5x1 HDMI over HDBaseT Presentation Switcher/Scaler with Mic Input and CEC control (1080p to 100m/328ft)

SW-0501-HDBT

WyreStorm

Quickstart Guide

💡 WyreStorm recommends reading through this document in its entirety to become familiar with the product's features before beginning the installation process.

SCREENLINK **HDBT** **HDMI** **PoH**

⚠️ **IMPORTANT! Installation Requirements**

- Visit the product page to download the latest firmware, document versions, and the WyreStorm Maintenance Suite configuration tools.
- Install the latest firmware to ensure that all features described in this document are available.
- WyerStorm recommends the use of static IP addresses to ensure that the devices IP address will not change after power is restored or if network components are changed. See Switcher First Time Configuration for details on changing the IP Address.
- In order to use ScreenLink software is required on the presentation PC. See ScreenLink Presentation Software for details on using ScreenLink
- When using ScreenLink, the switcher is required to be on the same Local Area Network (LAN) as the presentation PCs.

In the Box

1x SW-0501-HDBT Presentation Switcher
1x 100~240V AC 50/60Hz Power Cord with US Plug
1x 11-pin Phoenix Connector
2x 4-pin Phoenix Connector
3x 3-pin Phoenix Connector
1x Table Mounting Bracket Kit
1 x Quickstart guide (This Document)

Additional Information

Visit the product page on wyrestorm.com to download additional documentation, firmware, software, and control drivers.

- SW-0501-HDBT Latest Firmware
- SceenLink Presentation Software for PC or Mac
- Control System API
- Control Drivers for Various Control Systems

Basic Wiring Diagram

The following diagram is provided to illustrate a typical basic system containing the SW-0501-HDBT.

UK: +44 (0) 1793 230 343 | ROW: 844.280.WYRE (9973)
support@wyrestorm.com
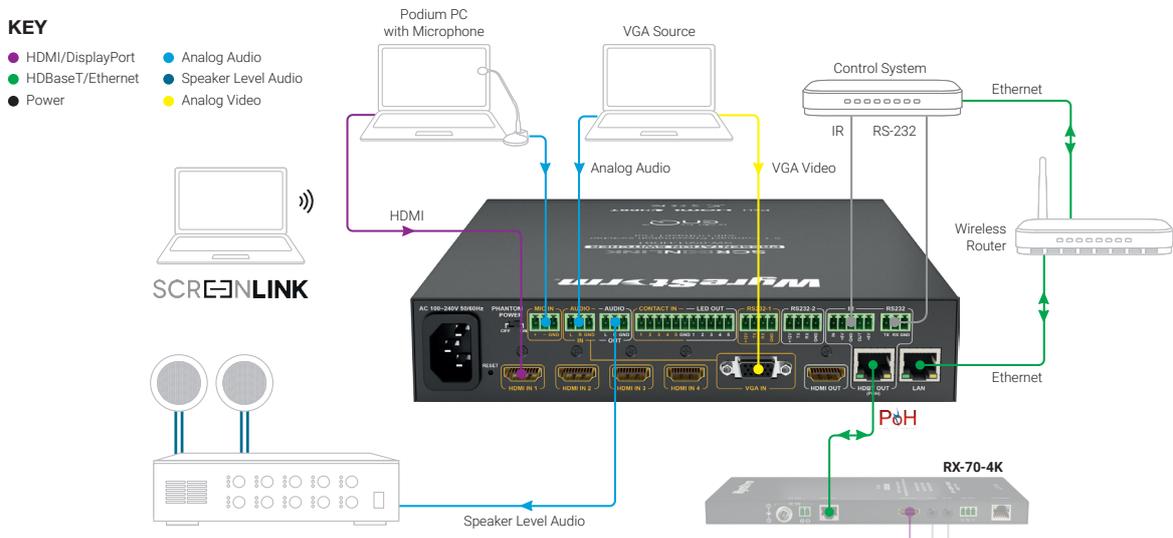
Wiring and Connections

WyreStorm recommends that all wiring for the installation is run and terminated prior to making connections to the switcher. Read through this section in this entirety before running or terminating the wires to ensure proper operation and to avoid damaging equipment.

