


# 4K HDR HDBaseT™ Matrix Switcher featuring 5Play™ including 16x48 Audio Matrix & DSP (4K to 70m/230ft - 1080p to 100m/328ft)

**MX-1010-HDBT-H2X | MX-1616-HDBT-H2X**

**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.

## Recommended Products

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

- **RX-70-4K-SCL**  
Scaling receiver that allows for 4K and 2K screens to be used while maintaining output of 4K.
- **RX-70-4K-ARC**  
HDCP 2.2 receiver with audio in to send audio from built in apps back to the matrix.
- **RX-70-4K**  
Standard 5-Play Receiver to be used in most cases

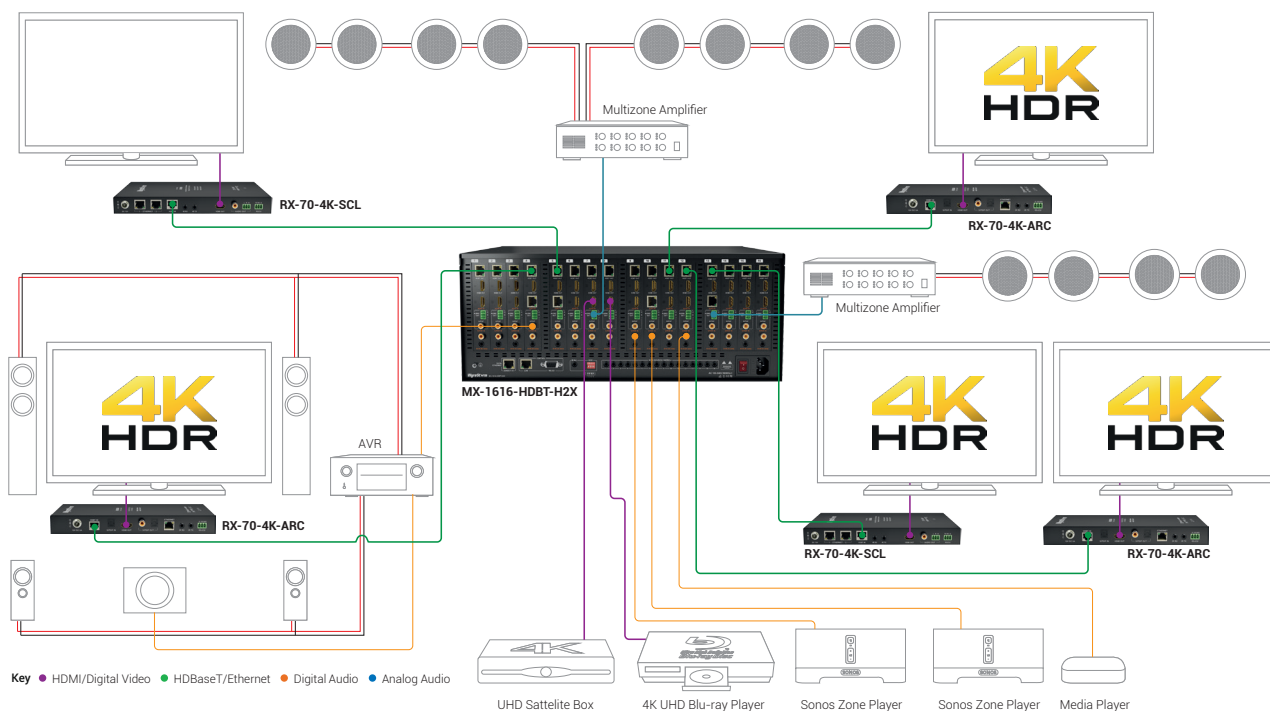
## In the Box

- 1x MX-1616-HDBT-H2X or 1x MX-1010-HDBT-H2X HDBaseT Matrix Switcher
- 1x Handheld IR Remote
- 10/16 x IR emitters
- 10/16 x IR Broadband Receiver (30KHz to 50KHz)
- 1x IR Receiver (38KHz)
- 10/16x 3-pin phoenix to stereo RCA sockets
- 1x AC Power Cord with US Plug
- 1x AC Power Cord with UK Plug
- 1x AC Power Cord with EU Plug
- 1x USB to UART Serial Cable
- 2x 4u rack ears and screws
- 1x Quickstart Guide (This Document)

## Additional Information

Visit the product page on [WyreStorm.com](http://WyreStorm.com) to download additional documentation, control drivers, and configuration software.

## 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 its 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

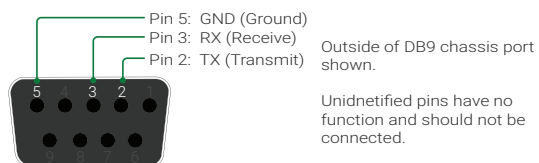


#### IR RX/Ext Port Pinout



### 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 functionality 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 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, 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.

