70m HDMI 2.0 4K HDMI Extender

EX-70-H2C

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.
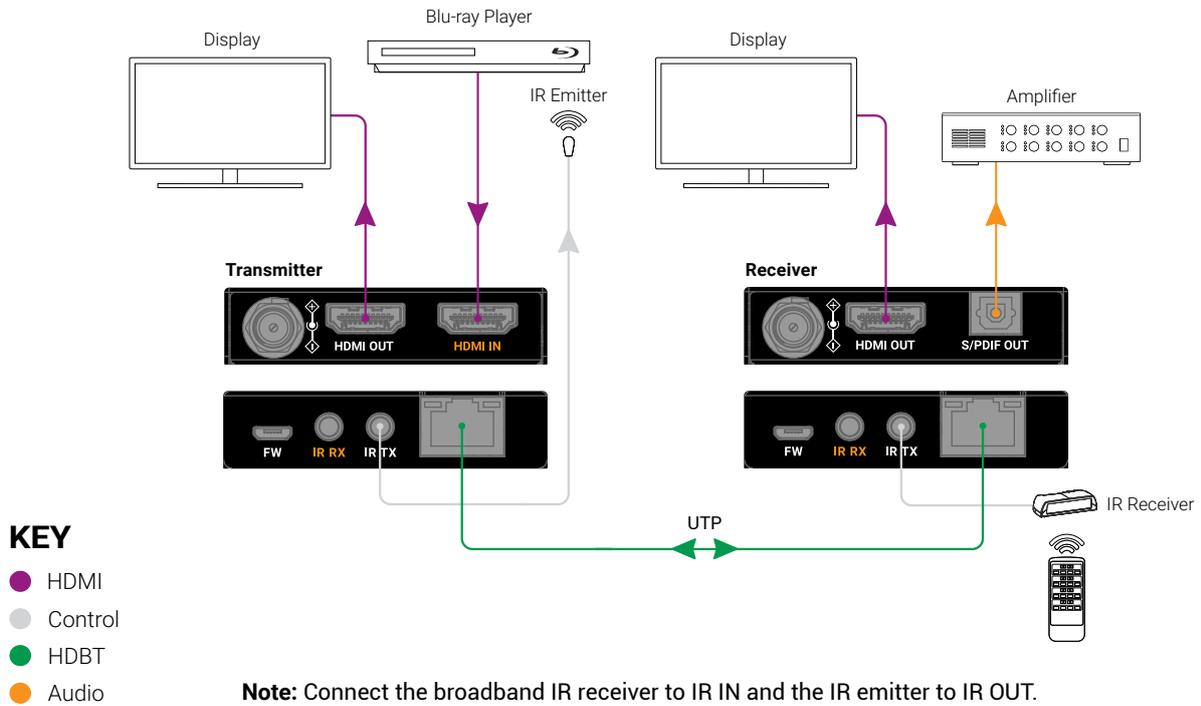
HDMI **HDCP 2.3** **PoC** **4K** **ARC**

⚠️ **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.

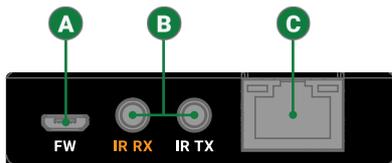**In the Box**

1x EX-70-H2C Extender Set
1x IR Receiver
1x IR Transmitter
4x Mounting Ears
1x 12V DC Power Supply with US/UK/EU/AU Plug
1x Quickstart Guide (this document)

Basic Wiring Diagram

KEY

- 🟣 HDMI
- ⚪ Control
- 🟢 HDBT
- 🟠 Audio

Note: Connect the broadband IR receiver to IR IN and the IR emitter to IR OUT.

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EX-70-H2C Transmitter (Front)
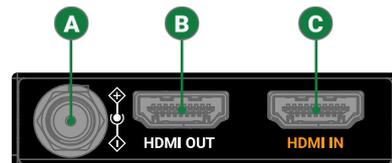

A	**Micro USB**	Connect to a PC for firmware upgrade.
B	**IR IN/OUT**	3.5mm jack: Bidirectional IR Connect to the IR emitter/receiver provided

C	**UTP OUT**	RJ-45 port with LED indicators.
		Connect to the UTP IN port of the receiver via a Cat 6/6a/7 cable.
		• **STATUS LED (Green):**
		  On when an HDMI signal is transmitted.
		• **PWR LED (Orange):**
		  On when the device is powered on.

