## Specifications

### ■ Video

| | | |
|---|---|---|
| Video Processing | 4:4:4 (Y/Pb/Pr), 10-bit | |
| 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) | |
| 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 |
| | 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-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 |
| Input/Output Level and Impedance | Analog RGB | 0.7Vp-p 75 ohms(H, V:5VTTL) |
| | Analog HD Component | 1.0Vp-p 75 ohms(Sync-Signal: Bi-level/Tri-evel) |
| | 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 |
| Input Supported Formats | 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, 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 |
| | 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 |
| | Composite<br>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 Formats | HDMI/HDBaseT | 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, 640×480/60Hz, 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 1280×1024 are 75Hz when the unit's frame rate setting is 50Hz. |
| Video Effects | Transition :<br>Mode:<br>Others : | Quasi-seamless switching, Seamless switching (Dissolve mode,PGM/PST mode)<br>Matrix, Multi(Up to 4 Windows),Span, Left and right 90 degrees rotation, 4K, Dissolve, PGM/PGT<br>Flip vertically, Flip horizontally, Output fade, Test pattern output(Colorbar, Hatch,etc) |

### ■ Audio

| | | |
|---|---|---|
| Audio Processing | Sampling Rate : 24-bit/48 kHz | |
| Input Connectors | Digital : HDMI Type A (19 pin) x 8<br>Analog : 5 pin terminal block connector x 8 | |
| Output Connectors | XS-82H | Digital : HDMI Type A (19 pin) x 2<br>Analog : 5 pin terminal block connector x 2 |
| | XS-83H | Digital : HDMI Type A (19 pin) x 3<br>Analog : 5 pin terminal block connector x 3 |
| | XS-84H | Digital : HDMI Type A (19 pin) x 4<br>Analog : 5 pin terminal block connector x 4 |
| Input Level and Impedance | Ch 1 to 2 : -60 to +4dBu (Maximum: +22 dBu), 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 | |
| Output Level and Impedance | Ch 1 to 4 : +4dBu (Maximum: +22 dBu), 600 ohms | |
| Audio Formats | HDMI : Linear PCM, 24bit, 48kHz, 8ch | |
| Audio Effects | 16 stereo inputs and 4 outputs digital audio mixer<br>Input: High-pass filter, Mono, 4-band parametric equalizer, Compressor/Ducking, Gate<br>Output: 4-band parametric equalizer, Compressor/Gate, Down mix, Lip-sync Delay(1msec units, max 170msec)<br>Other:Test tone output, Synchronized/unsynchronized audio and video function | |

### ■ Other Jacks

RS-232C : D-Sub 9 pin type x 1
LAN : RJ-45 x 1
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

Power Supply : AC117V,AC220V,AC230V,AC240V(50/60Hz)
Power Consumption: XS-82H:55W/0.5A(117V),55W/0.4A(220V,230V,240V)
XS-83H:60W/0.6A(117V), 60W/0.4A(220V,230V,240V)
XS-84H:70W/0.6A(117V), 70W/0.5A(220V,230V,240V)
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)
Weight : 6.0 kg, 13 lbs 4 oz
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: 20% to 90%(non-condensing)
Storage Humidity: 20% to 90%(non-condensing)
Accessories : Power Cord, Euroblock Plug × 12, Rubber Foot ×5, Owner's Manual

*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 *1920×1200/60Hz: Reduced blanking

## Options

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

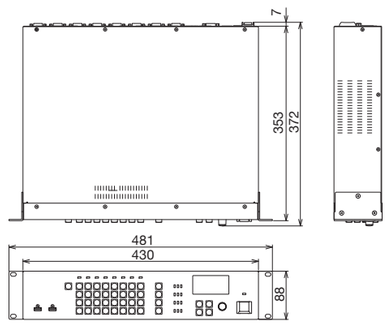
**HT-TX01**
HDBaseT Transmitter

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

**HT-RX01**
HDBaseT Receiver

## Dimensions

Unit: mm

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Printed in Japan. Nov. 2015 RAM-20056 BCC

Roland

# XS SERIES

## MULTI-FORMAT MATRIX SWITCHER Version 3.0

XS-84H 8IN 4OUT | XS-83H 8IN 3OUT | XS-82H 8IN 2OUT

**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**

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

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

*iPad is not included.

