

HDMI & IR over Twisted Pair Extender Set



4K-50M-BASIC-KIT
HDMI & IR over Twisted Pair Extender Set
Version 1.2.0

Introduction

Thank you for purchasing the LightSpeed Technologies® 4K-50M-BASIC-KIT HDMI and IR extender set. For proper installation and optimum performance, please read the instructions in this manual carefully.

The LightSpeed Technologies® 4K-50M-BASIC-KIT includes one twisted pair transmitter, one twisted pair receiver, one power supply that provides flexible power to the extender set from either the transmit or receiver side, IR accessories and mounting brackets.

The extender set features a slim, easy-to-install chassis and powerful signal performance, including HDCP 2.2, HDMI 2.0 and 4K60 4:4:4 compatibility. In addition to HDMI, the 4K-50M-BASIC-KIT transmits IR from the receiver to the transmitter.

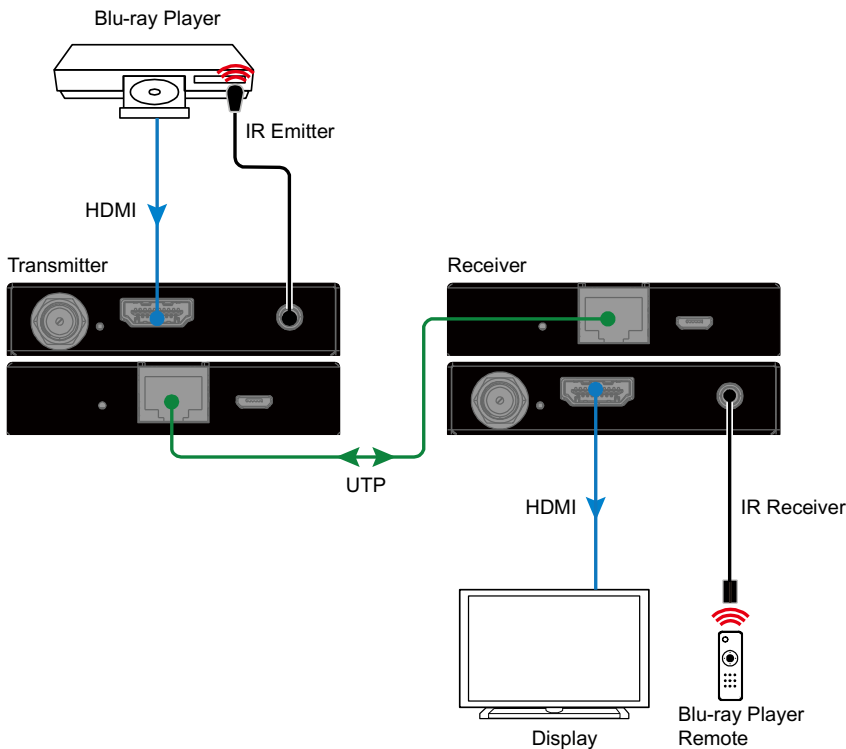
Features

- Supports video resolutions up to 4K@60Hz 4:4:4 8bit
- Supports HDMI 2.0 and HDCP 2.2
- Transmits 4K60 up to 50m (164ft) via CAT5E/6+
- Transmits 1080P up to 60m (197ft) via CAT5E/6+
- Supports HDR10, HLG and Dolby Vision in low-latency mode
- Supports multichannel audio up to PCM 5.1, Dolby Digital and DTS 5.1
- Supports one-way IR pass-through from receiver to transmitter
- Supports bi-directional power (PoC compatible) from either the receiver or transmitter
- Slim chassis with optional mounting brackets for easy installation

Package Contents

- 1 x twisted pair transmitter
- 1 x twisted pair receiver
- 1 x power supply (12VDC/1A)
- 1 x IR emitter
- 1 x IR receiver (rated for broadband 30-50KHz)
- 4 x mounting brackets and screws

Typical Application Diagram



Installation Notes:

1. Connect the IR receiver to the *IR IN* port on the transmitter and the IR emitter to the *IR OUT* port on the receiver.
2. Connect the included 12VDC/1A power supply to the power port on either the transmitter *or* receiver.