⚠️ **IMPORTANT! Wiring Guidelines**

- The use of patch panels, wall plates, cable extenders, kinks in cables, and electrical or environmental interference will have an adverse effect on signal transmission which may limit performance. Steps should be taken to minimize or remove these factors completely during installation for best results.
- WyreStorm recommends using pre-terminated HDMI and VGA cables due to the complexity of these connector types. Using pre-terminated cables will ensure that these connections are accurate and will not interfere with the performance of the product.

Local Area Network (LAN)

Lan wiring follows the EIA T568B standard

Pin 1   Pin 8

Pin 1:	White/Orange	Pin 5:	White/Blue
Pin 2:	Orange	Pin 6:	Green
Pin 3:	White/Green	Pin 7:	White/Brown
Pin 4:	Blue	Pin 8:	Brown

Wire colors shown follow EIA/TIA-568B standard.

Audio Wiring

Audio In

Starting with firmware v3.2.0 the stereo analog Audio In can be assigned to any video input to replace the audio for that input. The audio will be available to the assigned input even if there is no video signal present.

On firmware versions below v3.2.0 this connection only works with the VGA input and a video signal is required in order for the stereo audio signal to be available.

Connection is via the supplied 3-pin phoenix connector.

Analog Audio In/Out Pinout
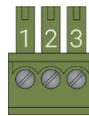
WyreStorm Connector			3rd Party Device
Pin 1	L (Left Signal)	---> To --->	Left Signal (L+)
Pin 2	R (Right Signal)	---> To --->	Right Signal (R+)
Pin 3	GND (Ground)	---> To --->	Left Ground (L-)
			Right Ground (R-)

Audio Out

The stereo analog Audio Out can be used to distribute the audio throughout the room by connecting to an audio pre-amplifier or powered speaker.

Connection is via the supplied 3-pin phoenix connector.

Microphone Input

The microphone input on the switcher can be used to add voice overs to content from other inputs. When used the voice will be combined with the video.

Unbalanced 2 wire Mic Connections

WyreStorm Connector			3rd Party Device
Pin 1	Positve (+)	---> To --->	Signal (+)
Pin 2	Negative (-)	---> To --->	No Connection
Pin 3	Ground (G)	---> To --->	Ground (G)

Balanced 3 wire (XLR) Mic Connections

| WyreStorm Connector			3rd Party Device
Pin 1	Positve (+)	---> To --->	In Phase Signal (+)
Pin 2	Negative (-)	---> To --->	Reverse Phase Signal (-)
Pin 3	Ground (G)	---> To --->	Ground (G)

RS-232 Wiring

Most control systems and computers are DTE where pin 2 is RX, this can vary from device to device. Refer to the documentation for the connected device for pin functionally to ensure that the correct connections can be made.

RS-232 1 - Control of the SW-0501-HDBT using a 4-pin phoenix connector.
RS-232 2 - Control of local devices using a 4-pin phoenix connector.
RS-232 - Control of devices in a remote location by sending control signals via HDBaseT using a 3-pin phoenix connector.

RS-232 1/2 Pinout
Pin 1:   (Not Used)
Pin 2:   TX (Transmit)
Pin 3:   RX (Receive)
Pin 4:   Ground (GND)

RS-232 (HDBaseT) Pinout
Pin 1:   TX (Transmit)
Pin 2:   RX (Receive)
Pin 3:   Ground (GND)

Switcher Control to RS-232   Local Device to RS-232   Remote Device Control to RS-232

to Control System   to Local Source   to Control System

Wire colors shown are for pin identificaiton only and do not represent any wiring standard.

