

Specifications

| ■ Video                          |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                             | ■ Audio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                              |                                                                                   |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Video Processing                 | 4:4:4 (Y/Pb/Pr), 10-bit                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                             | Audio Processing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Sampling Rate : 24-bit/48 kHz                                                                                                                                                                |                                                                                   |
| Input Connectors                 | HDMI : Type A (19 pin) x 8 (Input 1 to 8) *HDCP supported<br>RGB/Component/S-video/Composite : HD DB-15 type x 8 (Input 1 to 8)                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                             | Input Connectors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Digital : HDMI Type A (19 pin) x 8<br>Analog : 5 pin terminal block connector x 8                                                                                                            |                                                                                   |
| Output Connectors                | XS-82H                                                                                                                                                                                                                                                                                               | HDMI : Type A (19 pin) x 2 (Output 1 to 2)<br>HDBaseT : RJ-45 x 2 (Output 1 to 2)<br>*HDCP supported                                                                                                                                                                                                                                                        | Output Connectors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | XS-82H                                                                                                                                                                                       | Digital : HDMI Type A (19 pin) x 2<br>Analog : 5 pin terminal block connector x 2 |
|                                  | XS-83H                                                                                                                                                                                                                                                                                               | HDMI : Type A (19 pin) x 3 (Output 1 to 3)<br>HDBaseT : RJ-45 x 3 (Output 1 to 3)<br>*HDCP supported                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | XS-83H                                                                                                                                                                                       | Digital : HDMI Type A (19 pin) x 3<br>Analog : 5 pin terminal block connector x 3 |
|                                  | XS-84H                                                                                                                                                                                                                                                                                               | HDMI : Type A (19 pin) x 4 (Output 1 to 4)<br>HDBaseT : RJ-45 x 4 (Output 1 to 4)<br>*HDCP supported                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | XS-84H                                                                                                                                                                                       | Digital : HDMI Type A (19 pin) x 4<br>Analog : 5 pin terminal block connector x 4 |
| Input/Output Level and Impedance | Analog RGB                                                                                                                                                                                                                                                                                           | 0.7Vp-p 75 ohms (H, V:5VTTL)                                                                                                                                                                                                                                                                                                                                | Input Level and Impedance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Ch 1 to 2 : -60 to +4dBu (Maximum: +22 dBu),<br>10k ohms (Gain 0 to 23 dBu), 5k ohms (Gain 24 to 64 dBu)<br>Ch 3 to 8 : +4dBu (Maximum: +22 dBu), 8.5k ohms                                  |                                                                                   |
|                                  | Analog HD Component                                                                                                                                                                                                                                                                                  | 1.0Vp-p 75 ohms (Sync-Signal: Bi-level/Tri-evel)                                                                                                                                                                                                                                                                                                            | Output Level and Impedance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Ch 1 to 4 : +4dBu (Maximum: +22 dBu), 600 ohms                                                                                                                                               |                                                                                   |
|                                  | Composite /S-Video                                                                                                                                                                                                                                                                                   | Signal Level : 1.0 Vp-p (luminance),<br>0.286 Vp-p (chroma, NTSC),<br>0.3 Vp-p (chroma, PAL)<br>Impedance : 75 ohms                                                                                                                                                                                                                                         | Audio Formats                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | HDMI : Linear PCM, 24bit, 48kHz, 8ch                                                                                                                                                         |                                                                                   |
| Input Supported Formats          | HDMI                                                                                                                                                                                                                                                                                                 | 480/59.94i, 576/50i, 480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/59.94i1080/50i, 1080/59.94p, 1080/50p, 640×480/60Hz, 800×600/60Hz, 1024×768/60Hz, 1280×768/60Hz, 1280×1024/60Hz, 1366×768/60Hz, 1600×1200/60Hz, 1920x1080/60Hz, 1920×1200/60Hz                                                                                                          | Audio Effects                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 16 stereo inputs and 4 outputs digital audio mixer                                                                                                                                           |                                                                                   |
|                                  | RGB /Component                                                                                                                                                                                                                                                                                       | 480/59.94i, 576/50i, 480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/59.94i1080/50i, 1080/59.94p, 1080/50p, 640×480/60Hz, 800×600/60Hz, 1024×768/60Hz, 1280×768/60Hz, 1280×1024/60Hz, 1366×768/60Hz, 1600×1200/60Hz, 1920x1080/60Hz, 1920×1200/60Hz                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Input: High-pass filter, Mono, 4-band parametric equalizer, Compressor/Ducking, Gate                                                                                                         |                                                                                   |
|                                  | Composite S-video<br>Still Image:                                                                                                                                                                                                                                                                    | 480i/59.94, 576i/50<br>480i/59.94, 576i/50<br>Windows® Bitmap File (.bmp)<br>* Maximum 1920 x 1200 pixels, 24 bit per pixel, uncompressed<br>It can be stored up to 4 files in the internal memory.                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Output: 4-band parametric equalizer, Compressor/Gate, Down mix, Lip-sync Delay(1msec units, max 170msec)<br><br>Other:Test tone output, Synchronized/unsynchronized audio and video function |                                                                                   |
| ■ Other Jacks                    |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                              |                                                                                   |
|                                  |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                             | RS-232C : D-Sub 9 pin type x 1<br>LAN : RJ-45 x 1<br>USB : A Type x 2 for USB memory (for USB memories, for WNA1100-RL/ONKYO UWF-1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                              |                                                                                   |
| ■ Display                        |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                              |                                                                                   |
|                                  |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                             | Graphic LCD 128 x 64 dots                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                              |                                                                                   |
| ■ Others                         |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                              |                                                                                   |
| Output Formats                   | HDMI/HDBaseT                                                                                                                                                                                                                                                                                         | 80/59.94i, 576/50i, 480/59.94p, 576/50p, 720/59.94p, 720/50p, 1080/59.94i1080/50i, 1080/59.94p, 1080/50p, 640×480/60Hz, 800×600/60Hz, 1024×768/60Hz, 1280×768/60Hz, 1280×1024/60Hz, 1366×768/60Hz, 1600×1200/60Hz, 1920x1080/60Hz, 1920×1200/60Hz<br>*The output refresh rates of 640×480 to 1400×1050 are 75Hz when the unit's frame rate setting is 50Hz. | Power Supply : AC117V,AC220V,AC230V,AC240V(50/60Hz)<br>Power Consumption: XS-82H:55W/0.5A(117V),55W/0.4A(220V,230V,240V)<br>XS-83H:60W/0.6A(117V), 60W/0.4A(220V,230V,240V)<br>XS-84H:70W/0.6A(117V), 70W/0.5A(220V,230V,240V)<br>Dimensions : 481(W)x353(D)x88(H) mm, 18-15/16 (W) x 13-15/16 (D) x 3-1/2 (H) inches (EIA-2U rack mountable)<br>Weight : 6.0 kg, 13 lbs 4 oz<br>Operation Temperature: +0 to +40 degrees Celsius +32 to +104 degrees Fahrenheit<br>Storage Temperature: -20 to + 80 degrees Celsius -4 to +176 degrees Fahrenheit<br>Operation Humidity: 20% to 90%(non-condensing)<br>Storage Humidity: 20% to 90%(non-condensing)<br>Accessories : Rack Mount Angles,Power Cord,Owner's Manual,Owner's Manual, Screw Connectorex 12, Rubber Foot x 5 |                                                                                                                                                                                              |                                                                                   |
| Video Effects                    | Transition : Quasi-seamless switching, Seamless switching (Dissolve mode,PGM/PST mode)<br>Mode: Matrix, Multi(Up to 4 Windows),Span, Left and right 90 degrees rotation, 4K, Dissolve, PGM/PGT<br>Others : Flip vertically, Flip horizontally, Output fade, Test pattern output(Colorbar, Hatch,etc) |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                              |                                                                                   |

