HDMI Single Cat5e/6 Bi-Direction IR and Power over UTP Extender (HLHC050G)

User manual

Preface

Thanks for purchasing our HDMI Single Cat5e/6 Dual Direction IR and Power over UTP Extender. Before using this product, read this user manual carefully please. Follow the instruction to keep your safety and avoid products damage.

This user manual might be modified irregularly because of updated products. And the manual is for instruction only; we do not guarantee the information and the suggestions.

1. Cautions

■Logo and meaning

⚠Careful, warning, dangerous, Pay attend to following items.

■Cautions

- Do not use this product in the extreme hot, cold, dusty or humid environments.
- Prevent friction with hard objects.
- Avoid the product falling down from a high place, or it may damage the hardware.
- The product is not water proofed. So do not get any liquid into the unit please.
- Do not dismantle, assemble or alter the product arbitrarily.

⚠Warning

The CAT5e/6 cable can NOT be placed underground, outdoor, and between buildings. It must be placed with extenders indoor.

2. About

Product model and standard

HDMI Single Cat5e/6 Bi-Direction IR and Power over UTP Extender includes transmitter and receiver. Transmitters combine HDMI video, audio and control signals, then transmit them through single CAT5e cable. Receivers get these signals, separate signals and rebuild video, audio and control ones, output through HDMI interfaces. It also supports bi- direction remote IR (RX->TX and TX->RX), power over UTP, EDID call back, and both input and output HDCP 1.2 compatible. This product can achieve all functions through single CAT5e cable. Extending distance is 50 meters for 1080p 60Hz HD signal.

Main features:

- Extending distance is 170ft(50 meters) at resolutions 1080P 3D or 1920x1200 60fs, and 270ft(80 meters) at 1080i/720P through single CAT5e cable.
- Support audio formats, Dolby True HD, DTS-master, etc.
- Support 3D signals (all 7 formats), such as Frame Packing, Side-by-Side, Top-to-Bottom, etc.
- Supports EDID call back.
- Supports CEC pass through.

- VESA DDC and hot swap technology (HPD).
- Support power over UTP cable, single 12V DC power supply from any side of TX or RX.
- Bi-direction remote IR (RX->TX and TX->RX).
- HDCP 1.2 compatible.
- Compatible DVI 1.0.
- Support cascade to enhance extending distance.
- Industrial metal case, easy to install.

Parameters:

Interface	Transmitters	HDMI input, IR output (3.5mm), IR input (3.5mm),RJ45 Ethernet interface, 12V DC in
	Receivers	HDMI output, IR output (3.5mm), IR input (3.5mm),RJ45 Ethernet interface, 12V DC in
Power	<3.5W TX or <2.5W RX	
Dimension	(L x W x H): 100 x 65 x 26mm	
Net weight	0.2kg per unit	
Video bandwidth	Maximum TMDS clock frequency 165MHz，4.95Gbps	
Resolution and distance	1080P 170ft (50 meters)-CAT5e/ 270ft (80 meters)-CAT6 720P/1080i 270ft (80 meters)-CAT5e/ 330ft (100 meters)-CAT6	
Audio formats	8-channel, support Dolby True HD and DTS Master	
TMDS input signal	1.2 volts (point to point)	
DDC input signal	5 volts (point to point)	
Indicator	Power-Red, video link-Blue	
HDMI interface standard	HDMI 1.3 standard (HDMI 1.4 3D function), HDCP 1.2, support CEC, EDID	
Remote IR	20KHz~60KHz	
ESD level	HBM ±8 kV （Contact Discharge）	
Temperature range	0 ~ 40°C (operation), -20~60°C(stock)	
Compliance	FCC; CE; RoHS	

Product introduction

Transmitter：

1. DC 12V input
2. CAT5e/6 cable RJ45 port
3. IR receiver input
4. Power and Video status indicator
5. HDMI Input port, connect to Video source
6. IR blaster output

Receiver：

1. DC 12V input
2. CAT5e/6 cable RJ45 port
3. IR blaster output
4. Power and Video status indicator
5. HDMI Output port, connect to Video Sink
6. IR receiver input

Packing list

- 1 unit transmitter, 1 unit receiver.
- 1 remote IR blaster (with 1m cable), 1 remote IR receiver (with 1m cable).
- 1 units of DC 12V 1A adapter.
- 223*180*50mm carton packing.

