100m HDMI 2.1 8K HDBaseT Extender
EX-100-KVM-8K

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.
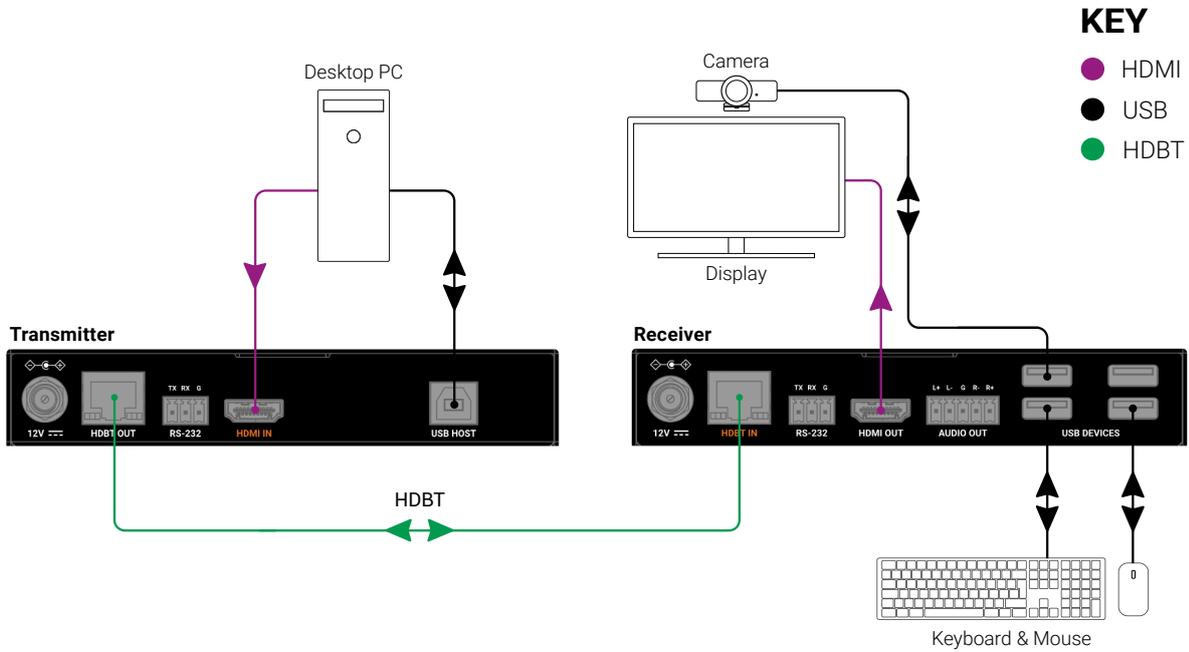
8K **HDBT™** **HDMI 2.1** **HDCP 2.3** **USB 2.0**

⚠️ **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.
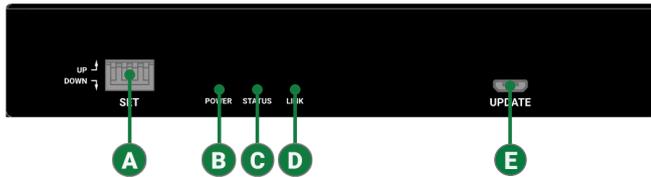
In the Box

1x EX-100-KVM-8K Extender Set
8x Mounting Ears
1x 12V DC Power Supply with UK/US/EU/AU Plug
2x 3pin Phoenix Terminal
1x 5pin Phoenix Terminal
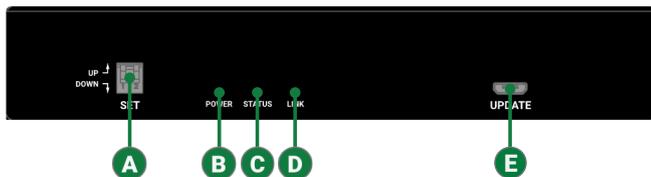1x Quickstart Guide (this document)

