

4K HDR HDMI-Over-HDBaseT Receiver with ARC & Audio Return

RXV-70-4K-ARC



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.



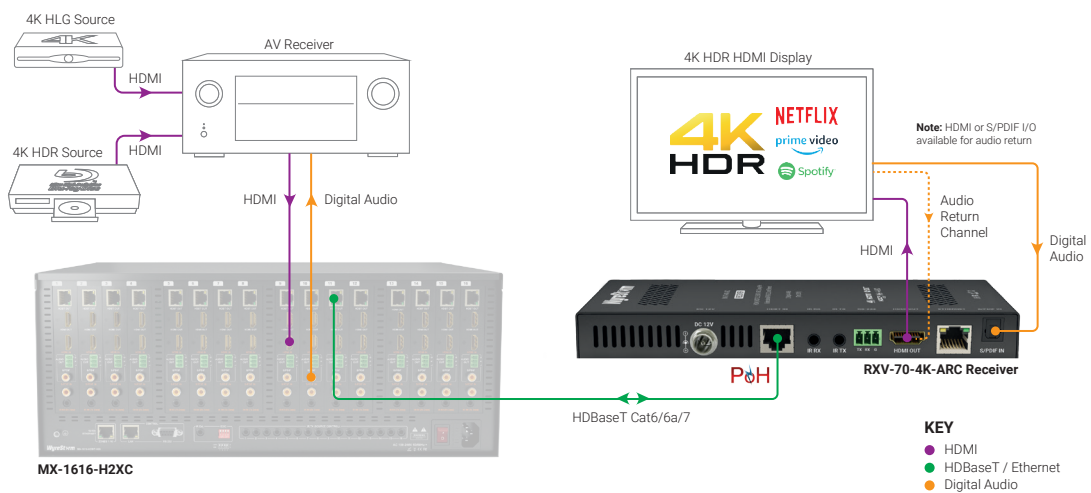
IMPORTANT! Installation Requirements

- 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.
- While this product supports CEC, WyreStorm cannot guarantee compatibility with all forms of CEC communication.

In the Box

- 1x RXV-70-4K-ARC Receiver
- 1x IR Emitter
- 1x IR Receiver
- 1x 3-pin Terminal Block
- 2x Mounting Brackets
- 1x Quickstart Guide (this document)

Basic Wiring Diagram



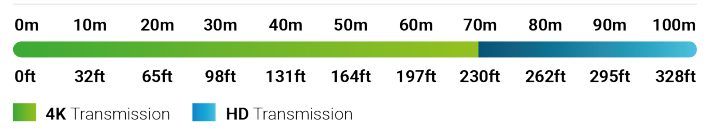
Wiring and Connections

WyreStorm recommends that all wiring for the installation is run and terminated prior to making connections to the switcher. Read through this section in it's entirety before running or terminating the wires to ensure proper operation and to avoid damaging 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 VGA, HDMI, and DP 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



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

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 NetworkHD system. Other 3rd party emitters and receivers can be used; however, these devices must operate in the same manner as the WyreStorm devices.
- Due to differences in IR across 3rd party control systems their IR ports should never be connected directly to a NetworkHD system as an incompatibility may exist. WyreStorm offers a cable that compensates for voltage differences as well adjusts for differences in the pins used within the port. Refer to the CAB-IR-LINK product page for more information.

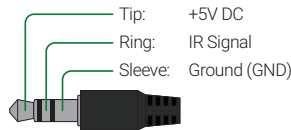
IR TX Port Pinout

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



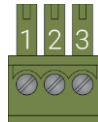
IR RX Port Pinout

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



RS-232 Wiring

The RXV-70-4K-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.



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)

Audio Wiring

This receiver contains audio connections for S/PDIF TOSLINK (Digital Optical) input. Due to the nature of optical cables we recombined using pre-terminated cables for this connection.

Setup and Configuration

ARC and Audio In Settings

The audio returned to the matrix can be configured to be either from the displays HDMI ARC channel or the S/PDIF In on the receiver. Set the switch on the front of the receiver accordingly.

Set the switch to **ARC** to send the audio returned from the display connected to the receivers HDMI Out via Audio Return Channel back to the matrix.



Set the switch to the **S/PDIF In** to send audio from the receivers S/PDIF In back to the matrix.



EDID Configuration

This receiver uses EDID pass-through from the display to the source. No configuration is required for EDID settings.

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 3D or 4K, verify that the HDMI cables used are 3D or 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/Ethernet cables are properly terminated.
- Verify that emitters/receivers are compatible with WyreStorm IR.
- If using an IR control system, verify that it is connected using the CAB-IR-LINK cable.

