

4K60 HDBaseT KVM Extender with Loop-Out (100m/150m LRM)

EX-100-KVM-H2

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 HDMI 2.0 HDCP 2.3 PoC

⚠️ IMPORTANT! Installation Requirements

- Visit the product page to download the latest firmware, document version, additional documentation, and configuration tools.
- Read through the Wiring and Connections section for important wiring guidelines before creating or choosing premade cables.

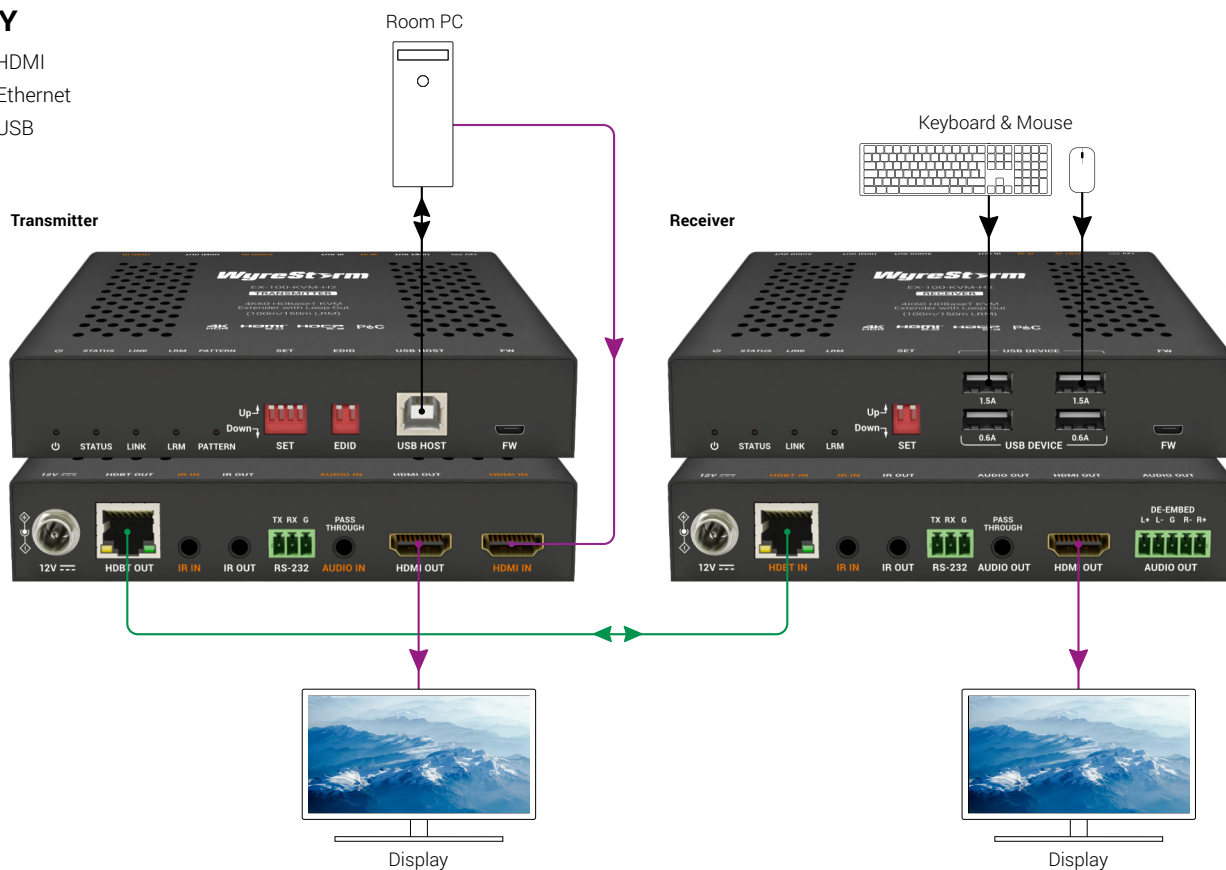
In the Box

- 1x Extender Set
- 1x 12V 3A Locking PSU (multi-region)
- 2x 3-pin Phoenix connectors
- 1x 5-pin Phoenix connector
- 8x Mounting Ears
- 1x IR Receiver
- 1x IR Transmitter
- 1x Quickstart Guide (this document)

