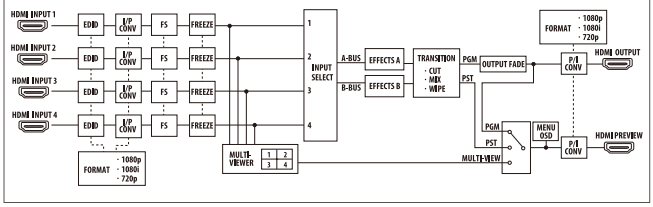
■ Rear Panel

■ Side Panel (Left)

■ Side Panel (Right)

- **Four HDCP supported HDMI inputs**
- **Switchable output format of 1080p/1080i/720p**
- **Two HDMI outputs for PROGRAM and PREVIEW**
- **Four-way multi-viewer**
- **Various video effects**
- **RCA stereo and Mic audio input**
- **12 channels digital audio mixer**
- **Dedicated remote control software the V-1HD RCS**

Video Block



Video Effects

The unit features a various of video effects.

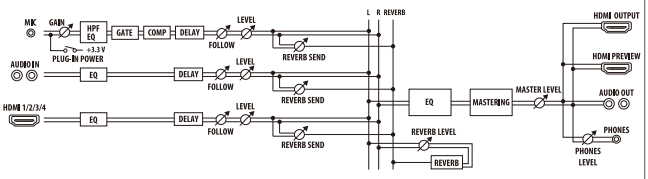
●Transition Effects

Four types of MIX effect and 30 types of WIPE pattern are provided for professional switching.

●Filter and Compositing Effects

You can set filter effects separately for the video on bus A and on bus B to change the color tone or the appearance to the entire video. You can also composite the video on bus A and on bus B using picture-in-picutre or keying.

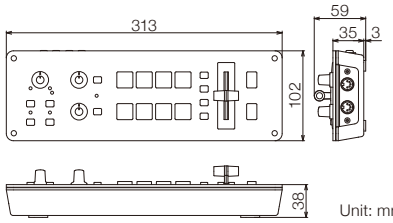
Audio Block



Remote Control

Remote Control is possible with the dedicated software V-1HD RCS installed on a PC or Mac, and also from the dedicated iPad application V-1HD Remote. You can make detailed settings using the application such as changing the video effects and mixing audio.

* Free download from the Roland website.



Unit: mm

SPECIFICATIONS V-1HD

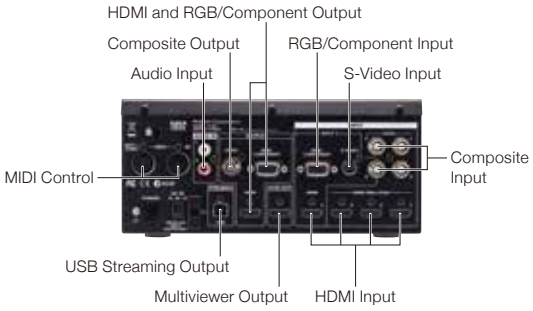
Video	
Processing	4:2:2 (Y/Pb/Pr), 8-bit
Input Connectors	**HDMI INPUT 1–4:** Type A (19 pins) x 4 * HDCP Supported
Output Connectors	**HDMI OUTPUT:** Type A (19 pins) * HDCP Supported **HDMI PREVIEW:** Type A (19 pins) * HDCP Supported
Input Formats	**HDMI:** 720/59.94p, 720/50p (FORMAT switch=720p) 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.
Audio	
Processing	**Sampling rate:** 24 bits/48 kHz
Input Connectors	**Digital:** HDMI INPUT 1–4 (19 pins) x 4 **Analog:** AUDIO IN (RCA pin 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
Operation Temperature	+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

(0 dBu=0.775 Vrms)

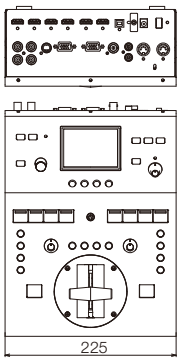
V-4EX | 4-Channel Video Mixer

All in one video mixer with HDMI in/out, USB streaming out, and built-in multiviewer with touch control

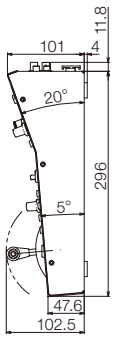
480p/576p
AUDIO EMBEDDING
HDCP
USB2.0 Video and Audio
V-LINK
MIDI VISUAL CONTROL



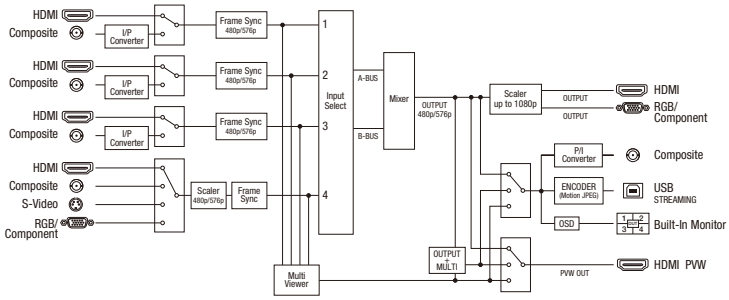
- **3 Input (HDMI/Composite) + 1 Input (Up to 1080p HDMI*/RGB/Component/Composite)** *downscaled to 480p/576p
- **PGM Output (Up to 1080p HDMI* + RGB/Component + Composite) + PVW Output (PVW/Multiviewer)** *upscaled from 480p/576p
- **480p/576p Progressive internal processing**
- **Built-in multiviewer with touch control**
- **Built-in frame synchronizers on all inputs**
- **Scalers on CH 4 and Output**
- **259 Transitions 148 Effects**
- **HDCP compliant**
- **Audio Embedding**
- **Audio Mixer & Delay - up to 4 frames**
- **USB Streaming Out for webstreaming**



Unit: mm



Block Diagram (Video)



* Total latency: 2 frames (from Input 1-3 to Output), 3 frames (from Input 4 to Output)
* Internal Processing: 480/59.94p when set to NTSC, 576/50p when set to PAL

SPECIFICATIONS V-4EX

Processing	
Video Processing	4:2:2 (Y/Pb/Pr), 8 bits (Internal Processing: 480/59.94p when set to NTSC, 576/50p when set to PAL)
Audio Processing	Sampling Rate: 24 bits/48 kHz, 2 ch
Input Formats	
HDMI Video (INPUT 1 to 3)	480/59.94p (when set to NTSC) 576/50p (when set to PAL)
HDMI and Component Video (INPUT 4)	480/59.94i, 480/59.94p, 720/59.94p, 1080/59.94i, 1080/59.94p (when set to NTSC), 576/50i, 576/50p, 720/50p, 1080/50i, 1080/50p (when set to PAL)
HDMI Audio	Linear PCM, 24 bits/48 kHz, 2 ch
RGB	640 x 480/60Hz, 800 x 600/60Hz, 1024 x 768/60Hz, 1280 x 768/60Hz, 1280 x 1024/60Hz, 1366 x 768/60Hz, 1400 x 1050/60Hz, 1600 x 1200/60Hz, 1920 x 1200/60Hz
Composite Video/ S-Video	NTSC, PAL
Output Formats	
HDMI and RGB/Component Video (OUTPUT)	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 640 x 480, 800 x 600, 1024 x 768, 1280 x 768, 1280 x 1024, 1366 x 768, 1400 x 1050, 1600 x 1200, 1920 x 1200 * The 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.
HDMI Audio (OUTPUT)	Linear PCM, 24 bits/48 kHz, 2 ch
Composite Video	NTSC, PAL
Preview Video (PVW OUT)	480/59.94p when set to NTSC 576/50p when set to PAL
Preview Audio (PVW OUT)	Linear PCM, 24 bits/48 kHz, 2 ch
USB Video	720 x 480 when set to NTSC, 720 x 576 when set to PAL, Motion JPEG
USB Audio	Linear PCM, 16 bits/48 kHz, 2 ch
Others	
Display	Graphic Color LCD, 320 x 240 dots, touch panel
Power Supply	AC adaptor
Current Draw	2.0 A
Accessories	AC adaptor, Power Cord, RCA - BNC conversion plug x 2, Owner's Manual
Dimensions	225 (W) x 296 (D) x 105 (H) mm 8-7/8 (W) x 11-11/16 (D) x 4-3/16 (H) inches
Weight	2.6 kg, 5 lbs. 12 oz.

(0dBu=0.775Vrms)

* RGB formats: Conforms to VESA DMT Version 1.0 Revision 11
* 1920 x 1200/60Hz: Reduced blanking

VR-50HD | Multi-Format AV Mixer

An all-in-one HD Multi-Format AV Mixer with built-in USB 3.0 for Web Streaming and Recording

AUDIO

12-Channel Digital Audio Mixer

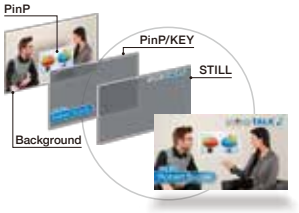
The VR-50HD features a 12-channel digital audio mixer that mixes audio from cameras in addition to sound from four microphones, computers, and DVD players. Capturing and mixing 3G/HD/SD-SDI/HDMI audio in the audio mixer is also possible. Using the "Audio Follow" feature, you can even make the audio switch automatically from one source to another as the video source changes. Built-in delay and equalizer features make possible a broad range of use, from seminars to musical events.

12 input, 4-Channel Multi-Format Video Switcher

A total of 12 HDMI, 3G/HD/SD-SDI/SDI, RGB/COMPONENT, and composite inputs are provided. In addition to professional HD cameras, you can connect equipment that ranges from computers and Blu-ray and DVD players to allow video cameras using composite output. The unit features multi-format specifications that allows you to never have to worry about differences in resolution among input devices.

* 6 channel switching is possible when not using compositing features such as PinP and Key.

Four Layer Composition



VIDEO

Built-In Preview Touch Monitor

The large 7-inch touch panel can be switched between seven-way multi-view, the quad view of inputs, still picture, and program out. By directly touching on the video that you want to switch to, the touch monitor allows for extremely easy operation.

Transition Effects

You can choose to cut, mix, or wipe by pressing the corresponding transition button. The Time dial lets you instantly apply an effect time of 0 to 4 seconds. Even without a T-bar, it's possible to achieve flexible switching.

AUDIO Output

SDI, HDMI: Linear PCM, 24 bit, 48 kHz, 2 ch
USB: Linear PCM, 16 bit, 48 kHz, 2 ch

Audio is mixed and re-embedded into the SDI, HDMI, and analog outputs as well as the USB output. Each of the outputs are assignable from the Main bus or Aux bus.

USB STREAMING Output

Uncompressed up to 1080/59.94p (USB 3.0), up to 720/29.97p (USB 2.0)

The resolution and frame rate of the video format can be changed thanks to the dedicated scaler for the USB output. Output is assignable from PGM or AUX bus.

AUDIO Input

SDI, HDMI: Linear PCM, 24 bit, 48 kHz, 2 ch

12 analog inputs or from audio embedded in the 4 SDI or 4 HDMI inputs. The XLR jacks are provided with selectable phantom power.

RGB/COMPONENT Input/Output

Up to 1080p

COMPOSITE Input

NTSC or PAL

HDMI MULTI-VIEW Output

1080/59.94p with HDCP
Seven-way multi-viewer

HDMI Output

Up to 1080p
HDCP support

Each of the outputs are assignable from PGM, PVW, or AUX bus.

3G/HD/SD SDI Input/Output

Up to 1080p
3G SDI supports Level A and B.

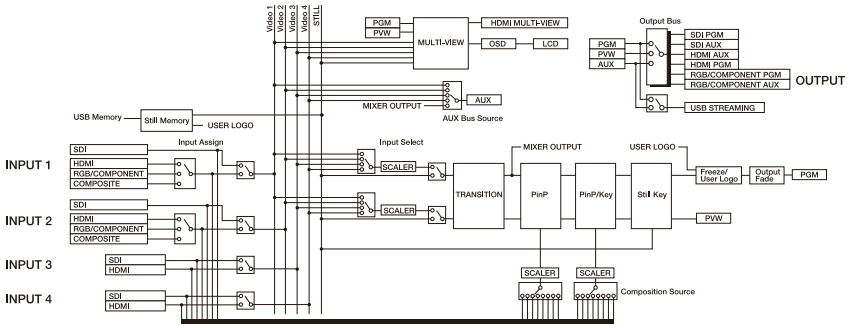
Each of the outputs are assignable from PGM, PVW, or AUX bus.

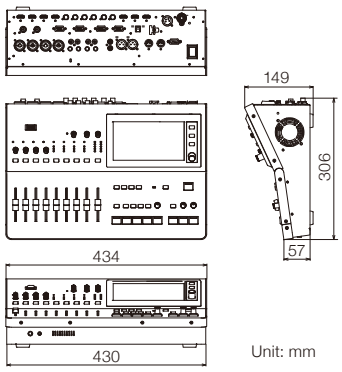
HDMI Input

Up to 1080p
HDCP support

- **12 input, 4-Channel Video plus still channel Multi-Format Switcher**
- **Supports 3G/HD/SD SDI, HDMI, RGB/Component, and Composite Video Inputs Up to 1080p (3G SDI)**
- **Embedding of audio with delay settings**
- **12-Channel Digital Audio Mixer with XLR, TRS, and RCA jacks along with audio from SDI and HDMI inputs**
- **4 Layer, Compositing of PinP, PinP/KEY, and STILL**
- **Built-In Preview Touch Monitor (7 inch Graphic color LCD 800 x 480 dots)**
- **External Multi-View Output through HDMI**
- **HDCP Support**
- **USB 3.0 Video/Audio Output for web streaming and recording up to 1080p (uncompressed)**

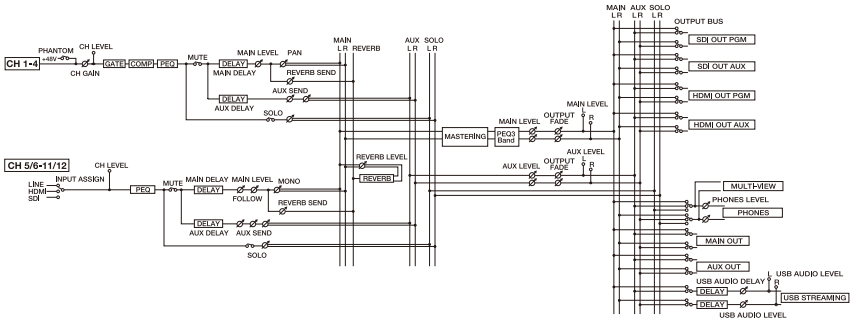
Block Diagram (Video)





Unit: mm

Block Diagram (Audio)



Video Capture for VR

Video Capture for VR is software that captures video and audio signals output from the VR-50HD USB port and saves them to movie files on your connected Windows/Mac.

