PU-507-TX/RX

5Play™ HDBaseT™ Receiver (inc. PoC & single LAN, up to 100m)

/// **OPERATIONS 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	SUMMARY OF CHANGE
VS1	29/02/12	First Release
VR2	02/03/12	PoC Support (Brand only)
VS3	23/03/12	Amended PoC function Updated the connection diagram and the specifications table
v1.01	20/09/13	Amended Link LED description
v1.02	08/10/13	Amended product description
v1.03	12/08/19	Update to Specifications

CONTENTS

1. INTRODUCTION

The HDMI over CAT5e/6/7 Transmitter and Receiver set can send uncompressed video/audio and IP data over an single run of CAT5e/6/7 cable up to 100m at 1080p and 70m at 4K. It has the added benefit of control through the built-in RS-232 pass-through and 2-way IR control and a LAN serving connection. Additionally, it has Power over Cable (PoC) functionality that allows for greater flexibility in installations

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

Transmitter Package

/// 1×HDMI to CAT5e/6 (with LAN/IR/RS-232) Transmitter

/// 1×IR Blaster

/// 1×IR Receiver

/// 1×24 V/1.25 A DC Power Adaptor

/// Operation Manual

Receiver Package

/// 1×CAT5e/6 to HDMI (with LAN/IR/RS-232) Receiver

/// 1×IR Blaster

/// 1×IR Receiver

/// Operation Manual

4. SYSTEM REQUIREMENTS

Input HDMI source equipment such as DVD/Blu-ray player and HDMI equipped output display (TV or monitor).

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5. FEATURES

/// HDMI 1.x and DVI 1.0 compliant

/// HDCP compliant

/// Supports HDMI 3D and 4K2K features

/// Supports HDCP repeater and CEC bypass

/// Supports distance up to 100m/328ft at 1080p and 70m/229ft 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

/// HDBaseT™ convergence: uncompressed high-definition Video and Audio, LAN serving, Power over Cable (PoC) and IR/RS-232 Control pass-through

/// Installation friendly

Note:

1. *This system was tested with CAT6/23AWG cables, results may vary with cables of a different specification.*

2. *The PoC function is designed for powering compatible receiver units only—non-PoC receivers will need their own power supply. Receivers of another brand may not be compatible.*

3. *For playback of 4K2K HDMI source signals, a 4K2K capable display and High Speed HDMI cables are required.*

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6. OPERATION CONTROLS AND FUNCTIONS

6.1 Transmitter Front and Rear Panels

Front   **Rear**
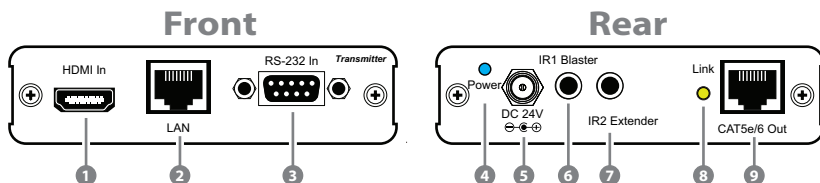
1 HDMI In: Connect to HDMI source equipment such as a DVD or Blu-ray player.

2 LAN: Connect to an internet or network connection.

3 RS-232 In: Connect to a PC or laptop with D-sub 9-pin male cable for the transmission of RS-232 commands.

4 Power LED: This blue LED will illuminate when the transmitter is connected to a power supply.

5 DC 24V: Plug the 24 V DC power supply into the unit and connect the adaptor to an AC outlet.

Note: Only the Transmitter unit needs to be powered and can power the Receiver unit via PoC.

6 IR1 Blaster: Connect to the IR Blaster cable for IR signal transmission. Place the IR blaster in direct line-of-sight of the equipment to be controlled.

7 IR2 Extender: Connect to the IR Extender cable for IR signal reception. Ensure that remote being used is within the direct line-of-sight of the IR extender.