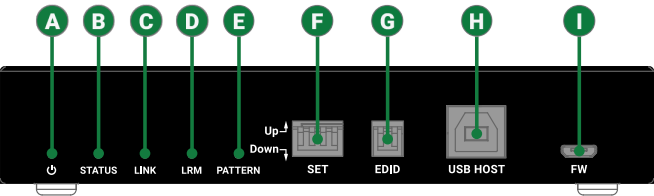
Basic Wiring Diagram

KEY

- HDMI
- Ethernet
- USB

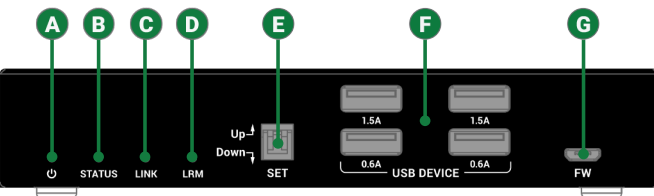


EX-100-KVM-H2 Transmitter (Front)



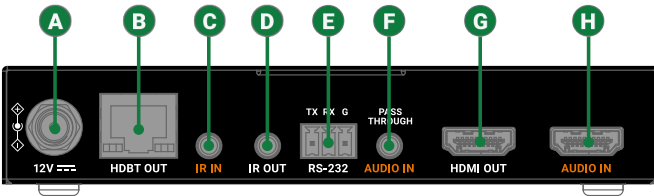
A Power LED	On: The device is powered on. Off: The device is powered off.
B STATUS LED	Blinking: The device is working properly. Off: The device is not working properly.
C LINK LED	On: HDBT link is normal. Off: No HDBT link or link error.
D LRM LED	On: The device is working in Long-reach mode. Off: The device is working in HDBaseT mode.
E PATTERN LED	On: Test pattern function is set to on. When enable test pattern, the HDMI IN source is replaced with a test signal, and the display shows a red image Off: Test pattern function is set to off.
F SET	4-pin DIP switch. It is used to set RS-232 function (pass-through or Valens firmware upgrade), select LRM mode or HDBaseT mode, and enable/disable test pattern mode.
G EDID	2-pin DIP switch. It is used to manage EDID.
H USB HOST	USB 2.0 Type-B port. Connect to a USB host device.
I FW	Micro-USB port, used for MCU firmware upgrade.

EX-100-KVM-H2 Receiver (Front)



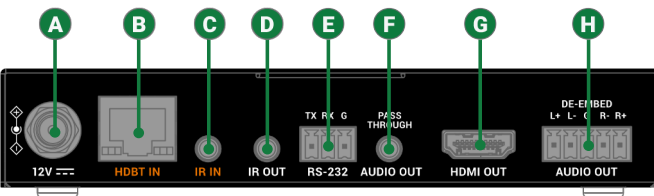
A Power LED	On: The device is powered on. Off: The device is powered off.
B STATUS LED	Blinking: The device is working properly. Off: The device is not working properly.
C LINK LED	On: HDBT link is normal. Off: No HDBT link or link error.
D LRM LED	On: The device is working in Long-reach mode. Off: The device is working in HDBaseT mode.
E SET	2-pin DIP switch. It is used to set RS-232 function (pass-through or Valens firmware upgrade), and select LRM mode or HDBaseT mode.
F USB Device	USB 2.0 Type-A ports. The upper two USB ports support a maximum output current of 1.5A, and can be connected to high-power USB devices such as USB camera. The lower two USB-A ports support a maximum output current of 0.6A, can be connected to low-power USB devices such as keyboard, mouse.
G FW	Micro-USB port, for MCU firmware upgrade.

EX-100-KVM-H2 Transmitter (Rear)



A 12V Power	Connect to the power adapter provided. With one-way PoC, one power adapter is needed to be connected to the receiver to power both units.
B HDBT OUT	Connect to HDBT IN port of the receiver.
C IR IN	Connect to the provided IR receiver.
D IR OUT	Connect to the provided IR emitter.
E RS-232	Connect to a RS-232 enabled device.
F AUDIO IN (PASSTHROUGH)	Connect to an audio source for audio pass-through from the transmitter to the receiver.
G HDMI OUT	Connect to an HDMI display for loop-out.
H HDMI IN	Connect to an HDMI source.

