4x4 4K UHD HDBaseT (35m/115ft) Matrix with audio breakout, HDCP 2.2 and PoH Receivers

MX-0404-HDBT-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.

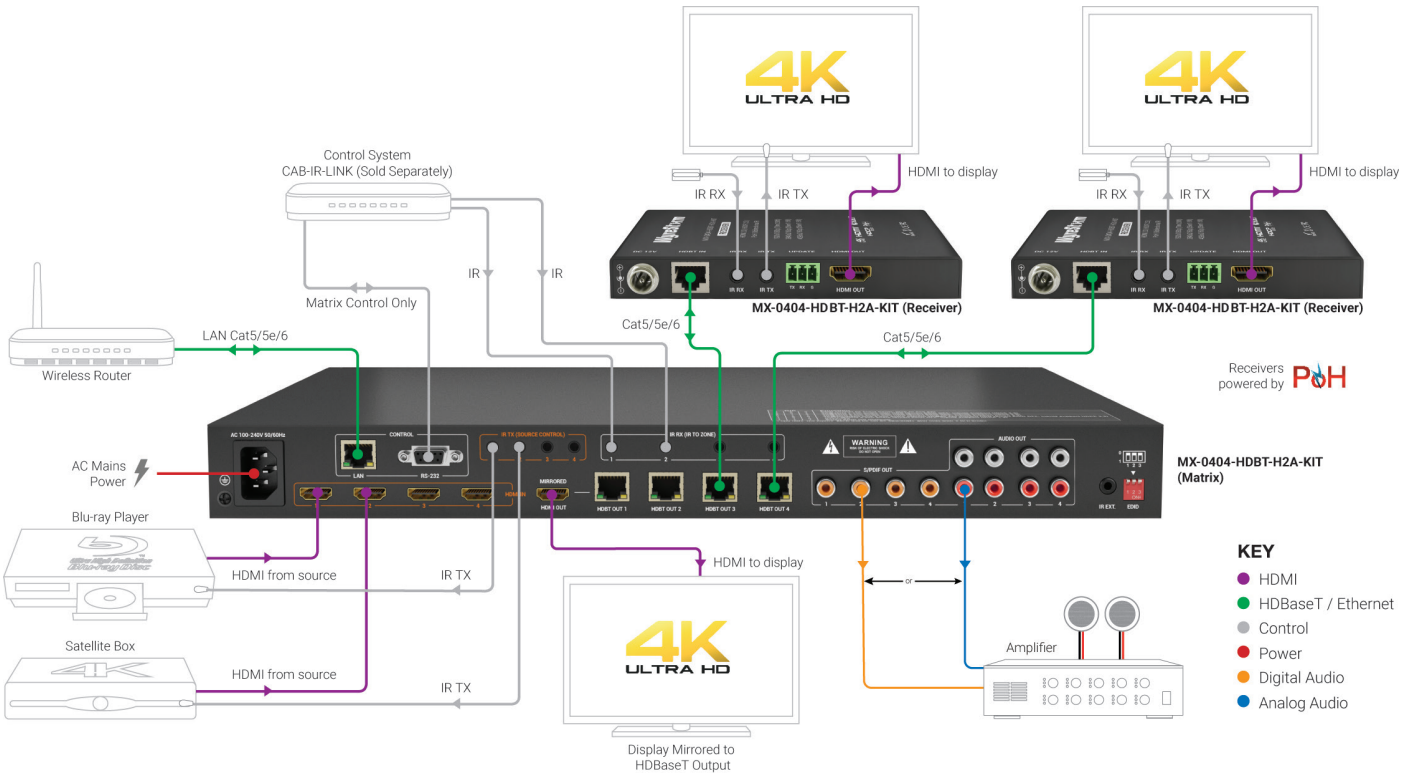
IMPORTANT! Installation Requirements

- Visit the product page to download the latest firmware, document version, additional documentation, and configuration tools.
- Install the latest firmware (if available) to ensure that all features described in this document are available during and after installation.
- Read through the Wiring and Connections section for important wiring guidelines before creating or choosing premade cables.