Free download from the Roland website

SPECIFICATIONS VR-50HD

VIDEO

Processing	4:4:4 (RGB), 10-bit 4:2:2 (Y/Pb/Pr), 10-bit
Input Connectors	**3G/HD/SD-SDI:** BNC type x 4 (INPUT 1 to 4) * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M, 259M-C. **HDMI (DVI-D):** Type A (19-pin) x 4 (INPUT 1 to 4) * HDCP Supported. **Analog RGB/HD-Component:** Mini D-sub 15-pin type x 2 (INPUT 1 to 2) **Analog Video (SD):** Composite (BNC type) x 2 (INPUT 1 to 2) * INPUT 1-2: Select SDI, HDMI or Analog RGB, Composite using menu. * INPUT 3-4: Select SDI, HDMI using menu.
Output Connectors	**3G/HD/SD-SDI:** BNC type x 2 (PGM OUT, AUX OUT) * Conforms to SMPTE 424M (SMPTE 425M-AB), 292M, 259M-C. **HDMI (DVI-D):** Type A (19-pin) x 3 (PGM OUT, AUX OUT, MULTI VIEW) * HDCP Supported. **Analog RGB/HD-Component:** Mini D-sub 15-pin type x 2 (PGM OUT, AUX OUT)
Supported Formats	**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** *2: 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 × 768/60Hz *1, 1280 × 720/60Hz *1, 1280 × 800/60Hz *1, 1280 × 1024/60Hz *1, 1400 × 1050/60Hz, 1920 x 1080/60Hz **HDMI (MULTI-VIEW Output)** *2: 1080/59.94p **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 **RGB** *2: 1024 × 768/60Hz *1, 1280 × 720/60Hz *1, 1280 × 800/60Hz *1, 1280 × 1024/60Hz *1, 1400 × 1050/60Hz, 1920 x 1080/60Hz **Composite:** NTSC, PAL * Conforms to ITU-R BT.601-5. *1: Output refresh rate is 75 Hz when frame rate is set to 50 Hz. *2: Conforms to CEA-861-E or VESA DMT Version 1.0 Revision 11. * The video signal frame rate must match the unit's frame rate setting. **USB-VIDEO:** 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® Bitmap File (.bmp) * Maximum 1920 x 1080 pixels, 24-bit per pixel, uncompressed.

AUDIO

Processing	**Sampling Rate:** 24-bit/48 kHz
Input Connectors	AUDIO IN (1 to 4) jacks (XLR/TRS combo type) * XLR type: 1 GND, 2 HOT, 3 COLD * Phantom Power: DC 48 V (unloaded maximum), 5 mA (maximum load) (Current value per channel). AUDIO IN (5 to 8) jacks (RCA phono type) AUDIO IN (9 to 12) jacks (TRS type)
Output Connectors	AUDIO OUT L, R jacks (XLR-3-32 type) * XLR type: 1 GND, 2 HOT, 3 COLD AUDIO OUT L, R jacks (RCA phono type) PHONES jack (Stereo 1/4-inch phone type) (headphones) PHONES jack (Stereo miniature type) (headphones)
Input Level and Impedance	**XLR/TRS:** -68 to +4 dBu (Maximum: +22 dBu, 4 k ohms) **RCA phono:** -10 dBu (Maximum: +8 dBu, 11 k ohms) **TRS:** +4 dBu (Maximum: +22 dBu, 98 k ohms)
Output Level and Impedance	**XLR:** +22 dBu (Maximum: +22 dBu, 600 ohms) **RCA phono:** -10 dBu (Maximum: +8 dBu, 1 k ohms) **Headphones:** 25 mW + 25 mW, 20 ohms
Effects	**Channel Effects:** Compressor, Noise Gate, 3-Band EQ, Delay **Master Effects:** Mastering, 3-Band EQ, Reverb

OTHERS

Remote	**Remote MIDI:** 5-pin DIN type (IN, OUT/THRU) **RS-232C:** D-sub 9-pin type x 1
Interface	**USB 2.0 port (host):** Hi-Speed USB: Type A (for USB memory) **USB 3.0 port (device):** Type B for USB-VIDEO (Super-Speed/ Hi-Speed), USB-AUDIO (Full-Speed)
Display	7 inch Graphic color LCD 800 x 480 dots (touch screen)
Power Supply	AC Adaptor DC 24 V Secondary AC Adaptor DC 12 V to 16 V (XLR-4-32 type)
Current Draw	2.5 A (DC 24 V)
Dimensions	434 (W) x 306 (D) x 149 (H) mm 17-1/8 (W) x 12-1/16 (D) x 5-7/8 (H) inches
Weight	5.3 kg, 11 lbs 11 oz (without AC Adaptor)
Operation Temperature	+0 to +40 degrees Celsius +32 to +104 degrees Fahrenheit
Accessories	AC Adaptor, Power Cord, Owner's Manual

(0dBu=0.775Vrms)

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

VR-3EX | AV Mixer

An all-in-one AV Mixer with built-in USB port for Web Streaming and Recording

480p/576p HDCP AUDIO EMBEDDING USB2.0 for Video / Audio MIDI VISUAL CONTROL V-LINK

AUDIO MIXER

The VR-3EX features an 18-channel digital audio mixer with built in effects for a wide variety of situations.

Intuitive Panel Layout

Gain, EQ (LO/MID/HI) controls and faders permit intuitive control of channel levels. Pressing the SETUP button for a channel enables more in-depth tuning via the touch screen display.

Rich Selection of Audio Effects

Built-in Equalizers, High-pass Filter, Gate, Compressor, Delay, and Reverb effects can be applied to each audio input channel, enabling a rich mix of sound with powerful impact.*

* CH 5/6, 7/8 and HDMI 1-4 have Equalizers, Delay, and Reverb only.

HDMI Audio Support

The VR-3EX can use the embedded audio from video cameras and other devices connected using HDMI. This makes it possible to work with clear, digital HDMI audio in just the same way as analog audio.

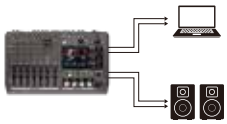
AUDIO EMBEDDING

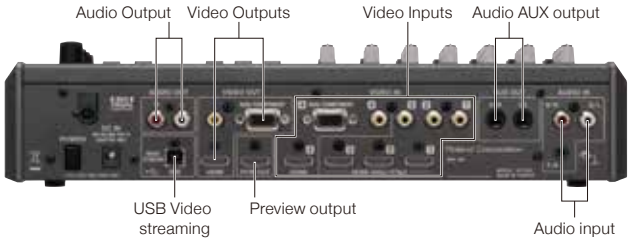
Internal Stereo Microphones

Built-in stereo microphones are located at the top of the case. These let the operator record commentary in his or her own voice or add in spectator cheers and applause to boost ambience.

Two Audio Mix Systems (Main & AUX)

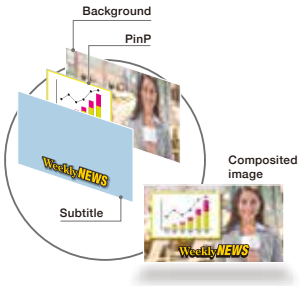
Audio can be mixed and output separately from the main audio. This makes it possible to use the VR-3EX for recording and as a PA system at the same time.





Composition of Text, People, and More

Produce picture-in-picture, lower 3rd or subtitle compositing using a single key button. The VR-3EX is capable of chroma and luminance key composition, enabling video with inserted characters against composited backgrounds.



Diverse Array of Video Effects

The VR-3EX comes with a range of effects for transforming video to match the application. With just the twist of a control, even ordinary camera footage can receive dramatic flair that makes it pop.


NEGATIVE

SEPIA


STROBE


COLOR PASS

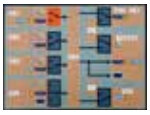
VIDEO FX list
Strobe, Negative, Colorize, Findedge, Silhouette, Monochrome, Sepia, Emboss, Posterize, Color pass, Multi (11 types)

VIDEO MIXER

The video processing engine in the VR-3EX is fully digital and progressive, even when using effect-heavy processing.

Four Video Sources from Nine Input Connectors

The VR-3EX accepts HDMI, RGB component, and composite input over up to nine connectors and seamlessly switches between any four of them. Inputs and outputs are intuitively switchable using the touch-screen or pushbuttons.



Intuitive Touch-screen Monitor

The touch-screen monitor lets the operator switch video and make settings via the on-screen touch display switchable to four-way split input, a single out screen, or simultaneous five-way input and output. Output can also be sent to an external HDMI monitor via the PVW OUT connector.

Simple Inset-screen and Split-screen Display

Various multi-screen display modes can be controlled with a button in the form of PinP using an inset screen positioned as wanted, horizontal or vertical split screen, or four-way split screen.

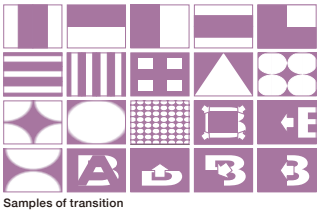

PinP


SPLIT


QUAD

Video Transition Times

A Transition dial lets the operator adjust the time for screen dissolves and wipes to any interval up to four seconds. This makes it easy to achieve slow video transitions that create greater emotional impact.


Samples of transition


Mix

Operating and Backing-up by remote software

You can use the VR-3EX RCS dedicated software to operate and back-up the settings by remote control from a computer connected via USB.

Free download from the Roland website

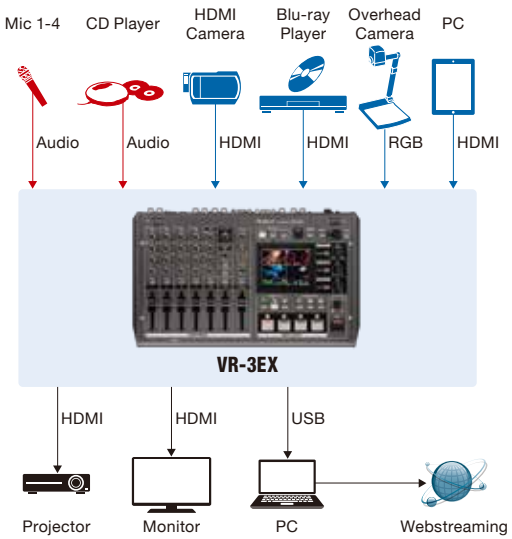
Recording using Windows/Mac

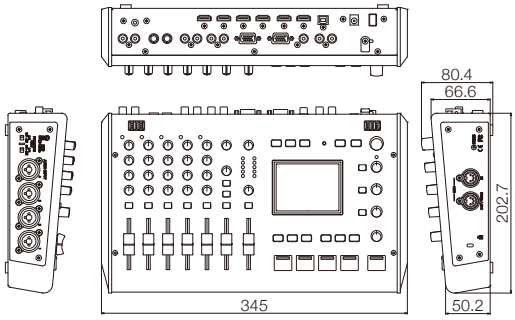
Video Capture for VR is application software that captures video and audio signals output from the VR-3EX USB port and saves them to movie files on a connected Windows/Mac.

