

4x12 Multi-View Scaler with 4K Output

SW-0402-MV-HDMI | SW-0402-MV-HDBT

A dual-output multi-view scaler or 4x2 matrix, this device enables 4 sources to be shown on a single 1080p or in full resolution on a 4K display

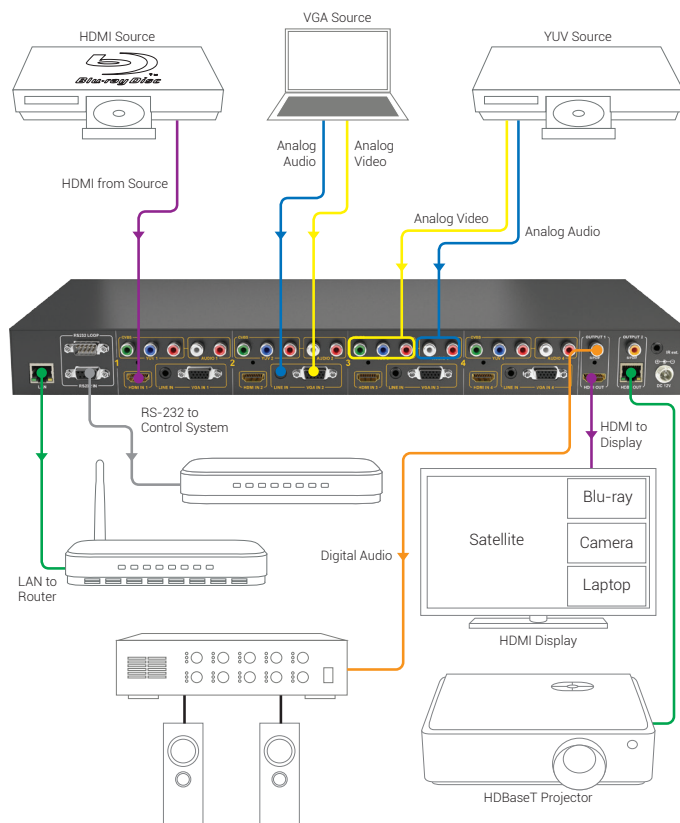
WyreStorm recommends reading through this document in its entirety to become familiar with the product's features prior to starting the installation process.

HDMI HDCP

In the Box

- 1x SW-0402-MV-HDMI or SW-0402-MV-HDBT Switcher
- 1x 12V DC 3A (SW-0402-MV-HDMI) Power Supply (US/UK/EU) or 1x 12V DC 4A (SW-0402-MV-HDBT) Power Supply (US/UK/EU)
- 1x Handheld IR Remote
- 1x IR Receiver Extension Cable
- 2x Mounting Brackets
- 1x Quickstart Guide (this document)

Basic Wiring Diagram



IMPORTANT!

Do not connect or disconnect (hot plug) the HDMI or HDBaseT connections while the transmitter or receiver is powered on. Doing so may cause damage to the units or connected devices.

Additional Information

This Quickstart Guide provides the basic steps for the common uses of this product. Refer to the Installation Guide and other documentation on the product page for additional information

Installation

Before Beginning

WyreStorm recommends visiting the product page before installing this product for updates to this Quickstart Guide as well as other information about this product.

Verify that all items are included in the packaging per the [In the Box](#) list.

