6x6/8x8 HDBaseT 4K Matrix
with ARC and HDCP 2.2 support (70m/230ft)
MX-0606-HDBT-H2 | MX-0808-HDBT-H2

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WyreStorm

Quickstart Guide

A 6x6 or 8x8 Class A HDBaseT 4K Matrix Switcher with support for 2 or 3 ARC zones, using the latest in HDCP 2.2 encryption technology.
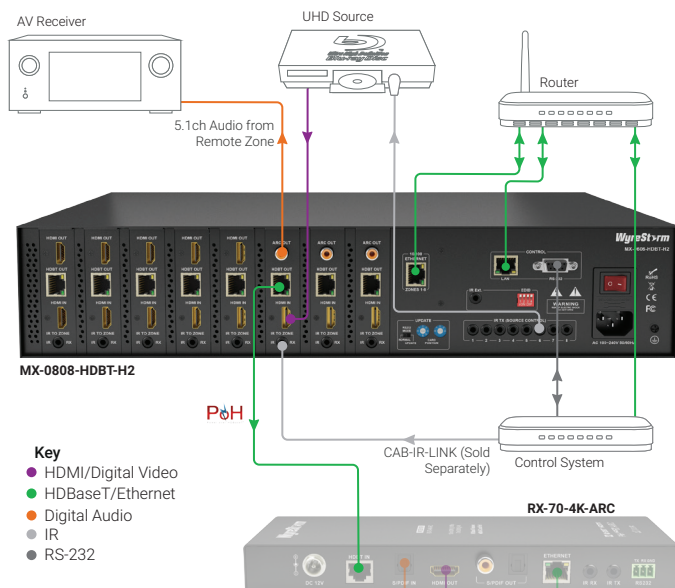
💡 WyreStorm recommends reading through this document in its entirety to become familiar with the product's features prior to starting the installation process.

4K · HDBT · HDMI · HDCP 2.2 · PoH

In the Box

1x MX-0606-HDBT-H2 or MX-0808-HDBT-H2 Matrix Switcher
1x IR Remote Handset
1x IR Receiver (38Khz)
6/8x Wide-band IR Receivers (30-50KHz)
6/8x IR Emitters
1x USB to DB9 RS-232 Cable
1x 100~240V AC 50/60Hz Power Cord with US Plug
1x 100~240V AC 50/60Hz Power Cord with UK Plug
1x 100~240V AC 50/60Hz Power Cord with EU Plug
2x Mounting Brackets
1x Quickstart Guide (this document)

Basic Wiring Diagram

MX-0808-HDBT-H2

PoH

Key
● HDMI/Digital Video
● HDBaseT/Ethernet
● Digital Audio
● IR
● RS-232

5.1ch Audio from Remote Zone

AV Receiver

UHD Source

Router

CAB-IR-LINK (Sold Separately)

Control System

RX-70-4K-ARC

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

Recommended Products

To take full advantage of the features of this matrix, WyreStorm recommends the following products be used within the system.

- **RX-70-4K-ARC HDBaseT Receiver** – Use this receiver when support for ARC functions of outputs 5-6 (6x6) and 6-8 (8x8) is required.
- **RX-70-4K HDBaseT Receiver** – Use this receiver for outputs 1-4 (6x6) and 1-5 (8x8) or when ARC is not required.
- **CAB-IR-LINK** – Use this cable when using an IR control system for matrix control of HDBaseT pass-through.

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.

Before Beginning

- WyreStorm recommends visiting the product page before installing this product for updates to this Quickstart Guide as well as other information about the 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 transmitter 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 IR emitters or connecting blocks, run the wire and terminate per the IR TX (Emitter) Wiring section.
3. (Optional) If using IR receivers, run the wire and terminate per the IR RX/Ext (Receiver) Wiring section.
4. (Optional) If using RS-232 pass-through, run the wire and terminate per the RS-232 Wiring section.

