



PU-101PL-KIT

HDBaseT HDMI Extender Set

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.
- Please completely disconnect the power when the unit is not in use to avoid wasting electricity.

VERSION HISTORY

REV.	DATE	SUMMARY OF CHANGE
v1.00	11/07/2024	Official release

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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.

2. APPLICATIONS

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

3. PACKAGE CONTENTS

- /// Transmitter unit
- /// Receiver unit
- /// 1× Operation Manual
- /// 12V DC power supply (only for TX, RX can be powered from TX)
- /// 2 x IR TX Unit (IR Emitter cable, 1 pcs for TX, 1pcs for rx)
- /// 2 x IR RX Unit (IR Reciever cable, 1 pcs for TX, 1 pcs or for RX)
- /// 2 x Phoenix Plugs for RS232cable termination

4. SYSTEM REQUIREMENTS

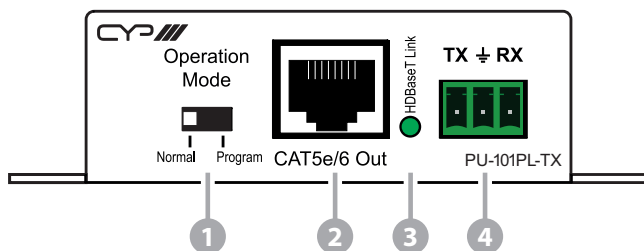
HDMI source equipment such as a Satellite/Cable box or Media player and HDMI equipped display (TV or monitor). HDMI and CAT5e/6 connection cables.

5. FEATURES

- /// HDMI 1.x and DVI 1.0 compliant**
- /// HDCP compliant**
- /// Supports HDCP repeater and CEC bypass**
- /// Supports distance up to 70m/229ft at 1080p and 40m/131ft at 4K60 4:2:0 through CAT5e/6 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**
- /// LED indicators to show the power status**
- /// ESD protection inside**
- /// Transfer Bidirectional Infrared control signal together with the HDMI signal**
- /// Phoenix RS232 Port for firmware update or RS232 control signal Transmission**

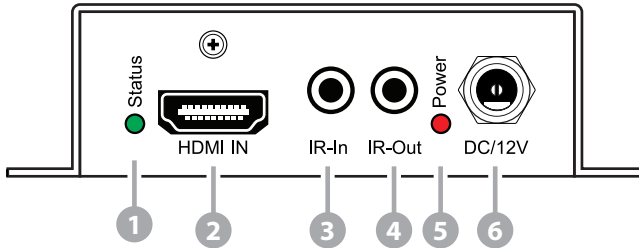
6. OPERATION CONTROLS AND FUNCTIONS

6.1 TX Front Panel



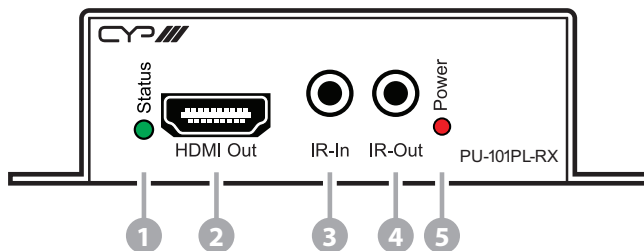
- 1 Operation Mode:** The switch is for bypassing RS232 signal or for firmware updating
- 2 CAT5e/6 OUT:** Connect to a compatible HDBaseT Receiver with a single Cat.5e/6 cable for transmission of all data signals.
- 3 HDBaseT Link:** HDBaseT Link indicator
- 4 RS-232 3-pin Terminal Block:** Connect to a PC, laptop, or serial controllable device for the extension of RS-232 signals.

6.2 TX Rear Panel



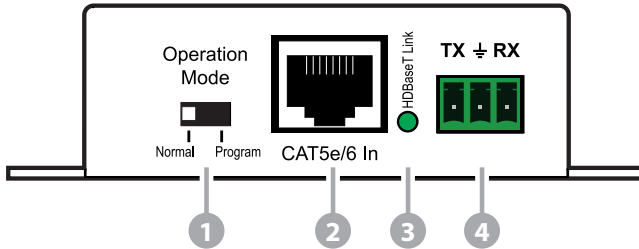
- 1 Status:** HDMI input indicator.
- 2 HDMI In:** Connect to the HDMI source equipment such as a DVD or Blu-ray player.
- 3 IR-In:** Connect an IR extender cable for IR signal reception. Ensure that remote control being used is within the direct line-of-sight of the IR extender.
- 4 IR-Out:** Connect an IR blaster cable for IR signal transmission. Place the IR blaster in direct line-of-sight of the equipment to be controlled.
- 5 Power LED:** This LED will illuminate when the device is connected to a power supply.
- 6 DC 12V:** Plug the 12V DC power adapter into this port and connect it to an AC wall outlet for power.

