

18Gbps HDMI over HDBaseT Extender with Bi-directional IR (150M)



User Manual

VER 1.0

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. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

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1. Introduction

This 18Gbps HDMI Extender can extend high definition video / audio signal, RS-232, bi-directional IR, and the distance is up to 492ft / 150 meters between transmitter and receiver via a single CAT cable. It supports resolution up to 4K2K@60Hz 4:4:4, 18Gbps and HDCP 2.2. One HDMI loop port is available for output. It also supports de-embedded audio for L/R audio output and PoC function. In addition, the extender is equipped with two-way IR pass-through which allows for source and display control.

This HDMI extender includes two units: transmitter unit and receiver unit. The transmitter unit is responsible for capturing HDMI input signal and carries the signal via one cost effective Cat5e/6 cable, and transmitting / emitting IR control signals. The receiver unit is responsible for receiving the HDMI signal and transmitting / emitting IR control signal.

The extender offers the most convenient solution for HDMI extension via a single Cat5e/6 with long distance capability, and is the perfect solution for any application.

2. Features

- ☆ HDMI 2.0, HDCP 2.2 / HDCP 1.4 and DVI 1.0 compliant
- ☆ Supports 18Gbps bandwidth
- ☆ Input and output extends distance up to 394ft / 120 meters when 4K2K signal and 492ft / 150 meters when 1080P signal
- ☆ Supports one HDMI loop output on transmitter
- ☆ De-embedded audio to analog stereo output on receiver
- ☆ With 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

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

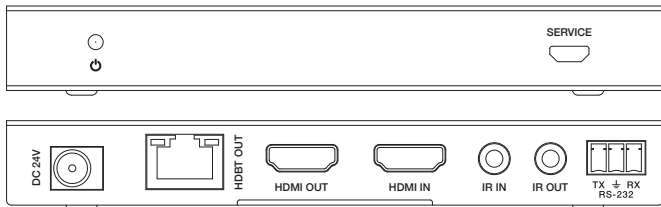
4. Specifications

| 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 | Inputs: 1x HDMI Type A [19-pin female] 1x SERVICE [Mini-USB, Update port] Outputs: 1x HDMI Type A [19-pin female] 1x HDBT OUT [RJ45, 8-pin female] Control: 1x IR IN [3.5mm Stereo Mini-jack] 1x IR OUT [3.5mm Stereo Mini-jack] 1x RS-232 [Phoenix jack] | | |
| Receiver | Inputs: 1x HDBT IN [RJ45, 8-pin female] 1x SERVICE [Mini-USB, Update port] Outputs: 1x HDMI Type A [19-pin female] 1x AUDIO OUT [3.5mm Stereo Mini-jack] Control: 1x IR IN [3.5mm Stereo Mini-jack] 1x IR OUT [3.5mm Stereo Mini-jack] 1x RS-232 [Phoenix jack] | | |
| Mechanical | | | |
| Housing | Metal Enclosure | | |
| Color | Black | | |
| Dimensions | Transmitter / Receiver: 140mm [W] x 65mm [D] x 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 | | |
| Operating 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. | | | |

5. Operation Controls and Functions

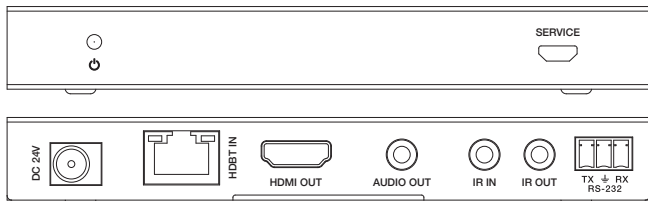
5.1 Transmitter Panel



| 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 supply by 24V/1A power adapter, the other doesn't need 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">• Illuminate: Transmitter and Receiver are in good connection status.• Flashing: Transmitter and Receiver are in poor connection status.• Dark: Transmitter and Receiver are not connected. |
| Data Signal Indicator lamp <i>(on the right side of the HDBT OUT port)</i> | <ul style="list-style-type: none">• Illuminate: HDMI signal with HDCP.• Flashing: HDMI signal without HDCP.• Dark: No HDMI signal. |
| 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. |

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| 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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5.2 Receiver Panel



| Name | Function description |
|--|---|
| Power LED | Red LED indicates when the receiver 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 supply by 24V/1A power adapter, the other doesn't need power supply.</i> |
| HDBT OUT | RJ45 connector for connecting the HDBT OUT port of transmitter 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"> ▪ Illuminate: Transmitter and Receiver are in good connection status. ▪ Flashing: Transmitter and Receiver are in poor connection status. ▪ Dark: Transmitter and Receiver are not connected. |
| Data Signal Indicator <i>(on the right side of the HDBT OUT port)</i> | <ul style="list-style-type: none"> ▪ Illuminate: HDMI signal with HDCP. ▪ Flashing: HDMI signal without HDCP. ▪ Dark: No HDMI signal. |
| HDMI OUT | HDMI output for display. |
| AUDIO OUT | 3.5mm stereo connector for analog audio output. |

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|--------|--|
| 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. |

5.3 IR Pin Definition

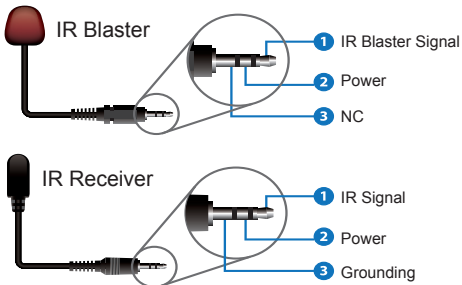
IR Receiver and Blaster pin's definition as below:



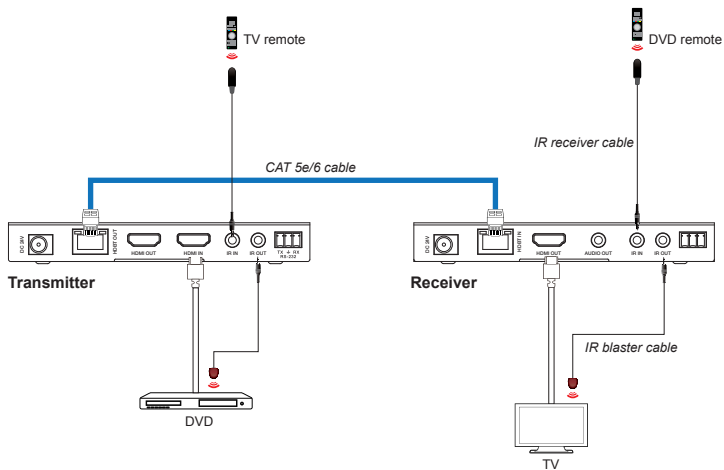
IR RECEIVER



IR BLASTER



The following is IR system diagram about IR cable use method.



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

6. Application Example