\*0dBu=0.775Vrms \*The video signal frame rate must match the unit's frame rate setting. \*Confirms to:VESA DMT Version 1.0 Revision 11 \*1920x1200/60Hz: Reduced blanking

Options

Conversion of HDMI input signals to HDBaseT output signals  
Support for RS-232C



**HT-TX01**  
HDBaseT Transmitter

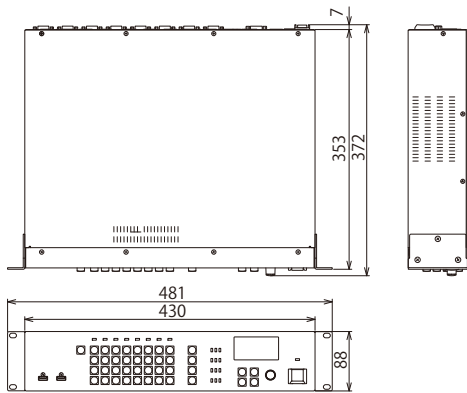
Conversion of HDBaseT input signals to HDMI output signals  
Support for RS-232C



**HT-RX01**  
HDBaseT Receiver

Dimensions

Unit: mm



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# XS SERIES

## MULTI-FORMAT MATRIX SWITCHER Version 2.0

XS-84H 4 OUT | XS-83H 3 OUT | XS-82H 2 OUT

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





# Digital and analog video and audio converted and distributed to digital outputs with customizable wireless control\* from an iPad



## XS-84H

Multi-format Matrix Switcher

4  
OUT

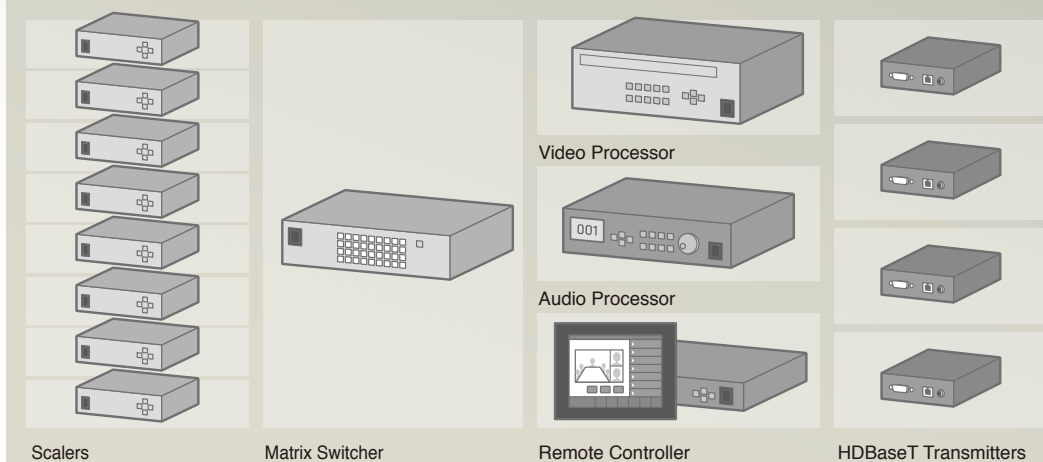
\*The product does not include an iPad  
\*Please use the attached screw when installing rack mount fittings

### Product Overview

- Support for maximum resolution of WUXGA and 1080p  
8 digital inputs and 8 analog inputs  
2, 3 or 4 outputs according to the application
- Accommodate HDMI/HD component/RGB/composite/S-video and audio inputs
- Built-in scalers and video processor enable split-picture and compositing function
- Dissolve transition and PGM/PST mode in Version 2.0 is ideal for live events
- 16ch stereo digital audio mixer with 8 HDMI inputs and 8 analog inputs
- Direct control via the iPad application XS-80 Remote

\*Each output can be selected from either HDMI or HDBaseT.

### Integrating Many Functions into One Unit



## XS-83H

Multi-format Matrix Switcher

3  
OUT



## XS-82H

Multi-format Matrix Switcher

2  
OUT



### Digital and Analog Inputs

- The XS series has eight video inputs. In addition to the HDMI port which can pass DVI signals, the series also enables switching for all analog signal formats including RGB, component, composite and S-video.
- The series features EDID emulation for HDMI and RGB signals, managing EDID information between the display and HDMI source to ensure a stable system environment for HDMI. Near instant video switching is possible within 0.2 seconds even with HDCP enabled.
- Video signals can be flipped vertically and horizontally, or rotated 90 degrees. Using this in combination with the built-in scaling makes creative cropping and orienting of the video possible.  
\*There is a limitation of the inputs. Please go to P6 to see the details.
- The internal audio mixer enables switching and mixing of audio inputs with EQ and dynamics processing on every input. Audio mixes can be created from both analog audio inputs as well as embedded HDMI audio inputs. The resultant mix can be embedded back into the HDMI/HDBaseT output as well as analog audio outputs.