Installation

1. Connect the output of an HDMI source to an **HDMI In** on the matrix using a cable from a high quality brand such as WyreStorm Express. Repeat for additional sources.
2. 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.
3. (Optional) Using the included IR emitter or the cable created in Pre Wire step 2, place an IR emitter onto a source device near the device's IR sensor. Connect the 3.5mm (1/8in) Mono Plug to an **IR TX** port. Repeat for additional sources.
4. (Optional) Using the included IR receiver, connect the 3.5mm (1/8in) Stereo Plug to an **IR RX** (IR to Zone) port. If using a control system, use the WyreStorm CAB-IR-LINK or the cable created in Pre Wire step 3. Repeat for additional zones.
5. (Optional) Using an included IR receiver, connect the 3.5mm (1/8in) Stereo Plug to an **IR Ext** port. If using a control system, use the WyreStorm CAB-IR-LINK or the cable created in Pre Wire step 3.
6. (Optional) Using the cable created in Pre Wire step 4, connect the 9-pin DB9 male jack to the **RS-232** port on the matrix and the opposite end to an RS-232 control system.
7. (Optional) Connect the **ARC Out** of cards 5-6 (6x6) or 6-8 (8x8) to a digital audio input of a device such as an AV Receiver. Repeat for additional **ARC Out** connections.
8. Install HDBaseT receivers (RX-70-4K-ARC recommended) following the instructions provided with the model being installed.
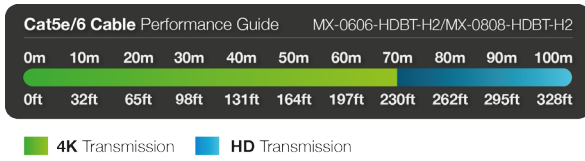
Front Panel
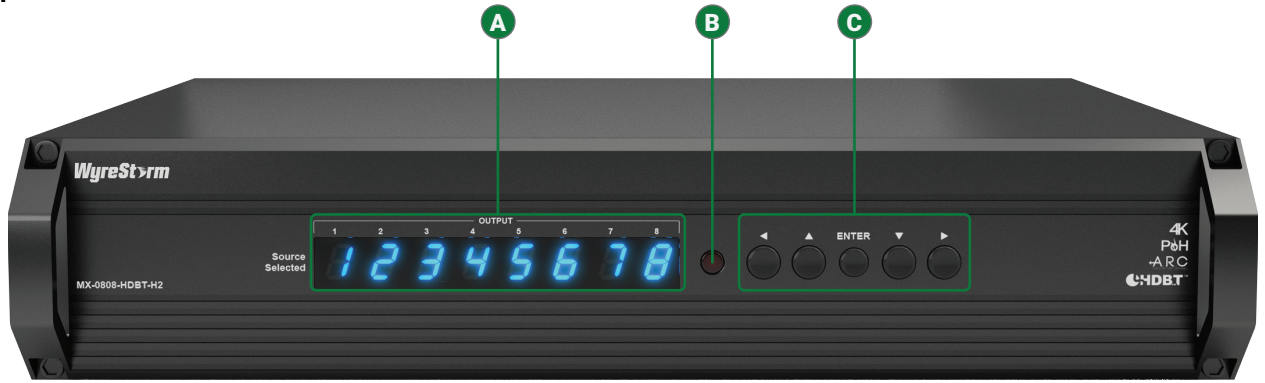
A	**Output Channel Indicator**	1-6 (6x6) or 1-8 (8x8) Displays the source input number currently selected for the corresponding output number.
B	**IR Sensor**	Receives IR signals from included handheld IR remote or attached emitter from IR control system for switcher control.
C	**Source/Output Navigation**	**Left/Right:** Output Selection **Up/Down:** Input Selection **Enter:** Confirm Selection