IR Wiring

IR Receiver Connection Guidlines

3rd party IR receivers may require a different voltage, refer to the documentation provided with the IR receiver before making any connections to avoid damaging the device.
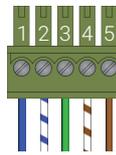
Pin 1: In Positive (+)
Pin 2: In +5V
Pin 3: In/Out GND (Common)
Pin 4: Out Positive (+)
Pin 5: Out +5V

Wire colors shown are for pin identificaiton only and do not represent any wiring standard.

Remote I/O Control Device Wiring

The SW-0501-HDBT may be controlled using a contract closure remote I/O device. Connection uses an 11-pin phoenix connector that also provides status feedback to the device for all 5 inputs.

We recommend that Contact Inputs use dry contact closure devices such as mechanical or solid-state switches. Voltage sources can be used up to 3.3V DC, voltages higher than 3.3V DC may damage the unit.

Status Outputs provide +3.3V DC 200mA max. If connecting to LEDs directly, a current-limiting resistor may be required
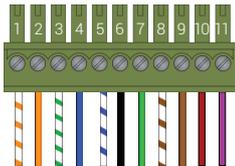
Pin 1: HDMI 1 Contact In   Pin 7: HDMI 1 Status
Pin 2: HDMI 2 Contact In   Pin 8: HDMI 2 Status
Pin 3: HDMI 3 Contact In   Pin 9: HDMI 3 Status
Pin 4: HDMI 4 Contact In   Pin 10: HDMI 4 Status
Pin 5: VGA Contact In   Pin 11: VGA Status
Pin 6: Contact/Status GND

Wire colors shown are for pin identification only and do not represent any wiring standard.

Setup and Configuration

First Time Configuration

By default, the switcher is set to a static IP that must be changed before using the switcher to a network. Due to various versions in firmware, there are 2 specific IP addresses and the steps are different for each. Follow these steps to set the switcher to an appropriate IP address for the network.

1. Connect the PC ethernet port directly to the switcher or connect them to the same network.

2. Set the PCs IPv4 address based on the unit's firmware version:

Firmware Version	IP Address	Subnet Mask	Gateway
v2.9.0 or below	192.168.1.xxx	255.255.255.0	Leave Blank
v3.0.7 or above	192.168.11.xxx	255.255.0.0	Leave Blank

3. Once saved, open any browser and enter the IP address based on the unit's firmware version:

Firmware v2.9.0 or below	192.168.1.1
Firmware v3.0.7 or above	192.168.11.243

4.

5. In the open dialog, enter the Username and Password. Default- Username: admin / Password: admin

6. In the open window, navigate to System > Network.

7. Set the parameters for IP address to either DHCP or static for an IP address that is within the range of the connected network and save the parameters.

8. Set the PCs IPv4 address back to the values used before configuring the switchers IP address.

Accessing the Web UI (Web-UI)

Before accessing the Web-UI, perform the steps under First Time Configuration to ensure that the default IP address of the switcher has been changed. Leaving the default IP address set can prevent the switcher from being seen on a network or create an IP address conflict.

1. Enter the IP address of the switcher followed by /settings in any web browser address bar. If DHCP was used, scan the network using an IP scanner before attempting to access the web UI. Example: 192.11.243/settings

2. In the open dialog enter the Username and Password.
Default- Username: admin / Password: admin

ScreenLink Presentation Software

WyreStorm's ScreenLink is a free firmware update that enables wireless connection to the presentation software. It is a powerful collaboration tool that is ideally suited for the corporate and educational environment. This feature was not always available on the SW-0501-HDBT v1 and units with firmware v2.8.5.1 or lower require that new firmware is installed in order to take advantage of ScreenLink within an installation.

Refer to the SW-0501-HDBT ScreenLink Installation App Note located on WyreStorm.com for details on installing ScreenLink before proceeding with using ScreenLink.

