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, lighting 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-embeded 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 carrying 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

- ☆ HDCP 2.2 / HDCP 1.4 and DVI 1.0 compliant
- ☆ Support 18Gbps video bandwidth
- ☆ The maximum extended transmission distance via a single Cat5e/6 cable:
  394ft / 120 meters for 4K2K signal;
  492ft / 150 meters for 1080P signal
- ☆ Support one HDMI loop output on the transmitter
- ☆ De-embeded 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
- ☆ Support PoC (Power over Cable) function
- ☆ 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)
1	IR Blaster cable (1.5 meters)
1	20~60KHz IR Receiver cable (1.5 meters)
4	Mounting Ear
2	3-pin Phoenix connector
1	24V/1A Locking Power adapter
1	User Manual

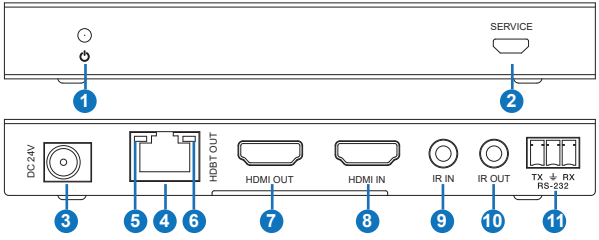
4. Specifications

Technical	
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)

Connection			
Transmitter	Inputs: 1x HDMI Type A [19-pin female] 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] 1x SERVICE [Mini-USB, Update port]		
Receiver	Inputs: 1x HDBT IN [RJ45, 8-pin female] 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] 1x SERVICE [Mini-USB, Update port]		
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	16ft / 5M	32ft / 10M	50ft / 15M
The use of “Premium High Speed HDMI” cable is highly recommended.			

5. Operation Controls and Functions

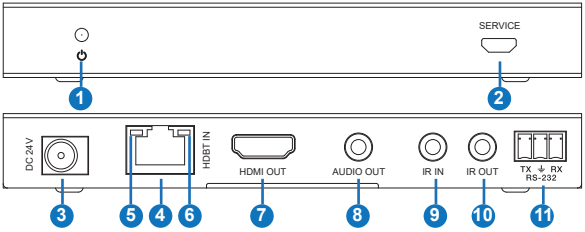
5.1 Transmitter Panel



No.	Name	Function Description
1	Power LED	Red LED indicates that the transmitter is powered on.
2	SERVICE port	Firmware update port.
3	DC 24V	DC 24V/1A power supply input port. *Note that the extender supports PoC function, it means that either transmitter or receiver is powered on by 24V/1A power adapter, the other one doesn't need power supply.*
4	HDBT OUT	RJ45 connector for connecting the HDBT IN port of receiver with a CAT 5e/6 cable.
5	Connection Signal Indicator lamp	▪ Illuminating: Transmitter and Receiver are in good connection status. ▪ Flashing: Transmitter and Receiver are in poor connection status. ▪ Dark: Transmitter and Receiver are not connected.
6	Data Signal Indicator lamp	▪ Illuminating: HDMI signal with HDCP. ▪ Flashing: HDMI signal without HDCP. ▪ Dark: No HDMI signal.
7	HDMI OUT	HDMI loop output for display.
8	HDMI IN	HDMI source input.
9	IR IN	IR input port for receiving the signal of IR remote.
10	IR OUT	IR output port for control of source device. This IR output signal is from the IR IN port of receiver.

11	RS-232	3-pin Phoenix connector for RS-232 command transmission. The RS-232 command will pass-through from transmitter to receiver or from receiver to transmitter.

5.2 Receiver Panel



No.	Name	Function Description
1	Power LED	Red LED indicates that the receiver is powered on.
2	SERVICE port	Firmware update port.
3	DC 24V	DC 24V/1A power supply input port. *Note that the extender supports PoC function, it means that either transmitter or receiver is powered on by 24V/1A power adapter, the other one doesn't need power supply.*
4	HDBT IN	RJ45 connector for connecting the HDBT OUT port of transmitter with a CAT 5e/6 cable.
5	Connection Signal Indicator lamp	▪ Illuminating: Transmitter and Receiver are in good connection status. ▪ Flashing: Transmitter and Receiver are in poor connection status. ▪ Dark: Transmitter and Receiver are not connected.
6	Data Signal Indicator	▪ Illuminating: HDMI signal with HDCP. ▪ Flashing: HDMI signal without HDCP. ▪ Dark: No HDMI signal.
7	HDMI OUT	HDMI output for display.
8	AUDIO OUT	3.5mm stereo connector for analog audio output.

9	IR IN	IR input port for receiving the signal of IR remote.
10	IR OUT	IR output port for control of display device. This IR output signal is from the IR IN port of transmitter.
11	RS-232	3-pin Phoenix connector for RS-232 command transmission. The RS-232 command will pass-through from transmitter to receiver or from receiver to transmitter.

5.3 IR Pin Definition

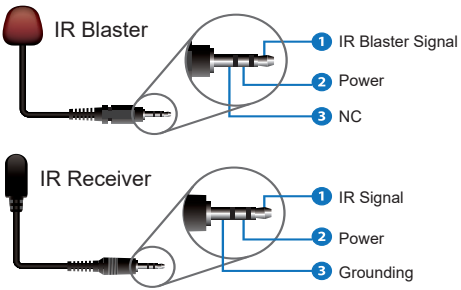
IR Receiver and Blaster pin's definition is as below:



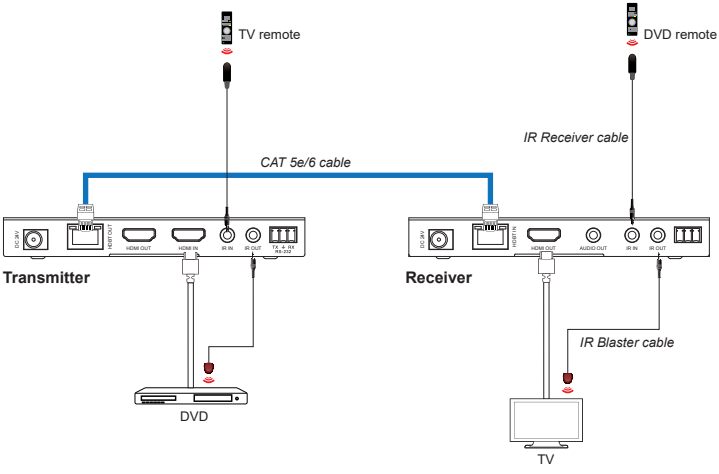
IR RECEIVER



IR BLASTER



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



Note: When the angle between the IR receiver and the remote control is ± 45 °, the transmission distance is 0-5 meters; when the angle between the IR receiver and the remote control is ± 90 °, the transmission distance is 0-8 meters.

6. Application Example

