CH-507TX & RX

HDMI over CAT5e/6/7 Transmitter and Receiver

HDBT

Operation Manual

DISCLAIMERS

The information in this manual has been carefully checked and is believed to be accurate. Cypress Technology assumes no responsibility for any infringements of patents or other rights of third parties which may result from its use.

Cypress Technology assumes no responsibility for any inaccuracies that may be contained in this document. Cypress also makes no commitment to update or to keep current the information contained in this document.

Cypress Technology reserves the right to make improvements to this document and/or product at any time and without notice.

COPYRIGHT NOTICE

Version 1.1 August 2011

TRADEMARK ACKNOWLEDGMENTS

All products or service names mentioned in this document may be trademarks of the companies with which they are associated.

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
VS1	29/02/12	First Release
VR2	02/03/12	Added PoE support (Brand only)
VS3	23/03/12	Amended PoE function and updated the connection diagram and the specifications table
VR4	16/04/12	Added IR distance
VS5	13/06/14	Updated texts/diagrams
VS6	17/06/15	Amended the LAN connector of the front and rear panels
VS7	26/04/16	Supplied IR blaster and extender to receiver's package

CONTENTS

1. Introduction **1**

2. Applications **1**

3. Package Contents **1**

4. System Requirements **1**

5. Features **2**

6. Operation Controls and Functions **3**

6.1 Transmitter Front and Rear Panels ..3

6.2 Receiver Front and Rear Panels 4

6.3 IR Cable Pin Assignment 5

6.4 RS-232 Cable Pin Definitions 5

7. Connection Diagram **6**

8. Specifications **7**

9. Acronyms **8**

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

- 1×HDMI over CAT5e/6/7 Transmitter
- 1×HDMI over CAT5e/6/7 Receiver
- 1×IR Blaster (Accessory for Receiver)
- 1×IR Extender (Accessory for Receiver)
- 1×24 V/1.25 A DC Power Adaptor
- 1×Operation Manual

4. SYSTEM REQUIREMENTS

HDMI source device such as a DVD/Blu-ray player and an HDMI equipped display (TV or monitor).

5. FEATURES

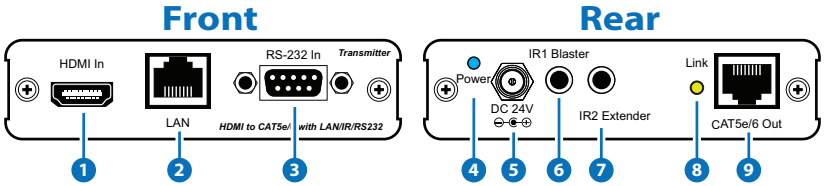
- HDMI with 3D format and 4K2K resolution support, DVI compatible
- HDCP 2.2 compliant
- Supports CEC bypass function
- Simultaneous transmission of uncompressed video/audio and data over a single CAT5e/6 cable up to 100m/328ft at 1080p and 70m/229ft at 4K
- Supports uncompressed video up to 4K@60Hz (YUV 4:2:0, 8-bit) and WUXGA@60Hz (RB)
- Supports pass-through of high-definition audio formats: LPCM 7.1CH, Dolby TrueHD and DTS-HD Mater Audio
- 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.*

6. OPERATION CONTROLS AND FUNCTIONS

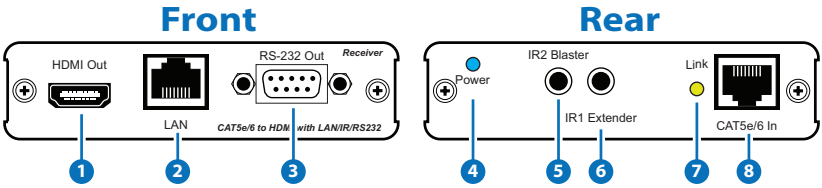
6.1 Transmitter Front and Rear Panels



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

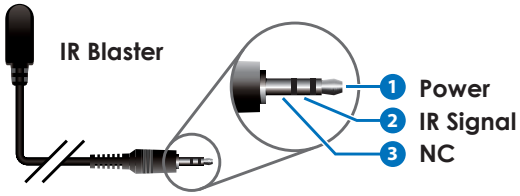
   Note: Only the Transmitter unit needs to be powered and can power the Receiver unit via PoC.
6. **IR1 Blaster:** Connect to the IR Blaster cable for IR signal transmission. Place the IR blaster in direct line-of-sight of the equipment to be controlled.
7. **IR2 Extender:** Connect to the IR Extender 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 cable for transmission of all data signals.