### Compositing and Multi-Screen

- The internal scalers enable the XS series to scale individual HDMI, HD component, RGB, composite and S-video inputs and mix inputs of different resolutions to a common output. Each output can be in their respective format and display.
- Resolutions up to WUXGA/1080p are supported for both input and output. Deinterlacing interlaced video for output as a progressive signal is also possible.
- The series features video processor which enables the composition of the video signal and split-picture in a numerous number of productions. Dissolving transition is possible in Version 2.0.  
\*Output format cannot be changed separately when using the composition function.  
\*Please go to P6 to see the details.
- All the outputs accommodate HDMI and HDBaseT. Video and Audio signals can be transmitted over a long distance by a LAN cable.  
\*Please access the website of the XS series in order to see more connecting verification information of HDBaseT.

### Digital Audio Mixer with Various Functions

- The internal 16ch stereo digital audio mixer enables sophisticated sound processing. Along with eight stereo HDMI audio inputs the series can also accept eight stereo analog audio inputs. Each of the inputs can be mixed separately.
- Each audio input has an internal high-pass filter, 4-band equalizer, noise gate and compressor. Audio follows video capabilities are also available enabling audio switching coordinated with video switching.
- Each audio output has a 4-band equalizer, gate, compressor and delay for proper lip-sync. It also features down-mixing function which makes output to a ceiling speaker possible.
- The XS series accommodates mic level audio inputs. A internal ducking function enables the ability to have the mic level automatically mixed above any other audio input.

### Wireless Control from an iPad

- Using the optional wireless LAN adapter enables direct control from an iPad installed with a dedicated application XS-80 Remote. Along with operating the unit, XS-80 Remote can be used to change settings instantly with its memory-recall function. The operation menu can also be customized by changing the layout, tab names, preset names and channel names or the background picture.

#### Controllable functions

- Preset change
- Video switching
- Audio level control

\*Check the optional wireless LAN adapter on Roland website.