Free download from the Roland website

- HDMI & Composite Inputs
- Standard Definition 16:9 Mixing Engine
- Scaled Output up to 1080p
- Advanced 18 Channel Audio Mixer
- USB 2.0 for 480i Streaming
- 2.5” Multiview Touchscreen Monitor
- Picture-in-Picture, Keyer and Video Effects

Application Sample





Unit: mm

SPECIFICATIONS VR-3EX

Video Processing	
Sampling Rate	4:2:2 (Y/Pb/Pr), 8 bits (Internal Processing: 480/59.94p when set to NTSC, 576/50p when set to PAL)
Audio Processing	
Sampling Rate	24 bits/48 kHz
Input Formats	
HDMI Video (VIDEO IN 1–3)	480/59.94p (when set to NTSC) 576/50p (when set to PAL)
HDMI Video (VIDEO IN 4)	480/59.94i, 480/59.94p, 720/59.94p, 1080/59.94i, 1080/59.94p (when set to NTSC) 576/50i, 576/50p, 720/50p, 1080/50i, 1080/50p (when set to PAL)
HDMI Audio (VIDEO IN 1–4)	Linear PCM, 24 bits/48 kHz, 2 ch
RGB/Component (VIDEO IN 4)	640 x 480/60 Hz, 800 x 600/60 Hz, 1024 x 768/60 Hz, 1280 x 768/60 Hz, 1280 x 1024/60 Hz, 1366 x 768/60 Hz, 1400 x 1050/60 Hz, 1600 x 1200/60 Hz, 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
Composite Video (VIDEO IN 1–4)	NTSC, PAL
Output Formats	
HDMI and RGB/Component Video (VIDEO 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 640 x 480, 800 x 600, 1024 x 768, 1280 x 768, 1280 x 1024, 1366 x 768, 1400 x 1050, 1600 x 1200, 1920 x 1200 * The 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 refresh rates of RGB format is 60 Hz when set to NTSC, 75 Hz when set to PAL (excluding 1600 x 1200 and 1920 x 1200. The refresh rate of these 2 is 75 Hz when set to PAL.) * RGB formats: Conforms to VESA DMT Version 1.0 Revision 11. * 1920 x 1200/60 Hz: Reduced blanking
HDMI Audio (VIDEO OUT)	Linear PCM, 24 bits/48 kHz, 2 ch
Composite Video (VIDEO OUT)	NTSC, PAL
Preview Video (PVW OUT)	480/59.94p when set to NTSC 576/50p when set to PAL
Preview Audio (PVW OUT)	Linear PCM, 24 bits/48 kHz, 2 ch
USB Video	720 x 480 when set to NTSC, 720 x 576 when set to PAL, Motion JPEG
USB Audio	Linear PCM, 16 bits/48 kHz, 2 ch
Input Connectors	
Video	VIDEO IN 1–4 (HDMI: Type A 19 pins) VIDEO IN 4 (RGB/Component: HD DB-15 type) VIDEO IN 1–4 (Composite: RCA phono Type)
Audio	AUDIO IN 1–4 (XLR/TRS combo type, phantom power) AUDIO IN 5--6 (Stereo RCA phono type) AUDIO IN 7/8 (Stereo miniature type) MIC (Internal stereo microphones)
Phantom Power	DC 48 V (unloaded maximum), 10 mA (maximum load) * Current value per channel
Output Connectors	
Video	VIDEO OUT (HDMI: Type A 19 pins) VIDEO OUT (RGB/Component: HD DB-15 type) VIDEO OUT (Composite: RCA phono type) PVW OUT (HDMI: Type A 19 pins)
Audio	AUDIO OUT L, R (Stereo RCA phono type) AUX OUT L, R (Stereo 1/4-inch phone type) PHONES (1/4-inch phone type) (headphones) PHONES (Stereo miniature type) (headphones)
Other Connectors	
MIDI	5 pins DIN type x 2 (IN, OUT/THRU)
USB	B type x 1 (for streaming and remote control)
Others	
Display	Graphic Color LCD, 320 x 240 dots, touch panel
Video Effects	**Transition:** Cut, Mix (3 patterns), Wipe (250 patterns) **VIDEO FX:** Strobe, Negative, Colorize, Findedge, Silhouette, Monochrome, Sepia, Emboss, Posterize, Color pass, Multi (11 types) **Composition:** Picture in Picture, Split, Quad, Luminance Key, Chroma Key **Others:** Output Fade, Freeze
Power Supply	AC Adaptor
Current Draw	2.3 A
Dimensions	345 (W) x 203 (D) x 80 (H) mm 13-5/8 (W) x 8 (D) x 3-1/8 (H) inches
Weight excl. AC adaptor	2.3 kg 5 lbs 2 oz
Accessories	AC Adaptor, Power Cord, Owner's Manual

(0dBu=0.775Vrms)

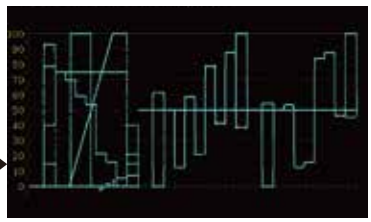
VC-1 series | Video Converters

Uncompromising commitment to picture quality

The VC-1 series faithfully converts the original source with no change in color or brightness. It supports super-blacks and super-whites, and converts video from cameras and other source devices maintaining all aspects of the original source.

Color bar signal

[Vector scope]
Faithful conversion of color phase and chroma



[Waveform monitor]
Faithful conversion from super-blacks to super whites

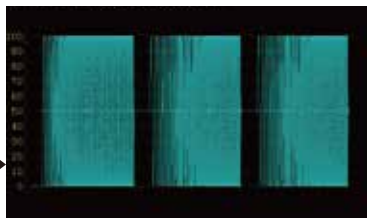
Lossless

Faithful reproduction of video characteristics

The VC-1 series reproduces the video characteristics of the original source with no interlace artifacts, pixel shifting, or other conversion problems or signal errors. Jitter and return loss are at absolute minimal levels.

Burst signal

Lossless

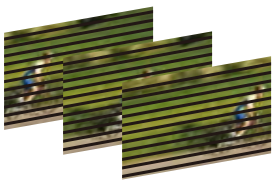


[Waveform monitor]
Perfect conversion of frequency character

Support for 1080p 3G-SDI

Video signals beyond 1080i can be input and output. The VC-1 series supports both level A and level B 3G-SDI, letting you connect a wide variety of 3G-SDI equipment. 1080i, 720p, and SD signals are accommodated also automatically on connection.

3G bps 1080/60p



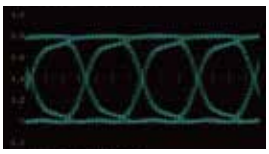
Interlaced (1080/60i)

Progressive (1080/60p)

On-board reclocker

The VC-1 series features an on-board reclocker to compensate for attenuation of SDI signals carried over long distances. This makes it possible to receive camera-relay video while maintaining a high image quality.

Signal before reclocking



Reduction of jitter

Support for HDCP HDMI signals

The VC-1 series is compliant with HDCP. For example, the VC-1-DL can take HDCP-applied HDMI input signals, apply frame synchronization or delay, and produce HDCP-applied HDMI output. This allows the VC-1 series to be used in any HDCP-based system with no worries.

* HDCP-applied HDMI signals cannot be converted to SDI and recorded to HDMI recorders and editors.

HDCP

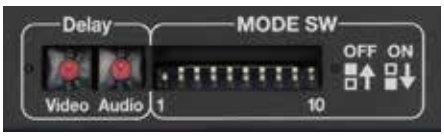
Support for workflow combining audio and video

Audio embedding and de-embedding features are provided (channel-selectable) in the VC-1 Series. The audio embedding feature lets you place audio signals from a different source into the video output. For example, when converting an SDI signal to HDMI, you can use the audio embedding feature to output high-quality audio from any of the SDI audio channels. Digital (AES/EBU) input and output are also supported, letting you exchange sound between professional audio equipment with no degradaton in signal. Analog input and output is supported as well making it possible to both monitor and input audio to/from a wide variety of equipment such as an audio console.

AUDIO EMBEDDING

Easy configuration with DIP switches or dedicated PC/Mac software app

DIP switches make it simple to accommodate on-site adjustments. Change the conversion direction or other settings by simply sliding a DIP switch on the side of the unit. Delay Dials (VC-1-DL only) set the amount of delay for video and audio. Set the amount of delay independently for video and audio in a range of 0 to 9 fields (0 to 4.5 frames). Connection to a computer via USB cable unlocks even greater versatility with advanced settings including a memory location to lock in a favorite configuration. Control and configure multiple VC-1 units at the same time using a USB hub.



Delay Dials (VC-1-DL only) and DIP switches on side panel

VC-1 RCS

* The VC-1 RCS for PC/Mac can be downloaded from **www.roland.com**

SPECIFICATIONS VC-1 series

			 VC-1-SH SDI to HDMI	 VC-1-HS HDMI to SDI	 VC-1-DL FS Delay	 VC-1-SC Scan Converter
Input	SDI		Yes	-	Yes	Yes * Selectable IN/OUT
	HDMI		-	Yes	Yes	Yes
	RGB/Component		-	-	-	Yes
	Composite		-	-	-	Yes
	Analog Audio		Yes	Yes	Yes	Yes * Selectable IN/OUT
	Digital Audio		Yes * Selectable Analog/Digital	Yes * Selectable Analog/Digital	Yes * Selectable Analog/Digital	-
	Reference		-	-	Yes	Yes
Output	SDI		Yes * Selectable THRU/OUT	Yes	Yes	Yes * One of two is selectable IN/OUT
	HDMI		Yes	Yes * Selectable THRU/OUT	Yes	Yes
	Analog Audio		Yes	Yes	Yes	Yes * Selectable IN/OUT
	Digital Audio		Yes * Selectable Analog/Digital	Yes * Selectable Analog/Digital	Yes * Selectable Analog/Digital	-
Format	SDI	Video Format	[Input/Output] 1920 x 1080/60p/59.94p/50p/30p/29.97p/25p/24p/23.98p/60i/59.94i/50i, 1280 x 720/60p/59.94p/50p/30p/29.97p/25p, 720 x 487/59.94i, 720 x 576/50i			[Input] 1920 x 1080/60p/59.94p/50p/30p/29.97p/25p/24p/23.98p/ 60i/59.94i/50i/30PsF/29.97PsF/25PsF/24PsF/23.98PsF, 720 x 487/59.94i, 720 x 576/50i, 1280 x 720/60p/59.94p/50p/30p/29.97p/25p/24p/23.98p [Output] 1920 x 1080/59.94p/50p/59.94i/50i, 1280 x 720/59.94p/50p, 720 x 487/59.94i, 720 x 576/50i
		Color Format	10 bits YCC 4:2:2			
		Audio Format	Linear PCM, 24 bits, 48 kHz, 16 ch *1			
	HDMI	Video Format	[Input/Output] 1920 x 1080/60p/59.94p/50p/30p/29.97p/25p/24p/23.98p/60i/59.94i/50i, 1280 x 720/60p/59.94p/50p/30p/29.97p/25p, 720 x 480/59.94i, 720 x 576/50i			[Input] 1920 x 1080/60p/59.94p/50p/30p/29.97p/25p/24p/23.98p/60i/59.94i/50i, 1280 x 720/60p/59.94p/50p/30p/29.97p/25p/24p/23.98p, 720 x 480/59.94p/59.94i, 720 x 576/50p/50i, 640 x 480/60/72/75/85 Hz, 800 x 600/56/60/72/75/85 Hz, 1024 x 768/60/70/75/85 Hz, 1280 x 768/60/75/85 Hz, 1360 x 768/60 Hz, 1152 x 864/75 Hz, 1400 x 900/60/75/85 Hz, 1280 x 960/60/85 Hz, 1280 x 1024/60/75/85 Hz, 1400 x 1050/60/75 Hz, 1680 x 1050/60 Hz, 1600 x 1200/60 Hz, 1920 x 1200/60 Hz: Reduced blanking [Output] 1920 x 1080/59.94p/50p/59.94i/50i, 1280 x 720/59.94p/50p, 720 x 480/59.94i, 720 x 576/50i
		Color Format	10 bits YCC 4:2:2, 8 bits YCC 4:4:4, 8 bits RGB 4:4:4			
		Audio Format	Linear PCM, 24 bits, 48 kHz, 8 ch *1			
	RGB/ Component	Video Format	-	-	-	[Input] 1920 x 1080/60p/59.94p/50p/60i/59.94i/50i/24PsF/23.98PsF, 1280 x 720/60p/59.94p/50p, 720 x 480/59.94p/59.94i, 720 x 576/50p/50i, 640 x 480/60/72/75/85 Hz, 800 x 600/56/60/72/75/85 Hz, 1024 x 768/60/70/75/85 Hz, 1280 x 768/60/75/85 Hz, 1360 x 768/60 Hz, 1152 x 864/75 Hz, 1400 x 900/60/75/85 Hz, 1280 x 960/60/85 Hz, 1280 x 1024/60/75/85 Hz, 1400 x 1050/60/75 Hz, 1680 x 1050/60 Hz, 1600 x 1200/60 Hz, 1920 x 1200/60 Hz: Reduced blanking
	Composite	Video Format	-	-	-	NTSC, PAL
Processing	Audio embedding/de-embedding		Yes	Yes	Yes	Yes
	Video Delay		-	-	0 to 4.5 frames	-
	Audio Delay		-	-	0 to 4.5 frames	-
	Frame Synchronize		-	-	Yes	Yes
	Up/Down/Cross, Frame Rate*2, I/P, Aspect Ratio Conversion		-	-	-	Yes
Control Software			VC-1 RCS for Win/Mac			
Others	USB Connector		USB Type B (Hi-Speed USB) x 1			
	Power Supply		DC 9 V (AC Adaptor)			
	Power Consumption		8 W	8 W	8 W	18 W
	Dimensions		150 (W) × 130 (D) × 30 (H) mm, 5-15/16 (W) x 5-1/8 (D) x 1-3/16 (H) inches			
	Weight		500 g (without AC Adaptor), 1 lb 2 oz			
	Operation Temperature		+0 to +40 degrees Celsius			
	Accessories		AC Adaptor, Power Cord, Rubber Foot x 4, Owner's Manual			

(0dBu=0.775Vrms)

*1: VC-1-DL: When frame synchronizer is working, CH 3-8 of HDMI and CH 3-16 of SDI audio output are not available. VC-1-SC: CH 3-8 of HDMI and CH 3-16 of SDI audio output are not available.
*2: Frame skip/repeat type
The VC-1 series support HDCP (High-bandwidth Digital Content Protection system). When an HDCP-applied signal is input, output is possible from only the HDMI OUT connector. Output from the SDI OUT connector and AUDIO OUT connectors is stopped.

