



CHDBT-1H1CE

1 by 2 HDMI over HDMI & CAT5e/6/7 with LAN/IR/
RS232 & Bidirectional PoE Splitter



Operation Manual

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SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply.

Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

REVISION HISTORY

VERSION NO.	DATE DD/MM/YY	SUMMARY OF CHANGE
VR0	09/01/14	Preliminary Release



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1. INTRODUCTION

The HDMI over HDMI and CAT5e/6/7 Transmitter can convert a single HDMI input, 2-way IR and RS-232 control and LAN serving to a single CAT5e/6/7 output and includes a simultaneous HDMI bypass output. It supports resolutions up to 1080p Full HD, 4K×2K timing, 3D and multi-channel digital audio formats (such as LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD). The HDMI bypass output can be connected to an HDMI display or cascaded to another splitter. The CAT5e/6/7 output can be connected to a CAT5e/6/7 to HDMI Receiver to extend the operating distance up to 100 meters.

Additionally, the LAN connectivity will allow a 100BaseT network to be served to smart TVs or games consoles. The Bidirectional Power over Ethernet (PoE) function provides greater flexibility in installations.

2. APPLICATIONS

- Household entertainment sharing and control
- Lecture room display and control
- Showroom display and control
- Meeting room presentation and control
- Classroom display and control

3. PACKAGE CONTENTS

- HDMI over HDMI & CAT5e/6/7 with LAN/IR/RS232 & Bidirectional PoE Transmitter
- IR Blaster x 1
- 3.5mm Phone Jack to RS-232 Cable
- 24V DC Power Adaptor
- Power Cord
- Operation Manual

4. SYSTEM REQUIREMENTS

- Source equipment with HDMI output connector
- Display TV/Monitor with HDMI input connector
- HDMI over CAT5e/6/7 Receivers with industry CAT5e/6/7 cables

5. FEATURES

- HDMI with 3D & 4Kx2K supported, HDCP and DVI compliant
- Simultaneous HDMI and CAT5e/6/7 outputs
- Supports data rate from 250Mbps up to 3Gbps
- Supports wide range of PC resolutions from VGA to WUXGA and HDTV resolutions up to 4Kx2K (3840x2160@24/25/30Hz and 4096x2160@24Hz)
- Supports LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio transmission (32-192kHz sample rate)
- Supports distances up to 100 meters through CAT5e/6/7 cables
- Supports Ethernet network rate up to 100Mbps
- Can select Standard or TV EDID
- Supports USB service port
- Provides 24V DC power to or received from compatible PoE Receiver through CAT5e/6/7
- Supports control of devices via RS-232 and 2-way IR
- The 3D signal display follow by display TV's EDID
- Supports Bidirectional IR PoE

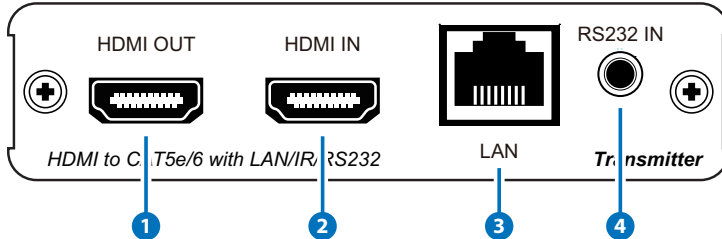
Note:

1. *This system was tested with CAT6/23AWG cables, results may vary with cables of a different specification.*
2. *The PoE function is designed for powering compatible Receiver units only non-PoE Receivers will need their own power supply. Receivers of another brand may not be compatible.*
3. *Displaying HDMI 4Kx2K resolution require the standard 4Kx2K HDMI cable and display in order for proper image displaying.*
4. *This device obtain the last memory function therefore, the device will use last CAT5e/6/7 output port's EDID when CAT5e/6/7 output is not connected to a display after power cycling.*

The unit will detect CAT5e/6/7 output's EDID when it obtain a 4Kx2K EDID and send out the signal accordingly to other output ports. If the CAT5e/6/7 output is without a 4Kx2K's EDID the unit will detect all output's EDID and send out the signal that all outputs can accept.

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



- 1 HDMI OUT:** Connect to HDMI display for instant image display or cascade with another family type Transmitter. The unit will detect CAT5e/6/7 output's EDID when it obtain a 4Kx2K EDID and send out the signal accordingly to other output ports. If CAT5e/6/7 output is without a 4Kx2K's EDID the unit will detect all output's EDID and send out the signal that all outputs can accept.