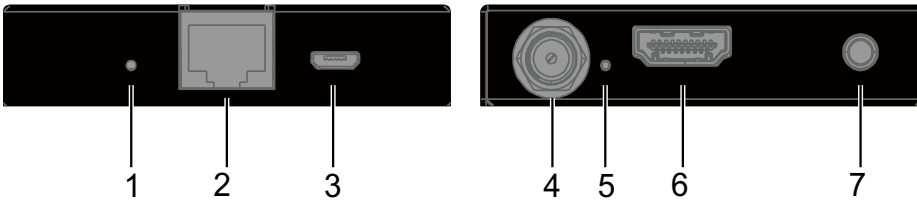
Specifications

Video	
Input/Output Signal Type	HDMI 2.0, HDCP 2.2
Input/Output Resolution Supported	Up to 3840x2160@60Hz, including 3840x2160@60Hz/4096x2160@50Hz/4K@30Hz/1080P/1080I/720P
Maximum Data Rate	18 Gbps
Maximum Pixel Clock	600MHz
Supported Audio Formats	Supports multichannel audio up to PCM 5.1, Dolby Digital and DTS 5.1
Max Distance	
4K60 4:4:4	50m (164ft) over CAT5E/6+ UTP or STP
1080P/1080I/720P	60m (197ft) over CAT5E/6+ UTP or STP
HDMI interconnect cables	15m (49ft) for 1080P/1080I/720P 10m (33ft) for 4K60/4K60
General	
Operating Temperature	32°F to 113°F (0°C to 45°C)
Storage Temperature	-4°F to 158°F (-20°C to 70°C)
Humidity	10% to 90%, non-condensing
ESD Protection (Human-body Model)	±8kV (Air-gap discharge) ±4kV (Contact discharge)
Power Supply	12VDC 1A
Power Consumption (Maximum)	5.79W (Pair, PoC)
Chassis Dimension (W x H x D)	Transmitter: 2.75" x 0.60" x 3.54" (69.9mm x 15.2 mm x 90mm) Receiver: 2.75" x 0.60" x 3.54" (69.9mm x 15.2 mm x 90mm)
Product Weight	Transmitter: 0.33lb (0.15kg) Receiver: 0.33lb (0.15kg)

Note: T568B straight-through category cable is recommended.

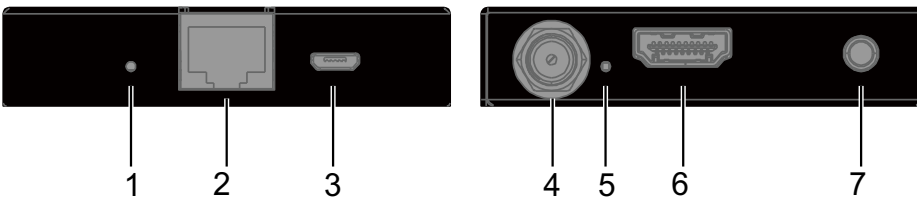
Panel & LED Descriptions

Transmitter



No.	Name	Description
1	STATUS LED	On: HDMI IN port has video signal input present Off: HDMI IN port has no video signal input present
2	UTP OUT	Twisted pair cable connection port
3	UPDATE	Micro USB port (typically used for firmware upgrades)
4	12V	Power adapter port (extender kit only requires power supply on transmitter or receiver)
5	POWER LED	On: The device is powered on Off: The device is powered off
6	HDMI IN	HDMI cable connection port
7	IR OUT	IR emitter port

Receiver



No.	Name	Description
1	STATUS LED	On: HDMI OUT port has video signal output present Off: HDMI OUT port has no video signal output present
2	UTP IN	Twisted pair cable connection port
3	UPDATE	Micro USB port (typically used for firmware upgrades)
4	12V	Power adapter port (extender kit only requires power supply on transmitter or receiver)
5	POWER LED	On: The device is powered on Off: The device is powered off
6	HDMI OUT	HDMI cable connection port
7	IR IN	IR receiver port

Troubleshooting

1. No Power

- Ensure the power is on.
- Ensure the power adapter provided in the package is connected to either the transmitter or receiver
- If power is present on one end only (either the transmitter or receiver), verify the twisted pair cable is connected and terminated according to T568B straight-through standards.

2. No Picture or Video Flash

- Ensure all devices are on, and all cables are qualified and connected properly. Ensure all the cables' length are within the maximum distance (refer to **Specification Table** in this manual).
- Ensure all the LED indicators are normal.
- Remove the twisted pair extender set and connect the video source directly to the video display to ensure proper settings and performance.
- Ensure the input resolution is supported by the device.

3. No or Intermittent IR Signal

- Ensure the devices support IR control (not Bluetooth/WIFI).
- Ensure the IR cables provided in the package are being used.
- Ensure the IR cables are installed correctly according to the **Application Diagram** in this manual.
- Verify and, if needed, adjust the control angle and distance of the IR accessories:

IR Cable	IR Emitter	IR Receiver
Suggested Angle	0°	0°
Distance (Max)	30cm	8m

- Ensure all third-party devices conform to the below pin configuration:

