



## PU-HBTPL-ZE

HDBaseT™ Lite Zone extender 1 x HDMI / 1 x HDBaseT out

**OPERATION MANUAL**

## 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
RDV1	08/09/14	Preliminary Release

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## 1. INTRODUCTION

The PU-HBTPL-ZE HDBaseT Lite Zone extender is designed to allow AV integrators to easily create additional zones for any HDBaseT distribution system whilst enabling the HDBaseT pass-through signal to be extended further over CAT5e/6/7 (up to 60m). This device supports the transmission of video (resolutions up to 1080p Full HD, plus 4K Ultra High Definition, and 1920x1200@60Hz), multi-channel digital audio and control via IR, RS-232 or Web GUI/Telnet IP over a single CAT5e/6/7 cable. The Zone extender allows signals to be transmitted up to 60m from the transmitter device to the Zone extender where the signal can be routed to a local display via the HDMI output. The signal is also transmitted simultaneously via the HDBaseT output enabling it to be distributed up to 60m over CAT5e/6/7 from the zone. The PU-HBTPL-ZE Zone extender utilises PoC (Power over Cable) to provide power to the connected Receiver unit, thus no requirement for a PSU on the Receiver end. This device can be cascaded up to five times to create additional zones.

## 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

- CAT5e/6/7 over HDMI & CAT5e/6/7 with IR Splitter
- IR Blaster x 1
- IR Extender x 1
- 24V DC Power Adaptor
- Operation Manual

## 4. SYSTEM REQUIREMENTS

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

## 5. FEATURES

- Supports uncompressed video/audio up to 10.2Gbps
- Supports resolutions VGA~WUXGA, 480i~1080p, 4K UHD@24/25/30Hz (RGB 4:4:4 & YUV 4:2:2), 4K UHD@ 60Hz (YUV 4:2:0), 4K/2K@24/25/30Hz (RGB 4:4:4 & YUV 4:2:2) and 4K/2K@ 60Hz (YUV 4:2:0) dependent upon the output display's EDID settings
- HDMI, HDCP and DVI compliant
- High Definition Audio supported: Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio plus LPCM (up to 192kHz)
- Supports RS-232, 2-Way IR, and HDMI CEC control pass through
- Supports 3D signals

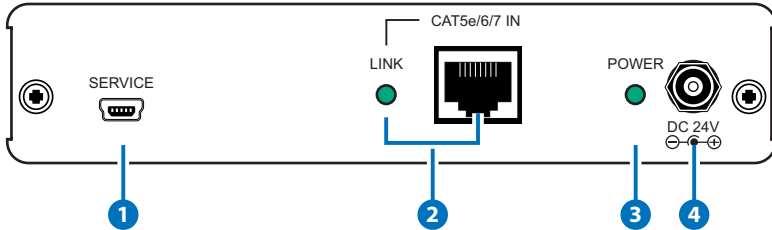
### **Note:**

1. *This system was tested with CAT6/23AWG cables, results may vary with cables of a different specification.*
2. *Displaying HDMI 4Kx2K resolution require the standard 4Kx2K HDMI cable and display in order for proper image displaying.*
3. *This device obtain the last memory function therefore, the device will use last output port's EDID when the output is not connected to a display after power cycling.*

*The unit will detect HDMI output's EDID when it obtain a 4Kx2K EDID and send out the signal accordingly to other output ports. If the HDMI 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.*