Rear Panel
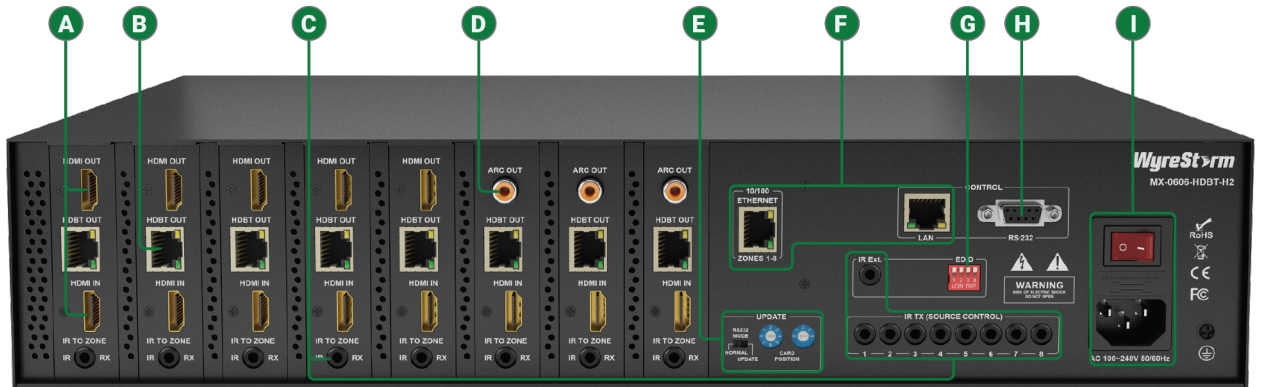
A	**HDMI In/Out**	19-pin type A HDMI female: Supports HDMI and DVI/D (requires adapter–not included). See HDMI/HDBaseT Wiring for important wiring guidelines.
B	**HDBT Out**	8-pin RJ-45 female Connect to the **HDBT In** of an HDBaseT receiver. See HDMI/HDBaseT Wiring for important wiring guidelines. **HDBT Out LED Operation** **Green Solid:** HDBaseT link has been established with the receiver. **Green Flashing or Off:** HDBaseT link has NOT been established with the receiver. **Amber Flashing:** HDBaseT functioning normally and can establish a link with the receiver. **Amber Off:** HDBaseT has discovered a fault and cannot establish a link with the receiver.
C	**IR RX/Ext/TX**	**IR RX/Ext - 3.5mm (1/8in) Stereo Jack:** Connect to an IR receiver for matrix control (Ext) or IR pass-through (RX) via HDBaseT. **IR TX - 3.5mm (1/8in) Mono Jack:** Connect to an IR emitter to control a local device from the remote display location via HDBaseT. See IR Wiring.
D	**ARC Out**	RCA Female (Digital Coax) Supports HDMI and DVI/D (requires adapter–not included).
E	**Update/RS-232 Mode**	**Normal:** RS-232 Matrix control. **Update:** RS-232 firmware update. **Dials:** Selects card position to update.
F	**Ethernet/LAN**	8-pin RJ-45 female | 10/100 Mbps auto-negotiating **Zones 1-8:** Connect to a network router or switch for sending Ethernet to the remote zone via HDBaseT. **LAN:** Connect to a network router or switch for accessing the Web UI or matrix control via IP.
G	**EDID**	4 Position Dipswitch: Used to set EDIDs to correct resolution conflicts between the source and the display. See EDID Settings.
H	**RS-232**	9-pin DB9 Female: Used to control the matrix functions and firmware updates. See RS-232 Wiring.
I	**Power**	Power Switch: 0 –Power Off / I – Power On Fuse Holder IEC Power Cord Port

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HDMI/HDBaseT Wiring

Cat5e/6 Cable Performance Guide   MX-0606-HDBT-H2/MX-0808-HDBT-H2

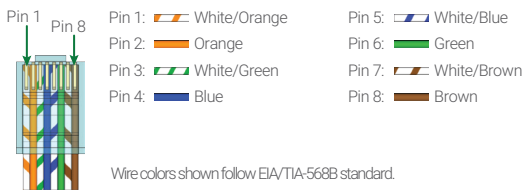| 0m	10m	20m	30m	40m	50m	60m	70m	80m	90m	100m
0ft	32ft	65ft	98ft	131ft	164ft	197ft	230ft	262ft	295ft	328ft

■ **4K** Transmission   ■ **HD** Transmission

⚠ IMPORTANT! 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.

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.

Supported Video Resolutions

The type of category cable used and the distance between the transmitter and receiver can restrict the available video resolution.

Cable Type	Range	Supported Resolution
Cat5/5e/6	100m/328ft	1080p@60Hz 48bit
	70m/230ft	1080p@60Hz 3D 4K@60Hz 4:2:0 24bit
Cat6a	100m/328ft	1080p@60Hz 48bit 1080p@60Hz 3D

Note: When connected to a class B HDBaseT receiver, the supported resolution is limited to 70m/230ft (1080p) and 35m/114ft (4K).

IR Wiring

IR TX (Emitter) Wiring

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

Tip:	IR Signal
Sleeve:	Ground (GND)

IR RX/Ext (Receiver) Wiring

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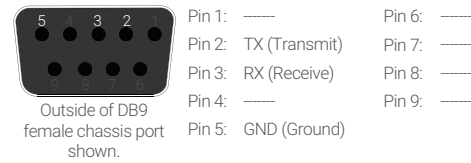
⚠ IMPORTANT!