This device obtain the last memory function therefore, the device will use the last CAT5e/6/7 output port's EDID when CAT5e/6/7 output port is not connected after power cycling.

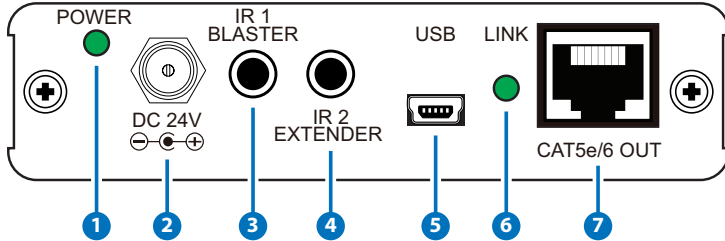
- 2 HDMI IN:** Connect with source equipment such as DVD/Blu-ray or PS3 player.

- 3 LAN:** Connect to intranet or internet service system for a total sharing rate of 100Mbps within the link of Transmitter.

Warning: DO NOT connect this slot with any of the CAT5e/6/7 port, doing so may trigger a power shot down and ruin the device.

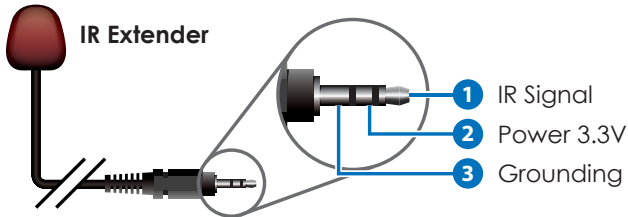
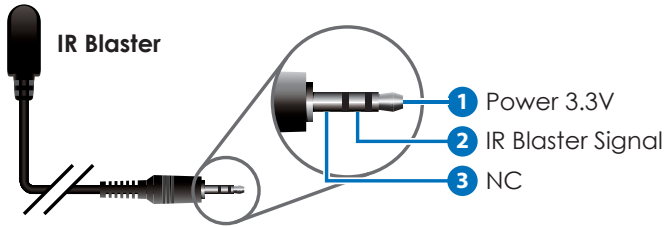
- 4 RS-232 IN:** Connect to a PC/Laptop or RS-232 enabled device (with supplied 3.5mm Phone Jack to D-Sub 9-Pin female adaptor) to transmit of RS-232 commands.

6.2 Rear Panel



- 1 POWER LED:** Once the power supply is connected the LED will illuminate.
- 2 DC 24V:** Plug the 24V DC power supply into the unit and connect the adaptor to an AC outlet.
- 3 IR 1 BLASTER:** Connect with the supplied IR Blaster to blast out the IR signal received from the Receiver side. Place the IR Blaster in direct line-of-sight of the equipment to be controlled.
- 4 IR 2 EXTENDER:** Connect with the supplied IR Extender to receive IR signal from Transmitter side and blast out at Receiver side. Ensure that remote controller being used is within the direct line-of-sight of the IR Extender.
- 5 USB:** This slot is reserved for firmware update only.
- 6 LINK LED:** This LED will illuminate when both the input source and output display signals are connected through CAT cable. When it blinks regularly it states the display is NOT sending signals to Receiver but the Transmitter and Receiver are linked and if it blink irregularly it states an error has occurred.
- 7 CAT5e/6/7 OUT:** Connect this port to CAT5e/6/7 to HDMI Receiver with CAT5e/6/7 cable to extend the signal up to 100m.