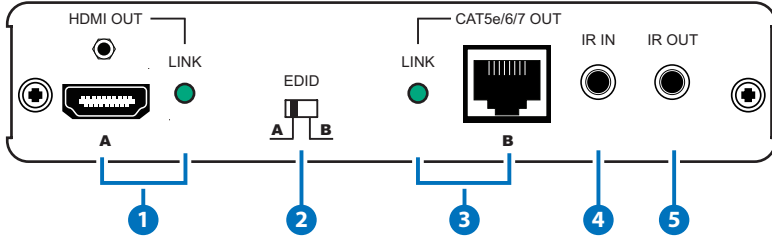
## 6. OPERATION CONTROLS AND FUNCTIONS

### 6.1 Front Panel



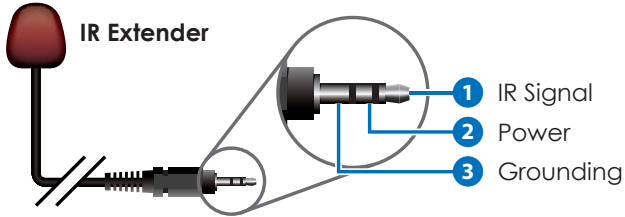
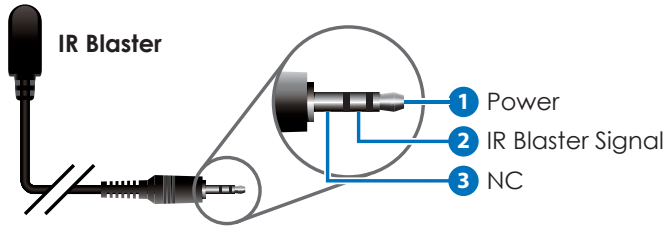
- 1 SERVICE:** This slot is reserved for firmware update only.
- 2 CAT5e/6/7 IN & LINK LED:** Connect from HDMI over CAT5e/6/7 Transmitter device along with source device for input signal distribution up to 60m. Once the connection is made with active signal the LINK LED will illuminate.
- 3 POWER LED:** Once the power supply is connected the LED will illuminate.
- 4 DC 24V:** Plug the 24V DC power supply into the unit and connect the adaptor to an AC outlet.

## 6.2 Rear Panel



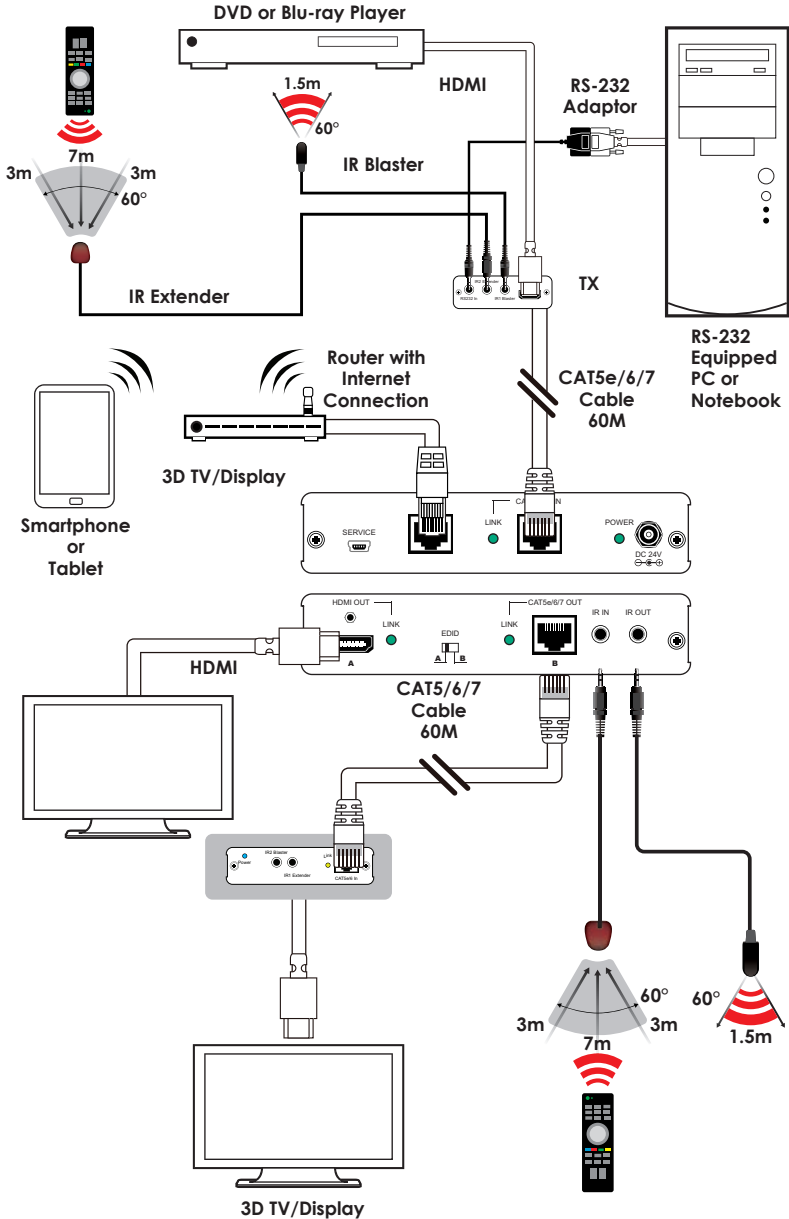
- 1 HDMI OUT & LINK LED:** Connect to HDMI display for instant image display or cascade with another family type Transmitter. The LINK LED will illuminate once and active display signal is detected.  
This device obtain the last memory function therefore, the device will use the last output port's EDID when The output port is not connected to a display after power cycling.
- 2 EDID:** Switch to A/B to allows device to output image according to output A/B (A: HDMI, B:CAT OUT) port's EDID. For example, switch to A and both input and output A is connect to 4K2K's equivalence signal, both output A and B will obtain a 4K2K's signal however if output B is not connected with 4K2K's display there will be no image.
- 3 CAT5e/6/7 OUT & LINK LED:** Connect this port to CAT5e/6/7 to HDMI Receiver with CAT5e/6/7 cable along with display to extend the signal up to 60m. Once the connection is made with active signal the LINK LED will illuminate.
- 4 IR IN:** 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 IR OUT:** 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.