## Version 3.0 New Features

- Dedicated XS-80H RCS PC and Mac remote control and set-up software facilitates settings on-line or off-line
- Enhanced PGM/PST MODE and DISSOLVE MODE
- Output link function and double tap mode of transition operation which enables the ability to switch two output buses simultaneously
- Remote control of an external device via HDBaseT
- Capturing a still-image from a live video source and using it as an input source
- Bezel compensation function that improves the precision of displaying one picture across multiple screens
- Output freeze function that temporarily pauses the output video

**XS-84H** 8IN 4OUT

**Multi-format Matrix Switcher**

**XS-83H** 8IN 3OUT

**Multi-format Matrix Switcher**

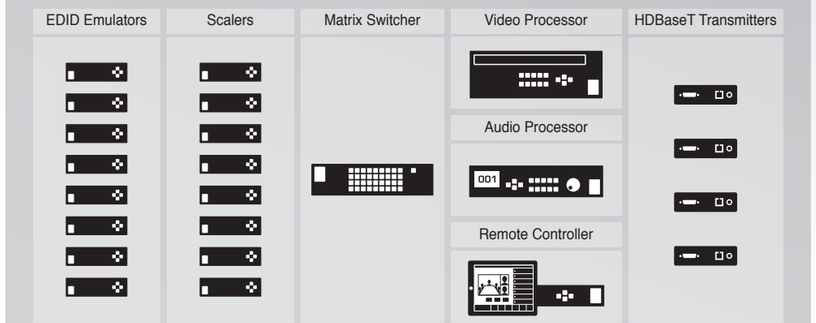
**XS-82H** 8IN 2OUT

**Multi-format Matrix Switcher**

## 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
- Supports HDMI/HD component/RGB/composite/S-video and audio inputs
- Built–in scalers and video processor enable split-picture and compositing functions
- Dissolve transition and PGM/PST mode are ideal for live event switching
- 16ch stereo digital audio mixer with 8 HDMI inputs and 8 analog inputs
- Direct control via the iPad application XS-80H Remote
  *Outputs configurable to HDMI or HDBaseT

■ Integrating Many Functions into One Unit




## Powerful Video Processing

The XS series provides a variety of video output modes for powerful video processing

### ■MATRIX MODE

This outputs the video input sources to any output bus as you like. Each input and output has a scaler which makes it possible to output the video to different video resolutions.

### ■ROTATION MODE

This mode lets you rotate the video picture 90 degrees either counterclockwise or clockwise. The rotated picture can be displayed across up to four screens.

### ■SPAN MODE

This displays a single video picture across multiple screens. Video sources can also be switched while in span mode.

### ■4K MODE

This mode can switch a 4k video by switching four full HD video sources simultaneously.

### ■DISSOLVE MODE
### ■PGM/PST MODE

Dissolve mode switches the video seamlessly. PGM/PST mode allows the operator to preview a video before outputting it.

### ■MULTI MODE

This combines video sources into composited output. You can change the position and size of the sources displayed in the same screen.

### ■Examples

Display four different pictures

Display three different pictures

Display identical pictures in two screens

Display one picture in two large screens

# FIXED INSTALLATION

The XS series provides an all-in-one video and audio system for installation applications like conference rooms and classrooms. The XS series integrates multiple functions such as video switching, video compositing, audio mixing into a convenient 2U rack space unit.

## KEY FEATURES

- Each HDMI/RGB input has a scaler and EDID emulator.
- Built-in audio mixer mixes audio from analog inputs and HDMI inputs.
- Video mixer gives the ability to switch and composite video.
- All of the video and audio settings can be saved as presets. You can recall them by just one press of the button in Preset mode.
- The video and audio signals can be transmitted to a projector or monitor via HDBaseT.
- Remote control from an iPad is possible.
- In Version 3.0, you can control an external device via HDBaseT.
- Programing and set-up via PC software XS-80H RCS is available in Version 3.0.