XS-80 Remote

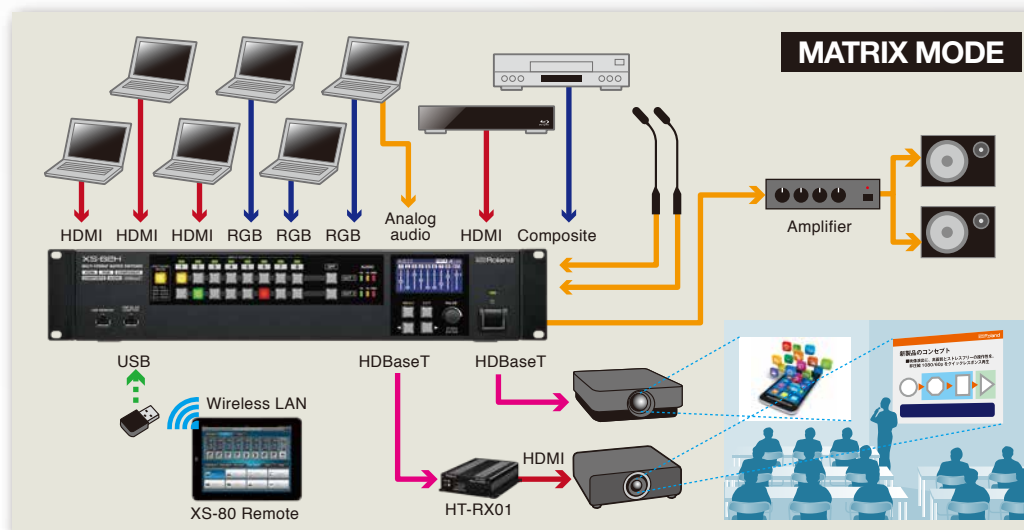




## Application Examples

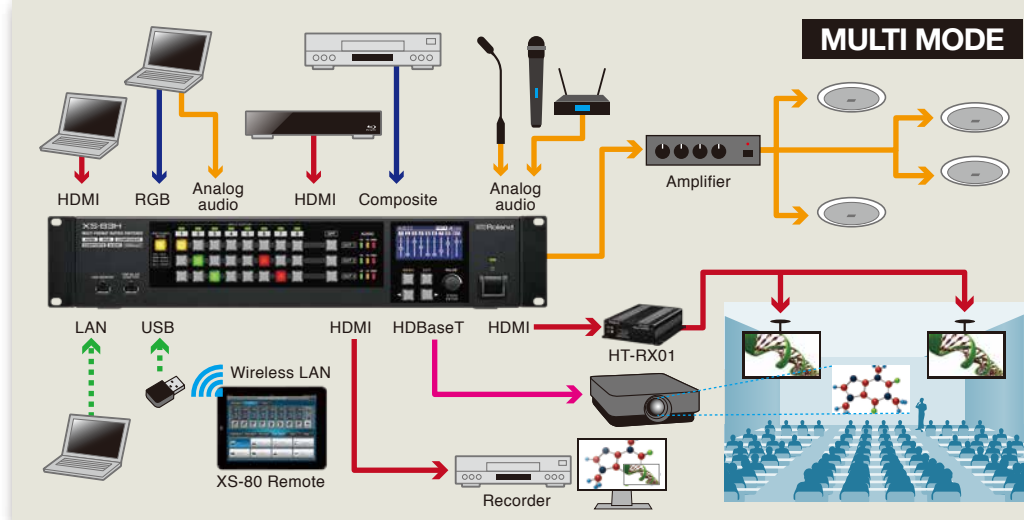
### Conference Rooms

The XS series can perform switching for up to eight computers and video devices. Systems comprising mixed digital and analog video sources in HDMI, RGB, Component, S-video, and composite can be configured. For audio as well, up to eight stereo channels of input can be switched and mixed. The ducking function also makes it possible to lower audio-line volume when someone speaks into a microphone. With a built-in ducking function, you don't have to buy additional compressor.



