PUV-1510-KIT

HDBaseT1 Transmitter & Receiver Kit with LAN & PoH

OPERATION MANUAL

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Version 1.1

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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	16/05/2019	First release

CONTENTS

1. INTRODUCTION

The PUV-1510-KIT Transmitter and Receiver Kit enables transmission of video resolutions up to 4K UHD, along with HD audio, 2-Way IR, RS-232, PoH (Power over HDBaseT), and LAN signals up to 100m. This solution provides advanced signal management ensuring reliable results in the most demanding installation environments. All audio, video, control, and power are transmitted simultaneously over a single CAT6a/7 cable up to 100m..

2. APPLICATIONS

- 48V PoE from Transmitter (PSE) to Receiver (PD)
- 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

- 1 x HDMI over CAT5e/6/7 Transmitter
- 1 x CAT5e/6/7 over HDMI Receiver
- 1 x IR Blaster
- 1 x IR Extender
- 1 x 48V DC adaptor

4. SYSTEM REQUIREMENTS

Input source equipment such as PS3/Blu-ray player and output HD TV/ display.

5. FEATURES

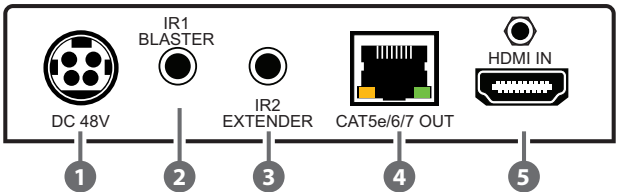
- HDMI with 3D, 4K2K support, HDMI & DVI Compliant
- Supports CEC bypass
- Simultaneous reception of uncompressed data over a single 100m/328ft CAT5e/6/7 cable
- 5Play™ convergence: HDMI, LAN, PoE & Control (IR & RS-2232)
- Supports resolution up to 4K2K@50/60 & YUV_420 and 21:9
- Supports standard 48V from Transmitter (PSE) to Receiver (PD)
- Installation Friendly
- Supports HDMI Output cable distance up to 5m at 4K2K@50/60 & YUV_420

Note:

Displaying HDMI 3D and 4K2K contents, equivalent source signal and HDMI cable are required in order to secure the quality.

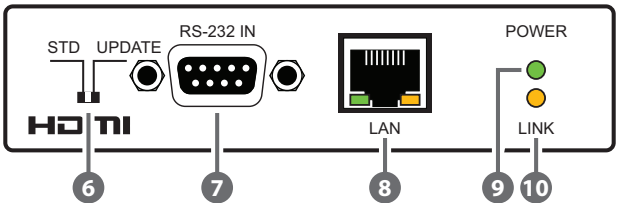
6. OPERATION CONTROLS AND FUNCTIONS

6.1 Transmitter Front Panel



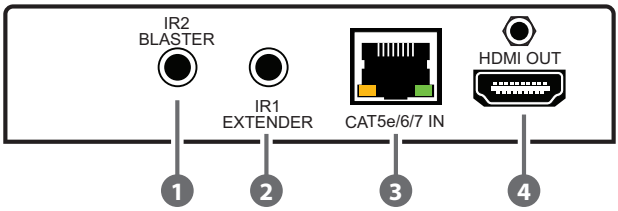
1. **DC 48V:** Plug the 48V DC power supply into the unit and connect the adaptor to an AC outlet.
2. **IR1 BLASTER:** Connect to the supplied IR Blaster cable for IR signal transmission. Place the IR Blaster in direct line-of-sight of the equipment to be controlled.
3. **IR2 EXTENDER:** Connect to the supplied IR Extender cables for IR signal reception. Ensure that remote being used is within the direct line-of-sight of the IR Extender.
4. **CAT5e/6/7 OUT:** Connect to the Receiver unit with a single CAT5e/6/7 cable for transmission of all data signals.
5. **HDMI IN:** Connect to HDMI source equipment such as a DVD or Blu-ray player.