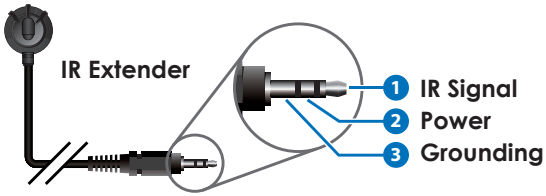
6.2 Receiver Front and Rear Panels



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 cable for transmission of all data signals.

6.3 IR Cable Pin Assignment

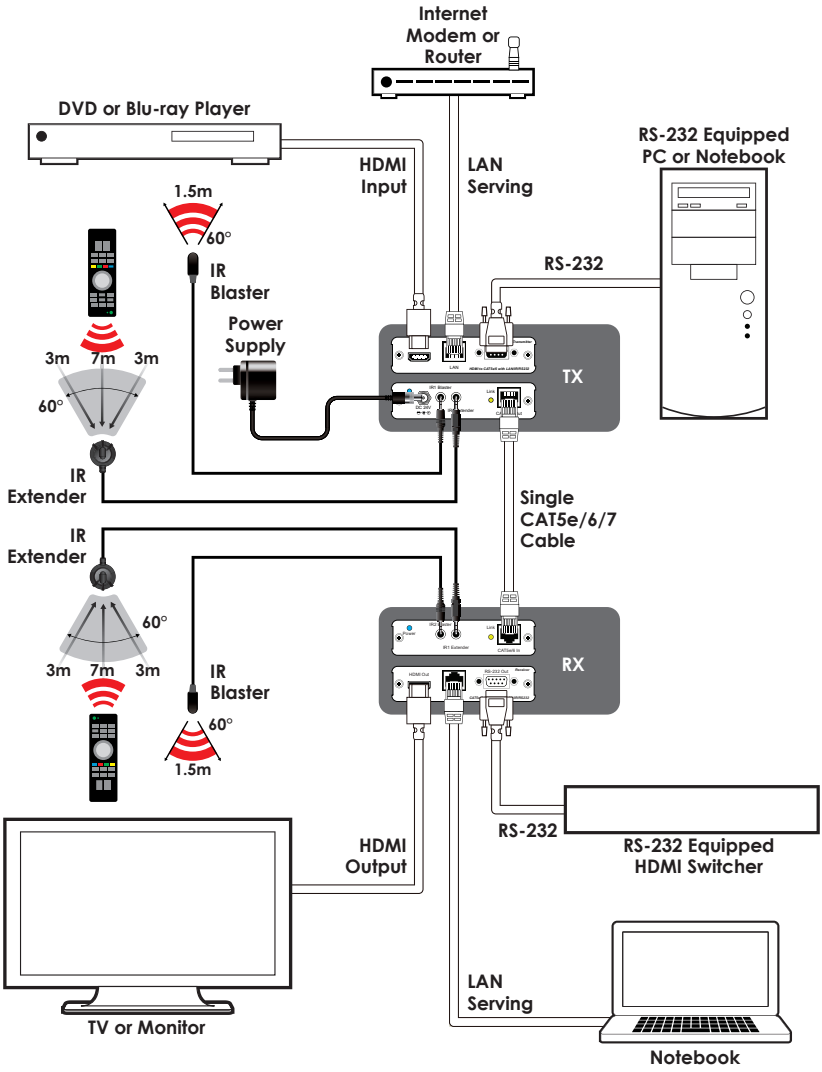




6.4 RS-232 Cable Pin Definitions

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



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

8. SPECIFICATIONS

Video Bandwidth	300 MHz/9 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
HDMI Cable Distances	10m (1080p@60Hz, 12-bit) 5m(4K@60Hz, 4:2:0, 8-bit)
CAT6 Cable Distances	100m (1080p@60Hz, 12-bit) 70m (4K@60Hz, 4:2:0, 8-bit)
HDMI Resolutions	480i~4K@60Hz(YUV 4:2:0, 8-bit) VGA~WUXGA@60Hz(RB)
IR Frequency	30~50 kHz
Power Supply	24 V/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 Color	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

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
PoC	Power over Cable

CYPRESS TECHNOLOGY CO., LTD
Home page: http://www.cypress.com.tw

MPM-CH507TXRX