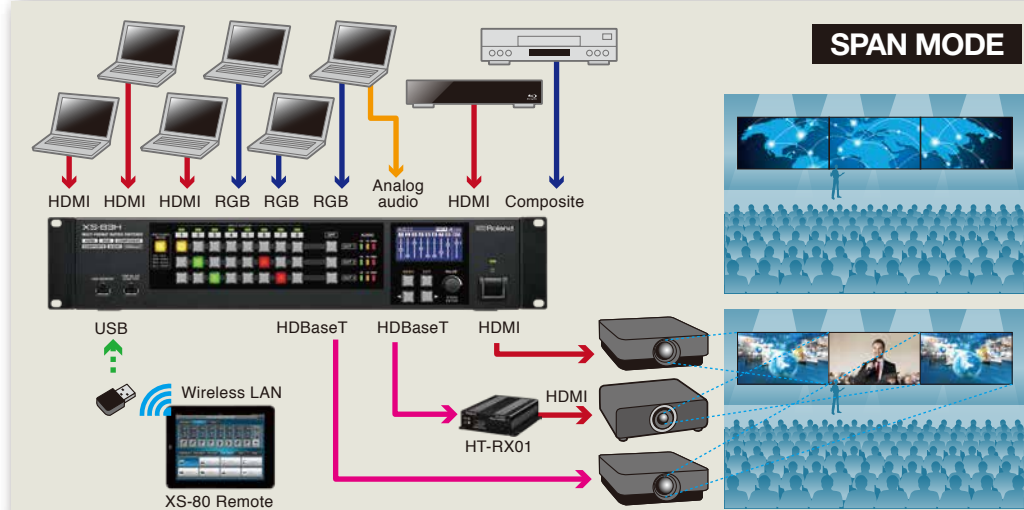
### Classrooms

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.



### Event Halls and Churches

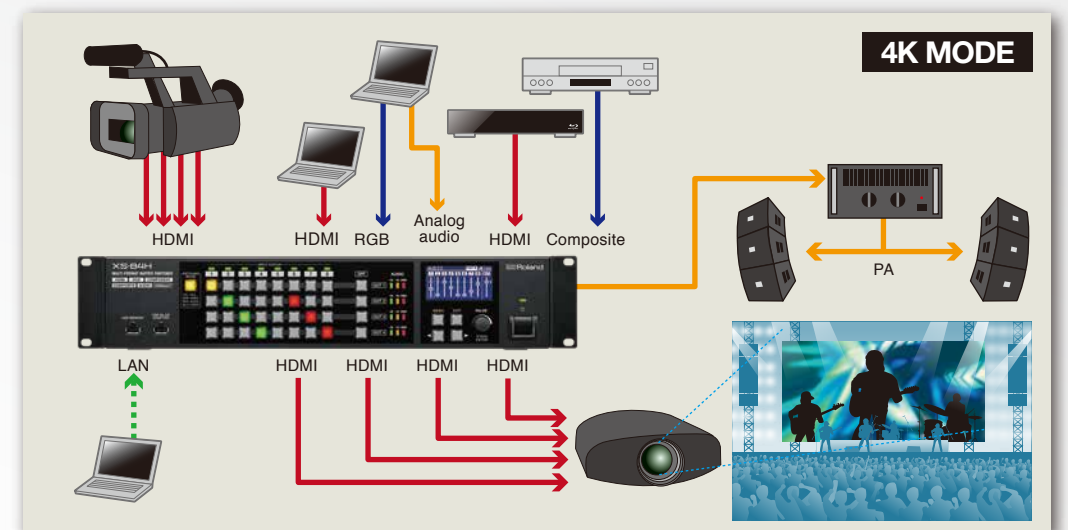
The XS series supports component, S-video, and composite feeds in addition to HDMI and RGB, making it ideal for event halls equipped with sources in various media formats. Multiscreen productions become possible with the different video modes. The horizontal mirroring and cropping functions enable the creation of laterally symmetrical video output while still sending a wideshot to the lobby.



