

40m 4K HDBaseT Extender with ARC and Audio Breakout

EX-40-H2-ARC



WyreStorm recommends reading through this document in its entirety to become familiar with the product's features prior to starting the installation process.



IMPORTANT! Installation

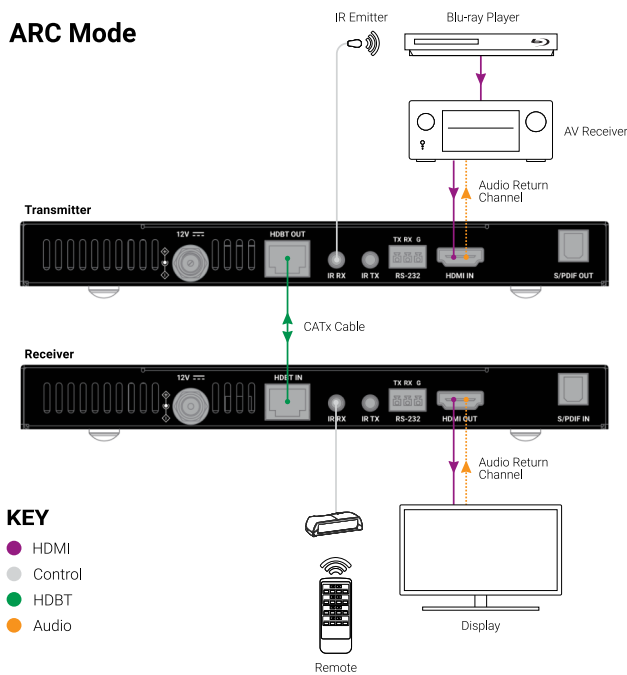
- Visit the product page to download the latest firmware, document version, additional documentation, and configuration tools.
- Read through the [Wiring and Connections](#) section for important wiring guidelines before creating or choosing premade cables.
- While this product supports CEC, WyreStorm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

In the Box

- 1x EX-40-H2-ARC Transmitter
- 1x EX-40-H2-ARC Receiver
- 1x 12V DC 3A Power Supply (US/EU/UK/AU)
- 3x 3-pin Screw Down Male Phoenix Connectors
- 1x IR Receiver
- 1x IR Transmitter
- 4x Mounting Brackets (2x TX | 2x RX)
- 1x Quickstart Guide (this document)

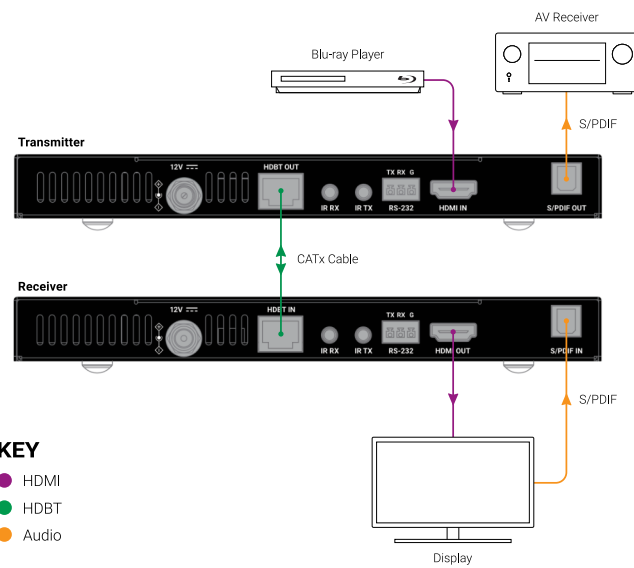
Basic Wiring Diagram

ARC Mode



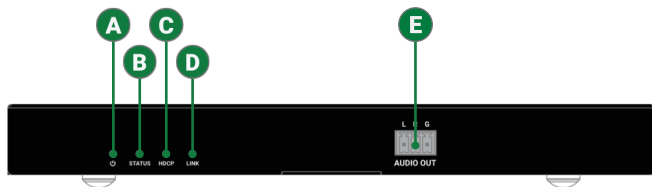
- KEY**
- HDMI
 - Control
 - HDBT
 - Audio

