BENESTON ®

USER MANUAL

VHDI-0050M
HDMI Single Cat5e/6 Bi-Direction IR

Features

● Extending distance is 170 ft(50 meters) at resolutions 1080P 3Dor 1920x1200 60fps, and 270 ft(80 meters) at 1080i/720P through single cat5e cable.

● Support audio formats, Dolby True HD, DTS-master, etc.

● Support 3D signals(all 7 formats), include new ones, such as Frame Packing, Side-by-Side,Top- to-Bottom, etc.

● Support EDID.and CEC

● VESA DDC and hot swap technology (HPD).

● 38Khz remote IR (RX->TX).

● Compatible with HDCP 1.2.

● Compatible DVI 1.0.

● Support cascade to enhance extending distance.

● Industrial metal case, easy to install.

User manual

Preface

Thanks for purchasing our HDMI Single Cat5e/6 Dual Direction IR Extender. Before using this product, please read this user manual carefully. 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 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), 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.(50meters) at resolutions 1080P 3D or 1920x1200 60fs, and
   270ft.(80meters) 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).
* 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, 5V
	Receivers	HDMI output, IR output (3.5mm), IR input (3.5mm), RJ45 Ethernet interface, 5V
Power		<3.5W TX or <2.5W RX
Dimension		(L x W x H): 100 x 65 x 26mm
Net weight		0.2kg
Video		Maximum TMDS clock frequency 165MHz ， 4.95Gbps
Resolution		1080P 170ft (50 meters) -CAT5e / 270ft (80 meters)-CAT6
Audio formats		8-channel, support Dolby True HD and DTS Master
TMDS input		1.2 volts (point to point)
DDC input signal		5 volts (point to point)
Indicator		Power-Red, video link-Blue
HDMI interface		HDMI 1.3 standard (HDMI 1.4 3D function), HDCP 1.2, support CEC, EDID
Remote IR		38KHz
ESD level		HBM ±8 kV （Contact Discharge）
Temperature		0 ~ 40℃ (operation), -20~60℃(stock)
Compliance		FCC; CE;

Product introduction

Transmitter：

① DC 5V 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 5V 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

Packing list

* 1* transmitter, 1*receiver
* 1* remote IR blaster(with 1meter cable)
* 1* remote IR receiver (with 1meter cable)
* 1* DC5V 1.0A adapter.
* 223*180*50mm/carton

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.
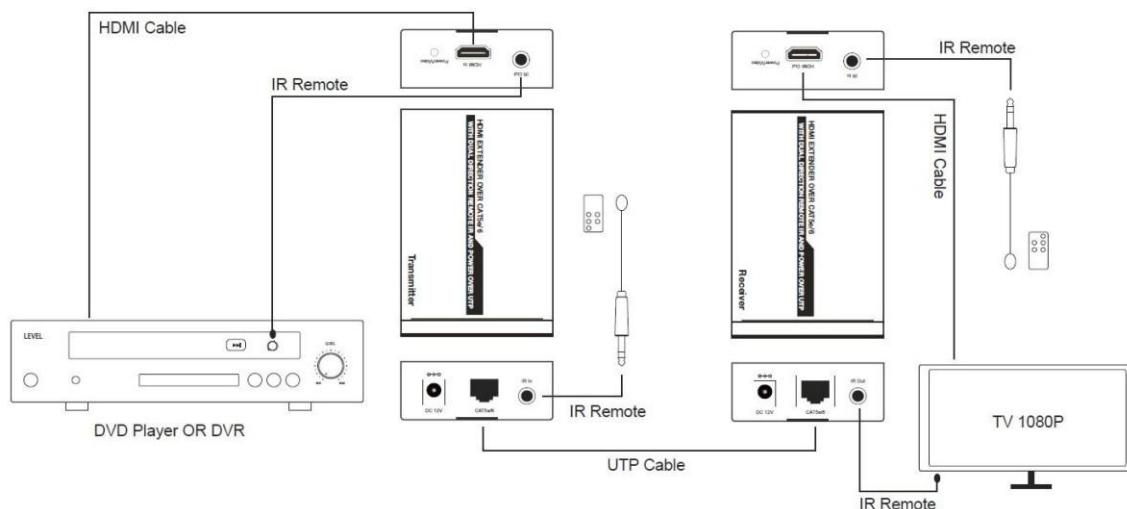
* Transmitter side connection

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.

* 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.

* 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 terminals 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.
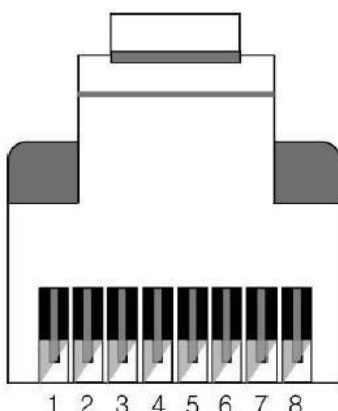This function is automatic, no need to setup by customers. This function is to keep maximum compatibility.

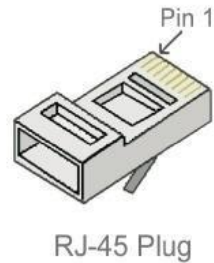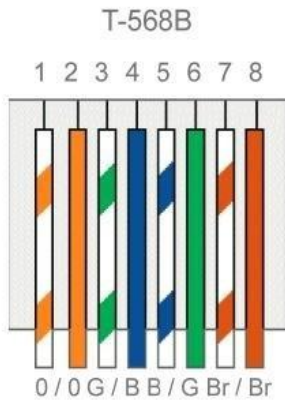## CEC pass through function

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

T-568B

1 2 3 4 5 6 7 8

0 / O G / B B / G Br / Br

Pin 1

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.