## A variety of applications for any event and installation

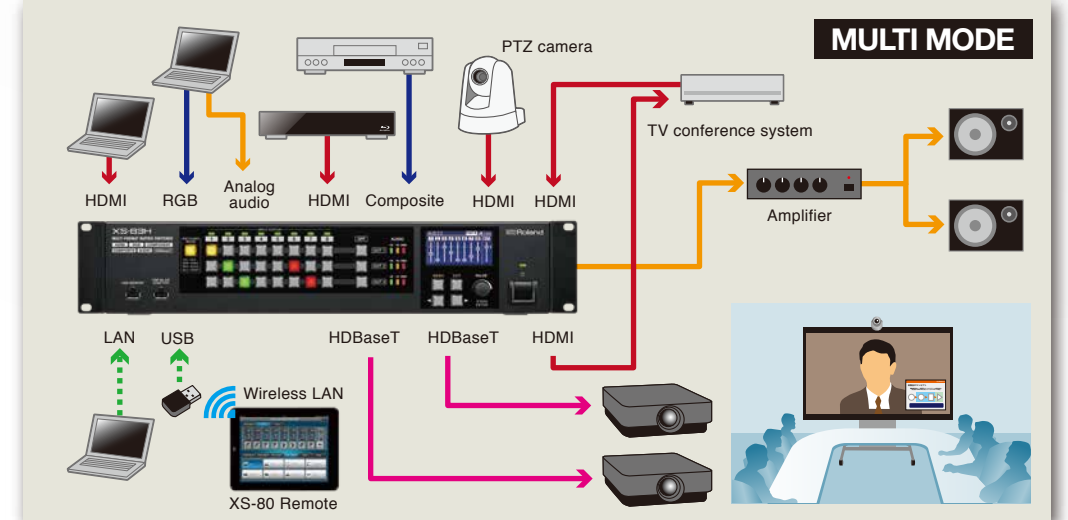
### 4K Mode

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



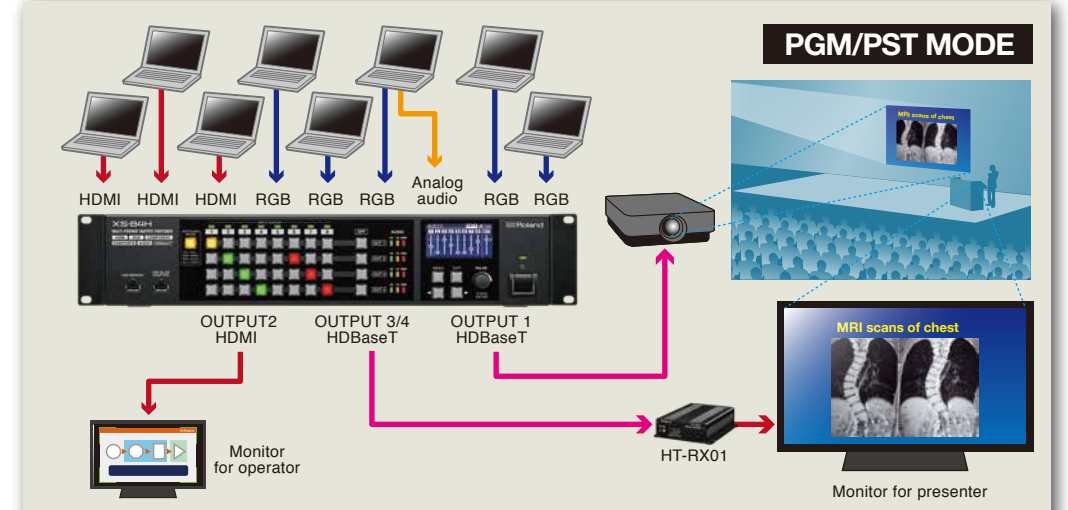
### Teleconferencing Solutions

The XS series features four internal buses each for video and audio. The MULTI MODE enables the communication between two windows in one screen.