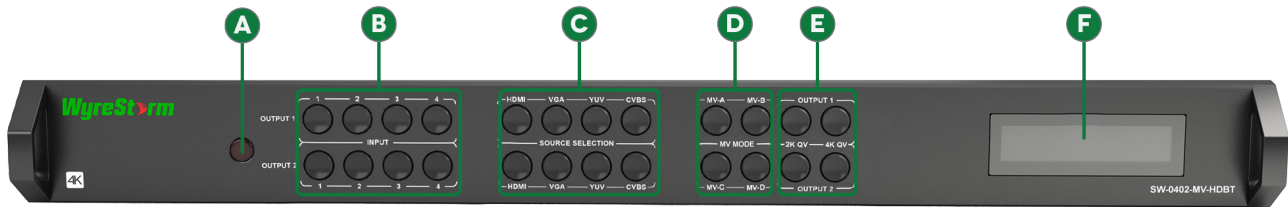
Pre Wire

1. Run a Cat5e/6/6a cable from the matrix location to the receiver location. See [Supported Video Resolutions](#) for resolution distance restrictions. Terminate the cable per the [HDMI/HDBaseT Wiring](#) section.
2. (Optional) If using VGA with Audio, run the wire and terminate per the [Line In Wiring](#) section.
3. (Optional) If using YUV (component video), run the wire and terminate per the [YUV/CVBS \(Component/Composite Video\) Wiring](#) section.
4. (Optional) If using Audio for a YUV input, run the wire and terminate per the [Audio In Wiring](#) section.
5. (Optional) If using RS-232 to control the switcher, run the wire and terminate per the [RS-232 Wiring](#) section.
6. (Optional) If using an external IR Receiver to control the switcher, run the wire and terminate per the [IR Wiring](#) section.

Installation

7. Connect an HDMI source to an **HDMI In** on the switcher using an HDMI cable from a high quality brand such as [WyreStorm Express](#). Repeat for other HDMI sources.
8. (Optional) Connect the VGA Out from a VGA source to a **VGA In** on the switcher. Connect the audio out for the VGA source to the shared **Line In** using the cable created in [Pre Wire](#) step 2. Repeat for other VGA sources.
9. (Optional) Connect the Component Video Out from a Component Video source to a **YUV In** on the switcher using the cable created in [Pre Wire](#) step 3. Connect the audio out for the Component Video source to the shared **Audio In** using the cable created in [Pre Wire](#) step 4. Repeat for other VGA sources.
10. Connect an **HDMI Out** to an HDMI input on a display device. Repeat using the other HDMI out for additional display devices.
11. Using the cable created in [Pre Wire](#) step 1, connect the 8-pin RJ-45 female plug to the **HDBT Out** jack on the matrix. Repeat for additional HDBaseT receivers.
12. (Optional) Connect the **Digital Coax Output** to a digital coax input on the display device or amplifier. Repeat for a second display device if present.
13. (Optional) If using RS-232 to control the switcher, connect the DB9 connector to the RS-232 In port on the switcher and the opposite end to a port on the control system using the cable created in [Pre Wire](#) step 5.
14. Connect the LAN connection to a Local Area Network (LAN) router or switch.

Front Panel



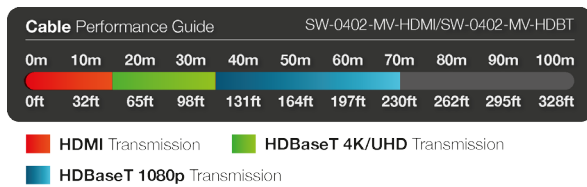
A IR Sensor	38kHz IR Receiver. Receives an IR signal from the included handheld remote or emitter for source selection and other switcher functions.
B Input 1-4 Selection	Selects the numbered input to assign to an output.
C Source Selection	Selects the source for the currently selected input number. Example: HDMI 1, VGA 2, etc.
D MV Mode	Selects the MV mode for the currently selected source.
E 2K QV/4K QV	Selected 2K or 4K output for the currently selected source.
F LCD Display	Displays current source selection and source type for each output.