Installing ScreenLink on Presentation PC

1. Open a web browser and enter in the NHD-SW-0501s IP address or visit ScreenLink.com to download the software.

2. The download page for ScreenLink will appear. Choose the appropriate installer and complete the installation process.

3. For instruction on how to use ScreenLink view the ScreenLink User Guide available for download at WyreStorm.com.

Specifications

Audio and Video				
Inputs	1x VGA In: 15-pin VGA | 4x HDMI In: 19-pin type A | 1x Audio In: 3-pin Phoenix | 1x Mic In: 3-pin Phoenix			
Outputs	1x HDBT Out: 8-pin RJ-45 Female | 1x HDMI Out: 19-pin type A | 1x Audio Out: 3-pin Phoenix			
Audio Formats	2ch PCM			
Video Resolutions (Max)	**Resolution**	**HDMI**	**Cat6**	**Cat6a/7**
	1920x1200p @60Hz 12bit	15m/49ft	100m/328ft	100m/328ft
	1920x1200p @60Hz 16bit	7m/23ft	70m/230ft	70m/230ft
Color Depth	12/16bit			
Maximum Pixel Clock	HDMI: 194MHz | HDBaseT: 194MHz			
Communication and Control				
HDMI	HDCP 1.4 compliant | DVI/D supported with adapter (not included)			
HDBaseT	HDCP 1.4 compliant | EDID | 1-way PoH | Bidirectional IR and Ethernet			
Ethernet	1x LAN 8-pin RJ-45 female | Web UI | IP Control | Bidirectional over HDBaseT			
IR	1x IR HDBT: 5-pin Phoenix | Bidirectional over HDBaseT			
RS-232	1x RS-232 (HDBT): 3-pin Phoenix | Bidirectional over HDBaseT 1x RS-232 1 (Switcher): 4-pin Phoenix | Switcher Control | Firmware Updates 1x RS-232 2 (Source): 4-pin Phoenix | Local Source Control			
Contact Closure	1x Contact In/1x LED Out: Shared 11-pin Phoenix			
Power				
Power Supply	Input: 100~240V AC 50/60Hz			
PoH	48V 15.4W			
Max Power Consumption	88.6W			
Environmental				
Operating Temperature	32°F ~ 113°F (0°C ~ 45°C) | 10% ~ 90%, non-condensing			
Storage Temperature	-4°F to ~ 158°F (-20°C ~ +70°C) | 10% ~ 90%, non-condensing			
Maximum BTU	302.3 BTU/hr			
Dimensions and Weight				
Rack Units	1U			
Height with | without feet	51.3mm/2.02in | 43.5mm/1.72in			
Width | without Rack Ears	N/A | 220mm/8.67in			
Depth | without Handles	NA | 280mm/11.03in			
Weight	2.3kg/5.07lbs			
Regulatory				
Safety and Emission	CE | FCC | RoHS			

Troubleshooting

No or Poor Quality Picture (snow or noisy image)

- Verify that power is being supplied to all devices in the system and that they are powered on. When using PoH, to power an HDBaseT receiver, verify that the HDBaseT cable is properly to the 568B terminated standard.
- Verify that all source and HDBaseT connections are not loose and are functioning properly.
- Verify that the transmitter, receiving device, and display support the output resolution of the source. Refer to **Video Resolutions** in the Specifications table for the max distance based on resolution.

No or Intermittent 3rd party Device Control

- Verify that IR and RS-232 cable(s) are properly terminated per the appropriate wiring section:
  - o IR: IR Wiring
  - o RS-232: RS-232 Wiring
- Verify that the IR emitter is located over or near the IR sensor on the device. Move the emitter closer or further from the sensor as the IR signal can be too strong in some cases.
- Verify that the IR receiver is in line of sight of the handheld remote.

💡 Troubleshooting Tips:

- WyreStorm recommends using a cable tester or connecting the cable to other devices to verify functionality.
- Use a flashlight to locate the IR sensor behind any tinted panels on the device being controlled. It will likely appear as a small round disc.

Warranty Information