Basic Wiring Diagram

KEY
- 🟣 HDMI
- ⚫ USB
- 🟢 HDBT

Desktop PC

Camera

Display

Transmitter

12V | HDBT OUT | TX RX G RS-232 | HDMI IN | USB HOST

Receiver

12V | HDBT IN | TX RX G RS-232 | HDMI OUT | L+ L- G R- R+ AUDIO OUT | USB DEVICES

HDBT

Keyboard & Mouse

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EX-100-KVM-8K Transmitter (Front)
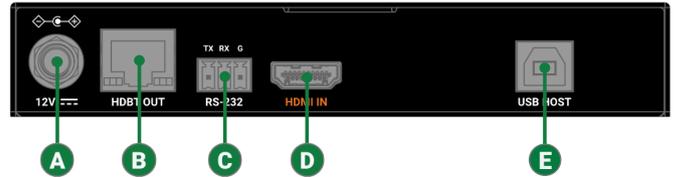

A	SET	4-pin switch for RS-232, HDCP and EDID configurations. For more information, refer to the *DIP Switch Configurations* section.
B	Power LED	**On/Off:** Indicates whether the device is powered on.
C	Status LED	• **Blinking:** The device is working properly. • **Off:** The device is not working properly.
D	Link LED	• **On:** The link between the transmitter and receiver is normal. • **Blinking/Off:** Link error or no link.
E	UPDATE	Micro USB port. Connect to a PC for firmware update.

EX-100-KVM-8K Transmitter (Rear)

A	Power	Connect to the included DC 12V 3A power adapter. **Note:** Connecting the power adapter to the receiver is recommended as it could power both the transmitter and the receiver through one-way PoC.
B	HDBT Output	Connect to the HDBT IN port of the receiver.
C	RS-232	Connect to an RS-232 device for RS-232 data passthrough or to a PC for HDBT firmware update (available only when the first pin of the **SET** switch is set to the "down" position).
D	HDMI Input	Connect to an HDMI source device.
E	USB Host	USB 2.0 Type-B port. Connect to a USB host (e.g. a PC).

EX-100-KVM-8K Receiver (Front)
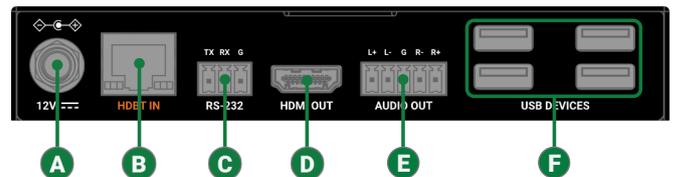

A	SET	2-pin switch for RS-232 configurations. For more information, refer to the *DIP Switch Configurations* section.
B	Power LED	**On/Off:** Indicates whether the device is powered on.
C	Status LED	• **Blinking:** The device is working properly. • **Off:** The device is not working properly.
D	Link LED	• **On:** The link between the transmitter and receiver is normal. • **Blinking/Off:** Link error or no link.
E	UPDATE	Micro USB port. Connect to a PC for firmware update.

EX-100-KVM-8K Receiver (Rear)

A	Power	Connect to the included DC 12V 3A power adapter. **Note:** Connecting the power adapter to the receiver is recommended as it could power both the transmitter and the receiver through one-way PoC.
B	HDBT Input	Connect to the HDBT OUT port of the transmitter.
C	RS-232	Connect to an RS-232 device for RS-232 data passthrough or to a PC for HDBT firmware update (available only when the first pin of the **SET** switch is set to the "down" position).
D	HDMI Output	Connect to an HDMI display device.
E	Audio Out	Connect to an audio receiver for de-embedded balanced analog audio output.
F	USB Host	4x USB 2.0 Type-A ports, each outputting a maximum current of 1.25A. Connect to USB peripherals.

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 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 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

WyreStorm recommends the use of shielded cable to minimize signal noise and interference

DIP Switch Configurations

Transmitter

The 4-pin SET switch on the transmitter configures RS-232 mode, input HDCP, and input EDID. By default, pins 1 to 4 are set to the "Up" position.