Rear Panel



A LAN	8-pin RJ-45 female 10/100 Mbps auto-negotiating Connect to a Local Area Network for accessing the built-in Web UI.
B RS-232 In/Loop	RS-232 Loop: 9-pin DB9 Male RS-232 In: 9-pin DB9 Female Connect to a control system to control the switcher and loop to other switchers. See RS-232 wiring section.
C YUV/ CVBS (Component/Composite Video)	RCA Female(3x) Connect YUV to the component video output of a source device. Connect CVBS (YUV Green) to the composite video output of a source device.
D Audio In (CVBS Audio)	RCA Female (2x) Connect to the analog audio output of the source connected to the CVBS input.
E S/PDIF Out	RCA Female (Digital Coax) Outputs a digital S/PDIF audio signal to the display or amplifier with a digital coax input..
F IR Ext	3.5mm (1/8in) Stereo Plug Connect to an IR receiver (not included) when the switcher is placed in a cabinet or out of range of the IR remote. See IR Wiring .
G HDMI In	19-pin type A HDMI female digital video/audio: Supports HDMI and DVI/D (requires adapter-not included). Limited to 297MHz pixel clock
H Line In (VGA Audio)	3.5mm (1/8in) Stereo Plug Connect to the analog audio output of the source connected to the VGA input.
I VGA In	15-pin VGA VESA (D-SUB 15): Connect to D-SUB 15 VGA output of a device such as a computer. 15-pin VGA cable is required.
J HDMI Out	19-pin type A HDMI female digital video/audio: Supports HDMI and DVI/D (requires adapter-not included). Limited to 297MHz pixel clock.
K HDBT Out	8-pin RJ-45 female Connect to the HDBT In of an HDBaseT receiver. See HDMI/HDBaseT Wiring for important wiring guidelines.
L Power In	5.5mm Male Barrel Jack Connect to the included 12V DC 3A (SW-0402-MV-HDMI) or 12V DC 4A (SW-0402-MV-HDBT) Power Supply.

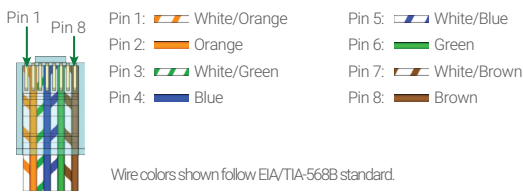
HDMI/HDBaseT Wiring



⚠️ IMPORTANT! HDMI Wiring Guidelines

- The use of patch panels, wall plates, cable extenders, kinks in cables, and electrical or environmental interference can have an adverse effect on HDMI or HDBaseT transmission limiting performance. Steps should be taken to minimize these factors (or remove completely) during installation for best results.
- While similar in nature, the HDBaseT protocol is different than Ethernet and voltages provided for PoH can be higher than those provided by PoE. For this reason, never connect an HDBaseT link to an Ethernet router or switch to avoid damaging the connected devices

Wiring for HDBaseT follows the EIA T568B standard.

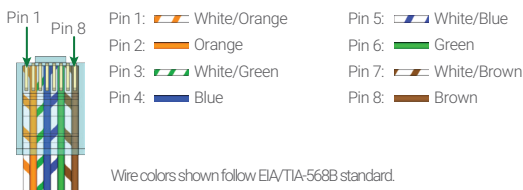


Supported Video Resolutions

Cable Type	Range	Supported Resolution
Cat5e	70m/230ft	1080p@60Hz 36bit
	70m/230ft	1080p@60Hz 3D
Cat6/6a	35m/115ft	4K@60Hz 4:2:0 24bit

Local Area Network (LAN) Wiring

LAN wiring follows the EIA T568B standard



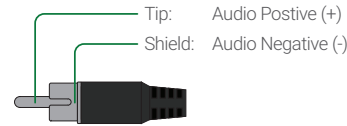
Line In Wiring

Connection for Line In uses a 3.5mm (1/8in) stereo connector.



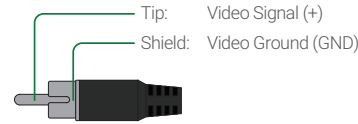
Audio In Wiring

Connection for Audio In uses an RCA Male connector for the left and the right inputs.



YUV/CVBS (Component/Composite Video) Wiring

Connection for CVBS inputs use an RCA Male connector for each of the individual connections.

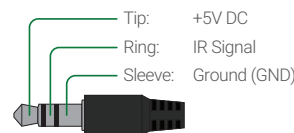


IR Wiring

Connection for IR RX (receive) uses a 3.5mm (1/8in) stereo jack that outputs +5V DC to power the included IR receiver.

⚠️ IMPORTANT IR TX Connection Guidelines!

- 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.
- When connecting to an IR control system use the WyreStorm CAB-IR-LINK stereo to mono cable to remove the sleeve +5V DC.

