6x6 HDBaseT Matrix Switcher with HDMI Mirror Outputs, Bidirectional IR, Routed RS-232 and PoH

MX-0606-PP-POH v1

WyreStorm

Quickstart Guide

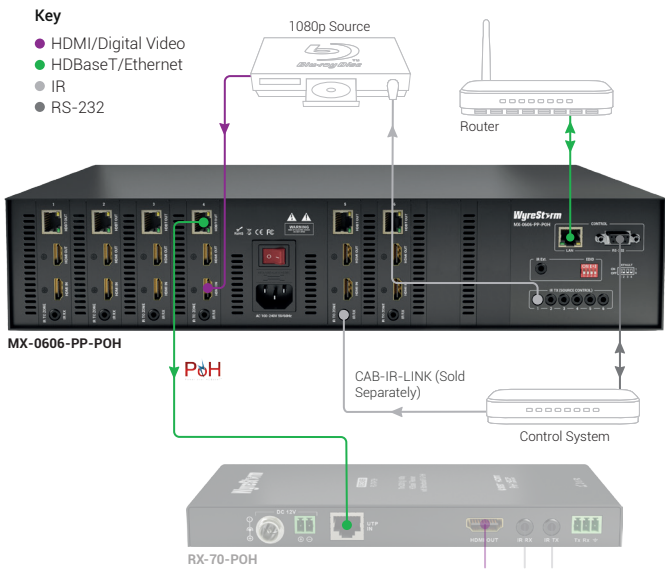
Note: The following information applies to version 1 of this product as identified by v1 after the model number on the product label.

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

In the Box

1x MX-0606-PP-POH Matrix Switcher
1x IR Remote Handset
1x IR Receiver (38khz)
6x Wide-band IR Receivers (30-50kHz)
6x IR Emitters
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



IMPORTANT!

Disconnecting and connecting (hot plugging) HDMI or HDBaseT while devices are powered on may cause damage. WyreStorm recommends powering off devices before disconnecting these connections.

Recommended Products

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

- **RX-70-POH** – This receiver supports the functions of this matrix. While others can be used, they may contain features that are not available on this matrix.
- **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. Detailed installation and configuration information may be found in the download tab located on the product page.

- WebUI Reference Guide – Setup for advanced Matrix features such as IP and testing of connections
- Drivers and API – Preconfigured drivers for popular control systems and API document.

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 matrix location to the receiver location. See 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 (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. Install HDBaseT receivers (RX-70-POH recommended) following the instructions provided with the model being installed.

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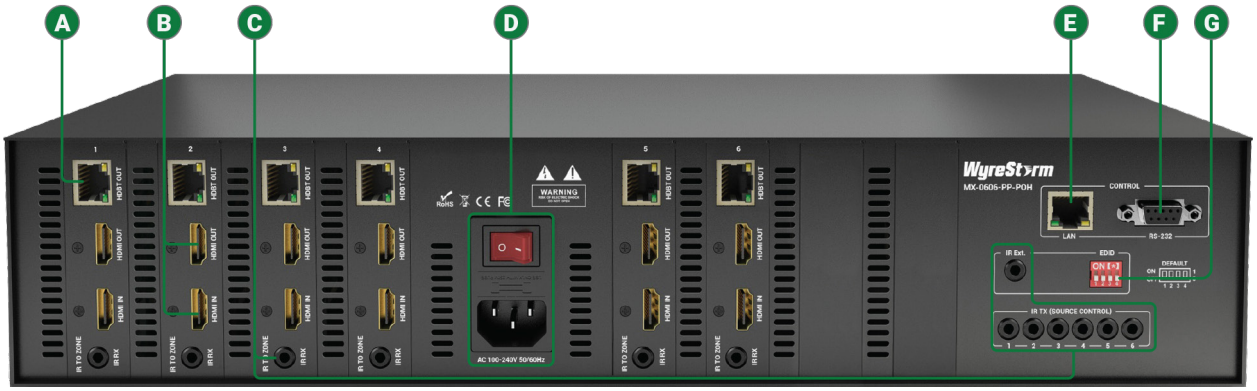
Front Panel

