4K HDR 4:4:4 60Hz HDBaseT™ Extender with DSC
Supporting USB.2.0 Client/host (4K: 100m/328ft)

EX-100-H2-PRO

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.

4K HDR | **2160p 4:4:4 60** | **HDBT™** | **HDMI®** | **HDCP 2.2** | **PoH**

⚠ IMPORTANT! Installation Requirements

- Visit the product page to download the latest firmware, document versions, additional documentation, and configuration tools.
- Read through the Wiring and Connections section for important wiring guidelines before creating or choosing premade cables.
- While this product supports CEC, WyreStorm cannot guarantee compatibility with all forms of CEC communication.

In the Box

1x EX-100-H2-PRO Transmitter (TX)
1x EX-100-H2-PRO Receiver (RX)
1x IR Emitter
1x IR Receiver
2x 3-pin Terminal Block
1x 12V DC 3A Power Supply (US/UK/EU/AU)
4x Mounting Brackets
1x Quickstart Guide (this document)

Basic Wiring Diagram

KEY
- ● HDMI
- ● HDBaseT / Ethernet
- ● RS-232
- ● Power
- ● USB
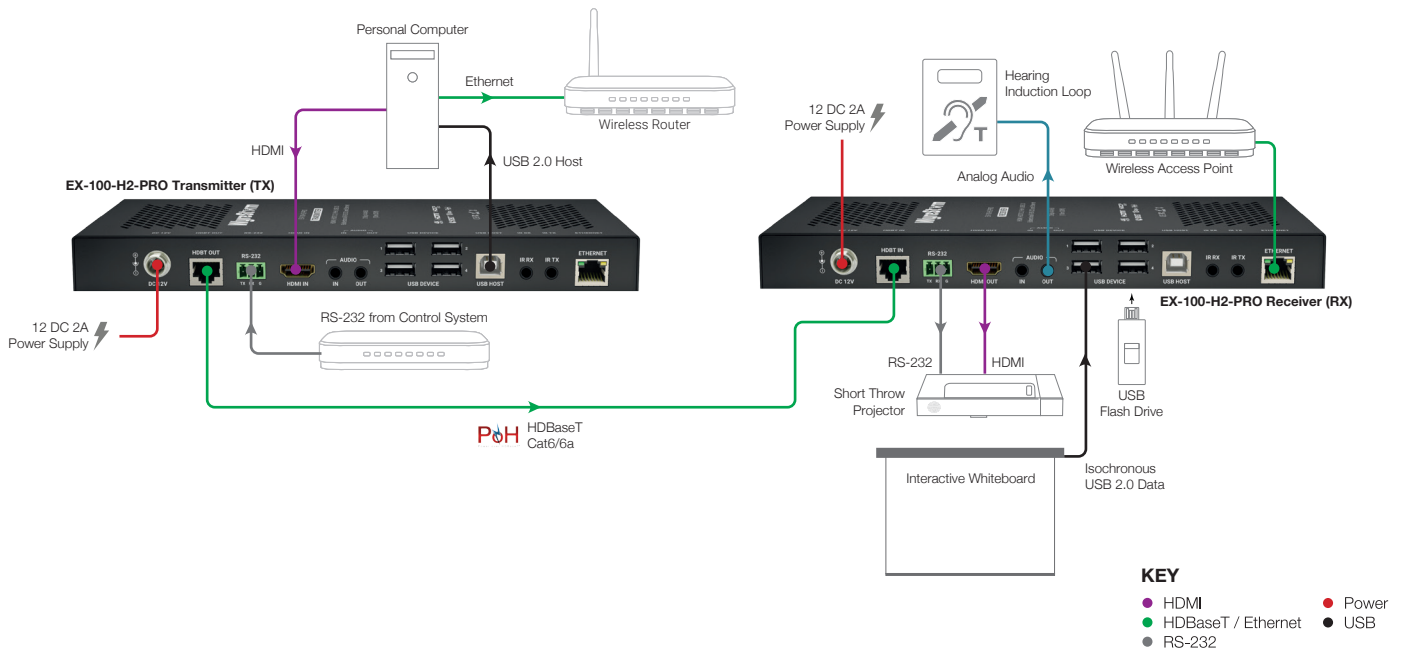
Wiring and Connections

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 the use of shielded category cable to minimize signal noise and interference.
- 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.

Cat6 Cable Performance Guide

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

■ **4K/HD** Transmission

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.

IR TX Port Pinout

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

Tip: Anode
Sleeve: Cathode (IR Signal)

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.

Tip: +5V DC
Ring: IR Signal
Sleeve: Ground (GND)
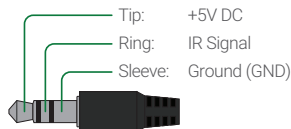
RS-232 Wiring

The EX-100-H2-PRO 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 functionally to ensure that the correct connections can be made.