S/PDIF In Mode



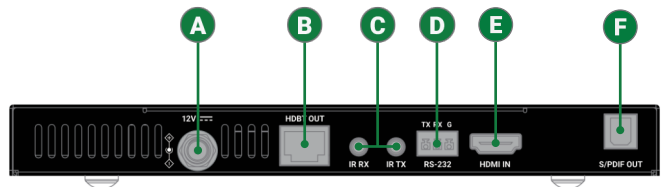
- KEY**
- HDMI
 - HDBT
 - Audio

EX-40-H2-ARC Transmitter (Front)



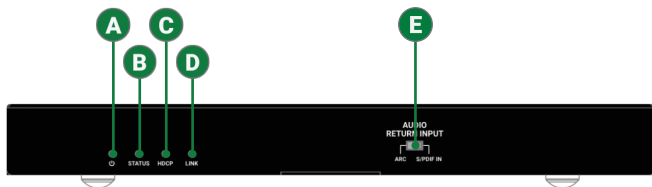
A Power LED	Solid: The unit is powered On Off: The unit is powered Off
B Status LED	Blinking: Transmitter is working properly Off: Transmitter is not working properly
C HDCP LED	On: HDCP content is being transmitted Blinking: Non-HDCP content is being transmitted Off: No HDMI signal
D Link LED	On: HDBT link is normal Off: No HDBT link or link error
E AUDIO OUT	HDMI audio de-embedding, connect to audio system like AV receiver

EX-40-H2-ARC Transmitter (Rear)



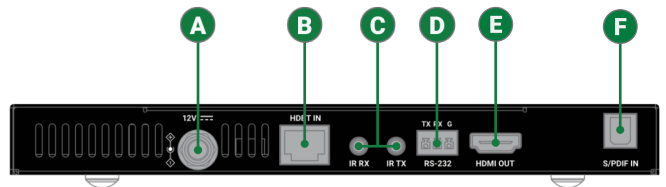
A Power	Connect to the power adapter provided
B HDBT Output	Connect to HDBT IN port of receiver
C IR IN/OUT	3.5mm jack: Bidirectional IR Connect to the IR emitter/receiver provided
D RS-232	Connect to RS-232 enabled device for RS232 pass-through
E HDMI Input	Connect to an HDMI source
F S/PDIF Output	Connect to audio system like AV receiver

EX-40-H2-ARC Receiver (Front)



A Power LED	Solid: The unit is powered On Off: The unit is powered Off
B Status LED	Blinking: Receiver is working properly Off: Receiver is not working properly
C HDCP LED	On: HDCP content is being transmitted Blinking: Non-HDCP content is being transmitted Off: No HDMI signal
D Link LED	On: HDBT link is normal Off: No HDBT link or link error
E AUDIO OUT	ARC: Configure ARC channel feed by TV S/PDIF In: Configure auxiliary S/PDIF input, pass optical audio from RX to TX unit

EX-40-H2-ARC Receiver (Rear)



A Power	12V DC power input
B HDBT Output	Connect to HDBT OUT port of transmitter
C IR IN/OUT	3.5mm jack: Bidirectional IR Connect to the IR emitter/receiver provided
D RS-232	Connect to RS-232 enabled device for RS232 pass-through or upgrading
E HDMI Output	Connect to an HDMI display
F S/PDIF Input	Connect to audio system on S/PDIF IN mode

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.

RS-232 Wiring

The EX-40-H2-ARC 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 functionality to ensure that the correct connections can be made.

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.

Audio Return Input

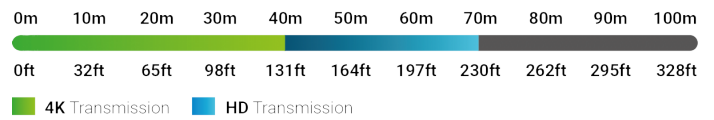
This receiver contains a switch that determines where the Audio Return is received to be sent back to the transmitter. Set this switch based on the connections being used to send and receive audio.

Troubleshooting

No or Poor Quality Picture (snow or noisy image)

- Verify that all HDMI and HDBaseT connections are not loose and are functioning properly
- 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
- Configure EDID Settings to a lower resolution.
- If transmitting 3D or 4K, verify that the HDMI cables used are 3D or 4K rated.

Cat6a/7 Cable Performance Guide



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

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)

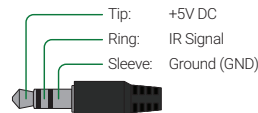
IR TX Port Pinout

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

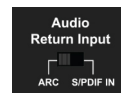


IR RX Port Pinout

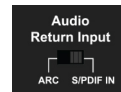
Connection for IR RX (receive) uses a 3.5mm (1/8in) stereo jack that outputs +5V DC to power the included IR receiver.