Function	DIP Switch Position			
	1	2	3	4
RS232 Passthrough **(Default)**	Up	—	—	—
RS232 for HDBT Firmware Update	Down	—	—	—
Input HDCP on **(Default)**	—	Up	—	—
Input HDCP off	—	Down	—	—
Copy EDID **(Default)**	—	—	Up	Up
Fix 4K@60 PCM 2CH	—	—	Up	Down
Fix 4K@30 PCM 2CH	—	—	Down	Up
Fix 1080P@60 PCM 2CH	—	—	Down	Down

Receiver

The 2-pin SET switch on the receiver configures the RS-232 mode. By default, pin 1 is set to the "Up" position. pin 2 is reserved.
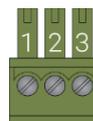
Function	DIP Switch Position	
	1	2
RS232 Passthrough **(Default)**	Up	—
RS232 for HDBT Firmware Update	Down	—

RS-232 Operation

The RS-232 ports support bi-directional passthrough, allowing RS232 data to transfer between the transmitter and receiver. Before operation, ensure that pin 1 of the SET switches on both units is set to the "Up" position.

RS-232 Wiring

The EX-100-KVM-8K 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.

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)

Troubleshooting

Why is there no power to the device?
- Ensure the device is powered on.
- Use the power adapter included in the package.

Why is there no picture, or is the video flashing?
- Make sure all devices are powered on and all cables are properly connected and of good quality.
- Check that cable lengths are within the recommended range (see Specifications table).
- Verify that all LED indicators are functioning normally.
- If connecting a source directly to a display, ensure they can work properly.
- Confirm that the input resolution is supported by the device

💡 **Troubleshooting Tips:**
WyreStorm recommends using a cable tester or connecting the cable to other devices to verify functionality.

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Specifications

Audio and Video	
Input/Output Signal Type	HDMI 2.1, HDCP 2.3
Input/Output Resolutions	**VESA:** 800 x 600[6], 1024 x 768[6], 1280 x 768[6], 1280x 800[6], 1280 x 960[6], 1280 x 1024[6], 1360 x 768[6], 1366 x 768[6], 1440 x 900[6], 1600 x 900[6], 1600 x 1200[6], 1680 x 1050[6], 1920 x 1200[6], 2048 x 1152[6], 2560 x 1440[6], 5120 x 1440[6], 5120 x 2160[6] **HDTV:** 1280 x 720P[5,6,7,8], 1920 x 1080P[5,6,7,8,9,10,11], 3840 x 2160P[1,2,3,4,5,6,7,8], 4096 x 2160P[1,2,3,4,5,6,7,8], 7680 x 4320P[1,2,3,4,5,6] 1 = at 24 (23.98) Hz, 2 = at 25 Hz, 3 = at 30 (29.97) Hz, 4 = at 48 Hz, 5 = at 50 Hz, 6 = 60 (59.94) Hz, 7 = at 100Hz, 8 = at 120Hz, 9 = at 144Hz, 10 = at 165Hz, 11 = at 240Hz **Note:** 7680 x 4320P @48Hz/50Hz/60Hz supports only YCbCr 4:2:0.
Maximum Data Rate	HDMI: 40Gbps | USB 2.0: 255Mbps
Maximum Pixel Clock	600MHz
Audio Formats	**HDMI IN/OUT:** Supports multichannel audio up to PCM 7.1, 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

	Cable Type	Range	Supported Video	
Transmission Distance	Cat 6/6A/7	100m/328ft	8K@60Hz 4:2:0 8K@30Hz 4:4:4	
	Cat 5e	90m/295ft	8K@60Hz 4:2:0 8K@30Hz 4:4:4	
	HDMI	Input/Output: 10m/33ft	4K@30Hz, 1080P@60Hz	
		Input: 5m/16ft Output:10m/33ft	4K@60Hz	
		Input/Output: 3m/10ft	8K@60Hz 4:2:0	

Power	
Power Supply	DC 12V 3A
Power Consumption (Maximum)	25W (per unit, via PoC)
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 / 0.98in
Width	145mm / 5.71in
Depth	90.2mm / 3.55in
Weight	0.86lb (0.39kg) per unit
Regulatory	
Safety and Emission	CE | FCC | 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.

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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.