

HDMI Extender

over single 50m/164ft UTP Cables with Dual

IR ontrol

INTRODUCTION

The HDMI Extender over Single Cat5e/6 with Bi-directional IR and Audio Return Channel extends high definition video and audio signals and IR, at a distance of up to 164ft/50m over a single Cat5e/6 cable. Features EDID management, which allows and encourages source and display “handshake” for seamless integration. Equipped with ARC (Audio Return Channel) functionality, which allows the connected ARC equipped display to send audio data “upstream” to an ARC equipped A/V receiver or surround audio controller. The result is an easy and flexible installation eliminating the need for any separate S/PDIF audio connection. Also features a coaxial audio breakout to extract audio, as well as an HDMI loop out for an additional HDMI output. With only one cost effective Cat5e/6 cable, high definition sources with HDMI outputs can be connected to high definition displays with HDMI inputs over long distances. Deep color video, DTS-HD or Dolby TrueHD audio, and HDCP is supported and compatible with the . In addition, is also equipped with bi-directional IR pass-through which allows for source or display control.

The Extender includes two units: transmitting unit and receiving unit. The transmitting unit is used to capture the HDMI input with IR signals and carries the signals via one cost effective Cat5e/6 cable. The receiving unit is responsible for equalizing the transmitted HDMI signal and reconstructing IR and serial control signals. The offers the most convenient solution for HDMI extension over a single Cat5e/6 with long distance capability, and is the perfect solution for any application.

FEATURES

- Allows HDMI Audio/Video and IR signals to be transmitted over a single Cat5e/6 cable
- Bi-directional IR system allowing for control of source or display (IR accessories included)
- Features EDID management which supports default HDMI EDID and has the ability to learn the EDID of display equipment
- Features ARC for two way communication between ARC equipped display and ARC equipped A/V receiver
- Features coaxial break out to extract audio
- Allows for cascading via additional HDMI loop out port
- Transmission Range: Extends 1080p resolution up to 164ft/50m over a single Cat5e or Cat6 cable
- Works with HDMI and HDCP compliant devices
- Supports up to 1080p High Definition resolution
- Compact design for an easy and flexible installation

SPECIFICATIONS

HDCP Compliance: Yes

Video Bandwidth: Single-link 165Mhz [4.95Gbps]

Video Support: 480i/480p/720p/1080i/1080p @60

Audio Support: Surround Sound (up to 7.1 ch) or stereo digital audio

Transmission Range: HD [1080p 24-bit color] – up to 50m [164ft]

HDMI Equalization: Auto

Input TMDS Signal: 3.3 volts

Input DDC Signal: 5.0 volts/P-P

ESD Protection: Human Body model: +/- 8 kV (air-gap discharge)
+/- 4 kV (contact discharge)

PCB stack-up: 4 layouts

Input: (TX) 1xHDMI; (RX) 1xRJ45 + 2x3.5mm

Output: (TX) 1xHDMI + 1xRJ45 + 2x3.5mm; (RX) 1xHDMI

HDMI connector: Type A 19 pin female

RJ-45 connector: WE/SS 8P8C

3.5mm connector: (TX and RX) IR Receiver/IR Blaster

MECHANICAL SPECS

Housing: Metal enclosure

Power Supply: (2) 5V1A DC

Power consumption: 3.2 watts (TX); 2.2 watts (RX)

Operation temperature: 32~104 °F

Storage temperature: -4 ~140 °F

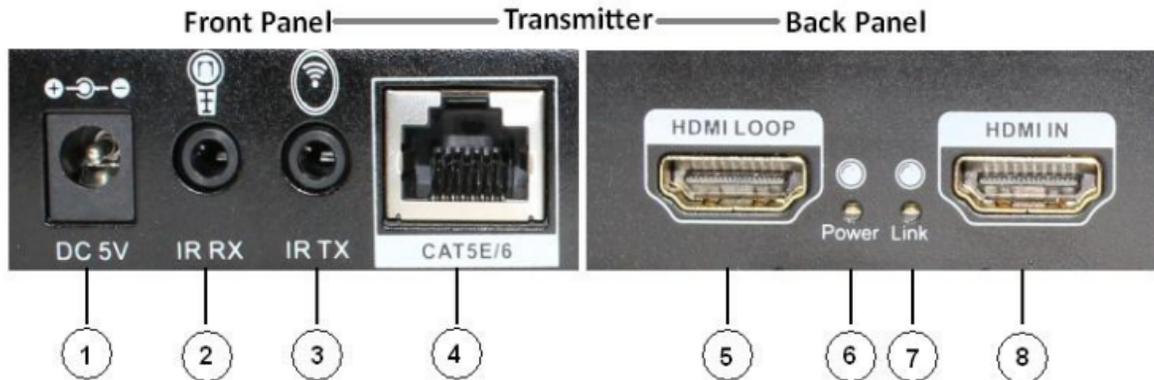
Relative humidity: 20~90 % RH (no condensation)

Package Contents:

- (1) [TX & RX]
- (2) IR Blaster (TX)
- (2) IR Receiver (RX)
- (2) DC 5V in line power supply
- (1) User Manual