### Events and Conventions

The XS series is equipped with eight ports each for HDMI and RGB/Component/S-video/Compo site input, giving it enough capacity to accommodate even large conventions. The PinP function make it possible to composite different types of informational screens separately from the main screen, for output to monitor displays visible to presenters and performers. Version 2.0 adds cross dissolve transition and PGM/PST mode with a preview sizing guide for confident operation in live events.



# Panels and functions

## XS-84H

### Switching Mode

This selects whether the matrix switches just video, just audio, combined audio/video, or preset.

- V&A
- VIDEO
- AUDIO
- PRESET

### Input Signal LEDs

These provide a color-coded indication of the presence of an input signals, what type it is, and its HDCP status.

### LCD Panel

An LCD screen features a backlit display for menu control and easy visibility in dark settings.

### Front Panel



### USB Memory Port

A USB flash drive can be inserted for backing up settings or importing still pictures.

### USB Wireless LAN Adaptor Port

Connecting the wireless adapter, enables direct control of the XS from an iPad.

### Matrix Switches

These set the input channels as well as ON/OFF for each output.

### Audio Level

These display the audio output level on each channel.

### LAN Port

Enables control over a network connection.

### HDMI Audio

Embedding HDMI input into other outputs as well as de-embedding to analog audio outputs. Internal delay settings enable alignment of audio to video for perfect lip-sync.

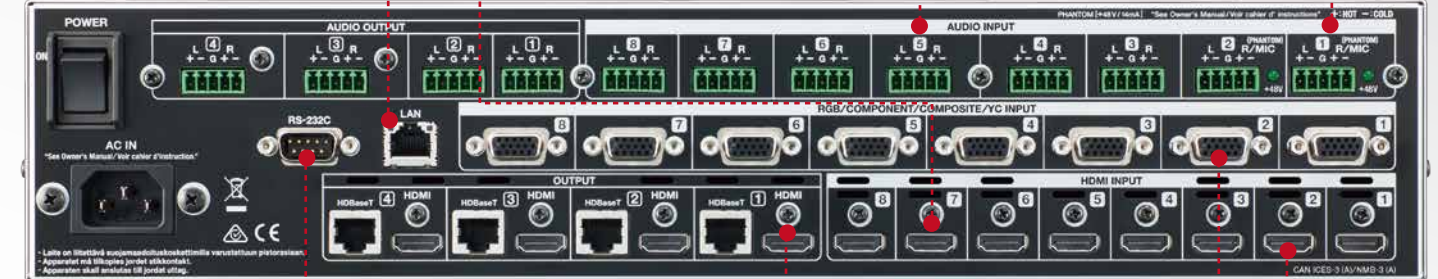
### 6 Line Audio Inputs

The unit has six stereo audio input outputs that support line levels. Support for audio follow enables audio switching coordinated with video switching.

### 2 Mic and Line Inputs

Two audio inputs with support for both mic levels and line levels are provided. An internal ducking function enables the ability to have the mic level automatically mixed above any other audio input.

### Rear Panel



### RS-232C Port

Serial connection enables control by external devices such as wall panels, remote buttons, etc.

### HDMI/HDBaseT Outputs

Resolutions up to WUXGA/1080p are supported. Each output block provides an HDBaseT connector for transmitting digital signals via Cat5e/6 cable over distances of up to 100 meters.

### HDMI/RGB Inputs

Resolutions up to WUXGA/1080p are supported. A built-in EDID emulator copies the EDID info of the display receiving output, achieving input and output of highest quality.

## Video Processing

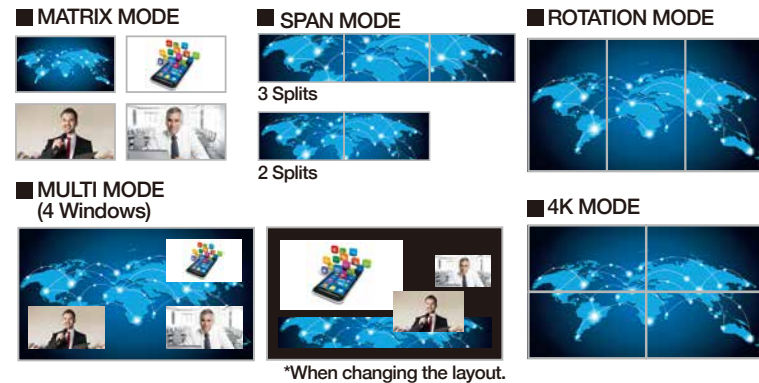
The XS series is equipped with video processor which allows composition and trimming of the video.