6.3 RX Front Panel



- 1 Status:** HDMI input indicator.
- 2 HDMI In:** Connect to the HDMI source equipment such as a DVD or Blu-ray player.
- 3 IR-In:** 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.
- 4 IR-Out:** Connect an IR blaster cable for IR signal transmission. Place the IR blaster in direct line-of-sight of the equipment to be controlled.
- 5 Power LED:** This LED will illuminate when the device is connected to a power supply.

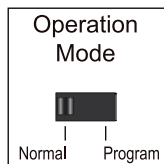
6.4 RX Rear Panel



- 1 Operation Mode:** The switch is for bypassing RS232 signal or for firmware updating
- 2 CAT5e/6 In:** Connect to a compatible HDBaseT Transmitter with a single Cat.5e/6 cable for transmission of all data signals.
- 3 HDBaseT Link:** HDBaseT Link indicator
- 4 RS-232 3-pin Terminal Block:** Connect to a PC, laptop, or serial controllable device for the extension of RS-232 signals.

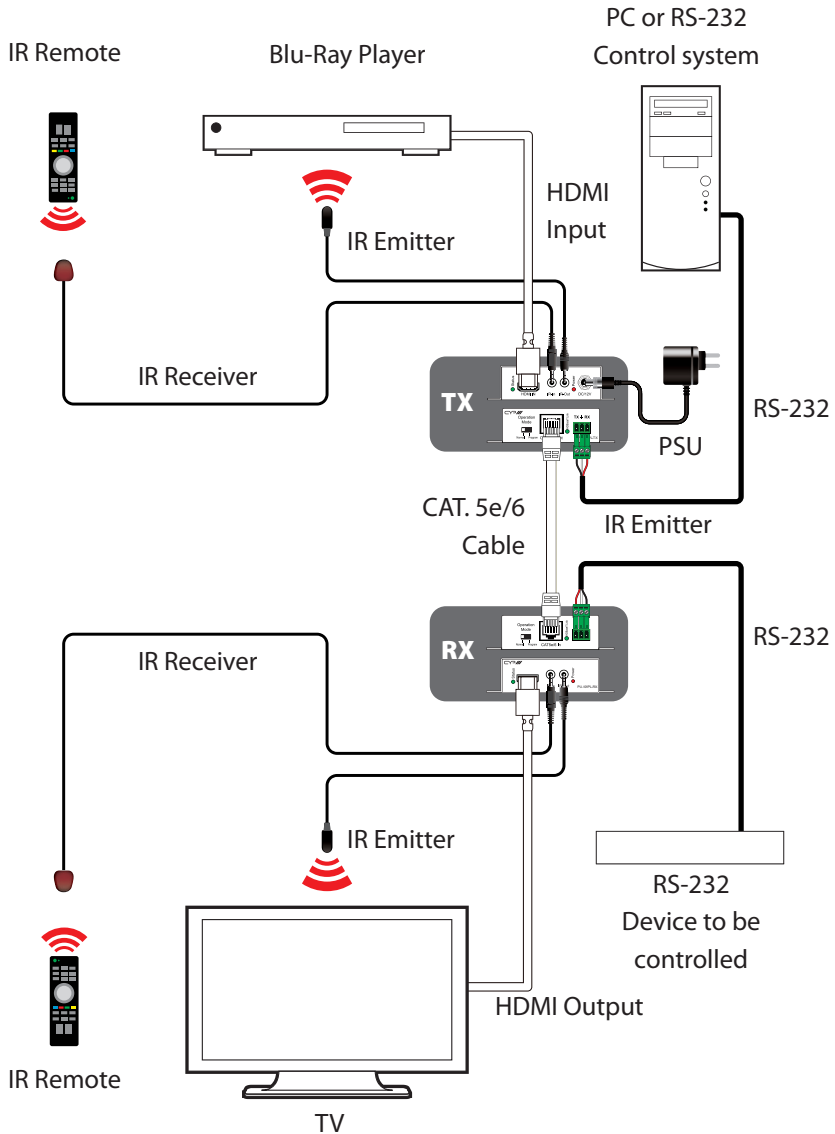
6.5 Setting Instructions

- 1 The switch is for bypassing RS232 signal or for firmware updating.
- 2 According to the silk prints nearby ("Program" for firmware update, "Normal" for RS232 transmission), change the switcher positions to set RS232 port's function.