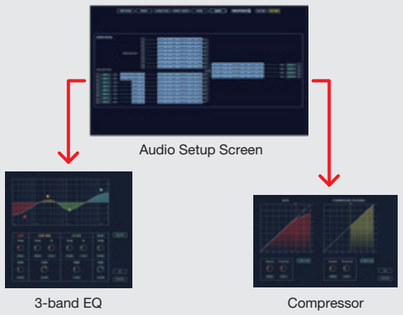
## Digital Audio Mixer with Sound Processing

- 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.
- Using the XS-80H RCS you can make audio settings from a PC using the graphic user interface.

AUDIO PROCESSOR

### Audio Mixer Function

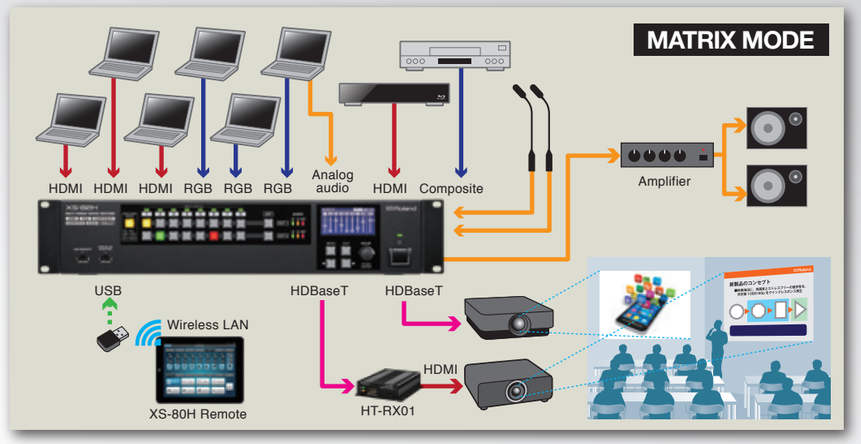
### Make Audio Settings with PC software XS-80H RCS




## Application Examples

### Conference Rooms

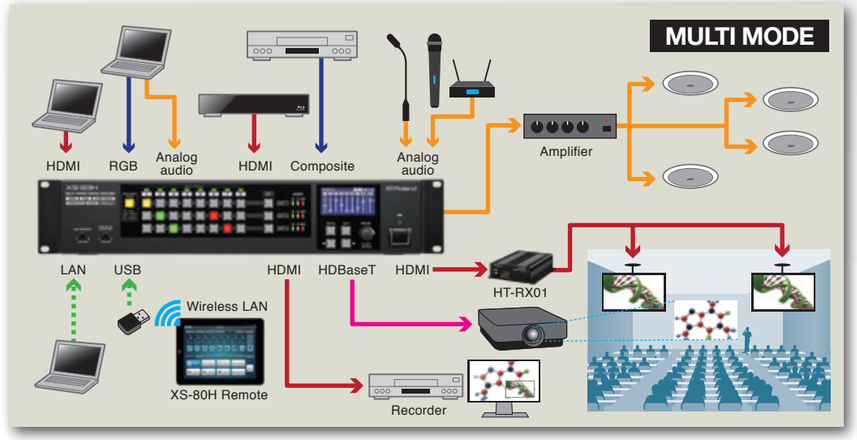
The XS series can perform switching for up to eight computers and video devices. Systems comprising mixed digital and analog video sources in HDMI, RGB, Component, S-video, and composite can be configured. For audio as well, up to eight stereo channels of input can be switched and mixed. The ducking 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

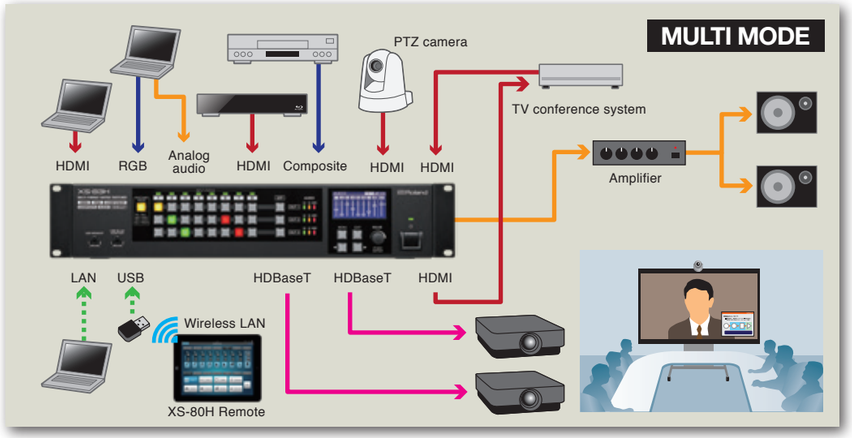
The XS series is equipped with a processor that enables compositing functions. The Multi mode allows compositing video signals from cameras and computers, which is convenient for recording E-learning contents as well as switching HDCP protected HDMI singals from computers or Blu-ray players. Still-images 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.