PANEL DESCRIPTIONS

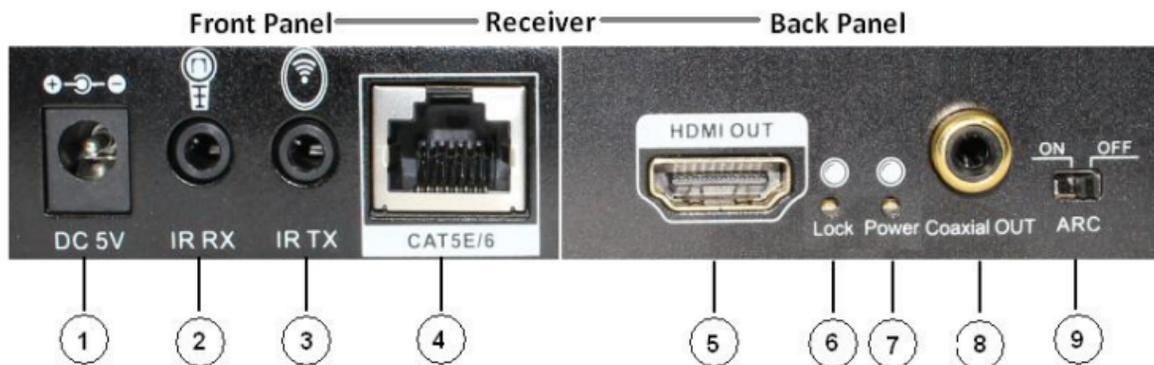
Transmitting unit - -TX



- ① **DC 5V:** Connect from 5V DC power supply into the unit and connect the adaptor to an AC outlet.
- ② **IR RX:** Connect to the IR Receiver for IR signal reception. Ensure that remote being used is within the direct line-of-sight of the IR receiver.
- ③ **IR TX:** Connect the IR Blaster cable included in the package for IR signal transmission. Place the IR blaster in direct line-of-sight of the equipment to be controlled.
- ④ **CAT5E/6:** Connect the CAT output of the transmitter with the CAT input of the receiver with CAT5E/6 cable.

- ⑤ **HDMI LOOP:** This slot is to connect the HDMI input port of your display such as an HDTV.
- ⑥ **Power LED:** This LED will illuminate when the device is connected with power supply.
- ⑦ **Link LED:** This LED will illuminate when the device is connected with HDMI source.
- ⑧ **HDMI IN:** This slot is where you connect the HDMI output port of your source equipment such as DVD/Blu-ray players or Set-Top-Box with an HDMI cable.

Receiver unit - -RX



- ① **DC 5V:** Connect from 5V DC power supply into the unit and connect the adaptor to an AC outlet.
- ② **IR RX:** Connect to the IR Receiver for IR signal reception. Ensure that remote being used is within the direct line-of-sight of the IR receiver.

- ③ **IR TX:** Connect the IR Blaster cable included in the package for IR signal transmission. Place the IR blaster in direct line-of-sight of the equipment to be controlled.
- ④ **CAT5E/6:** Connect the CAT input of the receiver with the CAT output of the transmitter with CAT5E/6 cable.
- ⑤ **HDMI OUT:** This slot is to connect the HDMI input port of your display such as an HDTV.
- ⑥ **LOCK LED:** This LED will illuminate when the HDMI signal from the transmitter is stable.
- ⑦ **Power LED:** This LED will illuminate when the device is connected with power supply.
- ⑧ **Coaxial out:** This slot is where you connect to the audio amplifier with coaxial cable.
- ⑨ **ARC :** Switch the ARC switcher will open or close the ARC function.

ARC function : If you need use ARC, your HDTV must support this function, When you open the ARC function, the coaxial of the receiver will output the HDTV current display content audio signal. Otherwise will output the HDMI source(DVD, set-top-box ,etc) audio signal.

TX EDID Adjust

Under normal circumstances, a source device (digital and analog) will require information about a connected device/display to assess what resolutions and features are available. The source can then cater its output to send only resolutions and features that are compatible with the attached device/display. This information is



called EDID (Extended Display Information Data) and a source device can only accept and read one EDID from a connected device/display. Likewise, the source can only output one resolution for use by a connected device/display.

The EDID switch allows for EDID learning or to pre-set an EDID to encourage a “handshake” between the display and source.

Manual EDID Learning Mode

When you switch to any number of “0-8”, the Transmitter will set a fix

EDID to the source. The detail EDID description please refer to the EDID table.

Auto EDID Learning Mode

When you switch to “9”,the Transmitter will copy the HDMI LOOP OUT port display EDID to source, When you switch to “A”,the Transmitter will copy the receiver HDMI OUT port display EDID to source.

Attention: Please confirm the extender is work normally,when you want modify the new EDID to source, Toggle the EDID switcher to the corresponding number first,then plug the Transmitter power again. The extender will send the new EDID to source.

