

## 18Gbps HDMI over HDBaseT Extender with Bi-directional IR



EHB-200

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### **Thank you for purchasing this product**

For optimum performance and safety, please read these instructions carefully before connecting, operating, or adjusting this product. Please keep this manual for future reference.

### **Surge protection device recommended**

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. In order to protect and extend the life of your equipment, use of surge protection systems is highly recommended.

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## 1. Introduction

This 18Gbps HDMI Extender can send high definition video and audio, RS-232, bi-directional IR, to distances up to 492ft (150 meters) between the transmitter and receiver via a single category cable. It supports resolutions up to 4K2K@60Hz 4:4:4, a full 18Gbps signal with support for HDCP 2.2. An additional HDMI output on the transmitter allows for use of a local monitor at the source side. It also supports de-embedded audio for L/R audio output, PoC power extension, and two-way IR pass-through to control both source and display.

## 2. Features

- HDMI 2.0, HDCP 2.2 / HDCP 1.4, and DVI 1.0 compliant
- Supports 18Gbps bandwidth
- Input and output extends up to 394ft (120 meters) with 4K2K signals and 492ft(150 meters) with 1080P signals
- Supports one HDMI loop output on transmitter
- De-embedded audio to analog stereo output on receiver
- Bi-directional IR, RS-232 and CEC pass-through
- HDR, HDR10+, Dolby Vision, and HLG function supported
- Supports PoC (Power over Cable)
- Compact design for easy and flexible installation.

## 3. Package Contents

Quantity	Item
1	18Gbps HDMI over HDBaseT Extender (Transmitter)
1	18Gbps HDMI over HDBaseT Extender (Receiver)
2	IR Blaster cable, 5ft (1.5 meters)
2	20~60KHz IR Receiver cable, 5ft (1.5 meters)
4	Mounting Ears
2	3-pin Phoenix connectors
1	24V/1A Locking Power adapter
1	User Manual

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## 4. Technical Specifications

Technical	
HDMI Compliance	HDMI 2.0
HDCP Compliance	HDCP 2.2 / HDCP 1.4
Video Bandwidth	18Gbps
Video Resolution	4K2K 50/60Hz 4:4:4 4K2K 50/60Hz 4:2:2 4K2K 50/60Hz 4:2:0 4K2K 30Hz 4:4:4 1080p, 1080i, 720p, 720i, 480p, 480i All HDMI 3D TV formats All PC resolutions including 1920 x 1200
Color Space	RGB / YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0
Color Depth	8/10/12-bit (1080P60Hz, 4K30Hz, 4K60Hz YCbCr 4:2:2/4:2:0) 8-bit (4K60Hz 4:4:4)
HDMI Audio Formats	LPCM 2.0/2.1/5.1/6.1/7.1, Dolby Digital, Dolby TrueHD, Dolby Digital Plus(DD+), DTS-ES, DTS HD Master, DTS HD-HRA, DTS-X
L/R Audio Formats	PCM 2.0
ESD Protection	Human body model — ±8kV (Air-gap discharge) & ±4kV (Contact discharge)

Connections	
Transmitter	<p>Inputs: 1x HDMI Type A [19-pin female] 1x SERVICE [Mini-USB, Update port]</p> <p>Outputs: 1x HDMI Type A [19-pin female] 1x HDBT OUT [RJ45, 8-pin female]</p> <p>Control: 1x IR IN [3.5mm Stereo Mini-jack] 1x IR OUT [3.5mm Stereo Mini-jack] 1x RS-232 [Phoenix jack]</p>
Receiver	<p>Inputs: 1x HDBT IN [RJ45, 8-pin female] 1x SERVICE [Mini-USB, Update port]</p> <p>Outputs: 1x HDMI Type A [19-pin female] 1x AUDIO OUT [3.5mm Stereo Mini-jack]</p> <p>Control: 1x IR IN [3.5mm Stereo Mini-jack] 1x IR OUT [3.5mm Stereo Mini-jack] 1x RS-232 [Phoenix jack]</p>

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# USER MANUAL v1.0

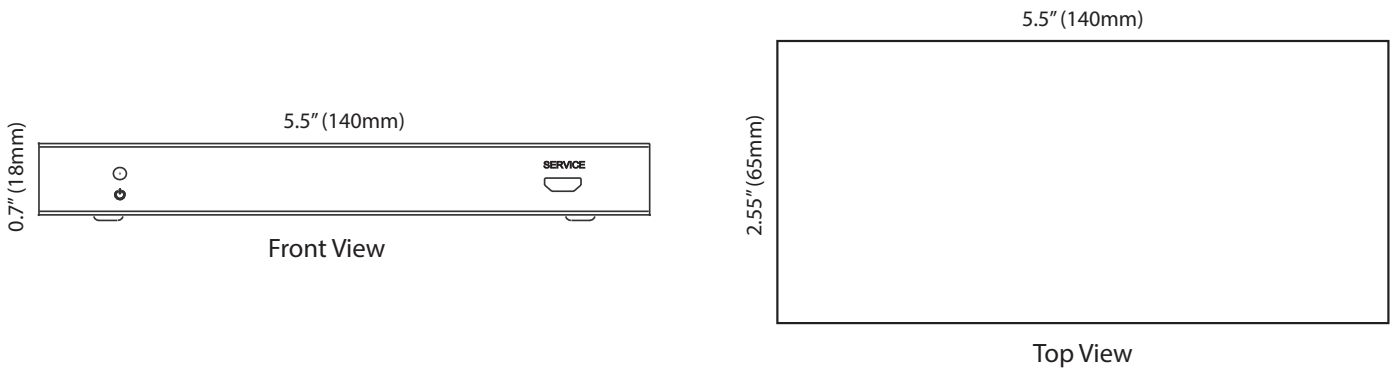


Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	Transmitter / Receiver: 5.5in / 140mm [W] x 2.55in / 65mm [D] x 0.7in / 18mm [H]
Weight	Transmitter: 160g, Receiver: 155g
Power Supply	Input: AC 100 - 240V 50/60Hz Output: DC 24V/1A (Locking connector)
Power Consumption	9.36 W
Operation Temperature	32 - 104°F / 0 - 40°C
Storage temperature	-4 - 140°F / -20 - 60°C
Relative Humidity	20 - 90% RH (no condensation)

Resolution / Distance	
4K2K	394ft / 120M
1080P	492ft / 150M

Resolution / Cable Length	4K60 - Feet / Meters	4K30 - Feet / Meters	1080P60 - Feet / Meters
HDMI IN / OUT	10ft / 3M	30ft / 10M	50ft / 15M

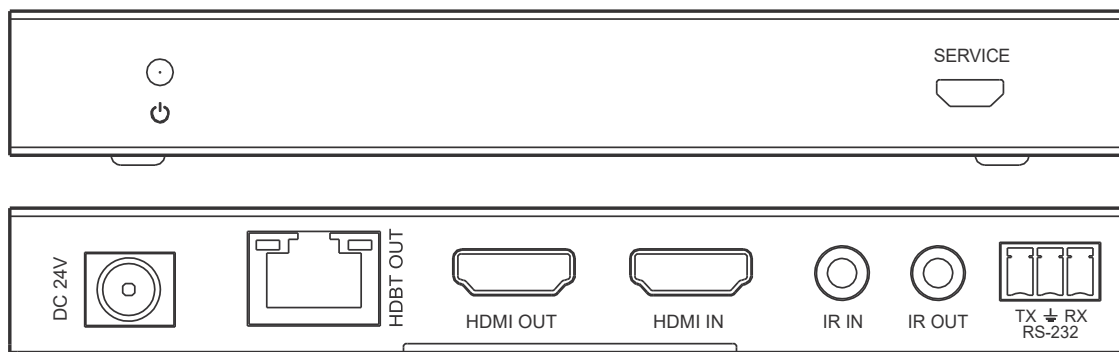
The use of "Premium High Speed HDMI" cable is highly recommended.



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## 5. Operation Controls and Functions

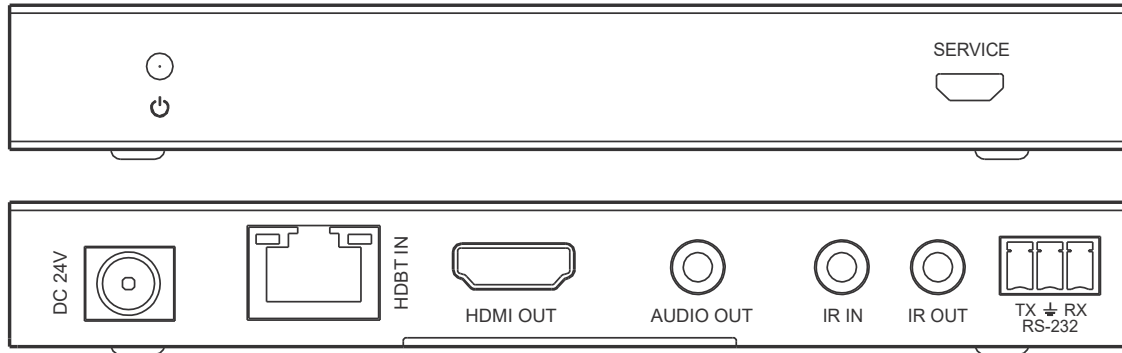
### 5.1 Transmitter Panel



Name	Function Description
Power LED	Red LED indicates when the transmitter is powered.
SERVICE port	Firmware update port.
DC 24V	DC 24V input for 24V 1A power adapter. <i>Note that the extender supports PoC function, it means that either transmitter or receiver is powered by the 24V/1A power adapter, the other does not need a power supply.</i>
HDBT OUT	RJ45 connector for connecting the HDBT IN port of receiver with CAT 5e/6 cable.
Connection Signal Indicator lamp (on the left side of the HDBT OUT port)	<ul style="list-style-type: none"> <li>• Solid: Transmitter and Receiver are in good connection status.</li> <li>• Flashing: Transmitter and Receiver are in poor connection status.</li> <li>• Dark: Transmitter and Receiver are not connected.</li> </ul>
Data Signal Indicator (on the right side of the HDBT OUT port)	<ul style="list-style-type: none"> <li>• Solid: HDMI signal with HDCP.</li> <li>• Flashing: HDMI signal without HDCP.</li> <li>• Dark: No HDMI signal.</li> </ul>
HDMI OUT	HDMI loop output for display.
HDMI IN	HDMI source input.
IR IN	IR port input for receiving the signal of IR remote.
IR OUT	IR port output for control of source device. This IR output signal is from IR IN port of receiver.
RS-232	3-pin pluggable connector for RS-232 command transmission. The RS-232 command will pass-through from transmitter to receiver or receiver to transmitter.

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## 5.1 Receiver Panel



Name	Function Description
Power LED	Red LED indicates when the transmitter is powered.
SERVICE port	Firmware update port.
DC 24V	DC 24V input for 24V 1A power adapter. <i>Note that the extender supports PoC function, it means that either transmitter or receiver is powered by the 24V/1A power adapter, the other does not need a power supply.</i>
HDBT OUT	RJ45 connector for connecting the HDBT IN port of receiver with CAT 5e/6 cable.
Connection Signal Indicator lamp <i>(on the left side of the HDBT OUT port)</i>	<ul style="list-style-type: none"> <li>• Solid: Transmitter and Receiver are in good connection status.</li> <li>• Flashing: Transmitter and Receiver are in poor connection status.</li> <li>• Dark: Transmitter and Receiver are not connected.</li> </ul>
Data Signal Indicator <i>(on the right side of the HDBT OUT port)</i>	<ul style="list-style-type: none"> <li>• Solid: HDMI signal with HDCP.</li> <li>• Flashing: HDMI signal without HDCP.</li> <li>• Dark: No HDMI signal.</li> </ul>
HDMI OUT	HDMI loop output for display.
AUDIO OUT	3.5mm stereo connector for analog audio output.
IR IN	IR port input for receiving the signal of IR remote.
IR OUT	IR port output for control of display device. This IR output signal is from IR IN port of transmitter.
RS-232	3-pin pluggable connector for RS-232 command transmission. The RS-232 command will pass-through from transmitter to receiver or receiver to transmitter.

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### 5.3 IR Pin Definition

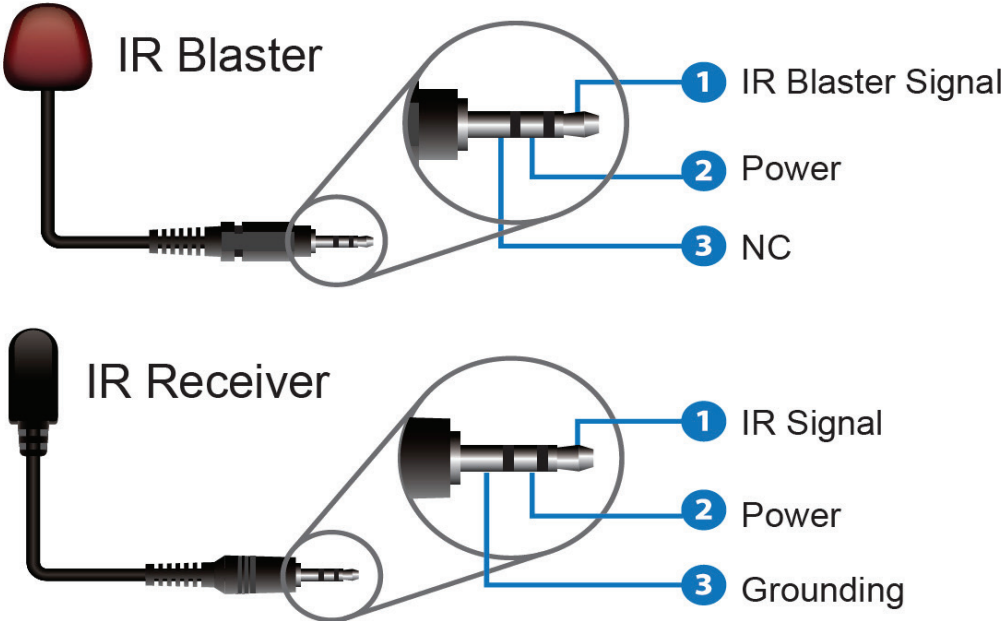
IR Receiver and Blaster pin's definition as below:



IR Receiver



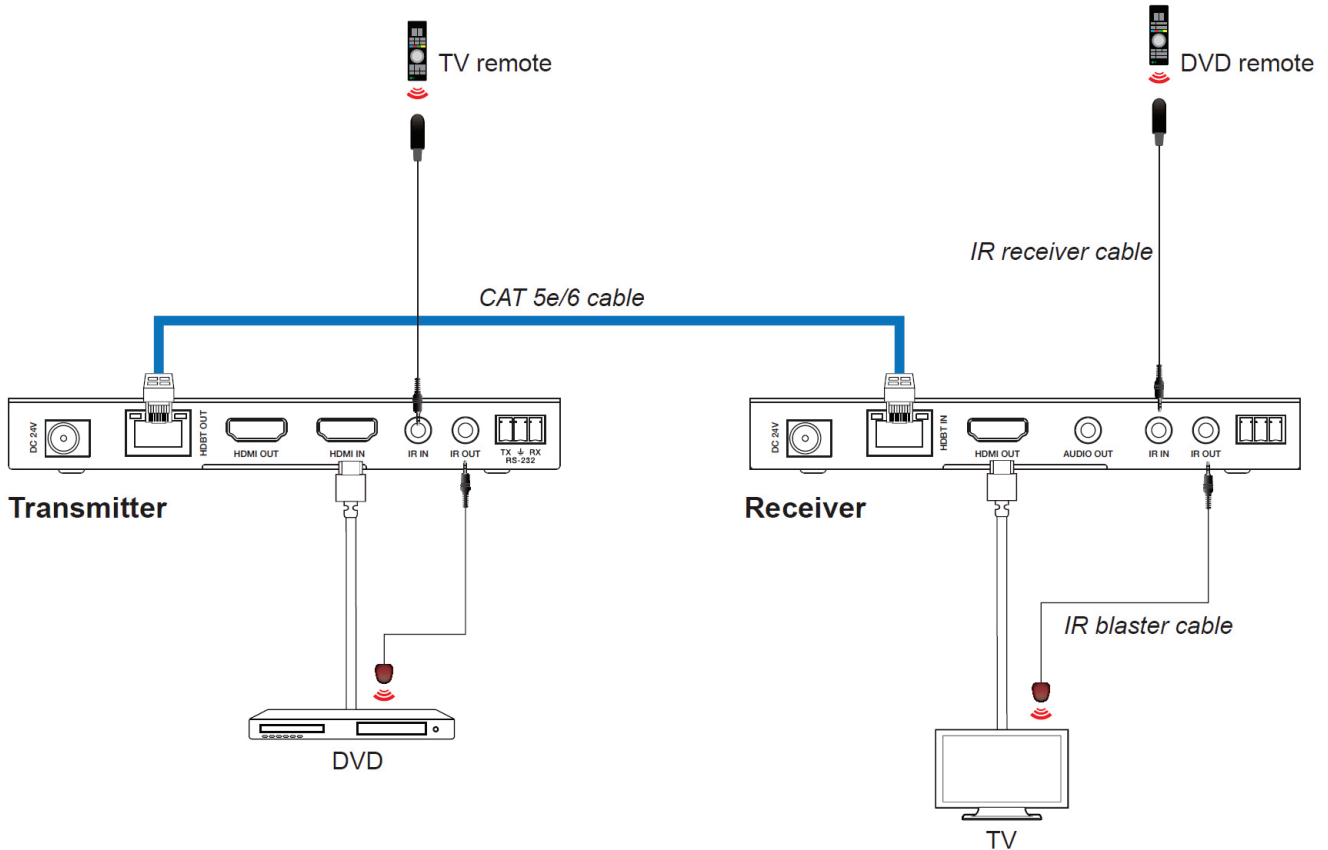
IR Blaster



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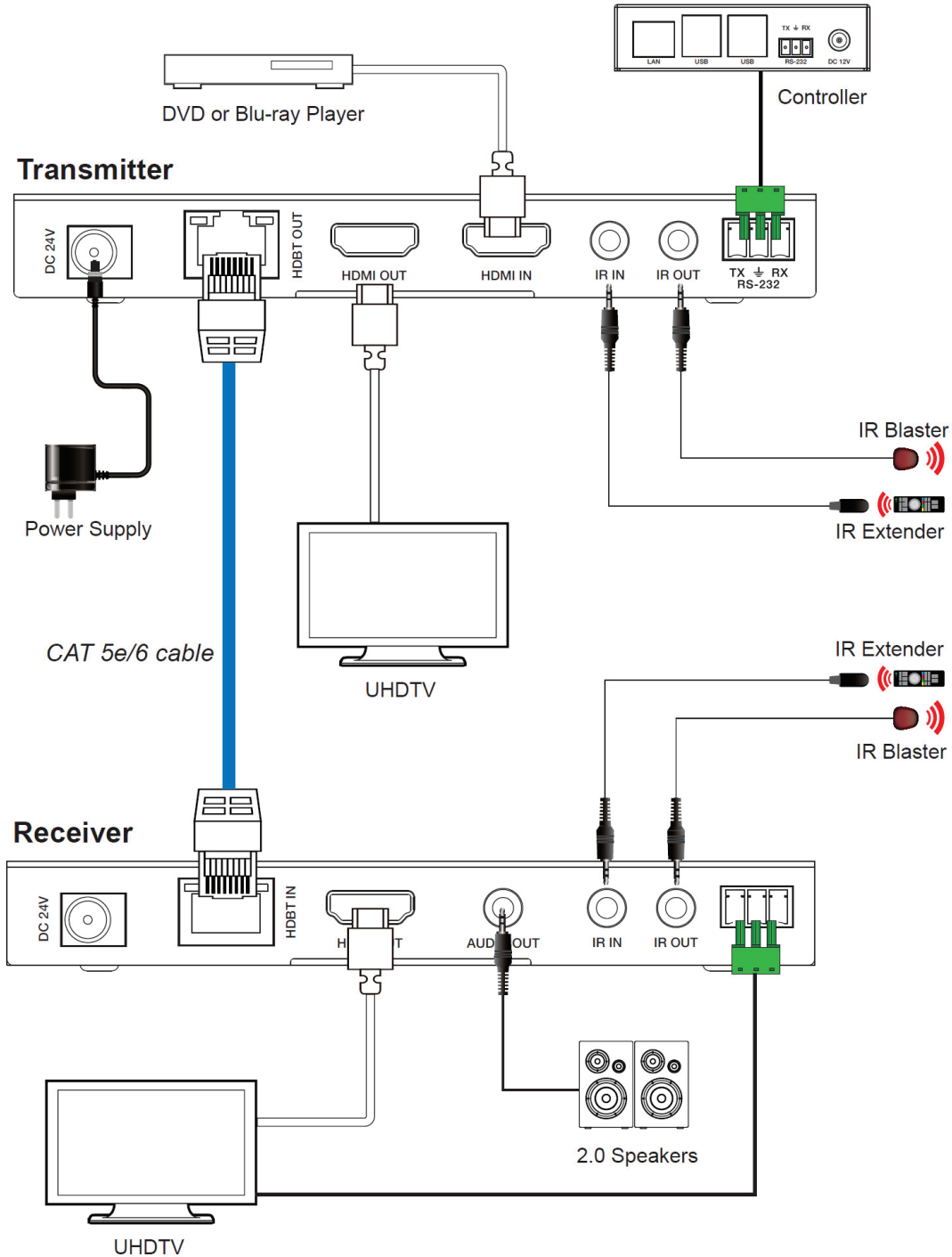
## IR system diagram



Note that IR remote sends signal distance for 0~5 meters / 0~8 meters, and angle is plus-minus 45 degrees / vertical direction.

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## 6. Application Example



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## Warranty

Parts and labor warranty time is three year and from the date of original shipment. This warranty shall be void if a serial number has been removed from the product.

Upon determination of a legitimate defect covered by this warranty and at COVID's sole discretion, user should bear the transport cost during the warranty.

If product is out of warranty then repair charge is required. Out of warranty repairs will only be made after cost has been approved by Customers and proper financial arrangements are made. Customer must cover round trip shipment expenses.

## Safety Information



To reduce the risk of electric shock, do not expose this product to rain or moisture.



Do not modify the wall plug. Doing so will void the warranty and safety features.



If the wall plug does not fit into your local power socket, hire an electrician to replace your obsolete socket.



This equipment should be installed near the socket outlet and the device should be easily accessible in the case it requires disconnection.

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