### Teleconferencing Solutions

The XS-84H featuring four output buses increases the diversity of teleconference solution. By using the Multi mode, up to four different video sources, such as three video camera inputs and one PC input, can be displayed on one screen.



# LIVE EVENT PRODUCTION

The XS series is ideal for the constantly changing input source and output destination needs of live events with high-quality performance and the flexibility to input all kinds of signals.

## KEY FEATURES

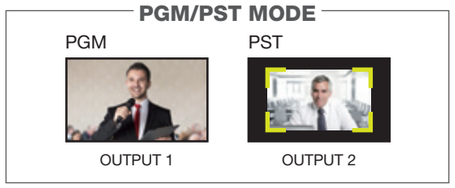
- Each HDMI/RGB input is equipped with a scaler which enables the video from a PC to be input with the same HD video quality.
- The internal EDID emulators can set a default resolution.
- High speed switching of HDCP protected HDMI signals is possible.
- Output link function switches two or more outputs simultaneously.
- Built-in audio mixer allows for mixing of the operator's voice and background music.
- Video mixer enables video switching and compositing with support for PGM/PST style operation.
- All of the video and audio settings can be saved as presets. You can recall them by just one press of the button in Preset mode.
- HDBaseT can transmit the signals up to 100 meters.
- Freeze function in version 3.0 temporarily pauses the incoming video.
- Version 3.0 introduces the ability to capture a still image from a video source.

# Real Time Operation

## ■PGM/PST Mode

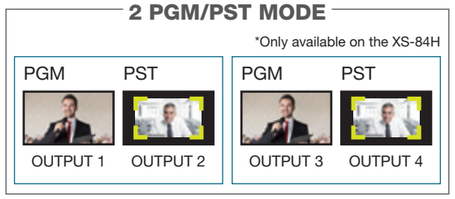
You can preview the video to be output next and then output it with a cross dissolve transition by pressing the OFF button. Version 3.0 offers two programs/two previews and three programs/one preview option for the XS-84H, two programs/one preview for the XS-84H and XS-83H.

### Top Panel when in PGM/PST Mode




### Guide Function

You can display a guide on the preview output picture to confirm the position and size of the video to be output next. The width and color of the border can be changed.The guide can also be set to be Inside or Outside the viewable area to suit the operator's preferences.




## ■Switch multiple outputs at the same time Ver.3.0

This can be done by two ways.

### Output Link Function

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

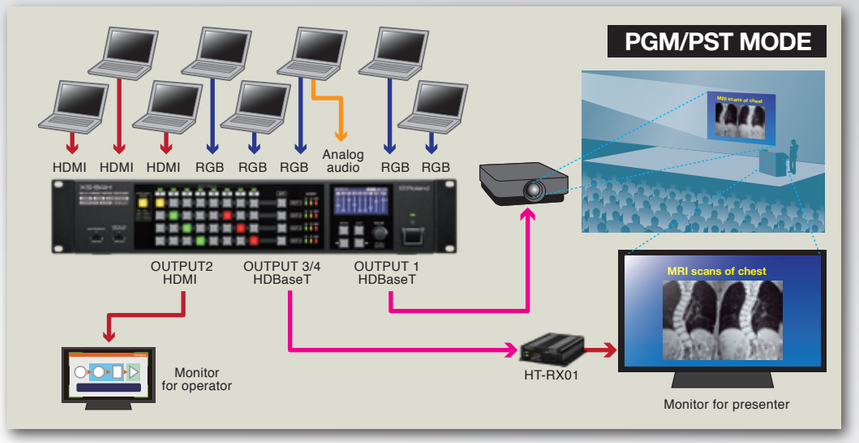
### Double Tap Transition

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.