3. Installation

Installation details and cautions

- Before installation

  a) Prepare place for installing system. The video sources should be close to the transmitter, and the display terminals should be close to receiver. It is better to keep the HDMI cables less than 6 meters.

  b) Basing on real request, make CAT5e/6 cables for connecting the transmitter and the receiver. The length can NOT be more than distance of parameters.

  c) CAT5e/6 cables should be far away from electromagnetic disturbance sources. Such as AC motors, electro soldering, fluorescents, microwave ovens, etc. These disturbance sources might affect extending distance or video quality.

  d) Ensure the length of cable is suitable, no external tensions.

  e) Ensure reliable DC adapter or other DC source.

- Transmitter side connection

  a) Connect your Player and HDMI IN port of transmitter with HDMI cable (HDMI cables are not included in this product).

  b) Insert IR blaster cable to extender TX IR OUT port. IR blaster should

be close to your player or other controlled equipment. TX IR IN port can be connected an IR receiving cable.

c) Insert CAT5e/6 cable to CAT5e/6 port.

d) Connect power adapter or provide DC input from rear DC input port. If RX side has connected DC adapter, TX can get the DC power over UTP cable, so can leave DC input port empty.

- Receiver side connection

a) Connect your HDTV and HDMI OUT port of receiver with HDMI cable (HDMI cables are not included in this product).

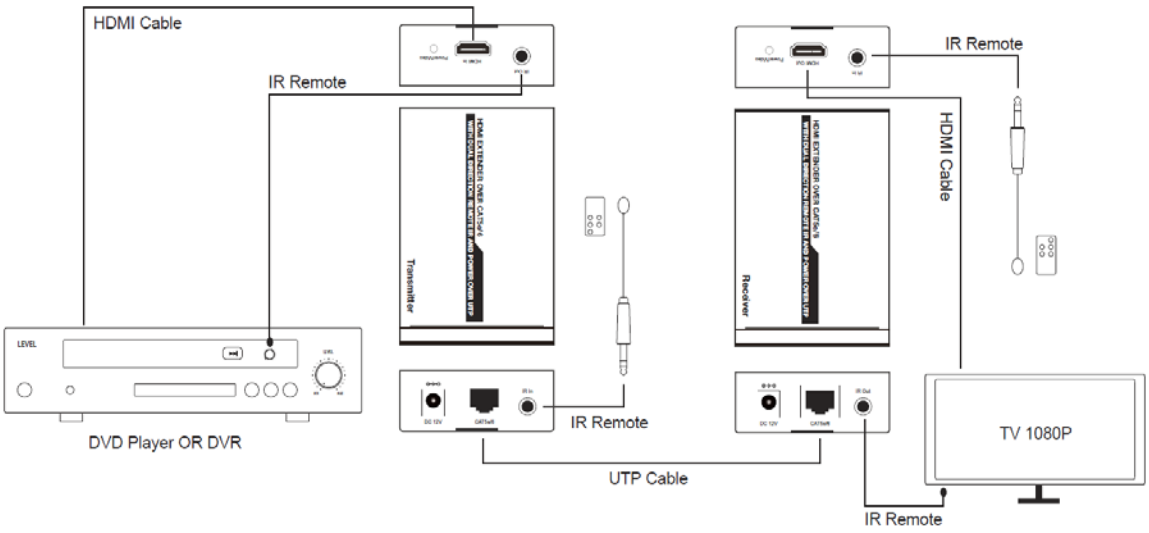
b) Insert IR receiving cable to extender RX IR IN port. IR receiver should be face outside for easy operation. RX IR OUT port can be connected another IR blaster cable.

c) Insert CAT5e/6 cable to CAT5e/6 port.

d) Connect power adapter or provide DC input from rear DC input port. If TX side has connected DC adapter, RX can get the DC power over UTP cable, so can leave DC input port empty.