In the Box

1 x MX-0404-HDBT-H2A HDBaseT Matrix Switcher
4 x HDBaseT PoC display receivers
1 x Handheld IR Remote
4 x IR emitters
4 x IR Broadband Receiver (30KHz to 50KHz)
1 x IR Extension Cable
1x AC Power Cord with US Plug
1x AC Power Cord with UK Plug
1x AC Power Cord with EU Plug
2x Mounting Brackets and accessories (matrix)
1x Quickstart Guide (this document)

Basic Wiring Diagram



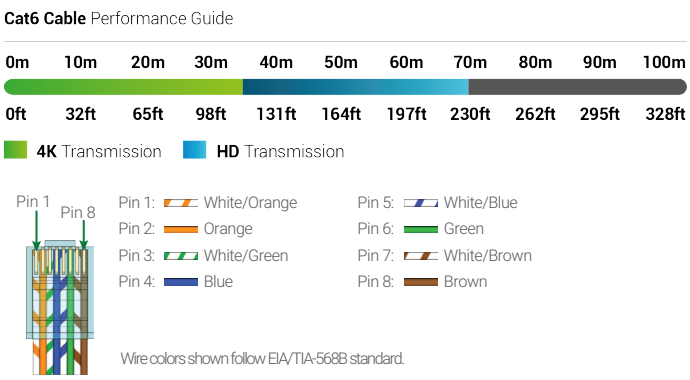
Wiring and Connections

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.

HDMI/HDBaseT Wiring

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 HDMI and Ethernet transmission limiting performance. Steps should be taken to minimize or remove these factors completely during installation for best results.
- WyreStorm recommends using high quality HDMI cables such as WyreStorm Express to ensure the highest content performance available.
- The type of category cable and length used can restrict the available video resolution. While Cat5e can be used, WyreStorm recommends using Cat6 or higher to ensure the highest content performance available. See **Video Resolutions** in the Specifications table before determining cable type and length.



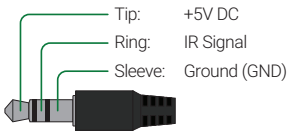
IR TX/RX Wiring

IMPORTANT! IR TX/RX Guidelines

- WyreStorm IR ports function differently than standard IR ports. For this reason only WyreStorm IR emitters and receivers can be used.
- WyreStorm IR emitter and receiver cables cannot be spliced as cutting into the cables will short the shield. While an extension cable may be used, WyreStorm assumes no responsibility for operation using an extension cable.
- When connecting the IR TX to an IR connecting blocks or control system with different plugs, a cable must be made following the IR TX Port Pinout diagram.
- When connecting to an IR control system use the WyreStorm CAB-IR-LINK cable. This cable compensates for differences between the WyreStorm RX and the control systems TX connection. Visit the CAB-IR-LINK product page for details.

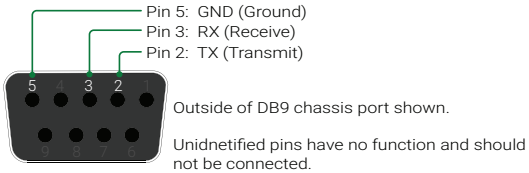
IR TX Port Pinout

IR RX/Ext Port Pinout



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.



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.
- 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.

Smart EDID – Display Lowest Resolution - 2ch only (default)		Front Panel, Web UI or API EDID Control	
4K@30Hz 2ch with HDR Support		4K@30Hz (8bit only) 2ch with HDR Support	
4K@30Hz 5.1ch with HDR Support		4K@30Hz 7.1ch with HDR Support	
4K @60Hz 2ch with HDR Support		1080p @60Hz 2.0ch audio	

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, FL-2 indicates that the copy failed.
5. Reboot the matrix

Note: EDID settings may also be configured using the Web UI. Refer to the Accessing the Web UI section.

Accessing the Web UI

Note: 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. 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

Note: 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 all devices in the system and that they are powered on.
- Verify that all source and HDBaseT connections are not loose and are functioning properly.
- Verify that the HDBaseT cable is properly terminated per the HDMI/HDBaseT Wiring section.
- Verify that the matrix, 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.
- 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 cable(s) is properly terminated. See IR TX/RX Wiring.
- Verify that the IR emitter is located near the IR receiver on the device.