EDID TABLE:

Position	EDID Description
0	1080p, 2CH AUDIO
1	1080p, DOLBY/DTS 5.1
2	1080p, HD AUDIO
3	1080i, 2CH AUDIO
4	1080i, DOLBY/DTS 5.1
5	1080i, HD AUDIO
6	3D,1080p, 2CH AUDIO
7	3D, 1080p,DOLBY/DTS 5.1
8	3D,1080p, HD AUDIO
9	Copy EDID from the Transmitter HDMI loop out
A	Copy EDID from the Receiver HDMI out
B	1080p, 2CH AUDIO
C	1080p, 2CH AUDIO
D	1080p, 2CH AUDIO
E	1080p, 2CH AUDIO
F	1080p, 2CH AUDIO

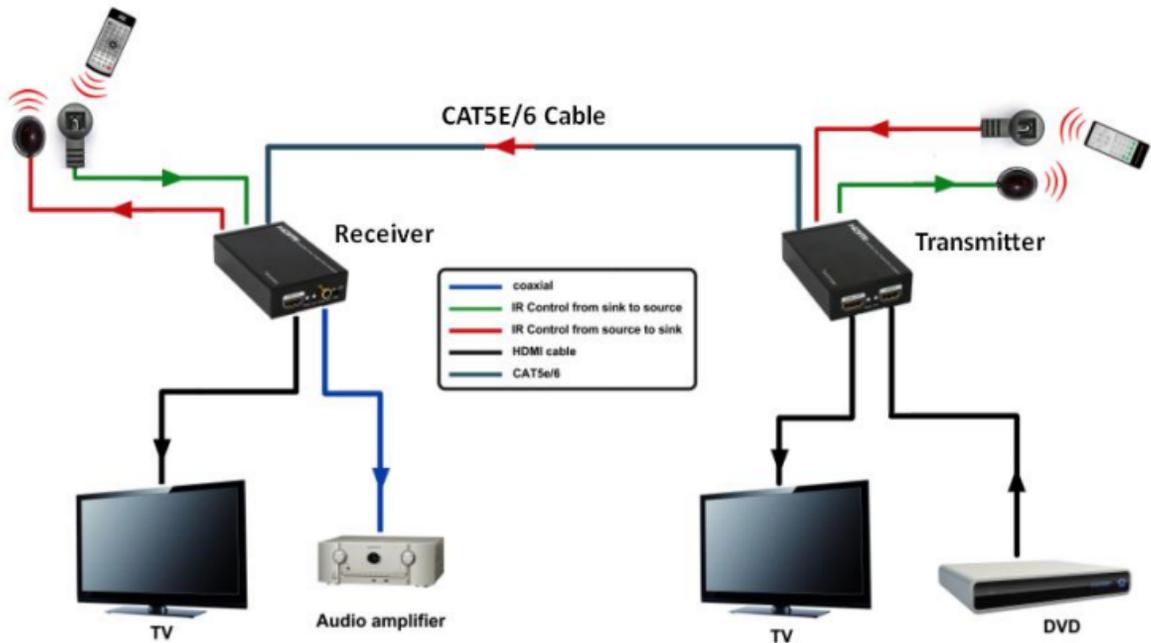
RX Equalizer distance adjust



If you see flickering or blinking image on the display, adjust the EQ switch to improve the cable skew. MAX stands for the strongest HDMI signal level for the longest possible transmission length while MIN stands for the weakest HDMI signal level for short transmission length. Adjust the signal level from MIN to MAX until desired video quality is displayed.

Recommended EQ setting	
Position	Cable Length
0 0	0—20m(0-66ft)
1 1	20—50m(66-164ft)

CONNECTION DIAGRAM



CONNECT AND OPERATE

1. Connect a source such as a Blu-Ray Player, game console, A/V Receiver, Cable or Satellite Receiver, etc. to the HDMI input on the Transmitting unit.
2. Connect a display such as an HDTV or HD Projector to the HDMI output on the Receiving unit.
3. Connect a single Category 5e/6 up to 164ft/50m to the output of the Transmitting unit, and the other end to the input of the Receiving unit.
4. For power, plug both the Transmitting unit and Receiving unit with the included power supplies.
5. Power on each device in the same sequence (receiver and transmitter will already be powered when either unit is plugged in.)

At this point the display connected should display the source signal connected to the extender set. If no signal is being displayed, connect a shorter Cat5e/6 cable (jumper or patch cable). If a display is having difficulty receiving a signal, see EDID section and perform EDID learning or access the display's menu and adjust the resolution (lowest to highest until signal is displayed). A 24 Hz vertical refresh rate may work better than 60 Hz or higher. Use the source remote at the receiver emitter to test IR functionality. If the IR remote function is not responding, check the emitters to ensure they are placed correctly and are plugged into the correct IR jacks on the Extender set receiving and transmitting units.

IR RECEIVER



IR BLASTER



IR BLASTER (TX)

To control the source: Plug IR Blaster into IR TX port of transmitter unit (TX); place blaster in front of the IR eye of the source.

To control the display: Plug IR Blaster into IR TX port of receiver unit (RX); place blaster in front of the IR eye of the display.

IR RECEIVER (RX)

To control the source: Plug IR Receiver into IR RX port of receiver unit (RX); place receiver at or near display.

To control the display: Plug IR Receiver into IR RX port of transmitter unit (TX); place receiver in position where it is able to receive remote signals.