VC-1 series

Awarding-winning multi-format conversion technology concentrated in a simplified mini-converter

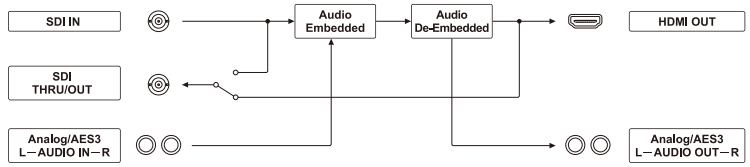
VC-1-SH | SDI to HDMI

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



MODE DIP SW

NO	MODE	OFF	ON
10	CONTROL	MODE SW	MEMORY
9	HDCP Encrypt	OFF	ON
8	SDI THRU/OUT	THRU	OUT
7 6	AUDIO OUT De-Embedded Ch Sel	1 + 2 / 3 + 4	5 + 6 / 7 + 8
5	SDI Audio Group	G1/G2	G3/G4
4 3	AUDIO IN Embedded Ch Sel	1 + 2 / 3 + 4	5 + 6 / 7 + 8
2	AUDIO IN Embedding	OFF	ON
1	AUDIO IN/OUT Type	Analog	AES3

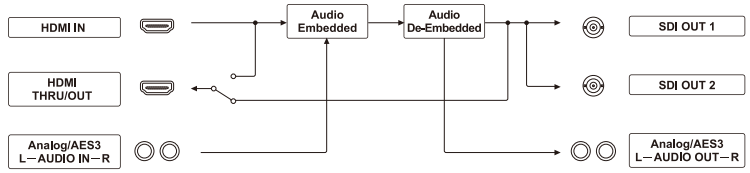
VC-1-HS | HDMI to SDI

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



MODE DIP SW

NO	MODE	OFF	ON
10	CONTROL	MODE SW	MEMORY
9	3G-SDI Type	Level A	Level B
8	HDMI THRU/OUT	THRU	OUT
7 6	AUDIO OUT De-Embedded Ch Sel	1 + 2 / 3 + 4	5 + 6 / 7 + 8
5	SDI Audio Group	G1/G2	G3/G4
4 3	AUDIO IN Embedded Ch Sel	1 + 2 / 3 + 4	5 + 6 / 7 + 8
2	AUDIO IN Embedding	OFF	ON
1	AUDIO IN/OUT Type	Analog	AES3

VC-1-DL | FS Delay

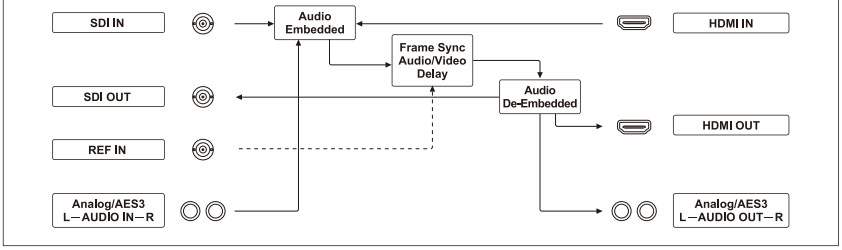
3G bps 1080/60p | Lossless | HDCP | AUDIO EMBEDDING

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



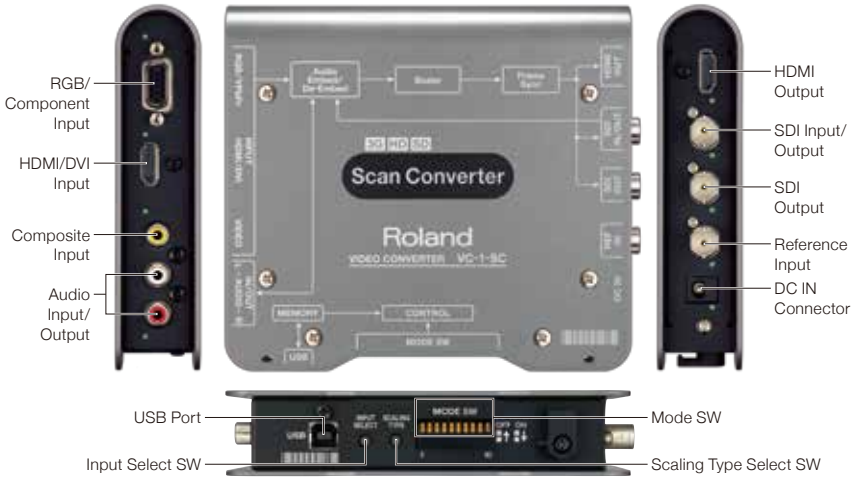
MODE DIP SW

NO	MODE	OFF		ON	
10	CONTROL	MODE SW		MEMORY	
9	3G-SDI Type	Level A		Level B	
8	Input Select	SDI IN		HDMI IN	
7 6	AUDIO OUT De-Embedded Ch Sel	1 + 2	3 + 4	5 + 6	7 + 8
5	SDI Audio Group	G1/G2		G3/G4	
4 3	AUDIO IN Embedded Ch Sel	1 + 2	3 + 4	5 + 6	7 + 8
2	AUDIO IN Embedding	OFF		ON	
1	AUDIO IN/OUT Type	Analog		AES3	
	Audio Delay	x0.5 Frame (x1.0 Field)			
	Video Delay	x0.5 Frame (x1.0 Field)			

VC-1-SC | Scan Converter

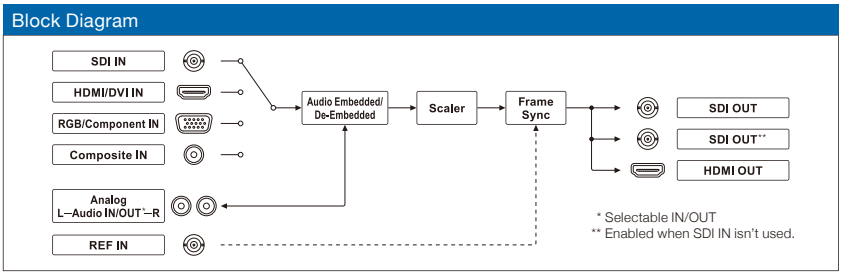
3G bps 1080/60p | HDCP | AUDIO EMBEDDING

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
  * Frame skip/repeat type
- Audio embedding or De-embedding
- VC-1 RCS, Dedicated PC/Mac Software App

Block Diagram



MODE DIP SW

NO	MODE	OFF		ON	
10	CONTROL	MODE SW		MEMORY	
9	3G-SDI Type	Level A		Level B	
8	NTSC Setup	0 IRE		7.5 IRE	
7 6	Output Format	SD	720p	1080i	1080p
5	Output Frame Rate	59.94 Hz		50 Hz	
4 3	AUDIO Embedded/ De-Embedded Ch Sel	1 + 2	3 + 4	5 + 6	7 + 8
2	SDI Audio Group	G1/G2		G3/G4	
1	Analog AUDIO	IN		OUT	

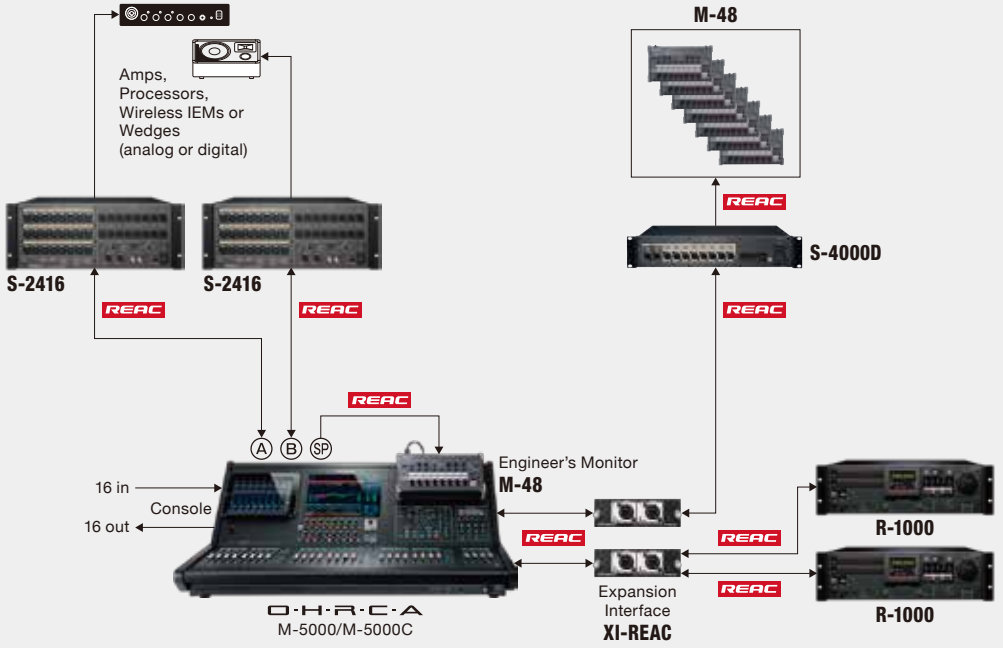
Live Mixing FOH/Monitor

The ability to change its configuration allows the M-5000 to excel at both FOH and monitor positions.

All-in-One FOH and Monitor

O·H·R·C·A

This is an example that shows how to mix from FOH position while monitoring personal mixers, complete with soundcheck/playback.



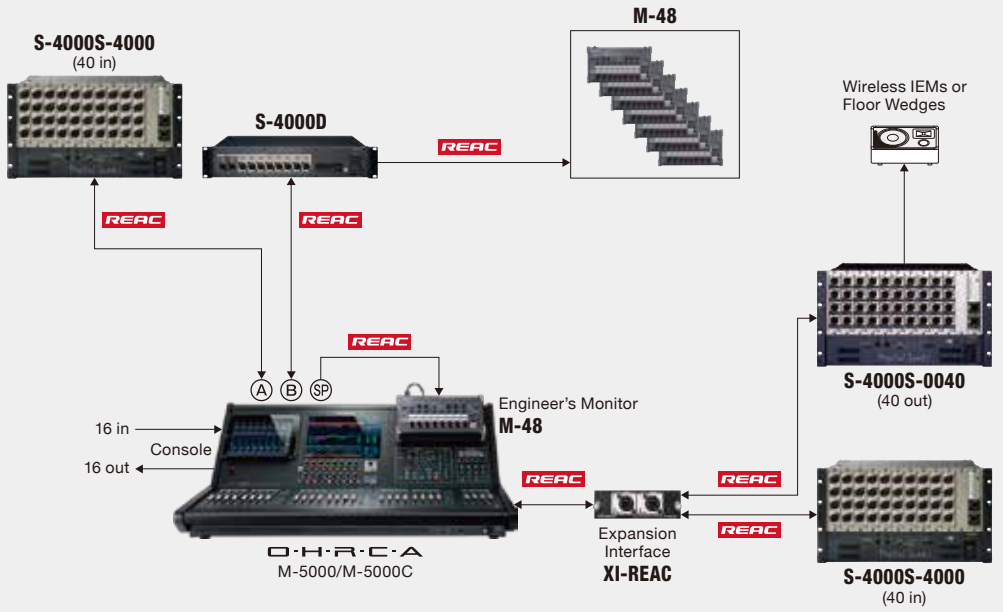
Analog: 64 inputs x 48 outputs
Digital: 20 inputs x 20 outputs

INPUT CHANNEL	68
MAIN	3
SUBGROUP	8
AUX	17
MIX-MINUS	0
MATRIX 16 X	6
MONITOR	4
COMM	0
OSC	1
HEADPHONES	1
DCA	24
MUTE GROUP	8
SOLO	2
REMAINING RESOURCES: 20	

Hybrid Monitor

O·H·R·C·A

This example illustrates how to monitor conventional IEMs/wedges and personal mixers from one position.



Analog: 96 inputs x 56 outputs
Digital: 4 inputs x 4 outputs

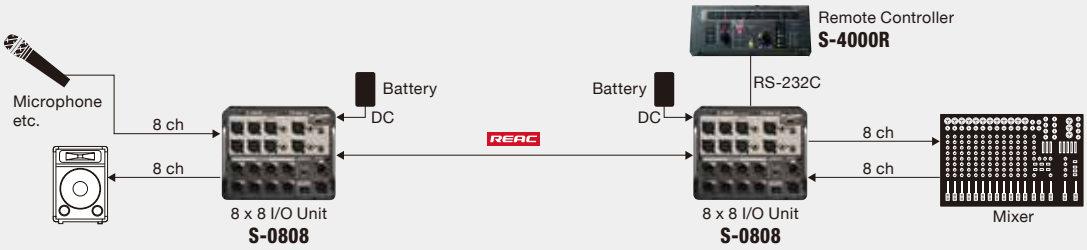
INPUT CHANNEL	80
MAIN	0
SUBGROUP	0
AUX	38
MIX-MINUS	0
MATRIX 16 X	2
MONITOR	4
COMM	1
OSC	0
HEADPHONES	2
DCA	24
MUTE GROUP	8
SOLO	2
REMAINING RESOURCES: 1	

Audio Production/Broadcasting

The V-Mixing System/Digital Snake System improves sound quality, reduces configuration complexity, and adds breakthrough capabilities.

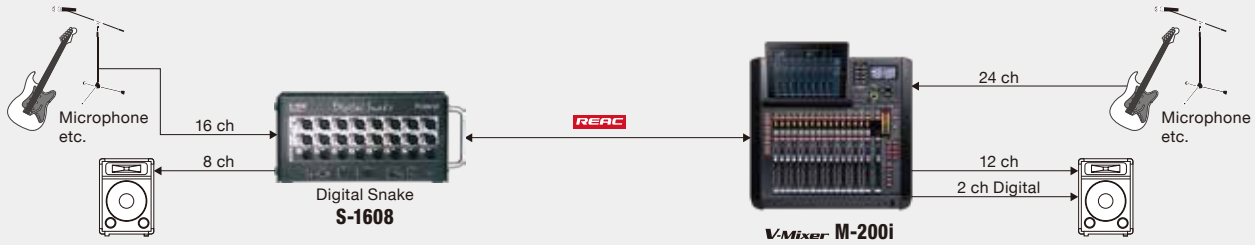
Location Sound - Digital Snake System 8 x 8 Ch with battery operation

An 8 x 8 Ch Digital Snake system enables high quality audio transmission with an easy setup. This system is ideal when AC power is not convenient or available.



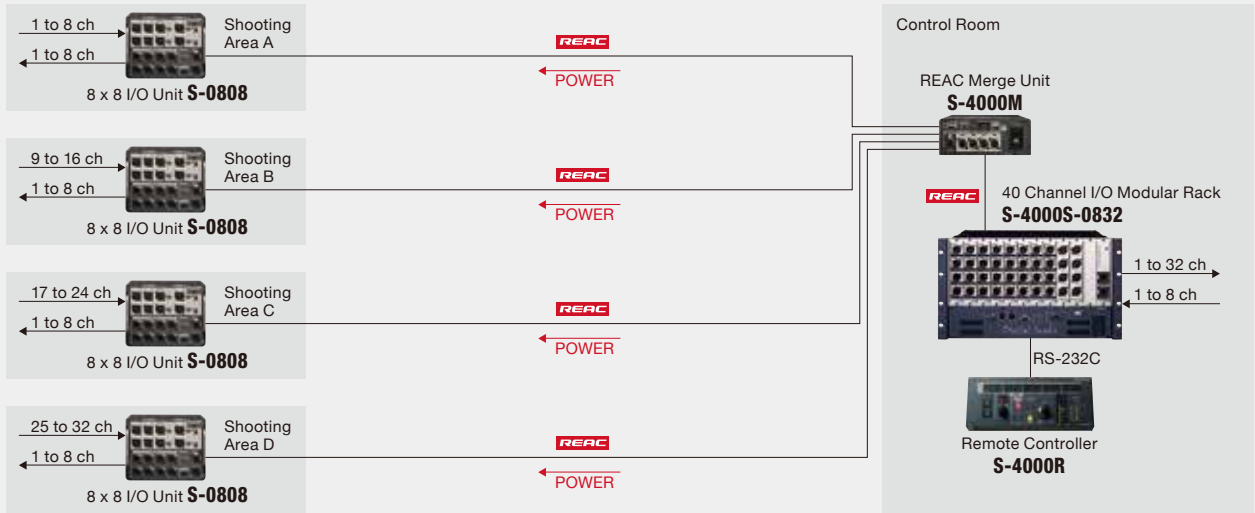
Live Event - Compact V-Mixing System – 40 Inputs/22 Outputs

16 mic/line inputs, 8 line inputs, 2 main outputs, and 10 assignable outputs are all included in the M-200i. Connect a Digital Snake to the REAC port to expand the number of inputs and outputs.



Broadcasting System with Multiple Locations

This system allows I/O to be placed in 4 separate locations using S-0808s. The signals from the 4 units are merged by the S-4000M as it travels to the S-4000S-0832 breakout location. Power to each of the S-0808s is supplied by the embedded power over REAC from the S-4000M.

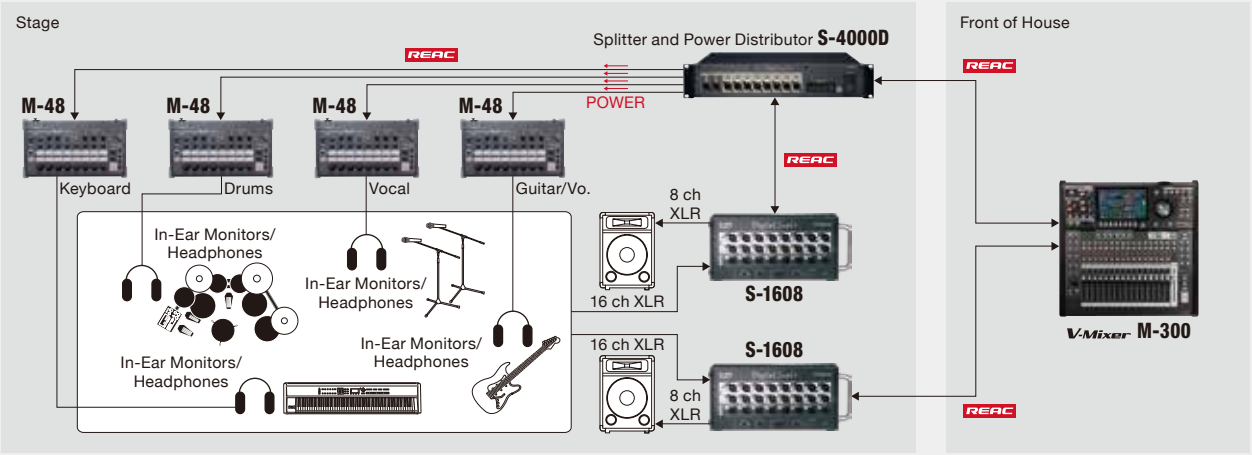


Personal Mixing

M-48 Live Personal Mixing System offers each musician the flexibility to control exactly what they want to listen to during their performance.

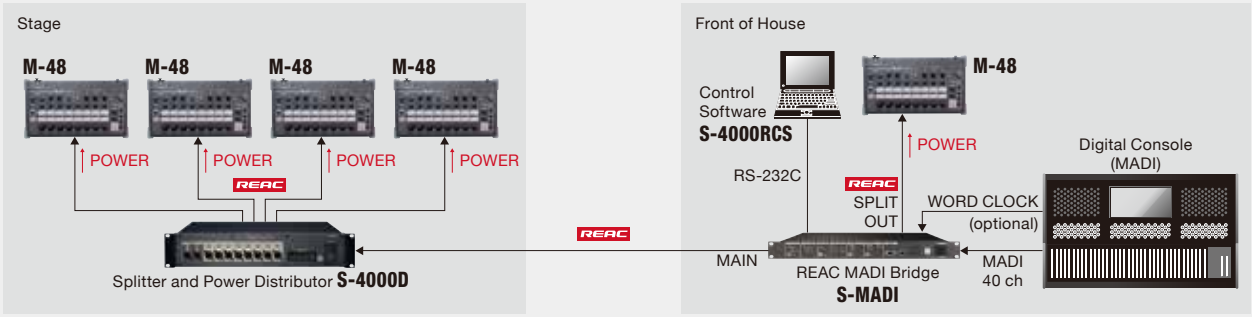
Personal Mixing Setup with V-Mixer

The M-48 enables control of up to 40 audio sources that can be managed via 16 stereo groups - assignable and unique per musician. Any V-Mixer can setup and control multiple M-48s via the S-4000D.



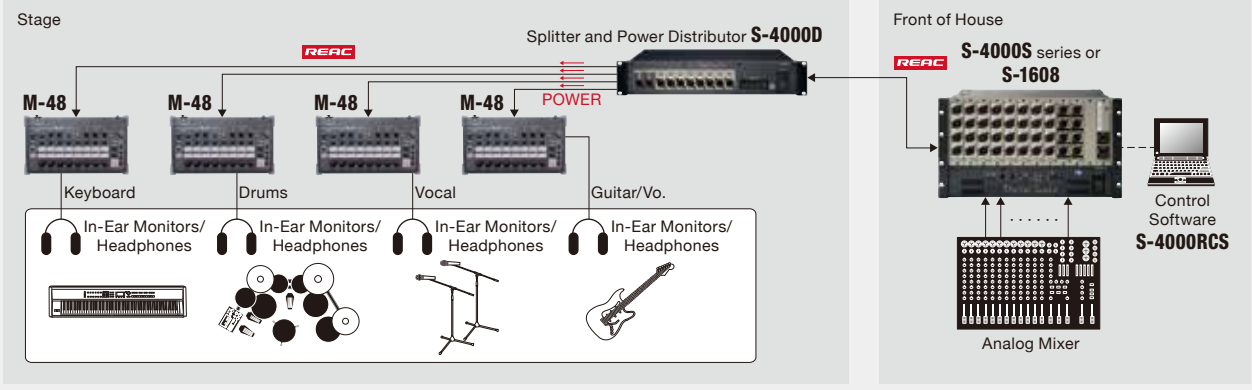
Personal Mixing Setup with Other Digital Consoles

Connect several M-48 Live Personal Mixers to a MADI equipped digital console. An additional M-48 can be connected to the SPLIT OUT port on the S-MADI that also supplies power - all over one Cat5e cable.



Personal Mixing Setup with Analog Mixers

With your existing analog console, connect the M-48 along with the S-1608 (16 channel) or the S-4000S (40 channel) Digital Snake to utilize the complete system. The M-48 Live Digital Mixing System can be incorporated into your existing audio setup.

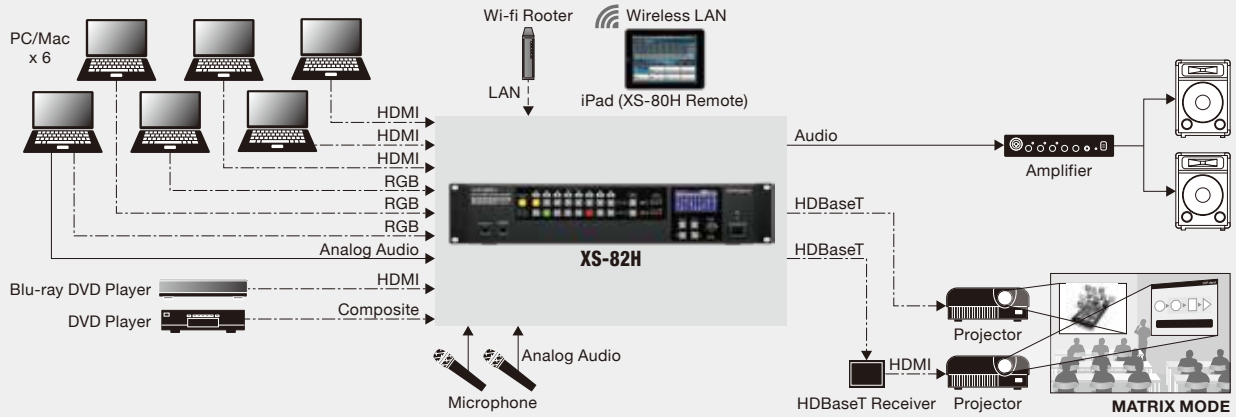


Fixed Installation

All Roland Multi-format matrix switchers provide an compact all-in-one video and audio system for installation applications.

Conference Rooms

The XS series can perform switching for up to eight computers and video devices. Systems comprising mixed digital and analog sources can be configured. In addition to audio from the HDMI input, eight analog audio sources can be mixed. With built-in audio following video function, PEQ and Compressor, you don't need additional audio mixer.



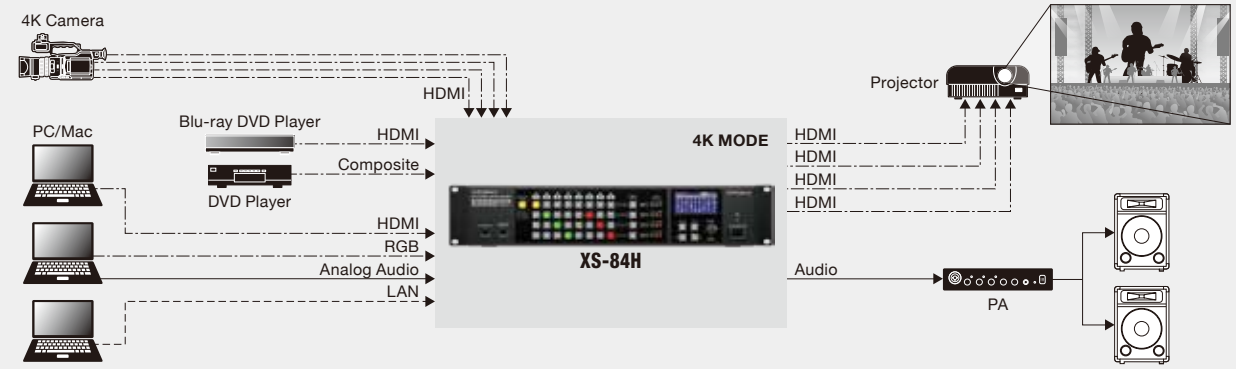
Classrooms

The XS series is equipped with a processor that enables compositing functions. The Multi Mode allows compositing video signals from cameras and computers, which is convenient for recording E-learning contents as well as switching HDCP protected HDMI signals from computers or Blu-ray players. Still-images can be saved in internal memory which makes it possible to display a school logo while in standby with no inputs connected.

* HDMI output with HDCP is not compatible with recorders.

4K Switching

The XS-84H is capable of switching four video lines as a group, which enables configuration of a 4K system. Switching a mixture of video feeds that includes 4K, HD, SD sizes as well as XGA and other computer video formats is also possible.



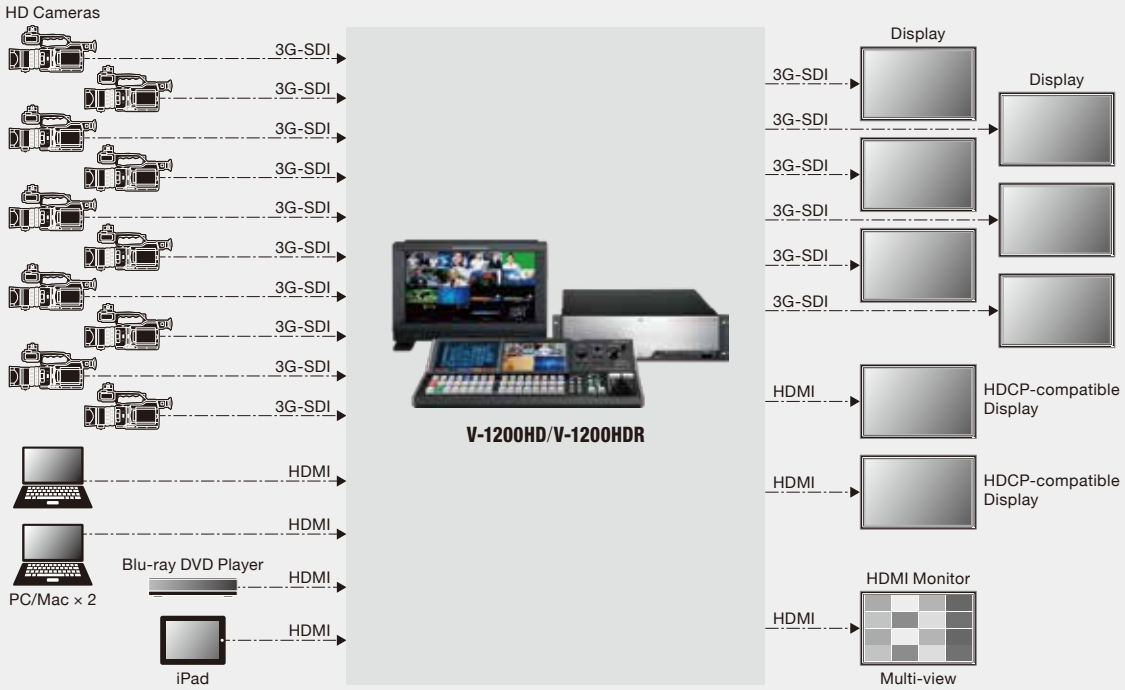
Large-scale Video Production

Roland's line-up of video switchers enable large, high-quality video production systems, such as SDI systems with multiple outputs and conventions or corporate presentations with lots of HDMI or RGB devices and support of multiple output destinations.

