



PU-515PL-TX & RX

HDBaseT™ LITE Extender Set with PoE & 2-way IR

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
v1.01	25/10/2013	First release
v1.02	22/08/2019	Updates to Specifications

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1. INTRODUCTION

The HDBaseT™ HDMI over single CAT5e/6 with bi-directional IR, RS-232 & PoC Transmitter and Receiver set can make your home or office set-up more efficient and easy to use. Uncompressed video and audio can be transmitted up to 70 metres at 1080p or 40 metres at 4K. with the PoC function and added benefit of controls through the built-in RS-232 and IR ports. This family design of HDBaseT technology allows a full usage of HDMI and controls over CAT5e/6/7.

2. APPLICATIONS

- /// Domestic HDMI installations
- /// University lecturing systems
- /// Retail showroom systems
- /// Conference presentation and control

3. PACKAGE CONTENTS

Transmitter Package

- /// 1xHDMI over Single CAT5e/6/7 Transmitter with PoC
- /// 1xIR Blaster
- /// 1x3.5 mm Mini-jack to RS-232 Female Cable
- /// 24 V/1.25 A DC Power Adaptor
- /// Operation Manual

Receiver Package

- /// 1xHDMI over Single CAT5e/6/7 Receiver with PoC
- /// 1xIR Extender
- /// 1x3.5 mm Mini-jack to RS-232 Male Cable
- /// Operation Manual

4. SYSTEM REQUIREMENTS

HDMI source equipment such as a DVD or Blu-ray player and HDMI equipped display (TV or monitor). HDMI and CAT5e/5/7 connection cables.

5. FEATURES

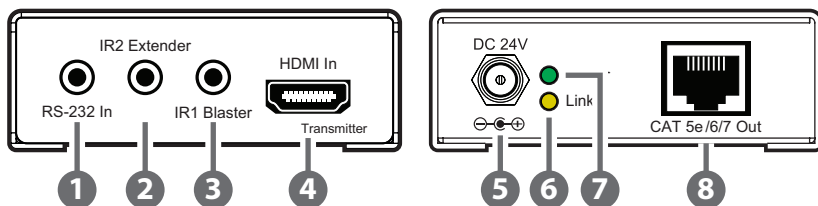
- /// HDMI 1.x and DVI 1.0 compliant
- /// HDCP compliant
- /// Supports HDMI 3D and 4K x 2K features
- /// Supports HDCP repeater and CEC bypass
- /// Supports distance up to 70m/229ft at 1080p and 40m/131ft at 4K through CAT5e/6/7 cable
- /// HDMI input resolutions up to 4K@60Hz (YUV 4:2:0, 8-bit) or 4K@30Hz (YUV 4:4:4, 8-bit)
- /// Supports pass-through of audio formats including LPCM 2.0/5.1/7.1, and Bitstream over HDMI
- /// Supports HDBaseT Lite Technology
- /// Installation friendly

Note

1. *This system was tested with CAT-6E/23AWG cables, results may vary with cables of a different specification.*
2. *The PoC function is designed for powering compatible receiver units only—do not use with non-PoC receivers or receivers of another brand.*

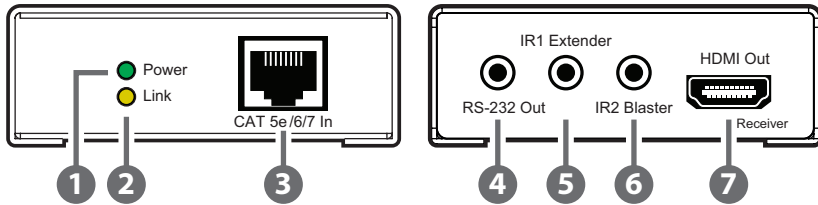
6. OPERATION CONTROLS AND FUNCTIONS

6.1 Transmitter Front and Rear Panels



- 1 **RS232 In:** Connect to a PC/laptop or RS-232 control device (with supplied 3.5 mm mini-jack to D-sub 9-pin adaptor) for the transmission of RS-232 commands.
- 2 **IR2 Extender:** Connect an IR extender cable for IR signal reception. Ensure that remote control being used is within the direct line-of-sight of the IR extender.
- 3 **IR1 Blaster:** Connect an IR blaster cable for IR signal transmission. Place the IR blaster in direct line-of-sight of the equipment to be controlled.
- 4 **HDMI In:** Connect to the HDMI source equipment such as a DVD or Blu-ray player.
- 5 **DC 24V:** Connect the 24V DC power supply to the unit and plug the adaptor into an AC outlet.
- 6 **Link LED:** The yellow LED will illuminate when both the input and output CAT5e/6/7 signals are connected. The LED will blink when there is an error with the transmission signal.
- 7 **Power LED:** This green LED will illuminate when the device is connected to a power supply.
- 8 **CAT5e/6 Out:** Connect to the receiver unit with a single CAT5e/6/7 cable for transmission of all data signals.