SmartEDID/Front Panel/ Web UI	4K UHD	1080p	Standard Video
Smart EDID-Display Lowest Resolution - 2ch only (default)	4K @60Hz 2ch No HDR	1080p @60Hz 7.1ch	1920x1200 2ch
Front Panel, Web UI or API EDID Control	4K @30Hz 5.1ch With HDR	1080p @60Hz 5.1ch	1920x1200 No Audio
	4K @30Hz 7.1ch With HDR	1080p @60Hz 2ch	
	4K @30Hz 2ch With HDR		
	4K @30Hz 8bit 2ch No HDR		

## 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 3<sup>rd</sup> 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	10/16x HDMI In19-pin type A   10/16x S/PDIF In Coaxial Digital	
Outputs	10/16x HDMI 19-pin type A (Mirrors HDBaseT)   10/16x HDBaseT 8-pin RJ-45 female 10/16x S/PDIF Out Coaxial Digital   10/16x Audio Out 3pin Phoenix Connector	
Output Video Encoding	HDBaseT Class A 5-Play	
Encoding Data Rate	10.2Gbps	
End to End Latency	10µs (micro seconds)	
Audio Formats	S/PDIF: 2ch PCM   Multichannel: Up to 5.1 DTS and Dolby Digital HDMI: 2ch PCM   Multichannel: LPCM and Up to DTS-X and Dolby Atmos Analog: 2ch	
Video Resolutions (Max)	<b>HDMI</b> 1920x1080p @60Hz 12bit (15m/50ft)   16bit (7m/23ft) 3840x2160p @24/25/30Hz 4:4:4 8bit (7m/23ft)   @24Hz 4:2:0 HDR 10bit (3m/9.8ft) 4096x2160p @60Hz 8bit 4:2:0 (7m/23ft)   @60Hz 8bit 4:4:4 (3m/9.8ft)	
	<b>Using Cat6</b> 1920x1080p @60Hz 12bit (100m/328ft)   16bit (70m/230ft) 3840x2160p @30Hz 4:4:4 8bit (70m/230ft)   @24Hz 4:2:0 HDR 10bit (70m/230ft) 4096x2160p @60Hz 4:2:0 8bit (70m/230ft)	
	<b>Using Cat6a/7</b> 1920x1080p @60Hz 12bit (100m/328ft)   16bit (100m/328ft) 3840x2160p @30Hz 4:4:4 8bit (100m/328ft)   @24Hz 4:2:0 HDR 10bit (100m/328ft) 4096x2160p @60Hz 4:2:0 8bit (100m/328ft)	
	<b>Cat6a/7 (Extended Distance Mode):</b> 1920x1080p @60Hz 8bit (140m/460ft)	
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 supported with adapter (not included)	
HDBaseT	HDMI   HDCP 2.2   EDID   CEC   ARC   1-way PoH to Receiver   Bidirectional 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) TRS Stereo   Matrix Control 10/16x IR RX - 3.5mm (1/8in) TRS Stereo   10/16x IR TX - 3.5mm (1/8in) TS Mono   Transmits over HDBaseT	
RS-232	Matrix Control   Bidirectional over HDBaseT   Firmware Updates	
Audio Return Channel (ARC)	Returns audio from displays built-in applications via ARC HDMI Input over HDBaseT	
Power		
Power Supply	100~240V AC 50/60Hz	
PoH	48V 15.4W (each HDBT output)	
Max Power Consumption	Based on 16 (or 10) HDMI in/HDBT out cards MX-1010-HDBT-H2X: 200W   MX-1616-HDBT-H2X: 290W	
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	MX-1010-HDBT-H2X: 682 BTU/hr   MX-1616-HDBT-H2X: 989 BTU/hr	
Dimensions and Weight		
	MX-1010-HDBT-H2X	MX-1616-HDBT-H2X
Rack Units/Wall Box	4U	4U
Height With   Without Feet	183.1mm/7.22in   176mm/6.93in	183.1mm/7.22in   176mm/6.93in
Width With   Without Brackets	483mm/19.02in   440mm/17.33in	483mm/19.02in   440mm/17.33in
Depth With   Without Handles	420.7mm/16.57in   382.7mm/15.07in	420.7mm/16.57in   382.7mm/15.07in
Weight	15.6kg/34.32lbs	16.54kg/36.39lbs
Regulatory		
Safety and Emission	CE   FCC   RoHS	

## 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](https://www.wyrestorm.com) for additional information on this product including important technical information not provided in this document and warranty terms & conditions.