8 Link LED: The yellow LED will illuminate when both the input and output signals are connected.

9 CAT5e/6 Out: Connect to the receiver unit with an single CAT5e/6/7 cable for transmission of all data signals.

6.2 Receiver Front and Rear Panels

Front   **Rear**
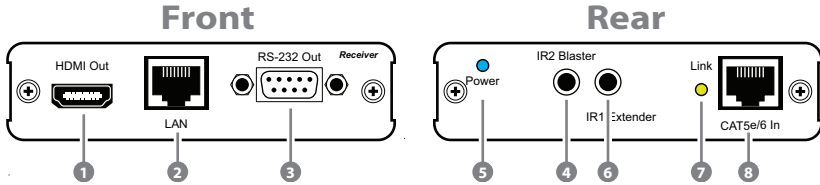
1 **HDMI Out:** Connect to a HDMI equipped TV/monitor for display of the HDMI input source signal.

2 **LAN:** Connect to a PC or Laptop to the Internet or network connection.

3 **RS-232 Out:** Connect to the device that is to be controlled (via D-sub 9-pin female cable) by RS-232 commands.

4 **Power LED:** This blue LED will illuminate when the receiver is receiving a power supply via PoC from a compatible transmitter unit.

5 **IR2 Blaster:** Connect to the IR Blaster cable for IR signal transmission. Place the IR blaster in direct line-of-sight of the equipment to be controlled.

6 **IR1 Extender:** Connect to the IR Extender cable for IR signal reception. Ensure that remote being used is within the direct line-of-sight of the IR extender.

7 **Link LED:** The yellow LED will illuminate when both the input and output signals are connected.

8 **CAT5e/6 In:** Connect to the transmitter unit with an single CAT5e/6/7 cable for transmission of all data signals.