6.2 Receiver Front and Rear Panels

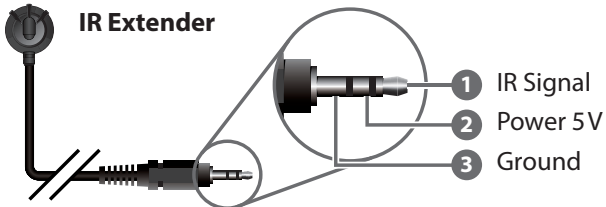
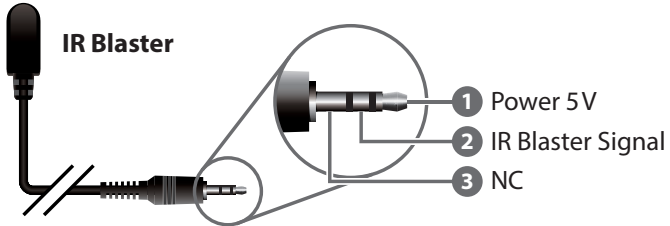


- 1 Power LED:** This green LED will illuminate when the device is connected to a power supply.
- 2 Link LED:** This yellow LED will illuminate when both the input and output CAT5e/6/7 signals are connected. The LED will blink when there is an error with the transmission signal.
- 3 CAT5e/6 In:** Connect to the transmitter unit with a Single CAT5e/6/7 cable for transmission of all data signals.
- 4 RS232 Out:** Connect to the device that is to be controlled (with the supplied 3.5mm mini-jack to D-sub 9-pin adaptor) by RS-232 commands
- 5 IR1 Extender:** Connect an IR extender cable for IR signal reception. Ensure that the remote being used is within the direct line-of-sight of the IR extender.
- 6 IR2 Blaster:** Connect an IR blaster cable for IR signal transmission. Place the IR blaster in direct line of sight of the equipment to be controlled.
- 7 HDMI Out:** Connect to a HDMI equipped TV/monitor for display of the HDMI input source signal.

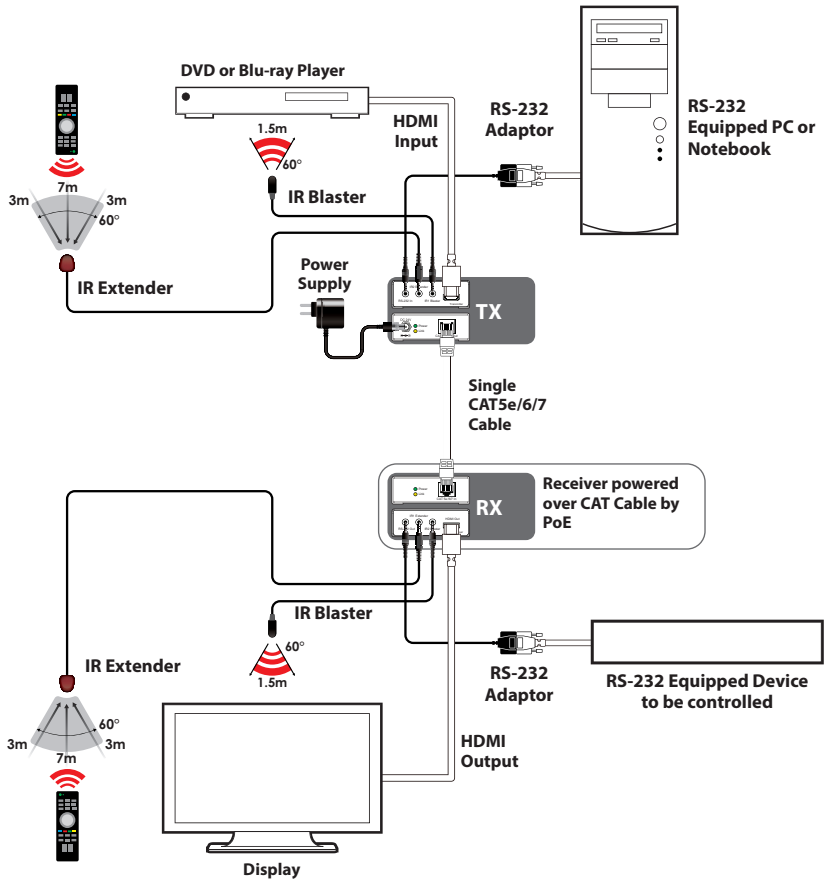
6.3 D-Sub 9-Pin Definitions

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

6.4 IR Cable Pin Assignment



7. CONNECTION DIAGRAM



8. SPECIFICATIONS

8.1 Technical Specification

Video Bandwidth	340 MHz/10.2 Gbps
Transmitter	
Input	1×HDMI, 1×IR Extender, 1×RS-232
Output	1×RJ45, 1×IR Blaster
Receiver	
Input	1×RJ45, 1×IR Extender
Output	1×HDMI, 1×IR Blaster, 1×RS-232
IR Frequency	30 – 50 kHz (30 – 60 kHz under ideal conditions)
Baud Rate	Up to 115200/sec
Power Supply	24V/1.25A DC (US/EU standards, CE/FCC/UL certified)
ESD Protection	Human Body Model: ±8kV (air-gap discharge) ±4kV (contact discharge)
Dimensions	71 mm(W) x 79 mm(D) x 23 mm(H)/each 71 mm(W) x 73.5 mm(D) x 23 mm(H)/each
Weight	120 g/TX, 126 g/RX
Chassis Material	Metal
Silkscreen 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	3 W/TX, 6 W/RX

8.2 CAT5e/6/7 Cable Specification

Cable Length	1080p		4K30	4K60
	8-bit	12-bit	(4:4:4) 8-bit	(4:4:4) 8-bit
High Speed HDMI Cable				
HDMI Input	15m	10m	5m	5m
HDMI Output	15m	10m	5m	5m
Ethernet Cable				
Cat.5e/6	60m		35m	
Cat.6a/7	70m		40m	

1080p (FHD Video)

- Up to 1080p@60Hz, 12-bit colour
- Data rates lower than 5.3Gbps or below 225MHz TMDS clock

4K30 (UHD Video)

- 4K@24/25/30Hz & 4K@50/60Hz (4:2:0), 8-bit colour
- Data rates higher than 5.3Gbps or above 225MHz TMDS clock but below 10.2Gbps

9. ACRONYMS

ACRONYM	COMPLETE TERM
CAT5e	Category 5 Cable
CAT6	Category 6 Cable
CEC	Consumer Electronics Control
DVI	Digital Visual Interface
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition multimedia Interface
IR	Infrared



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