HD Video Production with Multiple Outputs

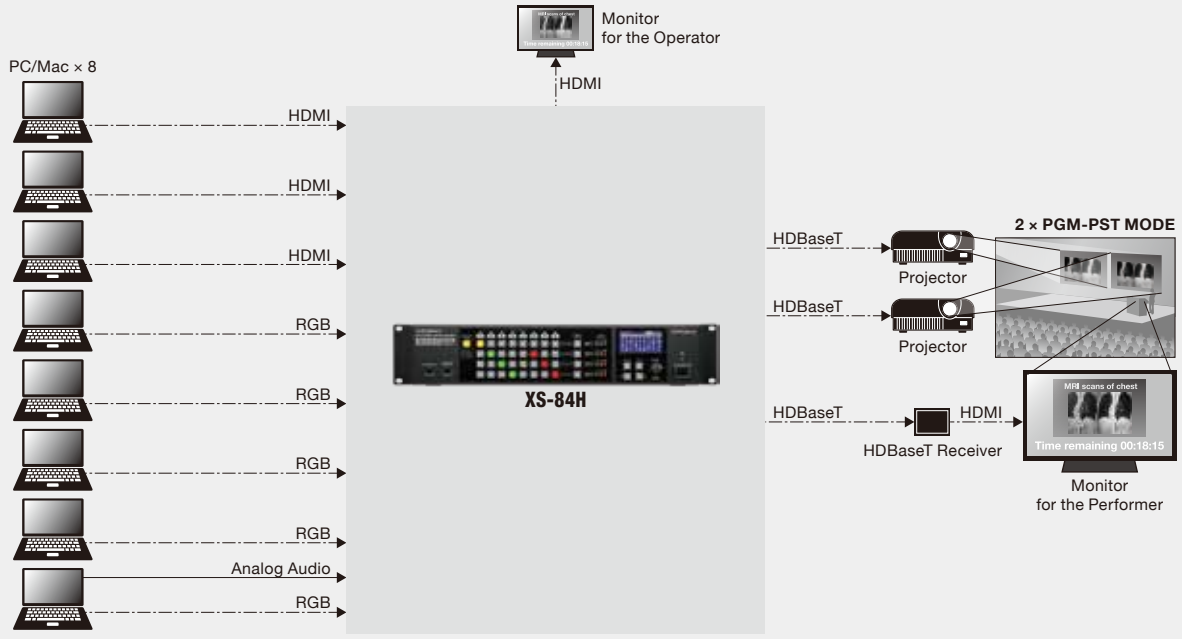
In addition to ten 3G/HD/SD-SDI inputs and four HDMI inputs, the V-1200HD is also equipped with six SDI outputs and two HDMI outputs. Each output has its own output fade-to-black. Input and Output of HDCP-protected HDMI signals are also possible.

* HDCP connections are only supported for sources connected to HDMI inputs 3 and 4 and output from HDMI outputs 3 and 4.



Conventions

The XS series is equipped with eight HDMI inputs and eight RGB inputs offering support for large conventions and events. The 2×PGM-PST mode enables the XS-84H to switch two output destinations with a dissolve sharing a single preview output. The fourth output is available to provide an confidence monitor for the performer or presenter on stage.

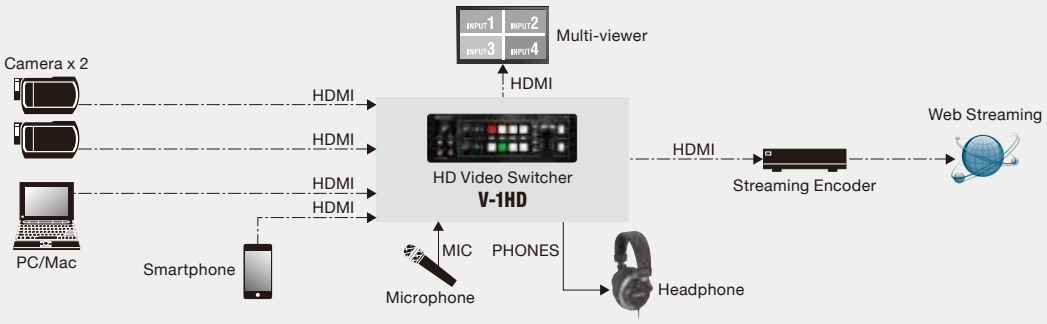


Web Streaming and Capture/Archiving

Integrating Roland Professional Audio and Video products together enables unique and flexible solutions suitable for many applications.

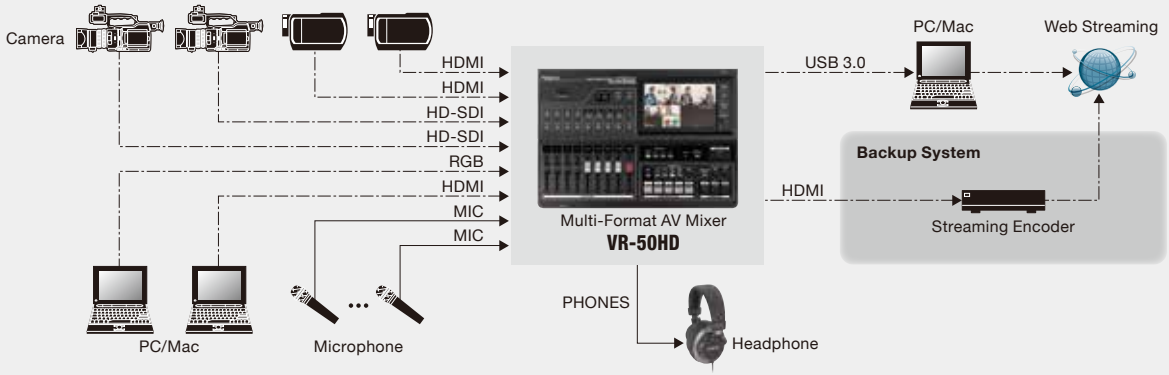
Compact HD Web Streaming

The V-1HD can achieve a HD web streaming system at 1080p in a compact size.



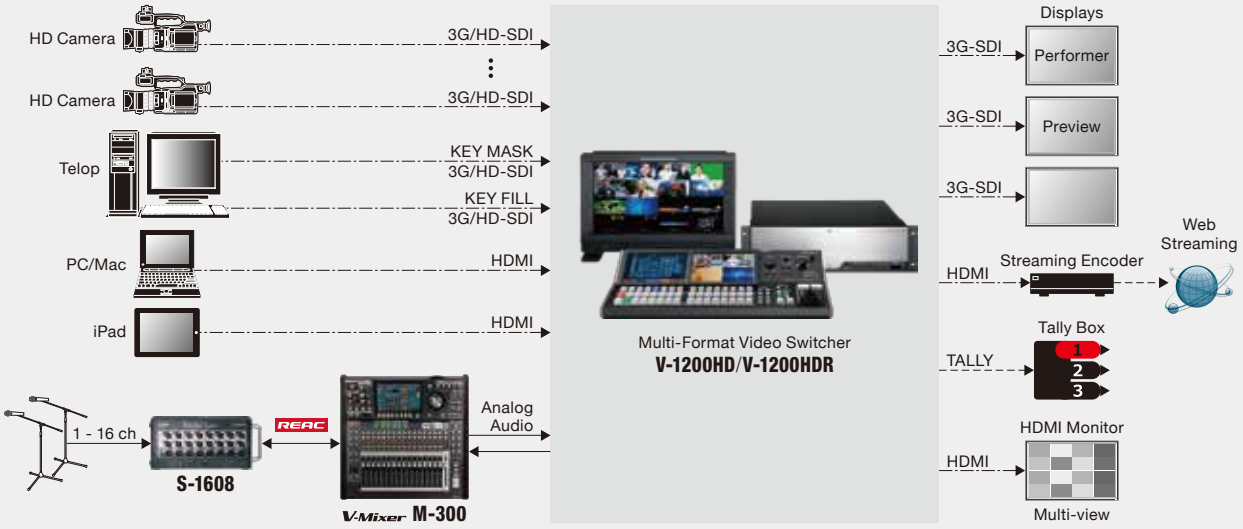
HD Web Streaming (Up to four cameras)

The VR-50HD all-in-one AV mixer provides a simple and space-saving web streaming system.



HD Video Production with Live Broadcasting (More than five cameras)

This is an example of standard live broadcasting studio with more than five cameras and telop. Multiple outputs allow extra program out for the studio. What's more, you can input background music or other audio sources into the V-1200HD, mix, sync and embed the audio with the video and then output the result via HDMI or SDI.

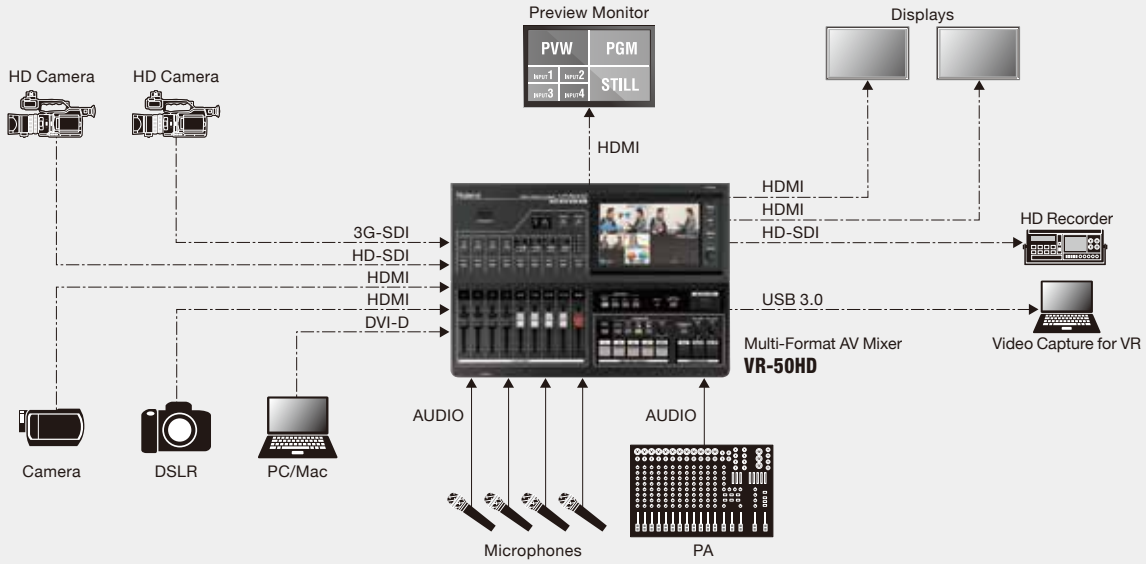


Video Recording

Roland offers solutions that are ideal for portable, high quality and extended video recording applications.

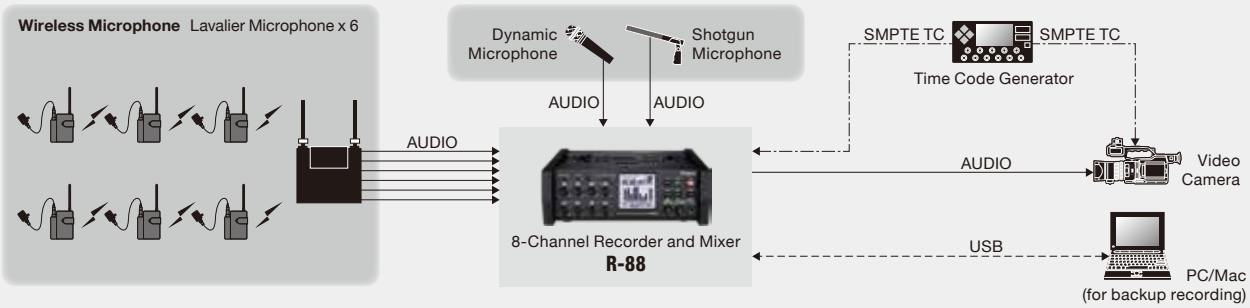
Live Event Recording

This example illustrates affordable and reliable HD video recording of live events.