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.

Tip:	+5V DC
Ring:	IR Signal
Sleeve:	Ground (GND)

RS-232 Wiring

RS-232 Connection Guidelines

The following wiring diagram shows the pinouts for the extender set. 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 functionally to ensure that the correct connections can be made.

Outside of DB9 female chassis port shown.

Pin 1:	——	Pin 6:	——
Pin 2:	TX (Transmit)	Pin 7:	——
Pin 3:	RX (Receive)	Pin 8:	——
Pin 4:	——	Pin 9:	——
Pin 5:	GND (Ground)		

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.

Smart EDID - Display Lowest Resolution (default)	[DIP switch]	1080p@60Hz 7.1ch	[DIP switch]
Front Panel, Web UI or API EDID Control	[DIP switch]	1080p@60Hz 5.1ch	[DIP switch]
4K@60Hz 2ch	[DIP switch]	4Kx2K 2ch	[DIP switch]
1080p@60Hz 2ch	[DIP switch]	1920x1200 2ch	[DIP switch]
		1920x1200 No Audio	[DIP switch]

Note:

• Ensure that a display is connected and powered On to the selected output before copying EDIDs or the copy will fail. When this occurs, the 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. An **OK** message of the display indicates that the copy was successful, an **FL-2** indicates that the copy failed.

5. Reboot the matrix.

Note: EDID Copy feature is not available when Matrix in Smart EDID mode.

Specifications

Audio and Video

Inputs	6/8x HDMI 19-pin type A
Outputs	6/8x HDMI 19-pin type A 6/8x HDBaseT 8-pin RJ-45 female
Audio Formats	2ch analog and Up to 7.1 DTS-HD Master Audio and Dolby TrueHD
Maximum Video Resolution	1920x1080@60H (1080p60) 4096x2160@60Hz 4:2:0 (4K)
Color Depth	1080p: 48bit | 4K: 24bit
Maximum Pixel Clock	HDMI: 600MHz HDBaseT: 297MHz

Communication and Control

HDMI	HDCP 2.2 | EDID | DVI/D supported with adapter (not included)
HDBaseT	HDCP 2.2 | EDID | ARC | PoH | Bi-directional IR and Ethernet
Ethernet	1x 8-pin RJ-45 female WebUI | IP Control | Bi-directional over HDBaseT
IR	1x IR Ext - 3.5mm (1/8in) Stereo 6/8x IR RX - 3.5mm (1/8in) Stereo 6/8x IR TX - 3.5mm (1/8in) Mono Matrix Control | Bi-directional over HDBaseT
RS-232	Matrix Control | Firmware Updates
Audio Return Channel (ARC)	Returns audio to source location from remote display via HDBaseT.Outputs 5-6 (6x6) or 6-8 (8x8) only

Power

Power Supply (Internal)	100~240V AC 50/60Hz
PoH	48V 15.4W
Max Power Consumption	MX-0606-HDBT-H2: 88.6W MX-0808-HDBT-H2: 90.6W

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
Maximum BTU	MX-0606-HDBT-H2: 302.3 BTU/hr MX-0808-HDBT-H2: 309.1 BTU/hr

Dimensions and Weight

Height	87.7mm/3.46in
Width	438mm/17.25in
Depth	396mm/15.6in
Weight	MX-0606-HDBT-H2: 8.2kg/18.04lbs MX-0808-HDBT-H2: 8.48kg/18.66lbs

Regulatory

Safety and Emission	CE | FCC | RoHS

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 the transmitter, verify that the HDBaseT cable is properly terminated per the HDMI/HDBaseT Wiring section.

- Verify that the transmitter supports the output resolution of the source. See Supported Video Resolutions.
- Verify that the receiving device and display support the output resolution of the source.
- 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 Matrix or 3rd party Device Control
- Verify that IR and RS-232 cable(s) are properly terminated per the appropriate wiring section:
  - IR: IR Wiring
  - 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 hand-held 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 receiver behind any tinted panels on the device being controlled. It will likely appear as a small round disc.

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Warranty Information

This product is covered by a 3 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.

3 YEARS WARRANTY