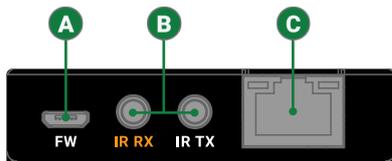## EX-70-H2C Transmitter (Rear)

A	**Power**	Connect to the included power adapter. With bi-directional PoC support, one power adapter connected to either the transmitter or receiver can power both units.
B	**HDMI Output**	Connect to an HDMI display.
C	**HDMI Input**	Connect to an HDMI source.

EX-70-H2C Receiver (Front)

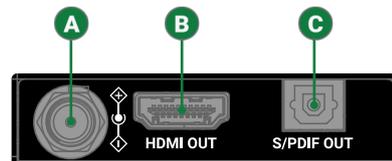|		
A	**Micro USB**	Connect to a PC for firmware upgrade.
B	**IR IN/OUT**	3.5mm jack: Bidirectional IR Connect to the IR emitter/receiver provided

C	**UTP OUT**	RJ-45 port with LED indicators.
		Connect to the UTP OUT port of the transmitter via a Cat 6/6a/7 cable.
		• **STATUS LED (Green):**
		  On when an HDMI signal is transmitted.
		• **PWR LED (Orange):**
		  On when the device is powered on.

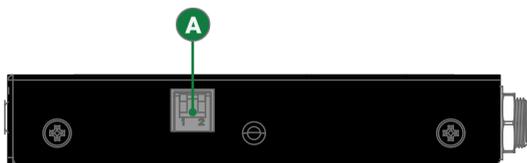## EX-70-H2C Receiver (Rear)

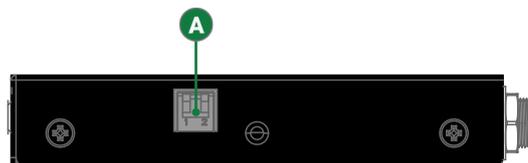|		
A	**Power**	Connect to the included power adapter. With bi-directional PoC support, one power adapter connected to either the transmitter or receiver can power both units.
B	**HDMI Output**	Connect to an HDMI display.
C	**S/PDIF OUT**	Connect to an audio receiver (e.g. amplifier).

EX-70-H2C Transmitter (Side)

A	**EDID**	2-pin switch for EDID management (0=up, 1=down): • **00:** Copy EDID from TX. • **01:** Use fixed 1080P@60 as input EDID. • **10:** Use fixed 4K@60 as input EDID. • **11:** Copy EDID from RX (**default**).

EX-70-H2C Receiver (Side)

A	**ARC**	2-pin switch for ARC control (0=up, 1=down): • **00:** De-embed audio output (default). • **01/11:** Enable ARC audio output.

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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

RS-232 Wiring

The EX-70-H2C 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)

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 by the system. Other 3rd party emitters and receivers can be used; however, these devices must operate in the same manner as the WyreStorm devices.

IR TX Port Pinout

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

Tip: Anode (IR Signal)
Sleeve: Cathode (Ground)

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)

Troubleshooting

No or Poor Quality Picture (snow or noisy image)

- Verify that all HDMI connections are not loose and are functioning properly
- 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.

No or Intermittent 3rd party Device Control

- Verify that the IR and RS-232 cables are properly terminated following the Wiring and Connections section.

💡 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 2.0, HDCP 2.3
Input/Output Resolutions	Supports VESA and SMPTE resolutions up to 4K@60Hz (4:4:4), including 3840x2160@60Hz, 4096x2160@50Hz, 4K@30Hz, 3840x1080@60Hz, 3440x1440@60Hz, 2560x1600@60Hz, 2560x1440@60Hz, 2560x1440@50Hz, 1080P@120Hz, 1080P@100Hz, 1080P@75Hz, 1080P@60Hz, 720P@60Hz
Maximum Data Rate	18Gbps
Maximum Pixel Clock	600MHz
Audio Formats	**HDMI:** 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 **S/PDIF:** PCM 2.0ch, Dolby Digital, DTS 5.1

Transmission Distance	Cable Type	Range	Supported Video	
	Cat 6/6A/7	70m/230ft	1080P@60Hz 4K@60Hz	
	HDMI	Input/Output: 15m/49ft	1080p@60Hz	
		Input/Output: 10m/33ft	4K@60Hz	
		Input: 10m/33ft Output: 15m/49ft	4K@30Hz	

Power	
Power Supply	DC 12V/1A, PoC
Power Consumption (Maximum)	4.2W (per pair, 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	15mm / 0.59in
Width	63mm / 2.48in
Depth	80mm / 3.15in
Weight	0.29lb (0.13kg) 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.

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.