Location Sound

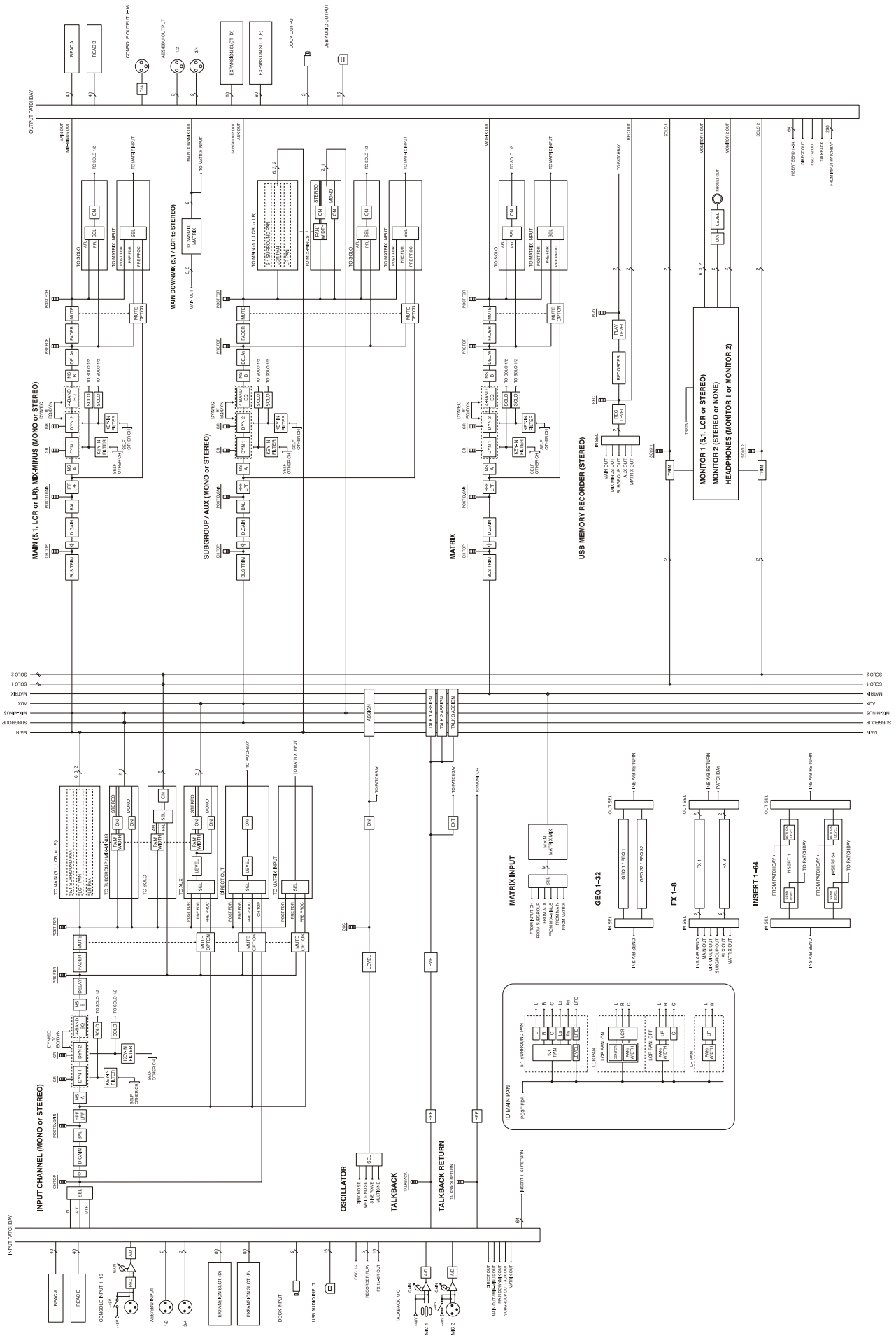
Beyond field applications the R-88 is nicely suited for post-production environments featuring a built-in 10-input/8-output USB audio interface for multi-channel recording. The interface function is also able to provide a backup record solution simultaneously recording all sources to a DAW of choice.



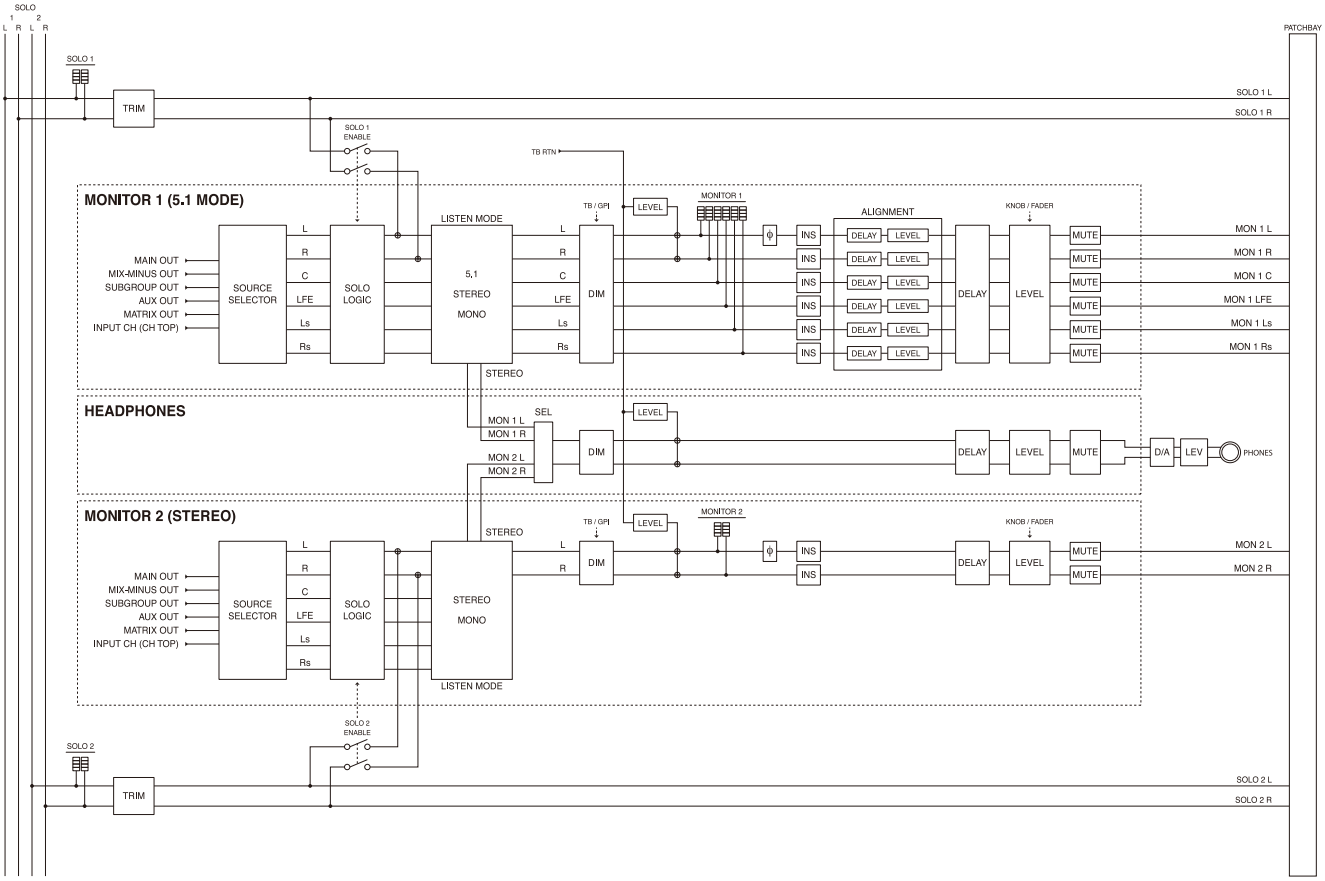
Conference Recording

This example is a typical setup for recording conferences. The R-44 captures four channels of uncompressed audio from table microphones. The recorded audio can then be transferred via USB to a PC/Mac to burn CD's or transfer to flash drives for attendees.

