4K UHD HDBaseT Receiver with 5Play and 2-way PoH (70m/230ft)

RX-70-4K v2

WyreStorm®

Quickstart Guide

Note: The following information applies to version 2 of this product as identified by v2 after the model number on the product label.
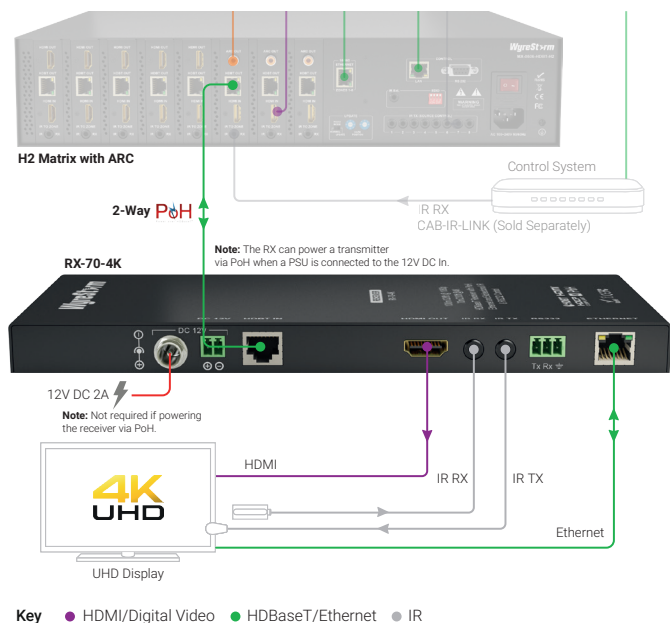
💡 WyreStorm recommends reading through this document in its entirety to become familiar with the product's features prior to starting the installation process.

4K UHD **HDBT™** **HDMI®** **HDCP 2.2** **PoH**

In the Box

1x RX-70-4K Receiver
1x Wide-band IR Emitter
1x Wide-band IR Receiver (30-50KHz)
2x Mounting Brackets
1x 3-pin Phoenix Connector
1x 2-pin Phoenix Connector
1x Quickstart Guide (this document)

Basic Wiring Diagram

H2 Matrix with ARC

Control System

2-Way PoH

IR RX
CAB-IR-LINK (Sold Separately)

Note: The RX can power a transmitter via PoH when a PSU is connected to the 12V DC In.

RX-70-4K

12V DC 2A

Note: Not required if powering the receiver via PoH.

HDMI

IR RX   IR TX

Ethernet

4K UHD

UHD Display

Key ● HDMI/Digital Video   ● HDBaseT/Ethernet   ● IR

⚠️ **IMPORTANT!**

Disconnecting and connecting (hot plugging) HDMI or HDBaseT while devices are powered on may cause damage. WyreStorm recommends powering off devices before disconnecting these connections.

Recommended Products

To take full advantage of the features of this receiver, WyreStorm recommends the following products be used within the system.

• **CAB-IR-LINK** – Use this cable when using an IR control system for matrix control of HDBaseT pass-through.

Additional Information

This Quickstart Guide provides the basic steps for the common uses of this product. Refer to the Installation Guide and other documentation on the product page for additional information.

Before Beginning

WyreStorm recommends visiting the product page before installing this product for updates to this Quickstart Guide as well as other information about the product.

• Verify that all items are included per the In The Box list.

Pre Wire

1. Run a Cat5e/6/6a cable from the transmitter location to the receiver location no longer than 70m/230ft (4K UHD) and 100m/328ft (1080p). Terminate the cable per the HDMI/HDBaseT Wiring section.

2. (Optional) If using 3rd party IR emitters or connecting blocks at either the transmitter or receiver, run the wire and terminate per the IR TX (Emitter) Wiring section.

3. (Optional) If using RS-232 pass-through, run the wire and terminate per the RS-232 Wiring section.

4. (Optional) If using 3rd party IR receivers at either the transmitter or receiver, run the wire and terminate per the IR RX (Receiver) Wiring section.

Receiver Installation
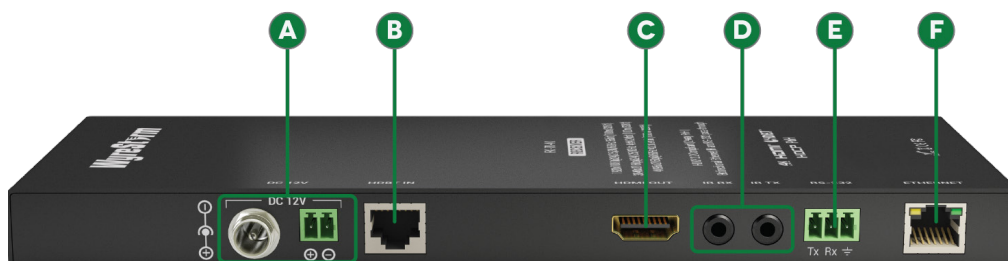
1. Connect the **HDMI Out** on the receiver to an input on the display using an HDMI cable from a high quality brand such as WyreStorm Express.