## 6.3 IR Cable Pin Assignment





# 7. CONNECTION DIAGRAM



## 8. SPECIFICATIONS

<b>Video Bandwidth</b>	340Mbps/10.2Gbps
<b>Input ports</b>	1 x CAT5e/6/7, 1 x IR IN, 1 x USB (Service only)
<b>Output ports</b>	1 x HDMI, 1 x CAT5e/6/7 1 x IR OUT,
<b>Resolution</b>	Up to 4Kx2K (3840x2160@24/25/30Hz/ 4096x2160@24Hz/4K2K@60Hz YUV_420)
<b>HDMI Input &amp; Output Cable Distance</b>	Up to 10m@8 or12-bit 1080p
<b>CAT5e/6/7 Output Cable Distance</b>	Up to 60m
<b>IR Frequency</b>	30~50kHz
<b>Power Supply</b>	24V / 1.25A DC (US/EU standards, CE/FCC/ UL certified)
<b>Dimensions</b>	145 mm(W) x 160 mm(D) x 30 mm(H)/ Jacks Excluded 45 mm(W) x 172.75 mm(D) x 35 mm(H)/ Jacks Included
<b>Weight</b>	662g
<b>Chassis Material</b>	Metal
<b>Silkscreen Color</b>	Black
<b>ESD Protection</b>	Human body model: ±8kV (air-gap discharge) ±4kV (contact discharge)
<b>Operating Temperature</b>	0°C ~ 40°C
<b>Storage Temperature</b>	-20°C ~ 60°C / -4 °F ~ 140 °F
<b>Relative Humidity</b>	20 ~ 90% RH (non-condensing)
<b>Power Consumption</b>	22.33W/with Receiver connected

## 8.1 CAT5e/6/7 Cable Specification

Cable Type	Range	Pixel clock rate	Video Data Rate	Supported Video
CAT5e/6/7	60 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).
	40 m	>225 MHz	> 5.3 Gbps (Ultra HD Video)	4K2K, 30Hz video formats
CAT6A/7	60 m	>225 MHz	> 5.3 Gbps (Ultra HD Video)	4K2K, 30Hz video formats

## 9. ACRONYMS

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



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RDV1