- Typical installation instruction

Connect a player and a HDTV:



4. Operation instruction

Getting started

After finishing all steps above, system is workable, follow below steps.

a) Ensure the video source and the display terminal are power on.

b) Ensure all input, output cables are connected.

c) Insert TX or RX power adapters into power plug bases.

d) Green power indicator will light.

e) It takes about 2~3 seconds to finish EDID and other initialization automatically.

f) Transmitter video indicator will light; it means input video signal is OK. Then receiver video indicator will light, it means output video signal is OK.

g) At this time, display terminal will show the same format video that

video source send out.

Remote IR function

Using video source's (such as Blue-ray DVD) IR controller faces extender RX side IR receiver. IR signal will be transmitted to extender TX side IR output port, to control video source directly. Contrarily using video sink's (such as TV, projector) IR controller faces extender TX side IR receiver. IR signal will be transmitter to extender RX side IR output port, to control video sink straightly.

EDID call back function

Products support EDID call back function. Receiver unit will read EDID from display terminal, and then pass this EDID information to transmitter unit. The transmitter unit will update internal NVRAM to save new EDID information, and inform video source to read updated EDID information. This function is automatic, no need to setup by customers. This function is to keep maximum compatibility.

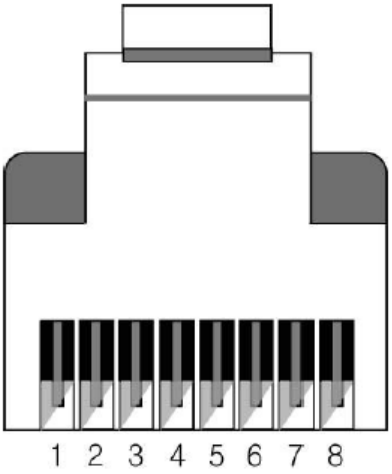
CEC pass through function

Products support CEC pass through function. When the system is powered on, CEC pass through is built automatically.

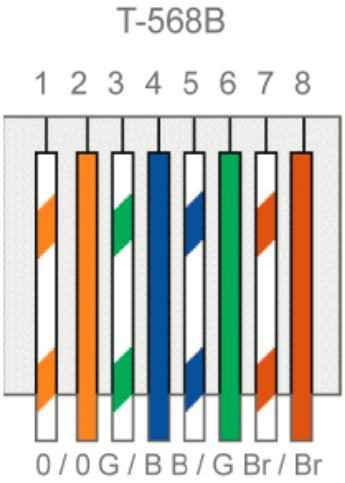
Cat5e/6 cable information

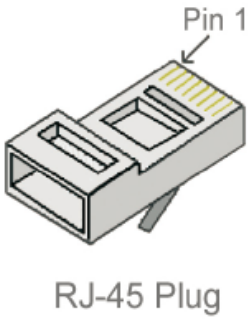
Products request normal CAT5e or CAT6 Ethernet cables, which must meet

standard-TIA/EIA-568B, refer to below pin definition.



Pin	TIA/EIA-568B Wire color
1	Orange/ White
2	Orange
3	Green/ White
4	Blue
5	Blue/ White
6	Green
7	Brown/ White
8	Brown





RJ-45 Plug

5. Maintenance

Storage conditions

Products storage temperature should be -20°C~60°C. For long time storage requirement, please use original carbon boxes, and avoid from high humid, acid base or dusty place.

Maintenance

⚠ Warning

To ensure your safety, place choose original adapters. And provide stable AC input according to this manual.

6. Trouble shooting

Normal problems

a) No output on display terminals

Check transmitter and receiver power first. And then check if transmitter unit video indicator is light. If it is not, check video source please. If it is, check receiver unit video indicator. If receiver video indicator is not light, check CAT5e/6 cable please. If length of cable is longer than maximum distance, the system is not workable. Refer to manual parameters segment to get more details of distance. If receiver video indicator is light, check HDMI cable and display terminal please.

b) Remote IR is not workable

Check transmitter and receiver power fist. Ensure both TX and RX power and video indicators are light. And then check CAT5e/6 cable please. Check if IR blaster unit connects to extender IR out port, and close to

controlled device. And check if remote controller faces to IR receiver.