4x4 4K HDR HDBaseT Matrix Kit with HDCP 2.2

MXV-0404-H2A-KIT

WyreStorm

Quickstart Guide

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

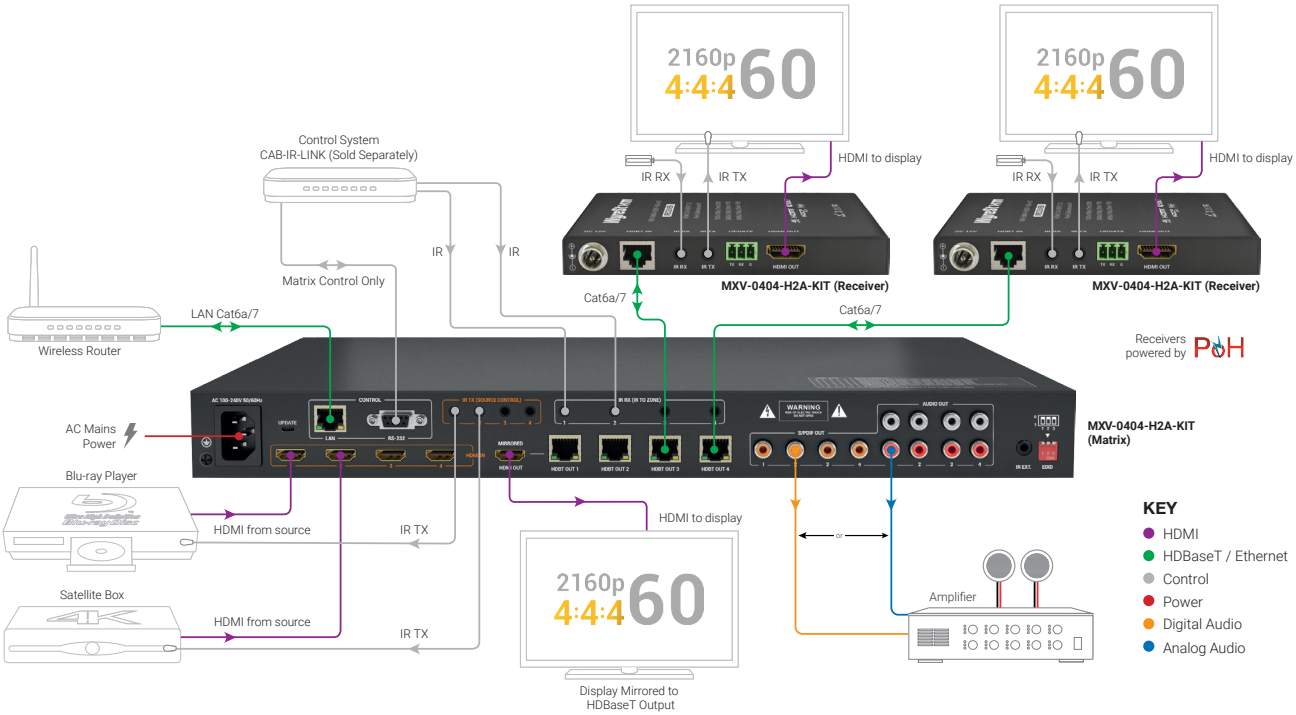
IMPORTANT! Installation Requirements

- Visit the product page to download the latest firmware, document version, additional documentation, and configuration tools.
- Read through the Wiring and Connections section for important wiring guidelines before creating or choosing premade cables.
- While this product supports CEC, WyreStorm cannot guarantee compatibility with all forms of CEC communication.

In the Box

1x MXV-0404-H2A-KIT Matrix
2x Standard HDBaseT Receivers
2x Scaling HDBaseT Receivers
1x AC Power Cord with EU/US/UK/AU pins
1x IR Remote (CR2025 Battery not Included)
4x IR Emitters
4x IR Receivers
1x IR Receiver for Matrix IR Ext.
2x Matrix Mounting Brackets with screws
8x Receiver Mounting Brackets with screws (2 per RX)
1x Quickstart Guide (this document)

Basic Wiring Diagram



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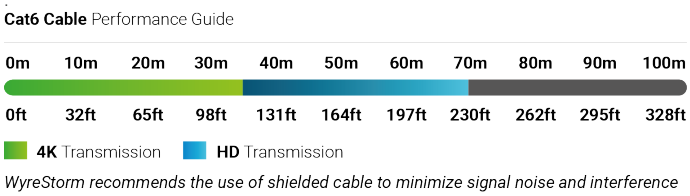
Wiring and Connections

WyreStorm recommends that all wiring for the installation is run and terminated prior to making connections to the switcher. Read through this section in it's 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 the use of shielded category cable to minimize signal noise and interference.
- WyreStorm recommends using pre-terminated HDMI 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.