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



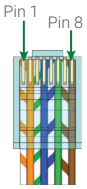
A	**Power Input**	8-pin RJ-45 female Connect to the HDBT In of an HDBaseT receiver. See HDMI/HDBaseT Wiring for important wiring guidelines. **HDBT Out LED Operation** **Green Solid:** HDBaseT link has been established with the receiver. **Green Flashing or Off:** HDBaseT link has NOT been established 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.
B	**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.
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	**Power**	Power Switch: 0 –Power Off / I – Power On Fuse Holder IEC Power Cord Port
E	**LAN**	8-pin RJ-45 female | 10/100 Mbps auto-negotiating Connect to a network router or switch for accessing the Web UI or matrix control via IP.
E	**RS-232**	9-pin DB9 Female Used to control the matrix functions and firmware updates. See RS-232 Wiring.
E	**EDID**	4 Position Dipswitch: Used to set EDIDs to correct resolution conflicts between the source and the display. See EDID Settings.

HDMI/HDBaseT Wiring

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

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

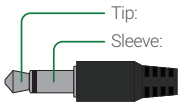
Resolutions Distances

The type of category cable used and the distance between the matrix and receiver can restrict the available video resolution.
Refer to **Video Resolutions** in the Specifications table for the max distance based on resolution.

IR Wiring

IR TX (Emitter) Wiring

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



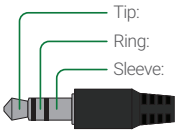
Tip: IR Signal
Sleeve: Ground (GND)

IR RX (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! 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.

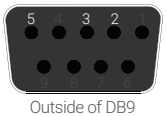


Tip: +5V DC
Ring: IR Signal
Sleeve: Ground (GND)

RS-232 Wiring

RS-232 Connection Guidlines

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

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 1080p @60Hz 2ch.
- Power to the matrix must be cycled (Off/On) after changing dip switches in order for the setting to take effect.
- Grayed out switches in the diagrams below can be in any position for the identified EDID.

EDID Copy			
1080p @60Hz 3D 2ch		1080p @60Hz 2ch	
1080p @60Hz 5.1ch		1080p @60Hz 7.1ch	
1080i @60Hz 2ch			
Normal Output Check hot plug voltage		Force Output Outputs regardless of hot plug voltage	

Copying EDIDs

1. Set the EDID dipswitch to EDID Copy (all switches down).
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 on the display indicates that the copy was successful, an **FL-2** indicates that the copy failed.
5. Reboot the matrix.

Specifications

Audio and Video		
Inputs	6x HDMI 19-pin type A	
Outputs	6x HDMI 19-pin type A (Mirrors HDBaseT) 6x HDBaseT 8-pin RJ-45 female	
Audio Formats	2ch PCM | Up to DTS-HD Master Audio and Dolby TrueHD	
Video Resolutions (Max)	**Using HDMI** 1920x1080p @60Hz 36bit (15m/50ft)	**Using Cat6/6a/7** 1920x1080p @60Hz 36bit (70m/230ft)
Color Depth	36bit	
Maximum Pixel Clock	225MHz	
Communication and Control		
HDMI	EDID | DVI/D supported with adapter (not included)	
HDBaseT	EDID | PoH (1way) | Bidirectional IR	
Ethernet	1x 8-pin RJ-45 female | Web UI | IP Control	
IR	1x IR Ext - 3.5mm (1/8in) Stereo | Matrix Control 6x IR TX - 3.5mm (1/8in) Mono | Bidirectional over HDBaseT | 6x IR RX - 3.5mm (1/8in) Stereo | Bidirectional over HDBaseT	
RS-232	Matrix Control | Firmware Updates	

Power	
Power Supply	Input: 100~240V AC 50/60Hz
PoH	48V 15.4W (each HDBT output)
Max Power Consumption	125 W
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	426.5 BTU/hr

Dimensions and Weight	
Rack Units/Wall Box	2U
Height With | Without Feet	95.5mm/3.76in | 87.7mm/3.46in
Width With | Without Brackets	481mm/18.94in | 438mm/17.25in
Depth With | Without Handles	373.8mm/14.72in | 347.8mm/13.7in
Weight	6.7kg/14.74lbs
Regulatory	
Safety and Emission	CE | FCC

Troubleshooting

No or Poor Quality Picture (snow or noisy image)

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

Note:

When using PoH, to power the receivers, 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. Refer to **Video Resolutions** in the Specifications tablefor the max distance based on resolution.

- Configure EDID Settings to a lower resolution.
- 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 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 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 receiver behind any tinted panels on the device being control.

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.