



PU-2H8HBTE-AD

2 x 8 HDBaseT™ Switch with Audio Dembedding

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	SUMMARY OF CHANGE
v1.00	25/04/2014	First release

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1. INTRODUCTION

The PU-2H8HBTE HDBaseT switch has two HDMI inputs and eight HDBaseT outputs, plus a single HDMI output. This device allows the user to select either HDMI source for distribution to all screens simultaneously. Each HDBaseT output supports the transmission of video (resolutions up to 1080p Full HD, plus 4K Ultra High Definition, and 1920x1200@60Hz), multi-channel audio, single LAN serving, and control via 2-way IR, RS-232 or Web GUI/Telnet IP over a single CAT5e/6/7 cable (up to 100m). The HDMI output supports the same video resolutions and high definition audio via certified HDMI cables up to 15m.

For additional flexibility, the PU-2H4HBTE is provided with Audio De-Embedding functionality allowing easy audio integration into a wider AV system or direct connection to an AVR. Audio outputs are via a single Optical connection or an Analogue Stereo output (2× RCA).

The HDBaseT outputs are designed to be used with any compatible HDBaseT Receiver as follows: PU-507RX / PU-507RX-2H / PU-507RX-SCD / PU-507WPRX / PU-1109RX. These Receivers support Power over Ethernet (PoE) function so do not require a separate PSU for power.

Use the LAN serving capabilities of this switch to add internet connectivity to every HDBaseT output zone. In addition, this switch also features IP control allowing users to access and control the matrix remotely and also allow additional options for integration of third-party control systems such as Control 4.

2. APPLICATIONS

- /// Household entertainment sharing and control
- /// Lecture room display and control
- /// Showroom display and control

3. PACKAGE CONTENTS

- /// HDMI over HDMI & CAT5e/6/7 with PoE and Ethernet Transmitter
- /// 1× IR Receiver
- /// 1× IR Blaster
- /// 1× Remote Control
- /// 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

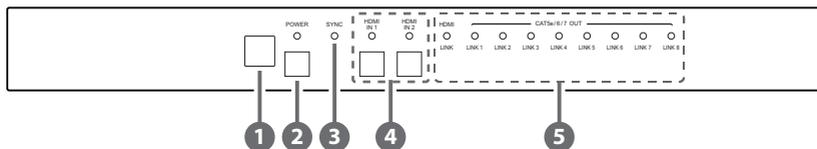
- /// HDMI, HDCP and DVI complaint
- /// Common supported resolutions: HDTV: 480p, 576p, 720p, 1080i, 1080p, 1080p24, 4K; PC: VGA, SVGA, XGA, WXGA, SXGA, UXGA, WUXGA, 1920x1200@60Hz
- /// High Definition Audio supported: Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio plus LPCM (up to 192kHz)
- /// Uncompressed data transfer over single CAT cable for HDBaseT outputs (100m - CAT6/7; 80m - CAT5e)
- /// Supports HDMI input up to 15m 1080p 8bit or 10m 1080p 12bit.
- /// Supports RS-232, 2-Way IR, Manual Selection Buttons, and Web GUI/ Telnet IP for control
- /// HDBaseT outputs support Power over Ethernet (PoE) with compatible receiver units
- /// Supports LAN serving to all connected HDBaseT zones
- /// Supports 3D signals and 4K Ultra High Definition

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.*

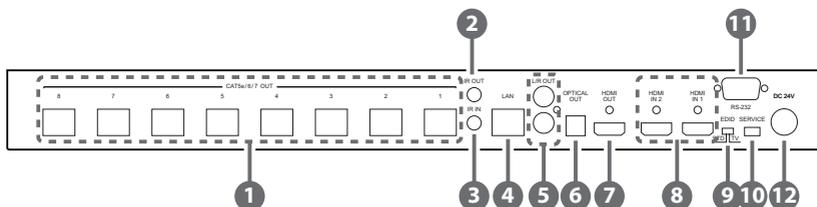
6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



- 1 **IR Window:** Receive IR signal from the package included remote control only.
- 2 **POWER Button & LED:** Press this button to switch ON or set the device to standby mode and the LED will illuminate in Green and Red.
- 3 **SYNC:** This LED will illuminate when the HDMI input port connected to the source.
- 4 **HDMI IN 1/2:** Press the button to selection HDMI input source 1 or 2. The LED will illuminate according to the selection.
- 5 **HDMI & CAT OUT LINK 1~8:** These link LEDs will illuminate when HDMI or CAT5e/6/7 output(s) has been connected to the Display/ Receiver(s) and the Receiver(s) has connected with display that shows image on screen.