2. Using the cable created in Pre Wire step 1, connect the 8-pin RJ-45 female plug to the **HDBT In** jack.

3. (Optional) Place an IR emitter onto the display device near the device's IR sensor and connect it the **IR TX** port.

4. (Optional) If using RS-232 pass-through, connect the 3-pin connector to the **RS-232** port on the receiver and the opposite end to a port on the device being controlled.
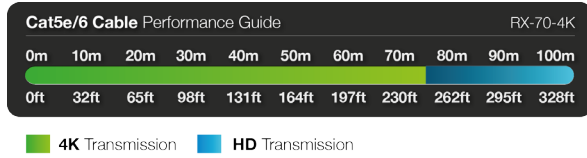
Front Panel

A	RS-232	Switches the mode for the RS-232 port. **Normal:** RS-232 HDBaseT pass-through. **Update:** RS-232 firmware update.
B	Power LED	**Solid:** The receiver is powered On **Off**: The receiver is powered Off
C	Status LED	**Flashing:** The receiver is operating normally. **Off:** The receiver is Not operating normally.
D	HDCP LED	**Solid:** HDCP content is present. **Flashing:** HDCP content is not present. **Off:** No signal.
E	LINK LED	**Solid:** Link to receiver has been established. **Flashing:** Link to receiver has not been established.

Rear Panel

A	Power In	5.5mm Male Barrel Jack/2-pin Phoenix Connector Connection to this jack is not required when using PoH. See Power Supply Wiring for details.
B	HDBT In	8-pin RJ-45 female Connect to the **HDBT Out** of a matrix or HDBaseT transmitter. See HDMI/HDBaseT Wiring for important wiring guidelines.
C	HDMI Out	19-pin type A HDMI female: Supports HDMI and DVI/D (requires adapter-not included).
D	IR TX/RX	**IR TX** - 3.5mm (1/8in) Mono Jack: Connect to the supplied IR emitter to control a local device from the remote display location via HDBaseT. **IR RX** - 3.5mm (1/8in) Stereo Jack: Connect to the supplied IR receiver to send IR to the remote display via HDBaseT. See IR Wiring.
E	RS-232	3-pin Phoenix Connector Used to send and receive RS-232 signals to/from the source location via HDBaseT and firmware updates. See RS-232 Wiring.
F	Ethernet	8-pin RJ-45 female	10/100 Mbps auto-negotiating Connect to the Ethernet port on a network enabled display.

HDMI/HDBaseT Wiring

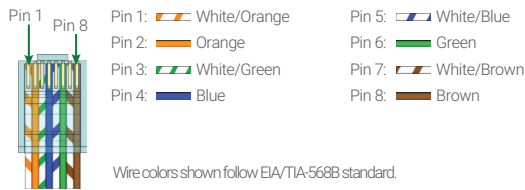| Cat5e/6 Cable Performance Guide										RX-70-4K
0m	10m	20m	30m	40m	50m	60m	70m	80m	90m	100m
0ft	32ft	65ft	98ft	131ft	164ft	197ft	230ft	262ft	295ft	328ft

■ **4K** Transmission   ■ **HD** Transmission

⚠ **IMPORTANT! Wiring Guidelines**

- The use of patch panels, wall plates, cable extenders, kinks in cables, and electrical or environmental interference can have an adverse effect on HDMI or HDBaseT transmission limiting performance. Steps should be taken to minimize these factors (or remove completely) during installation for best results.
- While similar in nature, the HDBaseT protocol is different than Ethernet and voltages provided for PoH can be higher than those provided by PoE. For this reason, never connect an HDBaseT link to an Ethernet router or switch to avoid damaging the connected devices.

Wiring for HDBaseT follows the EIA T568B standard.

Pin 1   Pin 8

Pin 1:	White/Orange	Pin 5:	White/Blue
Pin 2:	Orange	Pin 6:	Green
Pin 3:	White/Green	Pin 7:	White/Brown
Pin 4:	Blue	Pin 8:	Brown

Wire colors shown follow EIA/TIA-568B standard.

Resolution Distances

The type of category cable used and the distance between the matrix and receiver can restrict the available video resolution.

Refer to **Video Resolutions** in the Specifications table for the max distance based on resolution.

IR Wiring

IR TX (Emitter) Wiring

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

Tip:	IR Signal
Sleeve:	Ground (GND)

IR RX (Receiver) Wiring

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

⚠ **IMPORTANT!**

- 3rd party IR receivers may require a different voltage, refer to the documentation provided with the IR receiver before making any connections to avoid damaging the device.
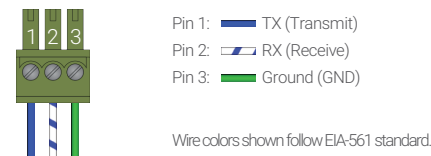- When connecting to an IR control system use the WyreStorm CAB-IR-LINK cable to remove the sleeve +5V DC.