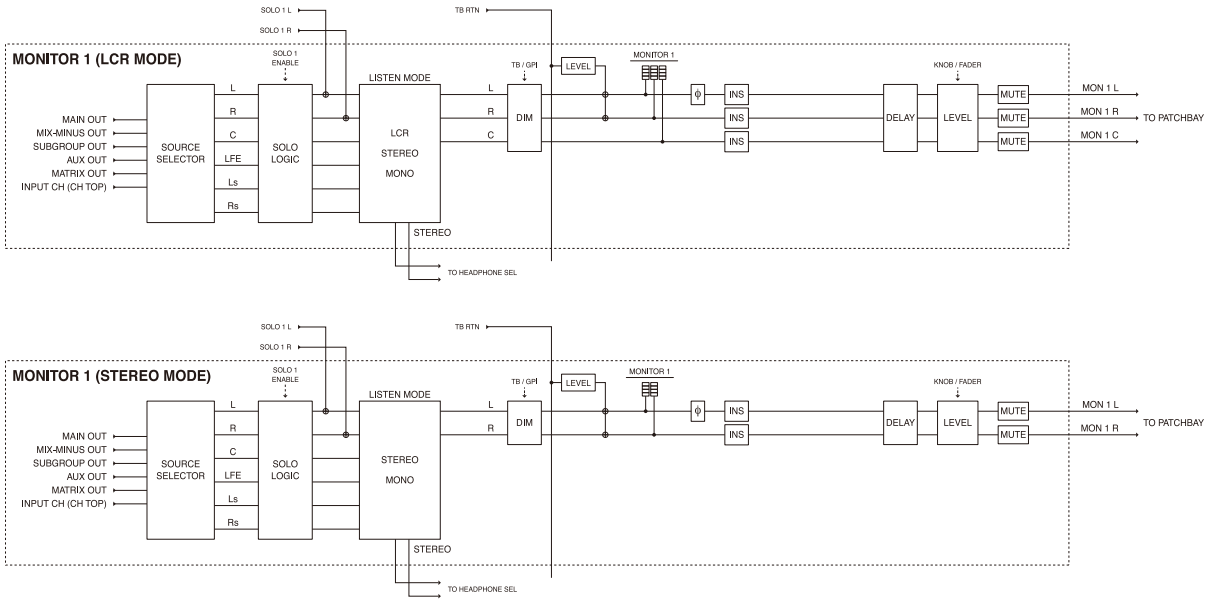
M-5000/M-5000C Block Diagram



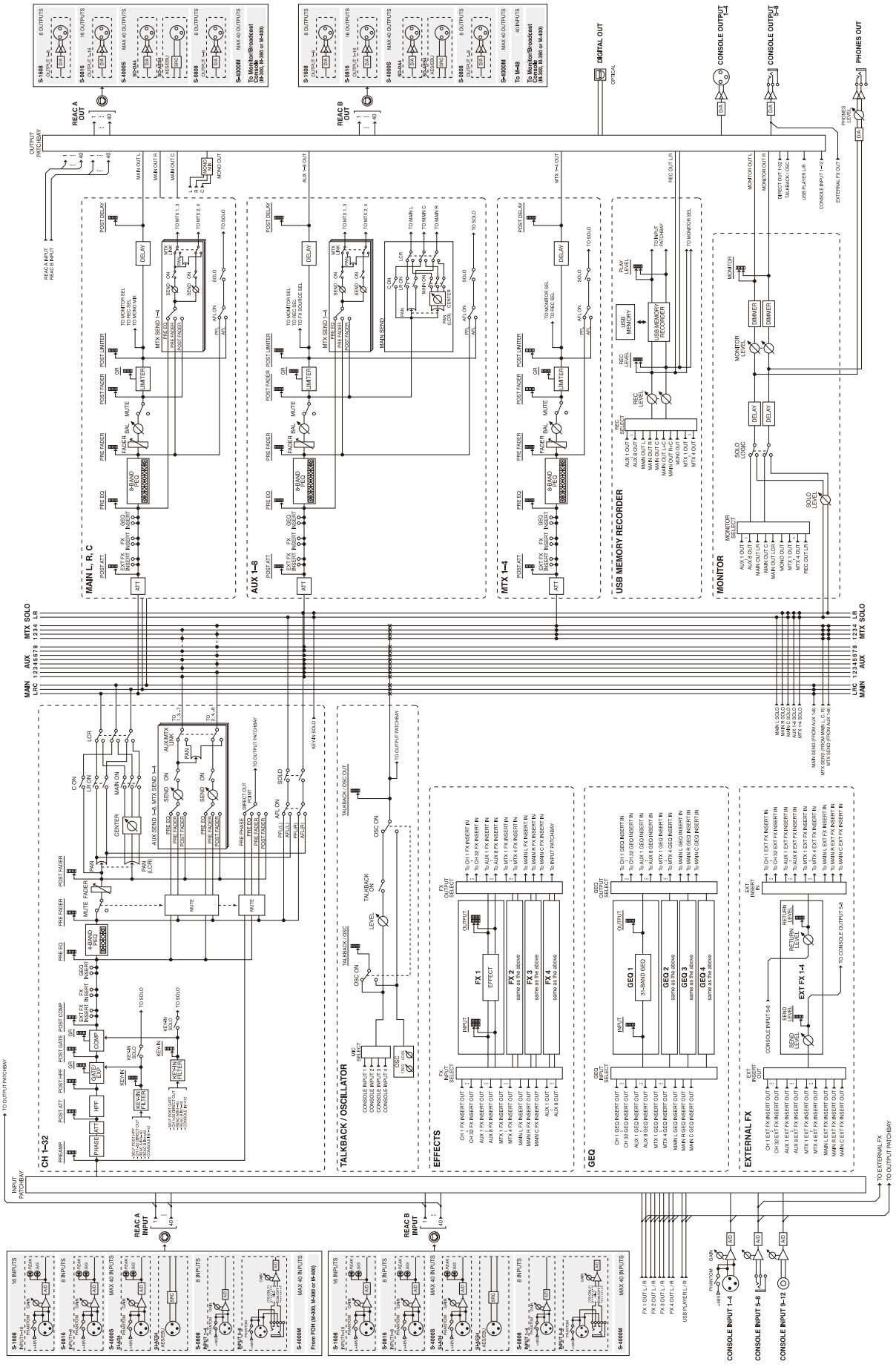
M-5000/M-5000C Monitor Block Diagram



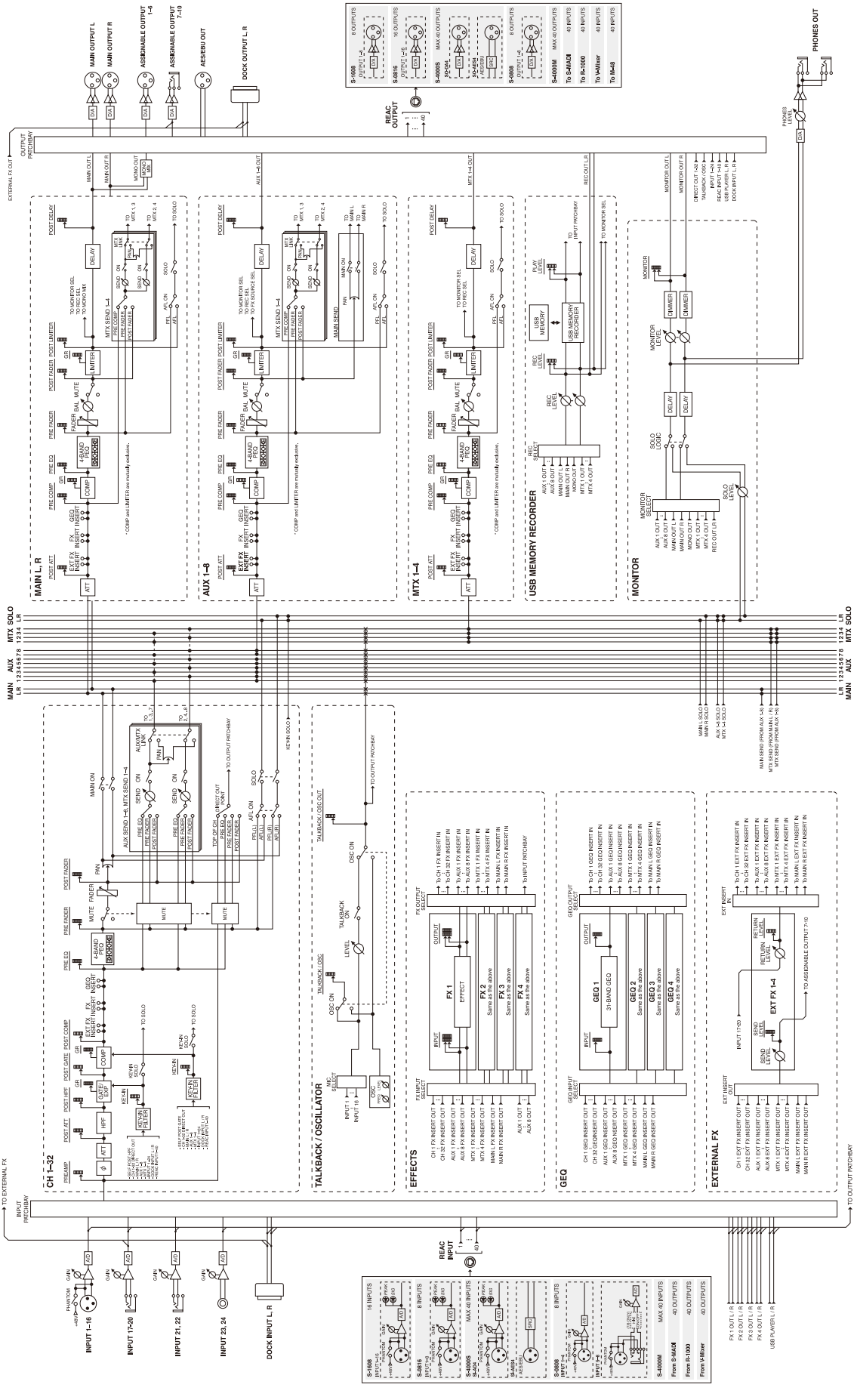
OTHER MODES



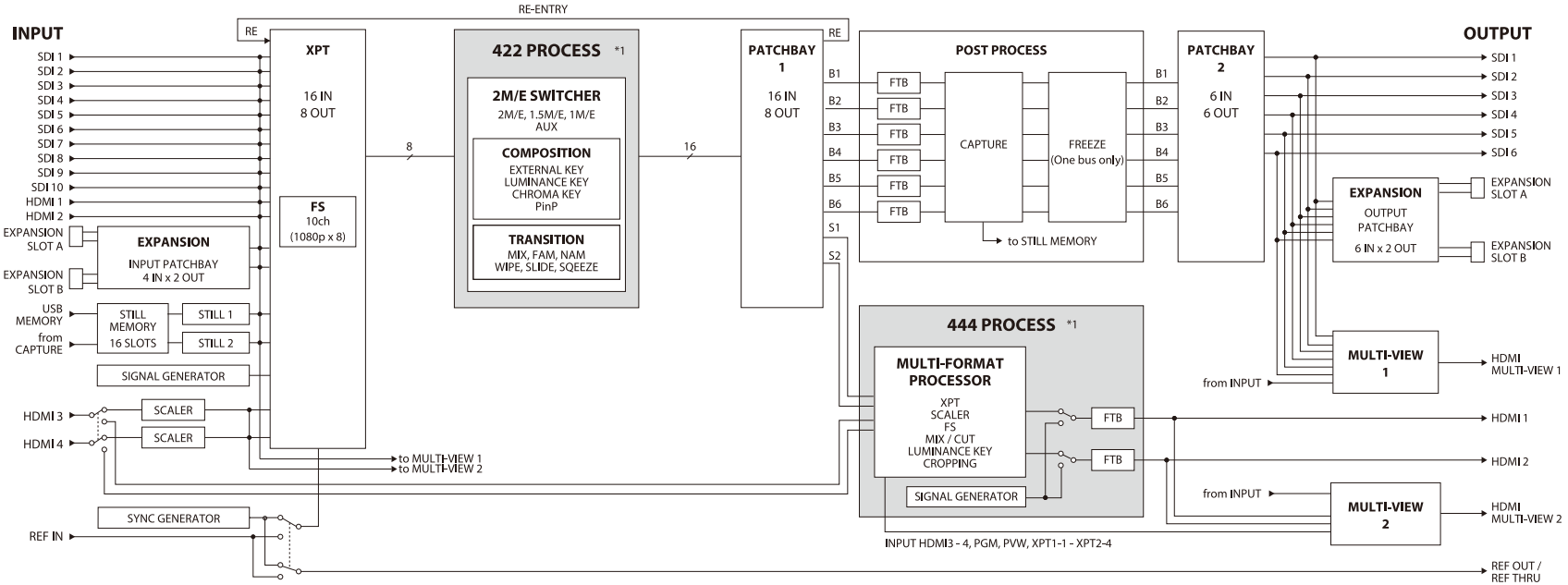
M-300 Block Diagram



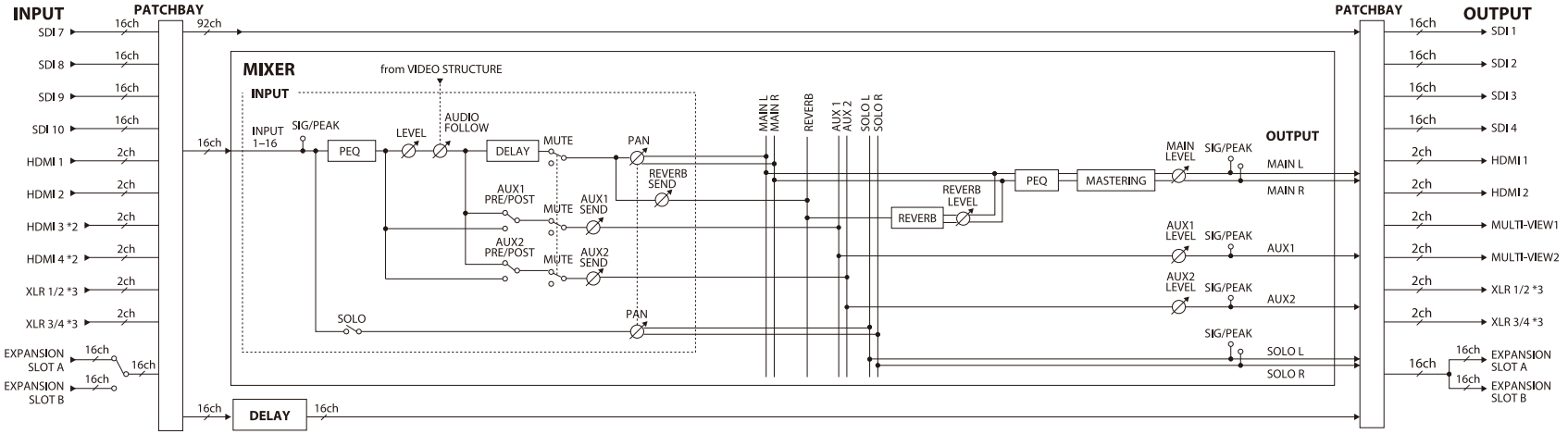
M-200i Block Diagram



Video Block

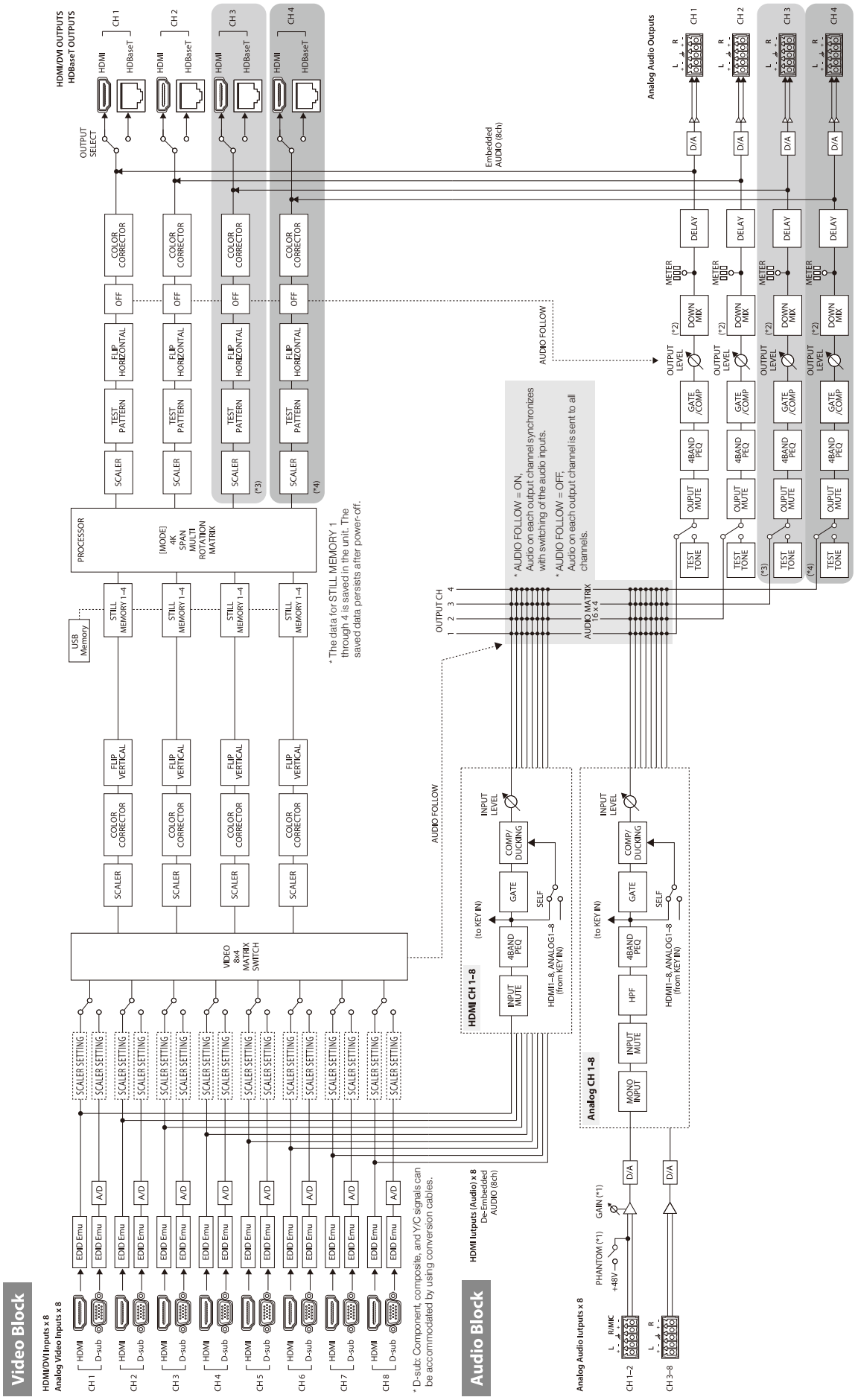


Audio Block



*1: Varies according to M/E configuration.
*2: HDCP-applied audio is outputtable to equipment supporting XLR output (only when ANALOG is selected) and HDCP from HDMI connectors.
*3: When the audio selector switch is set to AES/EBU, 2 channels each of AES/EBU input and output are possible. When the switch is set to ANALOG, 1 channel each of input and output are possible.

XS-84H/XS-83H/XS-82H Block Diagram



(*1) Phantom power and gain are enabled only for the R channels of analog input channels 1 and 2.

(*2) DOWN MIX: From the menu, set "OFF," "STEREO > MONO," "5.1ch > STEREO," "5.1ch > MONO."
(*3) : XS-83H and XS-84H only
(*4) : XS-84H only

INDEX

Roland

proav.roland.com

Printed in Japan. Mar. 2016 RAM-20058 M-PD