6.2 Rear Panel



- 1 **CAT5e/6/7 OUT 1~8:** Connect these ports to CAT5e/6/7 to HDMI Receivers (with or without PoE function) with CAT5e/6/7 cable to extend the signal up to 100m.
- 2 **IR OUT:** Connect with 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.
- 3 **IR IN:** Connect with 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.

- ④ **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.*

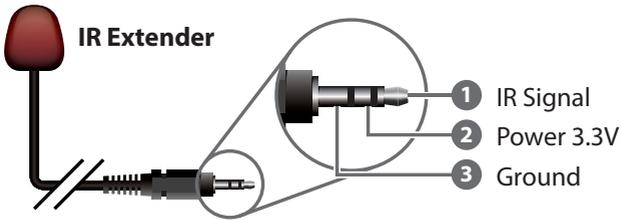
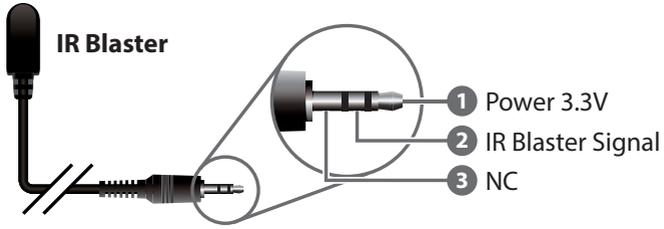
- ⑤ **L/R OUT:** Connect to active speaker or audio equipment for audio signal output.
- ⑥ **OPTICAL OUT:** Connect to active speaker or audio equipment for audio signal output.
- ⑦ **HDMI OUT:** Connect to HDMI display for instant image display or cascade with another family type Transmitter.
- ⑧ **HDMI IN1/2:** Connect with source equipment such as DVD/Blu-ray or PS3 player.
- ⑨ **EDID STD/TV:** The default factory setting is on TV, leave as it is when the display is properly. The unit will detect first the HDMI output's EDID and send out the signal accordingly to other output ports. If the HDMI output port is not connected the device will detect the 1st CAT5e/6/7 output's EDID and send out the signal accordingly to all outputs.

This device obtain the last memory function therefore, the device will use the last HDMI output port/the 1st CAT5e/6/7's output EDID after power cycling or switch in between the EDID setting.

Switch to STD to use build-in EDID if the display has problem. STD EDID's video at 1080p@60Hz and audio at LPCM 2CH.

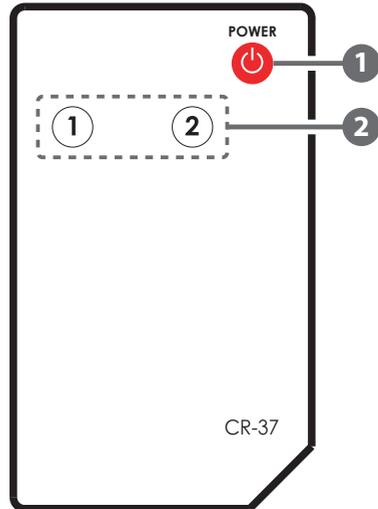
- ⑩ **SERVICE:** This slot is reserved for factory service only.
- ⑪ **RS-232:** Connect this slot from PC/Laptop for RS-232 command sending.
- ⑫ **DC 24V:** Plug the 24V DC power supply into the unit and connect the adaptor to an AC outlet.

6.3 IR Cable Pin Assignment



6.4 Remote Control

- 1 **Power:** Press the button to turn On/Off the unit.
- 2 **Input Selection 1/2:** Press 1/2 to select HDMI input sources 1 or 2.