6.2 Transmitter Rear Panel



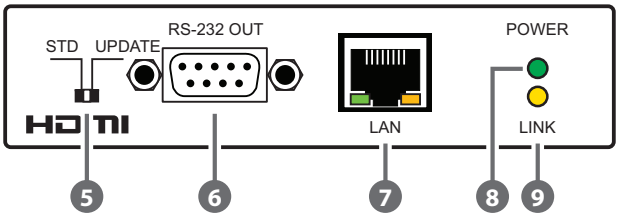
1. **STD/UPDATE Switch:** This switch is reserved for factory use only.
2. **RS-232 IN:** Connect to a PC or Laptop with D-Sub 9-pin male cable for the transmission of RS-232 commands.
3. **LAN:** Connect to an internet or network system.
4. **POWER LED:** This LED will illuminate when the device is connected to a power supply.
5. **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 blinks irregularly it indicates an error has occurred.

6.3 Receiver Front Panel



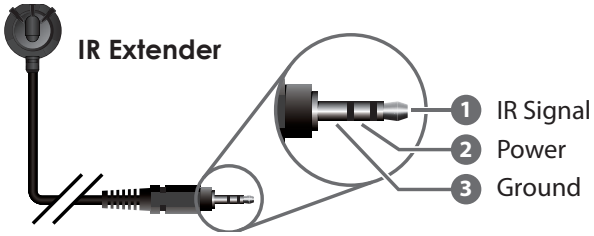
1. **IR2 BLASTER:** Connect to the supplied IR Blaster cable for IR signal transmission. Place the IR Blaster in direct line-of-sight of the equipment to be controlled.
2. **IR1 EXTENDER**: Connect to the supplied IR Extender cables for IR signal reception. Ensure that remote being used is within the direct line-of-sight of the IR Extender.
3. **CAT5e/6/7:** Connect to the Transmitter unit with a single CAT5e/6/7 cable for transmission of all data signals.
4. **HDMI OUT:** Connect to a HDMI equipped TV/monitor for display of the HDMI input source signal.

6.4 Receiver Rear Panel



1. **STD/UPDATE Switch:** This switch is reserved for factory use only.
2. **RS-232 OUT:** Connect to the device that is to be controlled (via D-Sub 9-pin female cable) by RS-232 commands.
3. **LAN:** Connect to a PC or Laptop to utilise the Internet or network function.
4. **POWER LED:** This LED will illuminate when the device is connected to a power supply.
5. **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 blinks irregularly it indicates an error has occurred.