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6.3 IR Cable Pin Assignment

IR Blaster

1. Power
2. IR Signal
3. NC

IR Extender

1. IR Signal
2. Power
3. Ground
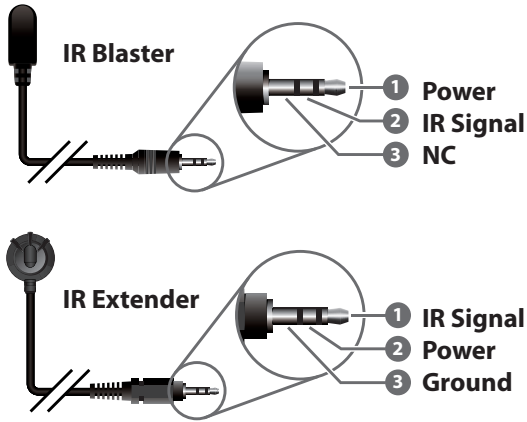
6.4 RS-232 Cable Pin Definitions

PIN	ASSIGNMENT (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
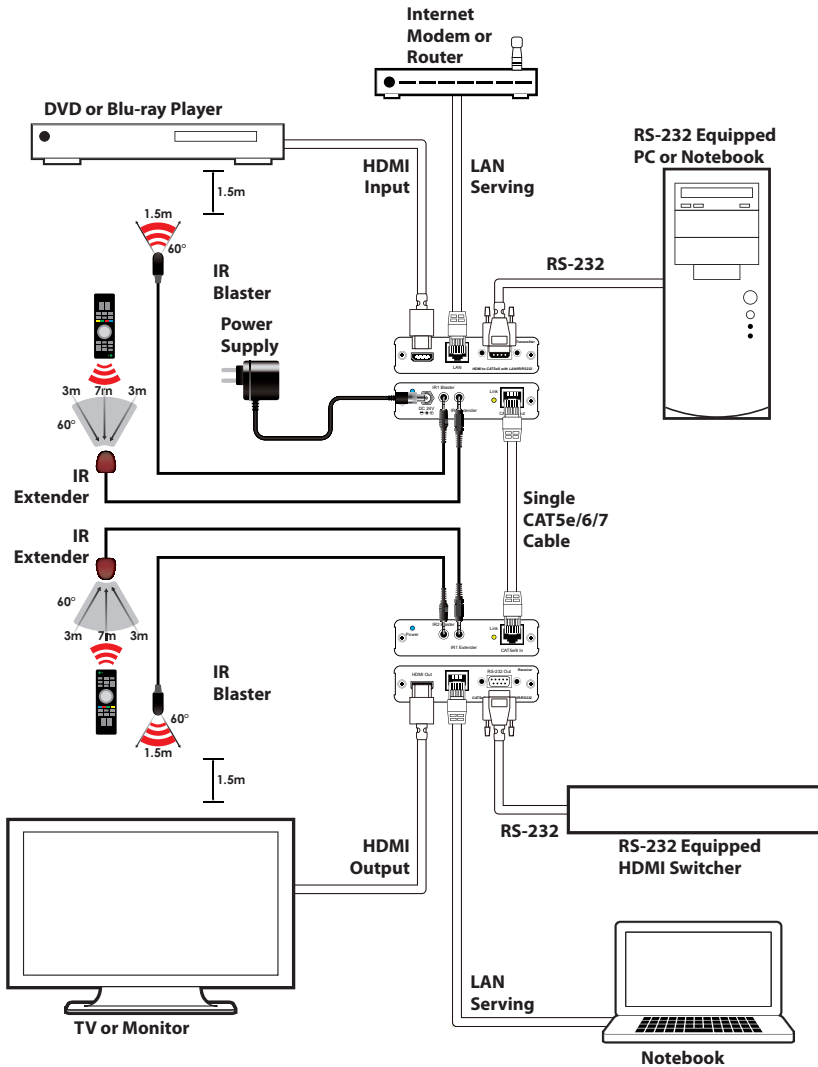
Internet Modem or Router

DVD or Blu-ray Player

1.5m

HDMI Input

LAN Serving

RS-232 Equipped PC or Notebook

1.5m
60°

IR Blaster

RS-232

Power Supply

3m 7m 3m

60°

IR Extender

Single CAT5e/6/7 Cable

IR Extender

60°

3m 7m 3m

IR Blaster

60°

1.5m

1.5m

HDMI Output

RS-232

RS-232 Equipped HDMI Switcher

TV or Monitor

LAN Serving

Notebook

Note: Only the Transmitter unit needs to be powered and can power the Receiver unit via PoC.

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8. SPECIFICATIONS

8.1 Technical Specifications

Video Bandwidth	340 MHz/10.2 Gbps
Ethernet Speed	100 Mbps
Transmitter	
Input Ports	1×HDMI, 1×LAN, 1×IR Extender,1×RS-232
Output Ports	1×CAT5e/6/7, 1×IR Blaster
Receiver	
Input Ports	1×CAT5e/6/7, 1×IR Extender
Output Ports	1×HDMI, 1×LAN, 1× IR Blaster, 1×RS-232
IR Frequency	30 – 50kHz
	(30 – 60kHz under ideal conditions)
Baud Rat	Up to 115200/sec
Power Supply	24V/1.25 A DC (US/EU Standards, CE/FCC/UL certified)
ESD Protection	Human Body Model: ±8 kV (air-gap discharge) ±4 kV (contact discharge)
Dimensions	102 mm (W)×113 mm (D)×25 mm (H)/TX 102 mm (W)×107 mm (D)×25 mm (H)/RX
Weight	252 g/TX, 256 g/RX
Chassis Material	Aluminum
Silkscreen Colour	Silver
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	13 W

8.2 Cable Specifications

Cable Length	1080p		4K30	4K60
	8-bit	12-bit	(4:4:4) 8-bit	(4:2:0) 8-bit
High Speed HDMI Cable				
HDMI Input	15m	10m	5m	5m
HDMI Output	15m	10m	5m	5m
Ethernet Cable				
Cat.5e/6/7	100m		70m	

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