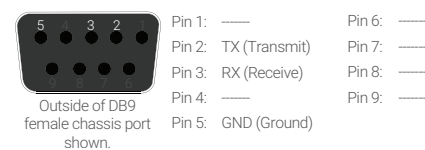


RS-232 Wiring

RS-232 Connection Guidelines

The following wiring diagram shows the pinouts for the switcher. While not shown, connect the TX (transmit) to RX (receive) pins at the control system or PC side of the cable.

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 functionality to ensure that the correct connections can be made.



Specifications

Audio and Video	
Inputs	4x HDMI (1x 19-pin type A)
	4x YUV (3x RCA Female)
	4x CVBS – YUV Green (1x RCA Female)
	4x VGA (1x 15-pin VGA VESA-D-SUB 15)
	4x Audio In –YUV/CVBS Audio (2x RCA Female)
4x Line In – VGA Audio (1x 3.5mm (1/8in) Stereo)	
Outputs	1/2x HDMI (1x 19-pin type A)
	1x HDBaseT (8-pin RJ-45 female) (SW-0402-MV-HDBT only)
	2x S/PDIF (Digital Audio) RCA Female
Audio Formats	2ch analog 2ch LPCM
Video Resolution	Input: Up to 1080p@60Hz 36bit Output: 4K@60Hz 4:2:0 24bit
Maximum Pixel Clock	297 MHz
Communication and Control	
HDMI	HDCP EDID DVI/D supported with adapter (not included)
HDBaseT	EDID
Ethernet	10/100 Mbps auto-negotiating (No IP Switcher Control)
Front Panel	Switcher control
IR	Switcher control with IR Ext for connection to an IR Receiver.
RS-232	Switcher control with loop for additional switchers.
Power	
Power Supply	Input: 100~240V AC 50/50Hz Output: SW-0402-MV-HDMI: 12V DC 3A SW-0402-HDBT-HDBT: 12V DC 4A
Environmental	
Operating Temperature	32°F ~ 113°F (0°C ~ 45°C) 10% ~ 90%, non-condensing
Storage Temperature	-4°F ~ 158°F (-20°C ~ +70°C) 10% ~ 90%, non-condensing
Dimensions and Weight	
Height	42mm / 1.65in
Width	439mm / 17.3in
Depth	254mm / 10in
Weight	2.85 kg / 6.27 kg
Regulatory	
Safety and Emission	CE FCC RoHS

Warranty Information

This product is covered by a 2 year limited parts and labor warranty. During this period there will be no charge for unit repair, component replacement or complete product replacement in the event of malfunction. The decision to repair or replace will be made by the manufacturer. This limited warranty only covers defects in materials or workmanship and excludes normal wear and tear or cosmetic damage.

Visit the product page located at wyrestorm.com for additional information on this product including important technical information not provided in this document and warranty terms & conditions.

Troubleshooting

No or Poor Quality Picture (snow or noisy image)

- Verify that power is being supplied to the transmitter and receiving device and that both devices are powered on.

Note:

When using PoH, to power a receiver, verify that the HDBaseT cable is properly terminated per the [HDMI/HDBaseT Wiring](#) section.

- Verify that the transmitter, matrix/receiver, and display support the output resolution of the source. See [Supported Video Resolutions](#).
- If transmitting 3D or 4K, verify that the HDMI cables used are 3D and/or 4K rated.
- Verify that the HDBaseT cable is properly terminated per the [HDMI/HDBaseT Wiring](#) section.
- Verify that all source and HDBaseT connections are not loose and are functioning properly.

No or Intermittent Device Control

- Verify that the handheld remote has a clear line of sight to the IR Sensor on the front panel or the IR Receiver if being used.
- Verify that the IR cable(s) is properly terminated if using an external IR Receiver. See [IR Wiring](#).
- Verify that the IR emitter is located near the IR Sensor on the front panel if using an external IR Control System.
- Verify that the RS-232 cable is properly terminated. See [RS-232 Wiring](#).

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 receiver behind any tinted panels on the device being control.