# Application Examples

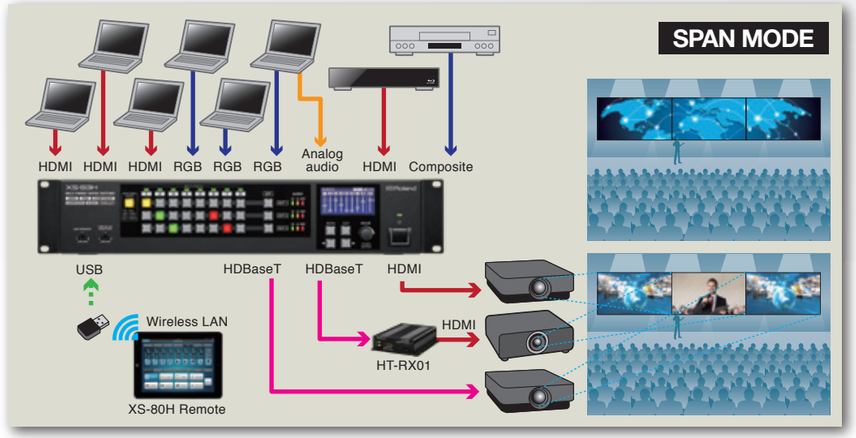
## ■ Events and Conventions

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 larger conventions. The PinP function makes it possible to composite different types of informational screens separately from the main screen, for output to monitor displays visible to presenters and performers. Cross dissolve transition and PGM/PST mode with a preview sizing guide are ideal for confident operation in live events.



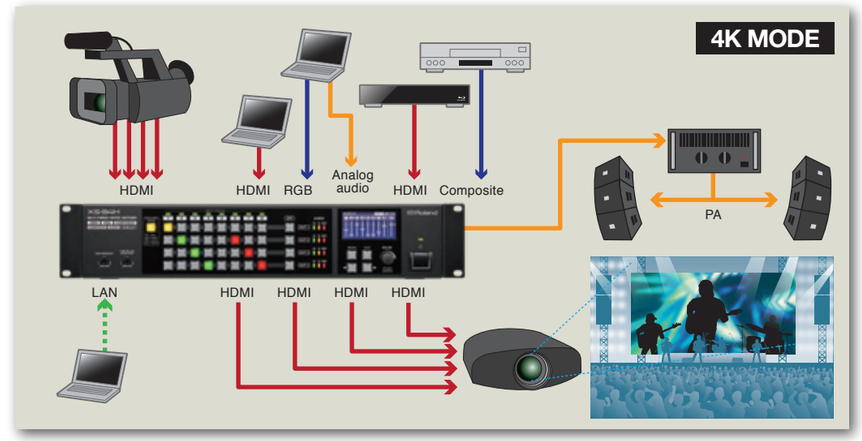

## ■ Event Halls and Churches

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. Mulit-screen 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.




## ■ 4K Mode

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, and SD sizes as well as up to WUXGA and other computer video formats is also possible.



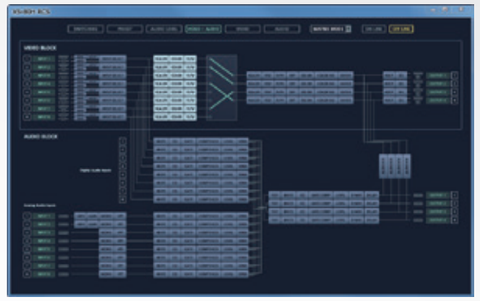
## Make Settings Graphically on PC

Ver.3.0

### Set-up and Switching from a PC using XS-80H RCS

The XS-80H RCS dedicated software for the XS series is able to remotely control the unit from a PC or Mac. With the help of the software, you can make detailed settings of the advanced audio mixer and adjust video parameters easily. By connecting the XS series to a PC installed with the XS-80H RCS via a LAN cable, you can control the unit on-line. You can also make all the settings off-line for later upload to the unit via USB flash drive.