6.5 RS-232 Pin Definition

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

Baud Rate: 115,200bps

Data bit: 8 bits

Parity: None

Flow Control: None

Stop Bit: 1

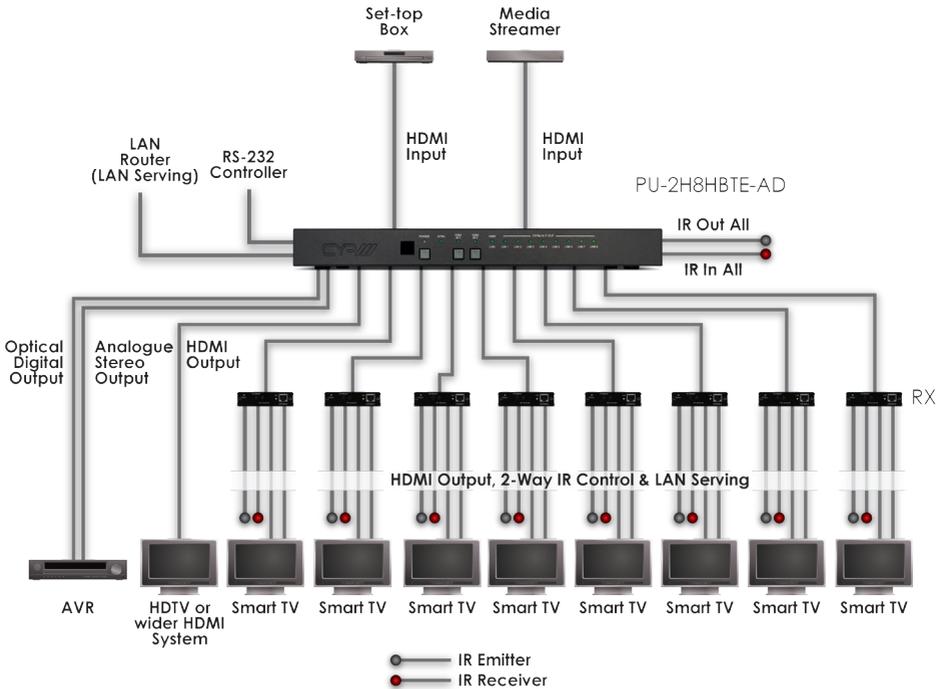
6.6 RS-232 Commands

COMMAND	DESCRIPTION
POWER 00	Power Off (Standby)
POWER 01	Power On
PORT 01	Select Input 1
PORT 02	Select Input 2

Note:

1. All the RS-232 command will be not executed unless followed with carriage return and LF (Line Feed).
2. Commands are case-insensitive.

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

8.1 Technical Specifications

Video Bandwidth	340Mbps/10.2Gbps
Input ports	2 x HDMI, 1 x IR IN, 1 x LAN, 1 x USB (Service only), 1 x RS-232
Output ports	1 x HDMI, 8 x CAT5e/6/7, 1 x IR OUT, 1 x L/R OUT, 1 x Optical OUT
Resolution	Up to 4Kx2K (3840x2160@24/25/30Hz & 4096x2160@24Hz)
HDMI Input Cable Distance	N/A
CAT5e/6/7 Output Cable Distance	Up to 100m
IR Frequency	30~50kHz
ESD Protection	Human body model: ±8kV (air-gap discharge) ±4kV (contact discharge)
Power Supply	24V / 6.25A DC (US/EU standards, CE/ FCC/UL certified)
Dimensions (mm)	436 mm(W) x 249 mm(D) x 44 mm(H)/ Jacks Excluded 436 mm(W) x 256.2 mm(D) x 48 mm(H)/ Jacks Included
Weight(g)	3114
Chassis Material	Metal
Colour	Black
Operating Temperature	0°C ~ 40°C / 32 °F ~ 104 °F
Storage Temperature	-20°C ~ 60°C / -4 °F ~ 140 °F
Relative Humidity	20 ~ 90% RH (non-condensing)
Power Consumption	105W

8.2 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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