4K30 IP Based KVM Extender
Zero Latency, USB2.0, 1G Network Plug & Play Extender
EX-100-KVM-IP

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**®   **USB 2.0**
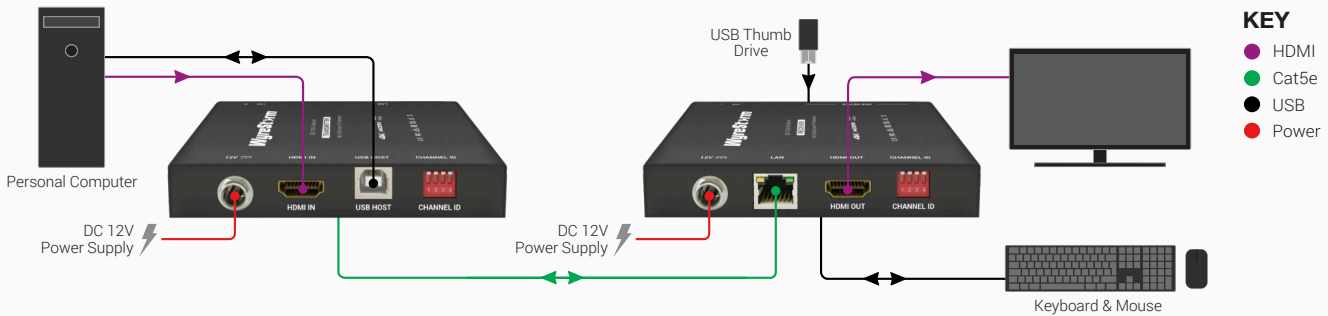
⚠️ **IMPORTANT! Installation Requirements**

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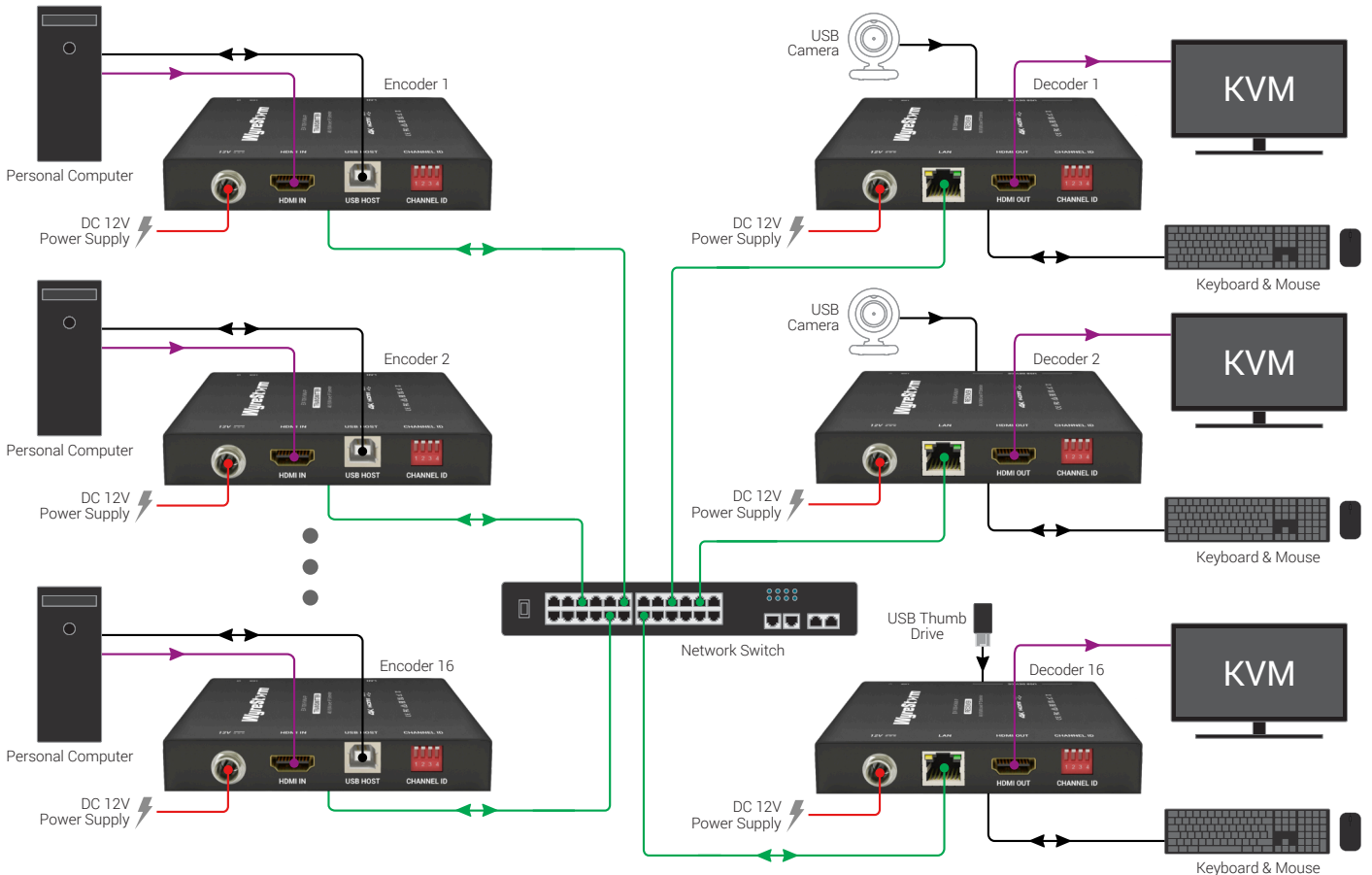
In the Box