**The XS-80H RCS is available as a free download from Roland's website.**



Setup Screen

### Live Switching Control

This is a function enables the ability to make the settings of the XS series directly. Not only can you make the adjust settings during setup, You can also use the RCS to control the switching functions during an event.

Switching Screen for Real-time Remote Control

## Events and Conventions

In addition to the computer software, you can also use an iPad installed with the dedicated application XS-80H to control the unit wirelessly. 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

- Preset Change
- Video Switching
- Audio Volume Adjusting

### Setting Items

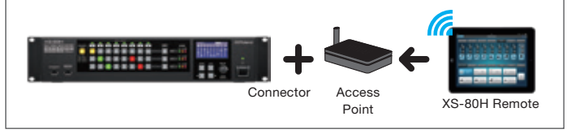
- Title
- Tab Names
- Enable/Disable Tab Display
- Input Device Name and Icon
- Wallpaper
- Password

*For more information on the optional wireless LAN adapter, visit the Roland website.

XS-80H Remote

**When Using a Wireless LAN Adapter**

**When Using a Wireless Access Point**




## 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 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 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.

Copyright-protected HDCP video is supported. It is possible to enable and disable HDCP individually for each input and output video.

Bezel compensation function in Version 3.0 changes the zoom and position of the output picture to make the picture look more continuous across multiple screens.

## 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.

## Still-images/Capture

Ver.3.0

Up to four BMP images can be imported into the unit from a USB flash drive and assigned to an input channel. This is ideal for displaying a school or company logo while in standby with no inputs connected.
*The maximum supported resolution of the still-image is 1900×1200.

In Version 3.0, still-images can be captured directly from a live video source.

*HDCP supported
*Other operations cannot be performed when capturing.
*The captured images cannot be saved in a USB flash drive.

## Key lock mode to prevent unintended operation

This mode renders inoperable buttons and knobs when you don't want the settings to be changed or want to prevent an operation by mistake. This includes the ability to disable switching to input cross-point selection buttons where no signal is present.

## HDBaseT Outputs

The XS series includes 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 , digital audio signal and RS-232 command to be transmitted over a LAN cable.

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

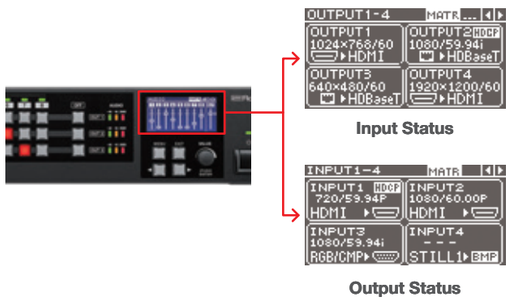
## Control of Power ON/OFF an external device via HDbaseT

Ver.3.0

Sending a RS-232 command via HDbaseT can turn an external device's power on or off.

## Input/output status viewing function that is convenient for trouble shooting

This displays information about the currently selected video input channels and output buses.



# Panels and Functions

## Front Panel

### 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.

### 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.

## Rear Panel

### LAN Port

Enables control over a network connection.

### HDMI Audio

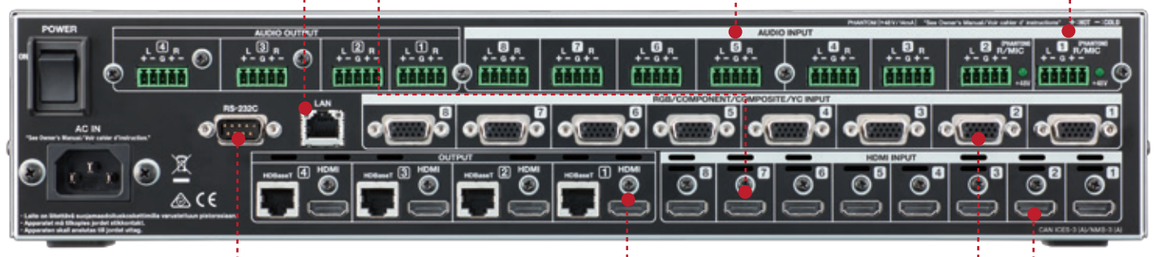
Embedding HDMI input into other outputs as well as de-embedding to analog audio outputs. Internal delay settings enable alignment of audio to video for perfect lip-sync.