- MATRIX MODE** ..... Switch at the matrix mode
- SPAN MODE** ..... Split the screen
- ROTATION MODE** ..... Flip the picture
- MULTI MODE** ..... Display in 2/3/4 windows with PinP
- 4K MODE** ..... Switch a 4k video
- DISSOLVE MODE** [Version 2.0] ..... Switch the picture seamlessly
- PGM/PST MODE** [Version 2.0] ..... Fit for events

Dissolve transition and PGM/PST mode have been added to the features in Version 2.0.

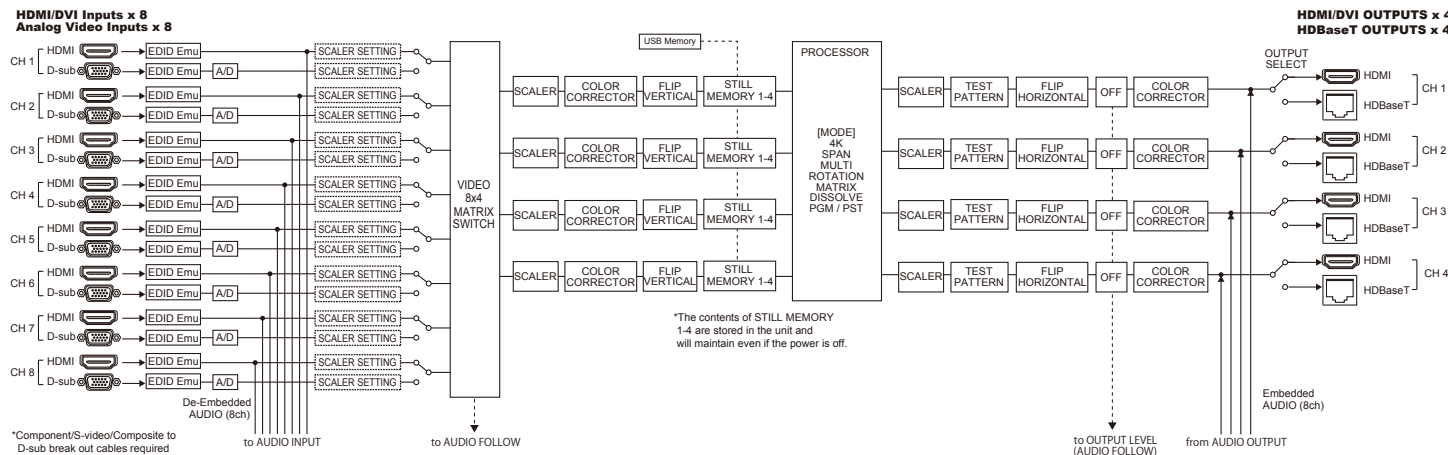
In addition to switching the video from OUTPUT1 seamlessly, it also supports for events operation.

\*To avoid the interruption of the output signal when changing the mode, OUTPUT 1 SYNC should be set to ON.



\*When changing the layout.

## Block Diagram (Video)



## A superior, easy-to-use interface that achieves switching and distribution

## Digital Audio Effects

The XS series is equipped with high quality audio effects. Built-in equalizers are included to balance frequencies and eliminate feedback. Each input has a compressor which enables ducking and a lip-sync delay.

## High-speed HDMI Switching

All HDMI inputs and outputs and HDBaseT outputs support HDCP. The XS series can switch HDCP protected video at an extremely fast speed of less than 0.2 seconds thanks to the XS series advanced HDCP key management.

## HDBaseT Outputs

The XS series include both HDMI and HDBaseT outputs. When using a LAN cable, up to WUXGA/ 1080p video signal can be transmitted up to 100meters.

HDBaseT is a connectivity technology established by the HDBaseT Alliance. HDBaseT enables uncompressed HD video and digital audio signal to be transmitted over a LAN cable.

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

## Block Diagram (Audio)