Refer to RS-232 Mode Settings for details on setting RS-232 modes.
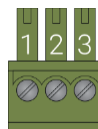
WyreStorm Connector			3rd Party Device
Pin 1	TX (Transmit)	---> To --->	RX (Receive)
Pin 2	RX (Receive)	---> To --->	TX (Transmit)
Pin 3	G (Ground)	---> To --->	G (Ground)

Audio Connections

Tip: Left Channel
Ring: Right Channel
Sleeve: Ground (GND)
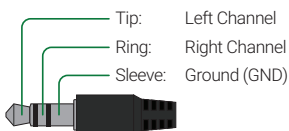
Setup and Configuration

USB Operation

When using the USB ports one of the units needs to set as a host while the other is set as a device connection. The host can be either the TX or RX as long as the other unit is set to device.

Set the switch to **Host** to connect to a host device such as a PC or Mac. Requires that the opposite unit is set to **Device.**


Set the switch to **Device** to connect devices such keyboards or USB cameras to the unit. Requires that the opposite unit is set to **Host.**
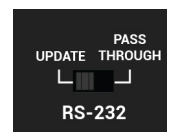

RS-232 Port Configuration

The RS-232 port on this extender has 2 settings that are important to the operation of the unit. While being used the RS-232 switch should be in the Pass-through position.

Set the switch to **Pass Through** for normal RS-232 operation. This is the default setting.
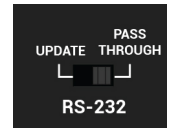
Set the switch to **Update** when updating firmware.

Troubleshooting

No or Poor Quality Picture (snow or noisy image)

- Verify that power is being supplied to the transmitter and receiver.
- 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.
- If transmitting 3D or 4K, verify that the HDMI cables used are 3D or 4K rated.
- Verify that all source and HDBaseT connections are not loose and are functioning properly

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 Audio In: 3.5mm (1/8in) TRS Stereo	1x HDBT In: 8-pin RJ-45 Female 1x Audio In: 3.5mm (1/8in) TRS Stereo
Outputs	1x HDBT Out: 8-pin RJ-45 Female 1x Audio Out: 3.5mm (1/8in) TRS Stereo	1x HDMI Out: 19-pin type A 1x Audio Out: 3.5mm (1/8in) TRS Stereo
Output Video Encoding	HDBaseT Class C	
Encoding Data Rate	10.2Gbps	
End to End Latency	10μs (micro seconds)	
Audio Formats	2ch Analog/PCM | Multichannel: LPCM up to DTS-X and Dolby Atmos	

	Video Resolution	HDMI	Cat6	Cat6a/7
Video Resolutions (Max)	1920x1080p @120Hz 12bit	70m/230ft	70m/230ft	100m/328ft
	1920x1080p @60Hz 12bit	15m/49ft	100m/328ft	100m/328ft
	3840x2160p @24Hz 10bit 4:2:0 HDR	15m/49ft	100m/328ft	100m/328ft
	3840x2160p @60Hz 8bit 4:4:4	7m/23ft	70m/230ft	100m/328ft
	3840x2160p @60Hz 10bit 4:2:0 HDR	5m/16ft	70m/230ft	100m/328ft
	3840x2160p @60Hz 12bit 4:2:2 HDR	5m/16ft	70m/230ft	100m/328ft
	Note: WyreStorm recommends the use of shielded category cable to minimize signal noise and interference.			

Supported Standards	DCI | RGB | HDR | HDR10 | Dolby Vision up to 30Hz | HLG | BT.2020 | BT.2100
Maximum Pixel Clock	HDMI: 600MHz | HDBaseT: 340MHz

Communication and Control	
HDMI	HDMI | HDCP 2.2 | EDID | CEC Pass-through | DVI/D supported with adapter (not included) | DP++
HDBaseT	HDMI | HDCP 2.2 | EDID | Audio | 1-way PoH (TX powers RX) | Bidirectional IR/RS-232/Ethernet | CEC
Ethernet	1x Ethernet: 8-pin RJ-45 Female | Bidirectional over HDBaseT
IR	1x IR RX: 3.5mm (1/8in) TRS Stereo | 1x IR TX: 3.5mm (1/8in) TS Mono (Transmitter and Receiver)
RS-232	1x RS-232: 3-pin Phoenix (Transmitter and Receiver)
USB	1x Type B (host) | 4x Type A (device) (Transmitter and Receiver) USB direction must be set using switch on both transmitter and receiver USB hub compatible | Maximum: 7 devices, 23 endpoints Maximum uplink speed: 190Mbps

Power	
Power Supply	12V DC 3A
Max Power Consumption	8.88W

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	30.30 BTU/hr

Dimensions and Weight	
Rack Units | Wall Box	<1U
Height With | Without Feet	21mm/0.83in
Width With | Without Brackets	195mm/7.68in
Depth With | Without Handles	94.8mm/3.74in
Weight	0.36kg/0.79lbs

Regulatory	
Safety and Emission	CE | FCC | RCM | EAC | 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.