Specifications

Audio and Video																																	
Inputs	1x S/PDIF In: TOSLINK (Digital Optical) 1x HDBT In: 8-pin RJ-45 Female																																
Outputs	1x HDMI Out: 19-pin type A																																
Video Encoding	HDBaseT Class A																																
Encoding Data Rate	10Gbps																																
End to End Latency (Max)	10µs (micro seconds)																																
Audio Formats	2ch PCM Multichannel: LPCM and Up to DTS-X and Dolby Atmos																																
Video Resolutions (Max)	<table border="1"> <thead> <tr> <th>Video Resolution</th> <th>HDMI</th> <th>Cat6</th> <th>Cat6a/7</th> </tr> </thead> <tbody> <tr> <td>1920x1080p @60Hz 12bit</td> <td>15m/49ft</td> <td>100m/328ft</td> <td>100m/328ft</td> </tr> <tr> <td>3840x2160p @24Hz 10bit 4:2:0 HDR</td> <td>7m/23ft</td> <td>70m/230ft</td> <td>100m/328ft</td> </tr> <tr> <td>3840x2160p @30Hz 8bit 4:4:4</td> <td>7m/23ft</td> <td>70m/230ft</td> <td>100m/328ft</td> </tr> <tr> <td>3840x2160p @60Hz 10bit 4:2:0 HDR</td> <td>5m/16ft</td> <td>70m/230ft</td> <td>100m/328ft</td> </tr> <tr> <td>3840x2160p @60Hz 12bit 4:2:2 HDR</td> <td>3m/10ft</td> <td>70m/230ft</td> <td>100m/328ft</td> </tr> <tr> <td>4096x2160p @60Hz 8bit 4:2:0</td> <td>7m/23ft</td> <td>70m/230ft</td> <td>100m/328ft</td> </tr> <tr> <td>4096x2160p @60Hz 8bit 4:4:4</td> <td>3m/10ft</td> <td>70m/230ft</td> <td>100m/328ft</td> </tr> </tbody> </table>	Video Resolution	HDMI	Cat6	Cat6a/7	1920x1080p @60Hz 12bit	15m/49ft	100m/328ft	100m/328ft	3840x2160p @24Hz 10bit 4:2:0 HDR	7m/23ft	70m/230ft	100m/328ft	3840x2160p @30Hz 8bit 4:4:4	7m/23ft	70m/230ft	100m/328ft	3840x2160p @60Hz 10bit 4:2:0 HDR	5m/16ft	70m/230ft	100m/328ft	3840x2160p @60Hz 12bit 4:2:2 HDR	3m/10ft	70m/230ft	100m/328ft	4096x2160p @60Hz 8bit 4:2:0	7m/23ft	70m/230ft	100m/328ft	4096x2160p @60Hz 8bit 4:4:4	3m/10ft	70m/230ft	100m/328ft
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Supported Standards	DCI RGB HDR HDR10 Dolby Vision up to 30Hz HLG BT.2020 BT.2100																																
Maximum Pixel Clock	HDMI: 600MHz HDBaseT: 297MHz																																
Communication and Control																																	
HDMI	HDCP 2.2 EDID CEC DVI-D supported with adapter (not included)																																
HDBaseT	HDMI HDCP 2.2 EDID CEC 1-way PoH to Receiver Bidirectional IR																																
CEC	Power Triggering from Matrix Requires CEC Compatibility at Display																																
Ethernet	1x Ethernet: 8-pin RJ-45 Female Bidirectional over HDBaseT																																
IR	1x IR RX 3.5mm (1/8in) TRS Stereo 1x IR TX: 3.5mm (1/8in) TS Mono Bidirectional over HDBaseT																																
RS-232	1x RS-232: 3-pin Phoenix Bidirectional over HDBaseT																																
ARC (Audio Return Channel)	Supports True ARC (via HDMI) or S/PDIF optical return from display to the matrix over HDBaseT																																
Power																																	
Power Supply	18V DC (Optional)																																
PoH	48V 15.4W																																
Max Power Consumption	12.5W																																
Environmental																																	
Operating Temperature	0 to + 45°C (32 to + 113 °F), 10% to 90%, non-condensing																																
Storage Temperature	-20 to +70°C (-4 to + 158 °F), 10% to 90%, non-condensing																																
Maximum BTU	43 BTU/hr																																
Dimensions and Weight																																	
Rack Units/Wall Box	<1U																																
Height	21mm/0.83in																																
Width	195mm/7.68in																																
Depth	94.8mm/3.74in																																
Weight	0.4kg/0.88lbs																																
Regulatory																																	
Safety and Emission	CE FCC RoHS RCM																																

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 LLC 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.

