



HD-H1504K-SP Extender Set



User Manual

VER 1.0

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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. Use of surge protection systems is highly recommended 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 signals, RS-232, and bi-directional IR to a distance up to 492ft / 150 meters between the transmitter and receiver via a single CAT cable. It supports resolution up to 4K2K@60Hz 4:4:4, 18Gbps, HDCP 2.2. One HDMI loop-through port is available for a local output. The extender receiver de-embeds the audio for analog L/R output. In addition, the extender is equipped with two-way IR pass-through which allows for source and display control.

This HDMI extender set includes two units: transmitter and receiver. The transmitter 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 is responsible for receiving the HDMI signal and transmitting / emitting IR control signals.

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
- ☆ Supports 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
- ☆ Supports one HDMI loop output on the transmitter
- ☆ Extracts 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) 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 Ears
2	3-pin pluggable screw terminal connectors
1	24V/1A Locking Power adapter
1	User Manual

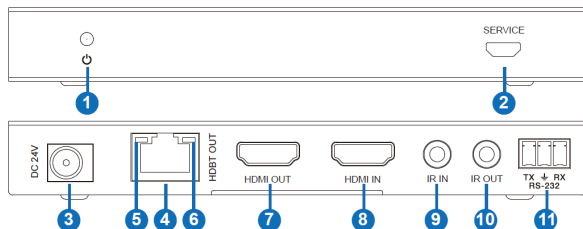
4. Specifications

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 [Pluggable screw terminal] 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 [Pluggable screw terminal] 1x SERVICE [Mini-USB, Update port]		
Mechanical			
Housing	Metal Enclosure		
Color	Black		
Dimensions	Transmitter / Receiver: 5.5" [W] x 2.56" [D] x 0.71" [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

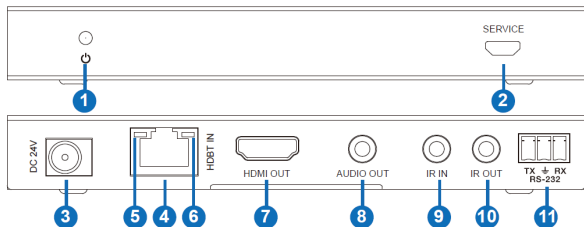
5.1 Transmitter Panel



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. <i>Note that the extender supports PoC function, it means that only 1 side, transmitter or receiver, needs to be powered by 24V/1A power adapter, the opposing side needs no power supply.</i>
4	HDBT OUT	RJ45 connector for connecting the HDBT IN port of receiver with a CAT 5e/6 cable.
5	Connection Signal Indicator lamp	<ul style="list-style-type: none">▪ Illuminated: Transmitter and Receiver have a good connection.▪ Flashing: Transmitter and Receiver have a poor connection.▪ OFF: Transmitter and Receiver are not connected.
6	Data Signal Indicator lamp	<ul style="list-style-type: none">▪ Illuminated: HDMI signal with HDCP.▪ Flashing: HDMI signal without HDCP.▪ OFF: No HDMI signal.
7	HDMI OUT	HDMI loop output for local display.
8	HDMI IN	HDMI source input.
9	IR IN	IR input port for receiving the IR remote signal.
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.
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5.2 Receiver Panel

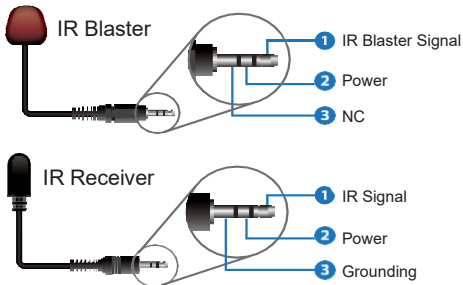


No.	Name	Function Description
1	Power LED	Red LED indicates that the receiver is powered on.
2	SERVICE port	Firmware update port.
3	DC 24V	DC 24V/1A power supply input port. <i>Note that the extender supports PoC function, it means that only 1 side, transmitter or receiver, needs to be powered by 24V/1A power adapter, the opposing side needs no power supply.</i>
4	HDBT IN	RJ45 connector for connecting the HDBT OUT port of transmitter with a CAT 5e/6 cable.
5	Connection Signal Indicator lamp	<ul style="list-style-type: none"> ▪ Illuminated: Transmitter and Receiver have a good connection. ▪ Flashing: Transmitter and Receiver have a poor connection. ▪ Dark: Transmitter and Receiver are not connected.
6	Data Signal Indicator	<ul style="list-style-type: none"> ▪ Illuminated: 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.

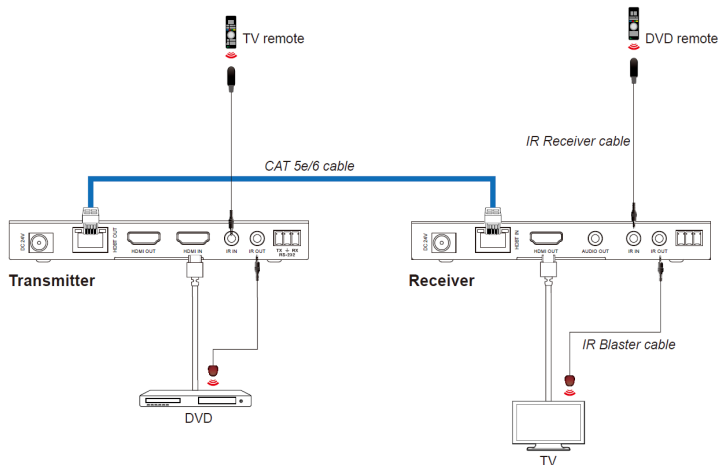
9	IR IN	IR input port for receiving the IR remote signal.
10	IR OUT	IR output port for control of display device. This IR output signal is from the IR IN port of transmitter.
11	RS-232	3-pin Phoenix connector for RS-232 command transmission. The RS-232 command will pass-through from transmitter to receiver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

5.3 IR Pin Definition

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



The following is an IR system diagram.



Note: When the angle between the IR receiver and the remote control is $\pm 45^\circ$, the transmission distance is 0-5 meters; when the angle between the IR receiver and the remote control is $\pm 90^\circ$, the transmission distance is 0-8 meters.

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6. Application Example