Set the switch to **ARC** to receive audio from the display via the HDMI connection.



Set the switch to **S/PDIF In** to receive audio from the display via the S/PDIF In connection.



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.

Specifications

Audio and Video																						
Inputs	1x HDMI (TX), 1x HDBaseT (RX)																					
Outputs	1x HDMI (RX), 1x HDBaseT (TX), 1x Toslink, 1x Analog 3-pin Phoenix																					
End to End Latency	<1ms																					
Resolutions Supported	800x600 ⁸ , 1024x768 ⁸ , 1280x768 ⁸ , 1280x800 ⁸ , 1280x960 ⁸ , 1280x1024 ⁸ , 1360x768 ⁸ , 1366x768 ⁸ , 1440x900 ⁸ , 1600x900 ⁸ , 1600x1200 ⁸ , 1680x1050 ⁸ , 1920x1080 ⁸ , 1920x1200 ⁸ , 3840x2160 ^{2,3,5,6,8} , 4096x2160 ^{2,3,5,6,8} 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 75 Hz;																					
Input Signal Type	HDMI with HDCP 2.2																					
Maximum Pixel Clock	600 MHz																					
Maximum Data Rate	18Gbps																					
Video Resolutions (Max)	Up to 4096x2160 @ 60Hz 4:4:4																					
Audio Formats Supported	HDMI: PCM 2.0/5.1/7.1, Dolby TrueHD, Atmos, DTS:X S/PDIF and ARC: PCM 2.0, Dolby Digital, DTS 5.1																					
Transmission Distance	<table border="0"> <tr> <td>Cat 5e/6:</td> <td>35m/115ft</td> <td>4K@60Hz 4:4:4</td> </tr> <tr> <td></td> <td>60m/197ft</td> <td>1080P@60Hz</td> </tr> <tr> <td>Cat 6a/7:</td> <td>40m/131ft</td> <td>4K@60Hz 4:4:4</td> </tr> <tr> <td></td> <td>70m/197ft</td> <td>1080P@60Hz</td> </tr> <tr> <td>HDMI:</td> <td>Input/Output: 15m/49ft</td> <td>1080p@60Hz</td> </tr> <tr> <td></td> <td>Input/Output: 10m/33ft</td> <td>4K@30Hz 4:4:4</td> </tr> <tr> <td></td> <td>Input/Output: 5m/16ft</td> <td>4K@60Hz 4:4:4</td> </tr> </table>	Cat 5e/6:	35m/115ft	4K@60Hz 4:4:4		60m/197ft	1080P@60Hz	Cat 6a/7:	40m/131ft	4K@60Hz 4:4:4		70m/197ft	1080P@60Hz	HDMI:	Input/Output: 15m/49ft	1080p@60Hz		Input/Output: 10m/33ft	4K@30Hz 4:4:4		Input/Output: 5m/16ft	4K@60Hz 4:4:4
Cat 5e/6:	35m/115ft	4K@60Hz 4:4:4																				
	60m/197ft	1080P@60Hz																				
Cat 6a/7:	40m/131ft	4K@60Hz 4:4:4																				
	70m/197ft	1080P@60Hz																				
HDMI:	Input/Output: 15m/49ft	1080p@60Hz																				
	Input/Output: 10m/33ft	4K@30Hz 4:4:4																				
	Input/Output: 5m/16ft	4K@60Hz 4:4:4																				
Communication and Control																						
HDMI	HDCP 2.2 EDID CEC (transparent on ARC)																					
RS-232	Bi-directional, 3-pin Phoenix																					
IR	Bi-directional, 3.5mm TRS																					
Power																						
Power Supply	DC 12V/3A																					
Power Consumption (Maximum)	Receiver is powered by transmitter: 18.72W Transmitter is powered by receiver: 18.96W Transmitter and receiver are powered separately: Transmitter: 8.4W Receiver: 6.6W																					
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	21mm / 0.83in																					
Width	195mm / 7.68in																					
Depth	94.8mm / 3.73in																					
Weight	Transmitter: 0.4kg/0.88lb Receiver: 0.4kg/0.88lb																					
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.