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

Specifications

Audio and Video	
Inputs	Matrix: 4x HDMI 19-pin type A female | Receiver: 1x HDBaseT 8-pin RJ-45 female
Outputs	Matrix: 1x HDMI In 19-pin type A female | 4x HDBaseT 8-pin RJ-45 female 4x S/PDIF Out RCA Digital Coax | 4x Audio Out Stereo Pairs RCA Analog Coax (Audio from Source or HDMI Output) Receiver: 1x HDMI 19-pin type A female
Audio Formats	HDMI/HDBaseT: 2ch PCM | Multichannel: LPCM and Up to DTS-X and Dolby Atmos S/PDIF: 2ch PCM | Multichannel: Up to 5.1 DTS and Dolby Digital Analog: 2ch Analog
Video Resolutions (Max)	**HDMI** 1920x1080p @60Hz 12bit (15m/50ft) | @60Hz 16bit (7m/23ft) 3840x2160p @30Hz 4:4:4 8bit (7m/23ft) | @24Hz 4:2:0 HDR 10bit per channel (3m/9.8ft) 4096x2160p @60Hz 8bit 4:2:0 (7m/23ft) | @60Hz 8bit 4:4:4 (7m/23ft)
	Using Cat6 1920x1080p @60Hz 12bit (70m/230ft) | 16bit (70m/230ft) 3840x2160p @30Hz 4:4:4 8bit (35m/115ft) | @24Hz 4:2:0 HDR 10bit (35m/115ft) 4096x2160p @60Hz 4:2:0 8bit (35m/115ft)
	Using Cat6a/7 1920x1080p @60Hz 12bit (70m/230ft) | @60Hz 16bit (70m/230ft) 3840x2160p @30Hz 4:4:4 8bit (40m/131ft) | @24Hz 4:2:0 HDR 10bit (40m/131ft) 4096x2160p @60Hz 4:2:0 8bit (40m/131ft)
Color Depth	1080p: 16bit | 4K UHD: 8bit | HDR @24p: 10bit BT.2020
Maximum Pixel Clock	HDMI: 600MHz | HDBaseT: 297MHz
Communication and Control	
HDMI	HDMI | HDCP 2.2 | EDID | DVI-D with adapter (not included)
HDBaseT	HDMI | HDCP 2.2 | EDID | CEC | 1-way PoC to receiver | Bidirectional IR
Ethernet	Matrix Only: 1x 8-pin RJ-45 female | 10/100 Mbps auto-negotiating | Built-in Web UI | IP Control
IR	Matrix: 1x Front Panel IR Sensor | 1x IR Ext 3.5mm (1/8in) TRS Stereo | Matrix Control 4x IR TX 3.5mm (1/8in) TS Mono | 4x IR RX 3.5mm (1/8in) Stereo | Transmits via HDBaseT Receiver: 1x IR TX 3.5mm (1/8in) TS Mono | 1x IR RX 3.5mm (1/8in) TRS Stereo | Transmits via HDBaseT
RS-232	Matrix Only: 1x 9-pin DB9 Female | Matrix Control (Telnet commands supported)

Power	
Power Supply	100~240V AC 50/60Hz
PoC	12V 5W(each HDBT output)
Max Power Consumption	54W
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	184.25 BTU/hr

Dimensions and Weight	Matrix	Receivers
Rack Units/Wall Box	1U	0.34U
Height With | Without Feet	51.3mm/2.02in | 43.5mm/1.72in	N/A | 15mm/0.6in
Width With | Without Brackets	482.6mm/19in | 440mm/17.33in	N/A | 135mm/5.32in
Depth With | Without Handles	N/A | 300.1mm/11.82in	N/A | 74.2mm/2.93in
Weight	4.06kg/8.93lbs	0.22kg/0.48lbs
Regulatory		
Safety and Emission	CE | FCC | RoHS	

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.

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