WyreStorm recommends the use of shielded cable to minimize signal noise and interference

IR TX/RX Guidelines

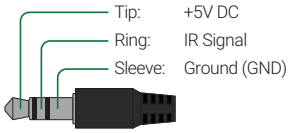
- Using WyreStorm infrared emitters and receivers is the best way to ensure that most IR coding formats are transmitted and received by the NetworkHD system. Other 3rd party emitters and receivers can be used; however, these devices must operate in the same manner as the WyreStorm devices.
- Due to differences in IR across 3rd party control systems their IR ports should never be connected directly to a NetworkHD system as an incompatibility may exist. WyreStorm offers a cable that compensates for voltage differences as well adjusts for differences in the pins used within the port. Refer to the CAB-IR-LINK product page for more information.

IR TX Port Pinout

Connection for IR TX (transmit) uses a 3.5mm (1/8in) mono plug.

IR RX Port Pinout

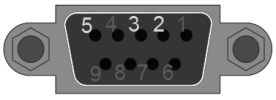
Connection for IR RX (receive) uses a 3.5mm (1/8in) stereo jack that outputs +5V DC to power the included IR receiver.



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.

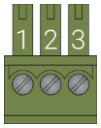
Matrix RS-232 Port



WyreStorm Connector			3rd Party Device
Pin 2	TX (Transmit)	---> To --->	RX (Receive)
Pin 3	RX (Receive)	---> To --->	TX (Transmit)
Pin 5	G (Ground)	---> To --->	G (Ground)

Note: Pins not shown in table have no connection.

Receiver (RX) RS-232 Port

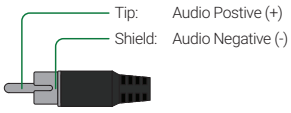


WyreStorm Connector			3rd Party Device
Pin 1	TX (Transmit)	---> To --->	RX (Receive)
Pin 2	RX (Receive)	---> To --->	TX (Transmit)
Pin 3	G (Ground)	---> To --->	G (Ground)

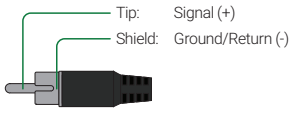
Audio Wiring

This matrix contains audio connections for Analog Audio as well as S/PDIF digital.

Analog Audio



S/PDIF Digital Coax Audio



Setup and Configuration

EDID Settings

EDIDs can be configured to resolve issues with video output on displays that may not accept the maximum resolution available from the source.

- When set to Smart EDID (default) the matrix will scan all selected displays for the lowest resolution to dynamically adjust the source content to allow output on 2K and 4K displays sharing the same source.
- When EDID Copy or a direct EDID is being used, SmartEDID is turned Off.
- Ensure that a display is connected and powered On to the selected output before copying EDIDs or the copy will fail. When this occurs, EDID will be set to 4K@30Hz 2ch.
- Power to the matrix must be cycled (Off/On) after changing dip switches in order for the setting to take effect.

Copying EDIDs

1. Set the EDID dipswitch to the **Front Panel, Web UI or API EDID Control** (all switches up).
2. Reboot the matrix.
3. Using the front navigation buttons, select the input port for the output. Example: Input 2 for Output 2
4. Once the output port indicator blinks, press and hold **Enter** for 5 seconds. **OK** indicates that the copy was successful, **FAIL** indicates that the copy failed.
5. Reboot the matrix

SmartEDID/Front Panel/Web UI		4K UHD		1080p	
Smart EDID-Display Lowest Resolution 2ch only (default)		4K@60Hz 2.0ch with HDR		1080p@60Hz 2.0ch	
Front Panel, Web UI or API EDID Control (EDID Copy)		4K@30Hz 7.1ch with HDR			
		4K@30Hz 5.1ch with HDR			
		4K@30Hz 2.0ch with HDR			
		4K@30Hz/8bit only 2.0ch without HDR			

Accessing the Web UI

This matrix is set to a default static IP Address (192.168.11.143). In order to communicate with it initially the PC must be set to a 192.168.11.xxx address with a subnet of 255.255.0.0. This can be changed back once a static IP is set within a different range.

1. Connect the matrix to the same network as a PC.
2. Open a web browser and enter the IP Address of the matrix.
   Default: 192.168.11.143 | Password: admin

IP Address Notes

- When to set to DHCP the IP address of the unit can be displayed by pressing and holding the front panel Enter and Down buttons for 3 seconds. The IP address will be displayed on the front panel.
- The installer password and general password are the same by default. WyreStorm recommends changing the password for installer login to avoid any unwanted changes being made to the matrix configuration.

Troubleshooting

No or Poor Quality Picture (snow or noisy image)

- Verify that power is being supplied to the transmitter and receiving device
- Verify that all HDMI and HDBaseT connections are not loose and are functioning properly
- Verify that the HDBaseT cable is properly terminated following EIA568B standard
- Verify that the output resolution of the source and display is supported by this matrix and recevier.
- If transmitting 3D or 4K, verify that the HDMI cables used are 3D or 4K rated.