1x Extender Set
2x DC 12V Power Supply (US/EU/UK/AU Pins for Each)
4x Mounting Brackets (With Screws)
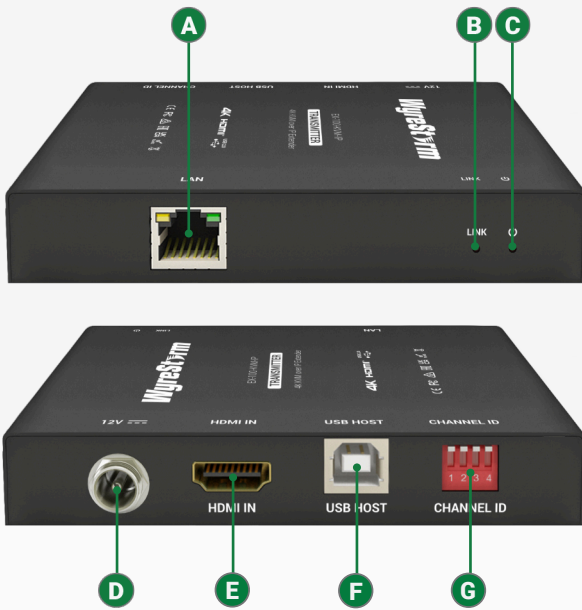1x 1.5m USB Type B Cable
1x Quickstart Guide

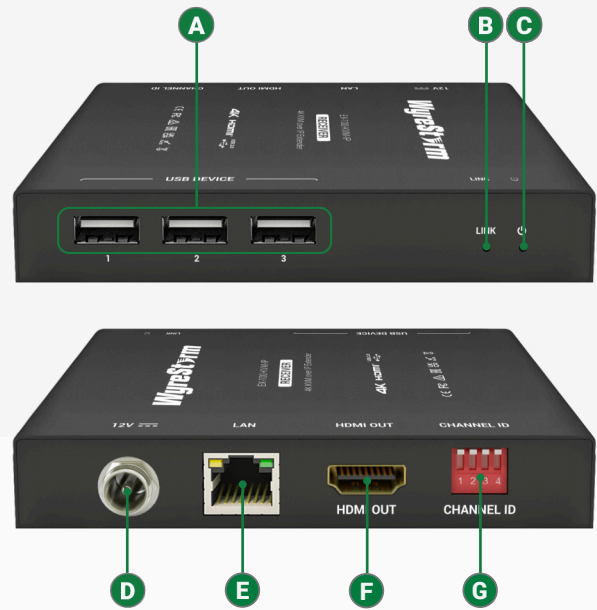## Basic Wiring Diagrams

Direct Connection Extender

KEY
- 🟣 HDMI
- 🟢 Cat5e
- ⚫ USB
- 🔴 Power

Extender via Network Switch

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EX-100-KVM-IP Encoder (Front/Rear)

EX-100-KVM-IP Decoder (Front/Rear)

A	**LAN**	Connect to the decoder or the switch for streaming media output.
B	**Link LED**	LED lights when the encoder is paired with the decoder successfully.
C	**Power LED**	LED lights when the device is powered on.
D	**DC 12V**	Connect to the 12V power adapter provided.
E	**HDMI In**	Connect to an HDMI source device.
F	**USB Host**	Connect a USB type A to type B cable between the port and the USB port of a desktop or a laptop. The port is USB 2.0 compliant.
G	**Channel ID**	This DIP switch consists of four manual switches, which are used to route the encoder to decoder based on their positions. For more information, see "Using DIP Switch to Perform Routing" section. **Note:** • By default, each individual switch is in the up position. • For the DIP switches on both encoder and decoder, you must reboot the encoder and decoder for the switch settings to take effect.

A	**USB Device**	Connect to USB devices (e.g. keyboard, mouse, Udisk, etc.)
B	**Link LED**	LED lights when the encoder is paired with the decoder successfully.
C	**Power LED**	LED lights when the device is powered on.
D	**DC 12V**	Connect to the 12V power adapter provided.
E	**LAN**	Connect to the encoder or the switch for streaming media input.
F	**HDMI Out**	Connect to an HDMI display.
G	**Channel ID**	This DIP switch consists of four manual switches, which are used to route the encoder to decoder based on their positions. For more information, see "DIP Switch Setting" section. **Note:** • By default, each individual switch is in the up position. • For the DIP switches on both encoder and decoder, you must reboot the encoder and decoder for the switch settings to take effect.

