

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 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.

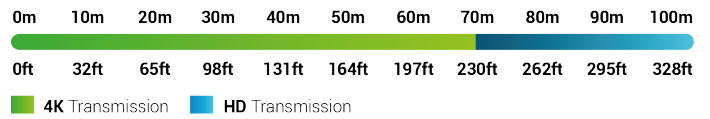
IR TX/RX Guidelines

- Using WyreStorm infrared emitters and receivers is the best way to ensure that most IR coding formats are transmitted and received. 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 WyreStorm 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.

RS-232 Wiring

The EX-70-H2X uses a 3-pin RS-232 with no hardware flow control. 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. Refer to [RS-232 Mode Settings](#) for details on setting RS-232 modes.

Cat6 Cable Performance Guide



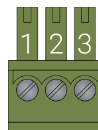
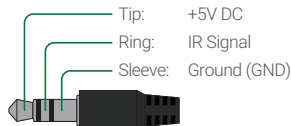
IR TX Port Pinout

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.



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)

Setup and Configuration

EDID Configuration

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

- 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 extender must be cycled (Off/On) after changing dip switches in order for the setting to take effect

Note: Switches shown in gray can be in any position for the described function

EDID Copy (Default)		4K@30Hz/8bit only 2ch audio without HDR	
4K@60Hz 2ch audio without HDR		4K@30Hz 2ch audio with HDR	
4K@60Hz 2ch audio with HDR		4K@30Hz 7.1ch audio with HDR	
4K@60Hz 7.1ch audio with HDR		1080P@60Hz 2ch	

Long Cable Mode

This extender can be set to allow for extending 2K HDBaseT signals up to 140m/459ft by setting Long Cable Mode **On**. We recommend that this mode is set to **Off** for cable runs of 100m/328ft or less. These settings apply to the Setting dipswitch located on the transmitter.

Note: Switches shown in gray can be in any position for the described function.

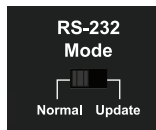
Long Cable Mode On		Long Cable Mode Off	
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RS-232 Mode Settings

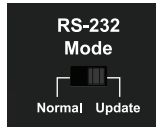
The RS-232 connector is used to transmit RS-232 over HDBaseT to the remote location and for firmware updates. Ensure that the RS-232 Mode switch on the receiver and the Setting dipswitches on the transmitter are the proper position for the operation being performed.

Receiver RS-232 Mode Switch

Set the mode switch to **Normal** to transmit RS-232 signals from the TX to the RX for controlling devices in the remote location.



Set the mode switch to the **Update** position to install a firmware update in either the TX or RX.



Transmitter Setting Switch

RS-232 Pass-Through (DEFAULT)



HDBaseT Update



Note: Switches shown in gray can be in any position for the described function.

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 extender.
- Configure EDID Settings to a lower resolution. Refer to [EDID Configuration](#) for details.
- 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, RS-232, and Ethernet cables are properly terminated following the [Wiring and Connections](#) section.
- Verify that RS-232 modes are properly selected for the desired operation. Refer to [RS-232 Mode Settings](#) for details.

Troubleshooting Tips:

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

Specifications

Audio and Video					
	Transmitter	Receiver			
Inputs	1x HDMI In: 19-pin type A	1x HDBT In: 8-pin RJ-45 Female			
Outputs	1x HDBT Out: 8-pin RJ-45 Female 1x HDMI Loop Out: 19-pin type A	1x HDMI Out: 19-pin type A			
Output Video Encoding	HDBaseT Class A				
Encoding Data Rate	18Gbps				
End to End Latency	10µs (micro seconds)				
Audio Formats	2ch PCM Multichannel up to DTS-X and Dolby Atmos				
Video Resolutions (Max)	Video Resolution	HDMI	Cat6	Cat6a/7	Cat6/6a/7 Long Cable Mode
	1920x1080p @60Hz 12bit	15m/49ft	100m/328ft	100m/328ft	140m/439ft
	1920x1080p @60Hz 16bit	7m/23ft	100m/328ft	100m/328ft	140m/439ft
	3840x2160p @24Hz 10bit 4:2:0 HDR	3m/10ft	70m/230ft	100m/328ft	NA
	3840x2160p @30Hz 8bit 4:4:4	7m/23ft	70m/230ft	100m/328ft	NA
	3840x2160p @60Hz 10bit 4:2:0 HDR	3m/10ft	70m/230ft	70m/230ft	NA
	4096x2160p @60Hz 8bit 4:2:0	7m/23ft	70m/230ft	100m/328ft	NA
4096x2160p @60Hz 8bit 4:4:4	7m/23ft	70m/230ft	70m/230ft	NA	
Supported Standards	DCI RGB Dolby Vision @ 30Hz HLG HDR-10				
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 2-way PoH Bidirectional IR, RS-232, and Ethernet				
CEC	CEC Pass-through – Requires CEC compatibility between source and display				
IR	1x IR TX: 3.5mm (1/8in) TS Mono 1x IR RX: 3.5mm (1/8in) TRS Stereo				
RS-232	1x RS-232: 3-pin Phoenix				
Ethernet	1x Ethernet: 8-pin RJ-45 Female				
Power					
Power Supply	12V DC 3A				
PoH	IEEE 802.3af 48V 15.4W Max 2-way				
Max Power Consumption	26.5W				
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	90.42 BTU/hr				
Dimensions and Weight					
Rack Units	<1U				
Height	18mm/0.71in				
Width	232mm/9.14in				
Depth	94mm/3.71in				
Weight	0.52kg/1.14lbs				
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.