Tip:	+5V DC
Ring:	IR Signal
Sleeve:	Ground (GND)

RS-232 Wiring

RS-232 Connection Guidelines

The following wiring diagram shows the pinouts for the extender set. While not shown, connect the TX (transmit) to RX (receive) pins at the control system or PC side of the cable.

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.

Pin 1:	TX (Transmit)
Pin 2:	RX (Receive)
Pin 3:	Ground (GND)

Wire colors shown follow EIA-561 standard.

Power Supply Wiring

The RX-70-4K v2 can receive power via PoH from a compatible HDBaseT matrix or send power to a transmitter. Should the distance or other factors prevent PoH from being used, connect a 12V DC 2A power supply (sold separately) to the receiver.

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support@wyrestorm.com

Specifications

Audio and Video	
Inputs	1x HDBaseT 8-pin RJ-45 female
Outputs	1x HDMI 19-pin type A
Audio Formats	2ch Digital | Up to DTS-X and Dolby Atmos
Video Resolutions (Max)	**HDMI** 1920x1080p @60Hz 36bit (15m/50ft) | 48bit (7m/23ft) 3840x2160p @30Hz 4:4:4 24bit (7m/23ft) | @24Hz 4:2:0 HDR 10bit per channel (3m/9.8ft) 4096x2160p @60Hz 24bit 4:2:0/4:4:4 (7m/23ft) **Using Cat6** 1920x1080 @60Hz 36bit (100m/328ft) | 48bit (70m/230ft) 3840x2160p @30Hz 4:4:4 24bit (70m/230ft) | @24Hz 4:2:0 HDR 10bit per channel (70m/230ft) 4096x2160p @60Hz 4:2:0 24bit (70m/230ft) **Using Cat6a/7** 1920x1080 @60Hz 36bit (100m/328ft) | 48bit (100m/328ft) 3840x2160p @30Hz 4:4:4 24bit (100m/328ft) | @24Hz 4:2:0 HDR 10bit per channel (100m/328ft) 4096x2160p @60Hz 4:2:0 24bit (100m/328ft)
Color Depth (Max)	1080p: 48bit | 4K UHD: 24bit | HDR @24p: 10bit per channel BT.2020
Maximum Pixel Clock	297 MHz

Communication and Control	
HDMI	HDCP 2.2 | DVI/D supported with adapter (not included)
HDBaseT	HDCP 2.2 | 2-way PoH | Bi-directional IR, RS-232 and Ethernet
Ethernet	1x 8-pin RJ-45 female | 10/100 Mbps auto-negotiating
IR	1x IR TX 3.5mm (1/8in) Mono | 1x IR RX 3.5mm (1/8in) Stereo | Bidirectional over HDBaseT
RS-232	1x 3-pin Phoenix Connector | Bidirectional over HDBaseT

Power	
Power Supply	Input: 100~240V AC 50/60Hz Output: 12V DC 2A
Max Power Consumption	7.2W
PoH (2-way)	48V 15.4W (each HDBT out)

Environmental	
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
Maximum BTU	24.6 BTU/hr

Dimensions and Weight	
Height	18mm/0.71in
Width	232mm/9.14in
Depth	93mm/3.67in
Weight	0.50kg/1.1lbs

Regulatory	
Safety and Emission	CE | FCC | RoHS
Maximum BTU	24.6 BTU/hr

Troubleshooting

No or Poor Quality Picture (snow or noisy image)
- Verify that power is being supplied to the transmitter and receiving device and that both devices are powered on.

Note:
When using PoH, to power the transmitter, verify that the HDBaseT cable is properly terminated per the HDMI/HDBaseT Wiring section.

- Verify that the matrix, receiver and display support the output resolution of the source. Refer to **Video Resolutions** in the Specifications table.
- If transmitting 3D or 4K UHD, verify that the HDMI cables used are 3D or 4K UHD rated.

- Verify that the HDBaseT cable is properly terminated per the HDBaseT Wiring section.
- Verify that all source and HDBaseT connections are not loose and are functioning properly.

No or Intermittent 3rd party Device Control
- Verify that the IR cable(s) is properly terminated. See IR Wiring.
- Verify that the IR emitter is located near the IR receiver on the device.

Troubleshooting Tips:
- WyreStorm recommends using a cable tester or connecting the cable to other devices to verify functionality.
- Use a flashlight to locate the IR receiver behind any tinted panels on the device being controlled. It will likely appear as a small round disc.

Warranty Information

This product is covered by a 3 year limited parts and labor warranty. During this period there will be no charge for unit repair, component replacement or complete product replacement in the event of malfunction. The decision to repair or replace will be made by the manufacturer. This limited warranty only covers defects in materials or workmanship and excludes normal wear and tear or cosmetic damage. Visit the product page located at **wyrestorm.com** for additional information on this product including important technical information not provided in this document and warranty terms & conditions.