EX-100-KVM-H2 Receiver (Rear)



A 12V Power	Connect to the power adapter provided. With one-way PoC, one power adapter is needed to be connected to the receiver to power both units.
B HDBT IN	Connect to HDBT OUT port of the transmitter.
C IR IN	Connect to the provided IR receiver.
D IR OUT	Connect to the provided IR emitter.
E RS-232	Connect to a RS-232 enabled device.
F AUDIO OUT (PASSTHROUGH)	Connect to an audio receiver for audio pass-through from the transmitter to the receiver.
G HDMI OUT	Connect to an HDMI display
H AUDIO OUT (DE-EMBED)	Connect to an audio receiver (e.g., AV Receiver) for audio de-embedding output.

Wiring and Connections

WyreStorm recommends that all wiring for the installation is run and terminated prior to making connections to the extender. Read through this section in its entirety before running or terminating any wires to ensure proper operation and to avoid damaging the 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.

DIP Switch Settings

SET DIP

Function	DIP Location
Test Pattern Off	
Test Pattern ON	
HDBaseT Mode	
Long-Reach Mode (LRM)	
RS-232 Passthrough	
HDBaseT FW Update	

EDID DIP

Function	DIP Location
Copy from RX HDMI OUT	
Copy from TX HDMI OUT	
Fix 4K@60Hz 2CH	
Fix 1080p@60Hz 2CH	

Front Panel (Receiver)

SET DIP

Function	DIP Location
HDBaseT Mode	
Long-Reach Mode	
RS-232 Passthrough	
HDBaseT FW Update	

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 4K, verify that the HDMI cables used are 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 RS-232 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		
Inputs	Transmitter	Receiver
	1x HDMI 2.0 (Type-A female) 1x USB-B 1 x Audio In (Passthrough) 1x IR 3.5mm	1x HDBaseT RJ-45 1x IR 3.5mm
Outputs	1x HDMI 2.0 Loop Out (Type-A female) 1x HDBaseT RJ-45 1x IR 3.5mm	1x HDMI 2.0 (Type-A female) 1x Audio Out (Passthrough) 1x Balanced Analog Audio Out 4x USB-A 1x IR 3.5mm
Video Encoding	HDMI 2.0	
Audio Formats	HDMI IN/OUT: Up to 7.1ch, including PCM 2.0/5.1/7.1ch, Dolby Digital, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS 5.1, DTS-HD Master Audio and DTS:X AUDIO OUT: PCM 2.0	
Video Resolutions (max)	3840×2160@60Hz 4:4:4	
Supported Standards	HDMI 2.0, HDCP 2.3	
Performance	HDMI bandwidth: 18Gbps USB bandwidth: 255 Mbps HDBaseT Mode: 4K60 + USB2.0 up to 100m Long-Reach Mode: 4K60 + USB1.1 up to 150m	
Communication & Control		
HDMI	HDMI 2.0 HDCP 2.3 EDID CEC Pass-through	
HDBaseT	HDMI HDCP 2.3 EDID Line Audio 1-way PoH (RX powers TX) Bidirectional IR Bidirectional RS-232 CEC	
RS-232	1x RS-232: 3-pin Phoenix (Transmitter and Receiver)	
USB	1x Type B (host) 4x Type A (device) Maximum uplink speed: 255Mbps	
EDID Setting	DIP Switch copy and fix	
Firmware Update	Micro USB port	
Power		
Power Supply	12V DC 3A	
Environmental		
Operating Temperature	0°C to 45°C (32°F to 113°F)	
Storage Temperature	-20°C to 70°C (-4°F to 158°F)	
Humidity	10% to 90%, non-condensing	
ESD Protection	Human-body Model: ±8kV (Air-gap discharge) / ±4kV (Contact discharge)	
Dimensions		
Height	25mm / 0.98"	
Width	140mm / 5.51"	
Depth	100mm / 3.94"	
Weight	0.33kg / 0.73lb	0.34kg / 0.75lb
Regulatory		
Safety and Emission	CE RoHS RCM EAC UKCA	

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 ProAV Corporation 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.