No or Intermittent 3rd party Device Control

- Verify that the IR and RS-232 cables are properly terminated following the Wiring and Connections section.

Troubleshooting Tips:

- WyreStorm recommends using a cable tester or connecting the cable to other devices to verify functionality.

Specifications

	Matrix		Receiver	
Audio and Video				
Inputs	4x HDMI In: 19-pin type A		1x HDBT In: 8-pin RJ-45 Female	
Outputs	4x Audio Out: RCA Female Stereo (L/R) 4x S/PDIF Out: RCA Female 4x HDBT Out: 8-pin RJ-45 Female		1x HDMI Out: 19-pin type A	
Output Video Encoding	HDBaseT Class B			
Encoding Data Rate	9.2Gbps			
End to End Latency (Max)	10µs (micro seconds)			
Audio Formats	Analog: 2ch Analog | S/PDIF: 2ch LPCM | Dolby Digital/DTS up to 5.1ch HDMI: 2ch LPCM | Multichannel up to Dolby Atmos and DTS-X			
Video Resolutions (Max)	**Video Resolution**	**HDMI**	**Cat6**	**Cat6a/7**
	1920x1080p @60Hz 12bit	15m/49ft	60m/197ft	70m/230ft
	1920x1080p @60Hz 16bit	7m/23ft	35m/115ft	40m/131ft
	3840x2160p @24Hz 10bit 4:2:0 HDR	3m/10ft	35m/115ft	40m/131ft
	3840x2160p @30Hz 8bit 4:4:4	7m/23ft Input 15m/49ft Output	35m/115ft	40m/131ft
	3840x2160p @60Hz 10bit 4:2:0 HDR	3m/10ft	35m/115ft	40m/131ft
	4096x2160p @60Hz 8bit 4:2:0	7m/23ft	35m/115ft	40m/131ft
	4096x2160p @60Hz 8bit 4:4:4	3m/10ft	35m/115ft	40m/131ft
	Note: WyreStorm recommends the use of shielded category cable to minimize signal noise and interference			
Supported Standards	DCI | RGB | HDR | HDR10 | Dolby Vision up to 30Hz | HLG | BT.2020 | BT.2100			
Maximum Pixel Clock	HDMI: 600MHz | HDBaseT: 297MHz			
Communication and Control				
HDMI	HDMI 2.0 | HDCP 2.2 | EDID | CEC | DVI/D supported with adapter (not included)			
HDBaseT	HDMI 2.0 | HDCP 2.2 | EDID | CEC | 1-way PoH | Bidirectional IR			
CEC	CEC power triggering for connected screens – Requires CEC compatibility			
IR	1x IR Ext: 3.5mm (1/8in) TRS Stereo 4x IR RX: 3.5mm (1/8in) TRS Stereo 4x IR TX: 3.5mm (1/8in) TS Mono Bidirectional over HDBaseT		1x IR TX: 3.5mm (1/8in) TS Mono 1x IR RX: 3.5mm (1/8in) TRS Stereo Bidirectional over HDBaseT	
RS-232	1x RS-232: 9-pin DB9 Female		1x RS-232: 3-pin Terminal Block - 3.5mm	
Ethernet	1x LAN: 8-pin RJ-45 Female		N/A	
Power				
Power Supply	100~240V AC 50/60Hz		18V DC (Optional)	
PoH	1-way Matrix to Receiver			
Max Power Consumption	85W with 4 RXs connected via PoH		8W with External PSU each receiver 12.5W via PoH each receiver	
Environmental				
Operating Temperature	0 to + 45°C (32 to + 113 °F), 10% to 90%, non-condensing			
Storage Temperature	-20 to +70°C (-4 to + 158 °F), 10% to 90%, non-condensing			
Maximum BTU/hr	290 BTU/hr		28 BTU/hr with External PSU each receiver 43 BTU/hr via PoH each receiver	
Dimensions and Weight				
Rack Units/Wall Box	1U		<1U	
Height	43.5mm/1.72in		15.2mm/0.6in	
Width	440mm/17.33in		136.4mm/5.38in	
Depth	300mm/11.82in		74.2mm/2.93in	
Weight	4.06kg/8.93lbs		0.24kg/0.53lbs	
Regulatory				
Safety and Emission	CE | FCC | RoHS | RCM			

Note: WyreStorm reserves the right to change product specification, appearance or dimensions of this product at any time without prior notice.

Warranty Information

WyreStorm Technologies LLC warrants that its products to be free from defects in material and workmanship under normal use for a period of five (5) years from the date of purchase. Refer to the Product Warranty page on wyrestorm.com for more details on our limited product warranty.