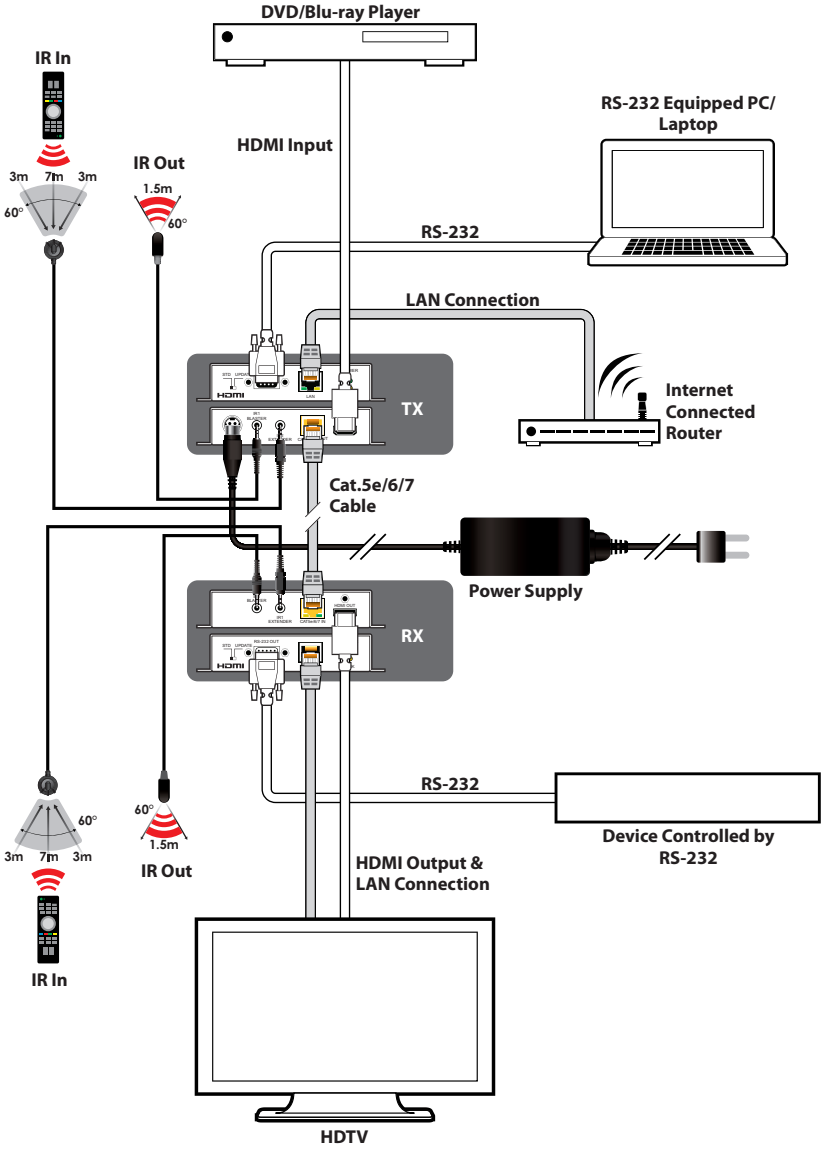
6.5. IR Cable Pin Assignment



6.4. D-Sub 9 Pin Definitions

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

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

Video Bandwidth	340MHz / 10.2Gbps
Transmitter	
Inputs	1 x HDMI 1 x IR Extender 1 x RS-232 1 x LAN
Outputs	1 x CAT5e/6/7 1 x IR Blaster
Receiver	
Inputs	1 x CAT5e/6/7, 1 x IR Extender
Outputs	1 x HDMI, 1 x RS-232, 1 X IR Blaster, 1 x LAN
HDMI Resolution	HD: 480i~4K2K@24/25/30/50/60 & YUV_420 PC: VGA ~ WUXGA (RB)
HDMI Cable Distance	Out: 10m/1080p@8-bit, 5m/1080p@12-bit and 5m@4K2K
CAT5e/6/7 I/O Cable Distance	Up to 100m
IR Frequency	30~50kHz
ESD Protection	Human Body Model: ±8 kV (air-gap discharge) ±4 kV (contact discharge)
Power Supply	48 V/0.83 A DC (US/EU Standards, CE/FCC/UL certified)
Dimensions	108mm (W) x 108mm (D) x 25mm (H) Each 108mm (W) x 116mm (D) x 29mm (H)Each
Weight	366g
Chassis Material	Metal
Silkscreen Colour	Black

Power Consumption	13.5W
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)

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/CAT5e/6 100 m/CAT7	>225 MHz	> 5.3 Gbps (Ultra HD Video)	4K2K, 30Hz video formats

8.2 Timing Support Chart

	INPUT	OUTPUT
640x480@60/72/75/85	✓	✓
800x600@56/60/72/75/85	✓	✓
1024x768@60/70/75/85	✓	✓
1280x720@60	✓	✓
1280x1024@60	✓	✓
1600x1200@60	✓	✓
1920x1200@60RB	✓	✓
3840x2160p@24/25/30	✓	✓
4096x2160p@24	✓	✓
4096x2160p@50/60(YUV_420)	✓	✓
480I/576I	✓	✓
480P/576P	✓	✓
720P@50/60	✓	✓
1080I@50/60	✓	✓
1080P@50/60	✓	✓
1080P@24/25/30	✓	✓

9. ACRONYMS

ACRONYM	COMPLETE TERM
CAT5e	Category 5 Cable
CAT6	Category 6 Cable
CAT7	Category 7 Cable
CEC	Consumer Electronics Control
DVI	Digital Visual Interface
HDCP	High-bandwidth Digital Content Protection
HDMI	High Definition Multimedia Interface
IR	Infrared
PD	Powered Device
PSE	Power Sourcing Equipment

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