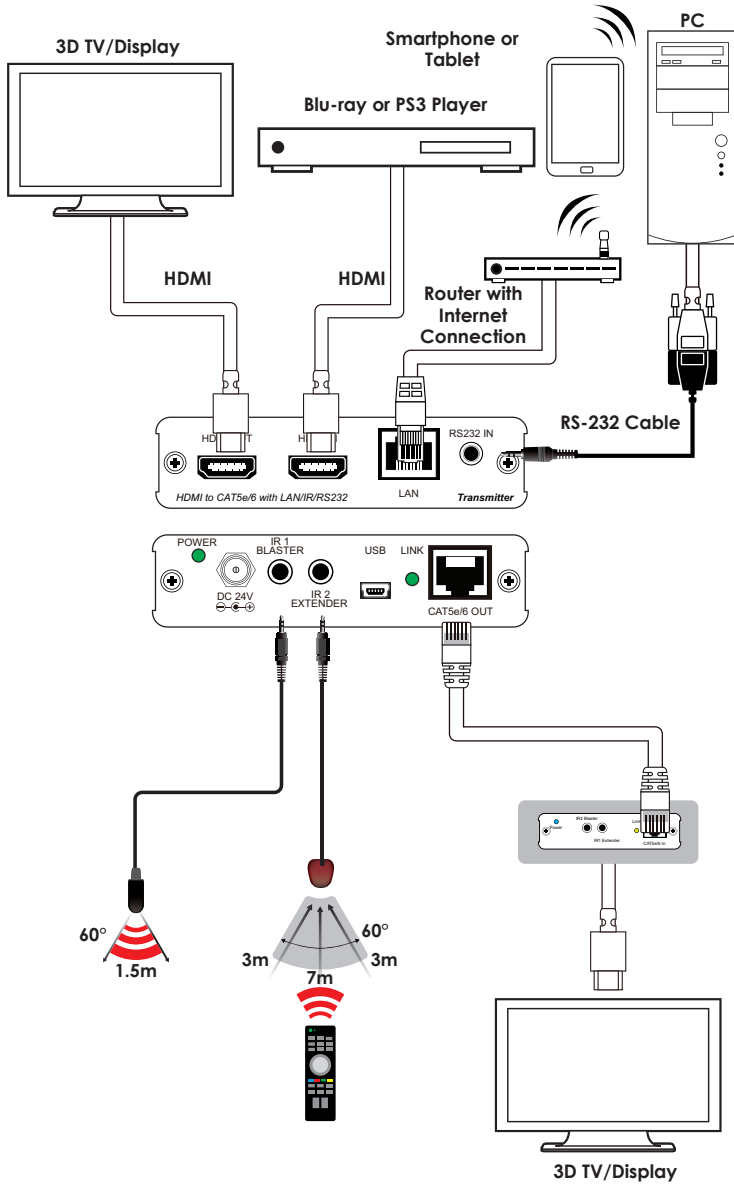
6.3 IR Cable Pin Assignment



6.4 D-Sub 9-Pin Definitions

Pin	Define TX / RX
1	N/C
2	TxD/RxD
3	RxD/TxD
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

7. CONNECTION DIAGRAM





8. SPECIFICATIONS

Video Bandwidth	340Mbps/10.2Gbps
Input ports	1 x HDMI, 1 x 3.5mm Phone Jack for RS-232, 1 x IR IN, 1 x LAN, 1 x USB (Service only)
Output ports	1 x HDMI, 1 x CAT5e/6/7 1 x IR OUT,
Resolution	Up to 4Kx2K (3840x2160@24/25/30Hz/4096x 2160@24Hz)
HDMI Input & Output Cable Distance	Up to 10m@8 or12-bit 1080p
CAT5e/6/7 Output Cable Distance	Up to 100m
IR Frequency	30~50kHz
Power Supply	24V / 1.25A DC (US/EU standards, CE/FCC/ UL certified)
Dimensions	102 mm(W) x 102 mm(D) x 25 mm(H)/ Jacks Excluded 102 mm(W) x 110 mm(D) x 25 mm(H)/ Jacks Included
Weight	252g
Chassis Material	Metal
Silkscreen Color	Gray
ESD Protection	Human body model: ±8kV (air-gap discharge) ±4kV (contact discharge)
Operating Temperature	0°C ~ 40°C
Storage Temperature	-20°C ~ 60°C / -4 °F ~ 140 °F
Relative Humidity	20 ~ 90% RH (non-condensing)
Power Consumption	6.3W

8.1 CAT5e/6/7 Cable Specification

Cable Type	Range	Pixel clock rate	Video Data Rate	Supported Video
CAT5e/6/7	100 m	<=225 MHz	<=5.3 Gbps (HD Video)	Up to 1080p, 60 Hz, 36 bits, 3D (data rates lower than 5.3 Gbps or below 225 MHz TMDS clock).
	70 m	>225 MHz	> 5.3 Gbps (Ultra HD Video)	4K2K, 30Hz video formats
CAT6A/7	100 m	>225 MHz	> 5.3 Gbps (Ultra HD Video)	4K2K, 30Hz video formats

9. ACRONYMS

ACRONYM	COMPLETE TERM
4Kx2K	3840x2160 / 4096x2160
DTS	Digital Theater System
EDID	Extended Display Identification Data
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface
HDTV	High-Definition Television



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