### 6 Line Audio Inputs

The unit has six stereo audio inputs 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.



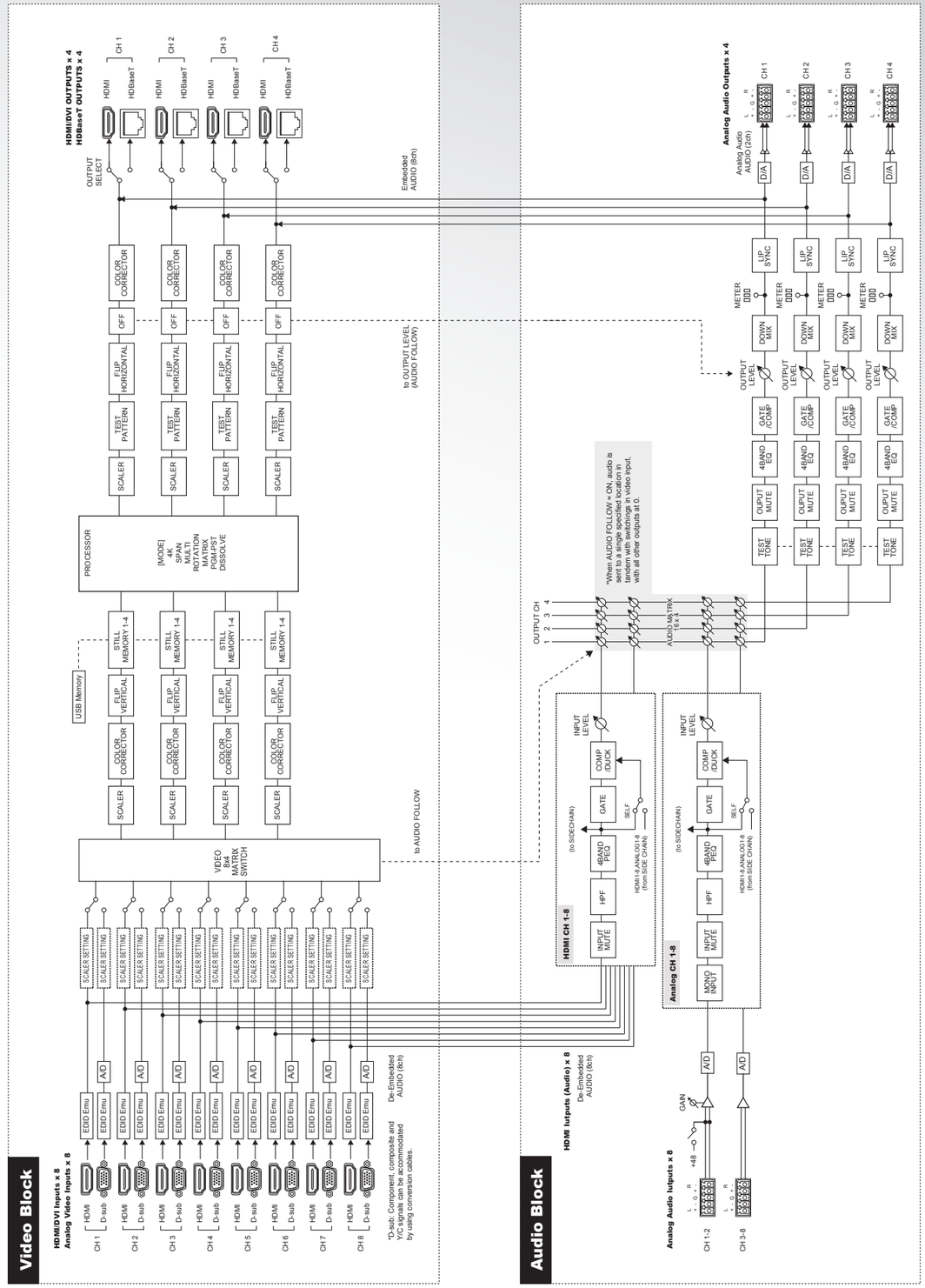

### RS-232C Port

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.

## Block Diagram