- 1 The user should receive a Firmware burn package, containing all software needed for burning and updating the firmware on the EEPROM.
- 2 Connect to an RS232 port of the unit to a PC.
- 3 Power the unit.
- 4 Extract the zipped file from the burn package to a directory (e.g. C:\dir_name)
- 5 Browse to the directory (e.g. C:\dir_name\) and double click the batch file Update Source.bat (for TX) or Update Sink.bat (for RX).
- 6 A short description of the link created between the PC and the board appears on the screen, followed by the burn progress percentage report.
- 7 A second stage of verifying the content of the EEPROM follows, also with a progress report.

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

8.1 Technical Specifications

Video Format Supported	DTV/HDTV: 4K/1080p/1080i/720p/576p/480p/576i/480i
Input Video Signal	0.5-1.0 volts p-p
Input DDC Signal	5 volts p-p (TTL)
Output Video	HDMI 2.0, HDCP 1.4/2.2
Output Audio	Supports DTS-HD, Dolby HD
Maximum Transmission Distance	70m (1080p), 40m (4K)
Input Ports (TX)	1x HDMI [1x HDMI Uncompressed AV and Data] 1x 3.5mm Stereo mini-jack [1x Infra Red Receiver] 1x Phoenix (3 pin) [1x RS-232]
Input Ports (RX)	1x RJ45 [1x HDBaseT Lite HDMI & Proprietary Data] 1x 3.5mm Stereo mini-jack [1x Infra Red Receiver] 1x RJ45 [1x HDBaseT Lite HDMI & Proprietary Data]
Output Ports (TX)	1x RJ45 [1x HDBaseT Lite HDMI & Proprietary Data] 1x 3.5mm Stereo mini-jack [1x Infra Red Emitter]
Output Ports (RX)	1x HDMI [1x HDMI Uncompressed AV and Data] 1x 3.5mm Stereo mini-jack [1x Infra Red Emitter] 1x Phoenix (3 pin) [1x RS-232]

Dimensions (W×H×D)	71mm×105mm×25mm (each)
Weight	70g (Pair)
Chassis Material (Face)	Metal (Steel)
Chassis Colour	Black
Operating Temperature	5°C – 35°C/-41°F – 95°F
Relative Humidity	5 – 90% RH (Non-condensing)
PSU	12V 2A
PoC	Power from TX to RX over Cat5e/6 cable
Power Consumption	25W (TX) 5W (RX)

8.2 Video Specifications

Supported Resolutions				
480p	60Hz	4:4:4	70m	✓
720p	60Hz	4:4:4	70m	✓
1080i	60Hz	4:2:2	70m	✓
1080i	60Hz	4:4:4	70m	✓
1080i	60Hz	RGB	70m	✓
1080p	30Hz	4:2:2	70m	✓
1080p	30Hz	4:4:4	70m	✓
1080p	30Hz	RGB	70m	✓
1080p	60Hz	4:2:2	70m	✓
1080p	60Hz	4:4:4	70m	✓
1080p	60Hz	RGB	70m	✓
3840 x 2160p	24Hz	4:2:2	40m	✓
3840 x 2160p	24Hz	4:4:4	40m	✓
3840 x 2160p	24Hz	RGB	40m	✓
3840 x 2160p	30Hz	4:2:2	40m	✓
3840 x 2160p	30Hz	4:4:4	40m	✓
3840 x 2160p	30Hz	RGB	40m	✓
3840 x 2160p	50Hz	4:2:0	40m	✓
3840 x 2160p	60Hz	4:2:0	40m	✓
3840 x 2160p	50Hz	4:4:4	40m	×
3840 x 2160p	50Hz	RGB	40m	×
3840 x 2160p	60Hz	4:4:4	40m	×
3840 x 2160p	60Hz	RGB	40m	×

9. ACRONYMS

ACRONYM	COMPLETE TERM
4K UHD	4K Ultra-High-Definition (10.2Gbps max)
HDMI	High-Definition Multimedia Interface
HDR	High Dynamic Range
kHz	Kilohertz
LED	Light-Emitting Diode
LPCM	Linear Pulse-Code Modulation



CYP (UK) Ltd., Unit 7, Shepperton Business Park, Govett Avenue,
Shepperton, Middlesex, TW17 8BA

Tel: +44 (0) 20 3137 9180 | Fax: +44 (0) 20 3137 6279

Email: sales@cypeurope.com

www.cypeurope.com

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