DIP Switch Setting

To route the signal from an encoder to a decoder, toggle each individual switch of the DIP switch on decoder to the same position as that on encoder. If you want to link the decoder to a different encoder, change the decoder's switch settings in the same way as the encoder's switch is performed.

Note:

1. The DIP switch setting is applicable to one-to-one routing between an encoder and a decoder only, i.e. up to 16 arrangements of DIP switch setting are available for 16 encoders to be associated one-to-one with 16 decoders in the same network.
2. You must reboot the encoder and decoder for the switch setting changes to take effect.

Installation & Wiring

Note: Before installation and wiring, ensure the device is disconnected from the power source.

Bracket Installation

To install the mounting brackets onto a surface:

1. Attach the mounting bracket to the enclosure using the screws provided in the package separately. The bracket is attached to the enclosure as shown.

2. Repeat step 1 for the other side of the device.

3. Attach the brackets to the surface you want to hold the unit against using the screws (not included in the package).
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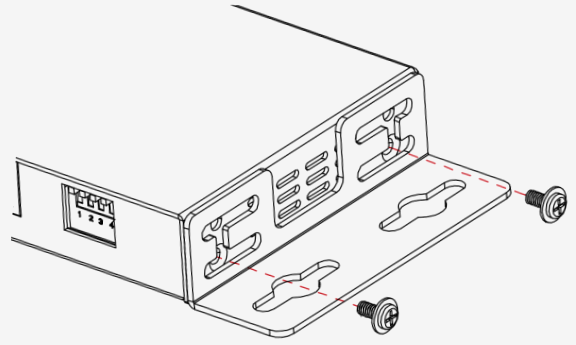
⚠️ **IMPORTANT! Wiring Guidelines**

- 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

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 UTP connections are not loose and are functioning properly.
- Verify that the UTP cable is properly terminated following EIA568B standard.
- Verify that the output resolution of the source and display is supported by this extender.

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

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.

Specifications

	Encoder	Decoder
Video		
Input Video Port	1x HDMI	1x LAN
Input Video Type	HDMI 1.4b, HDCP 1.4	Compressed IP streams
Output Video Port	1x LAN	1x HDMI
Output Video Type	Compressed IP streams	HDMI 1.4b, HDCP 1.4
Video Resolutions	**Input Resolutions**	**Output Resolutions**
	640x480[8], 800x600[8,10], 1024x768[8,10], 1280x720[6,7,8,9,10], 1280x768[8,10], 1280x800[8,10], 1280x960[8,10], 1280x1024[8,10], 1360x768[8], 1366x768[8], 1440x900[8,10], 1600x900[8], 1600x1200[8], 1680x1050[8,10], 1920x1080[1,2,3,4,5,6,7,8,9,10], 1920x1200[8], 3840x2160P[2,3,5], 4096x2160P[2,3,5]	640x480[8], 800x600[8,10], 1024x768[8,10], 1280x720[6,7,8,9,10], 1280x768[8,10], 1280x800[8,10], 1280x960[8,10], 1280x1024[8,10], 1360x768[8], 1366x768[8], 1440x900[8,10], 1600x900[8], 1600x1200[8], 1680x1050[8,10], 1920x1080[1,2,3,4,5,6,7,8,9,10], 1920x1200[8], 3840x2160P[2,3,5], 4096x2160P[2,3,5]
	1 = at 23.98 Hz, 2 = at 24 Hz, 3 = at 25 Hz, 4 = at 29.97 Hz, 5 = at 30 Hz, 6 = at 50 Hz, 7 = at 59.94 Hz, 8 = at 60 Hz, 9 = at 100 Hz, 10 = at 120 Hz	
Input/Output Video Signal	0.5~1.2 V p-p	0.5~1.2 V p-p
Encoding Data Rate		9 Gbps
Maximum Data Rate	9 Gbps	9 Gbps
Maximum Pixel Clock	300MHz	300MHz
Transmission Distance	100m/330ft (Cat 5e or above)	100m/330ft (Cat 5e or above)
Video Latency		80us
USB Consumption		Not more than 0.5A per USB port is recommended
Audio		
Input Audio Port	1x HDMI	1x LAN
Output Audio Port	1x LAN	1x HDMI
Input/Output Audio Format	PCM 2.0 / 2.1 / 5.1 / 7.1, Dolby Digital 5.1ch, Dolby Digital Plus, Dolby TrueHD, DTS 5.1ch, DTS-HD High Resolution Audio, DTS-HD Master Audio	
General		
Operating Temperature	32°F ~ 113°F (0°C ~ 45°C), 10% ~ 90%, non-condensing	
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C), 10% ~ 90%, non-condensing	
ESD Protection	Human body model: ±8kV (air-gap discharge) / ±4kV (contact discharge)	
Power Supply	DC 12V 1A	DC 12V 1A
Power Consumption	2.5W (Max)	2.5W (Max)
Product Dimensions (W x H x D)	112mm x 17.8mm x 65.2mm / 4.41" x 0.7" x 2.57"	112mm x 17.8mm x 65.2mm / 4.41" x 0.7" x 2.57"
Net Weight	0.18kg / 0.40lb	0.18kg / 0.40lb