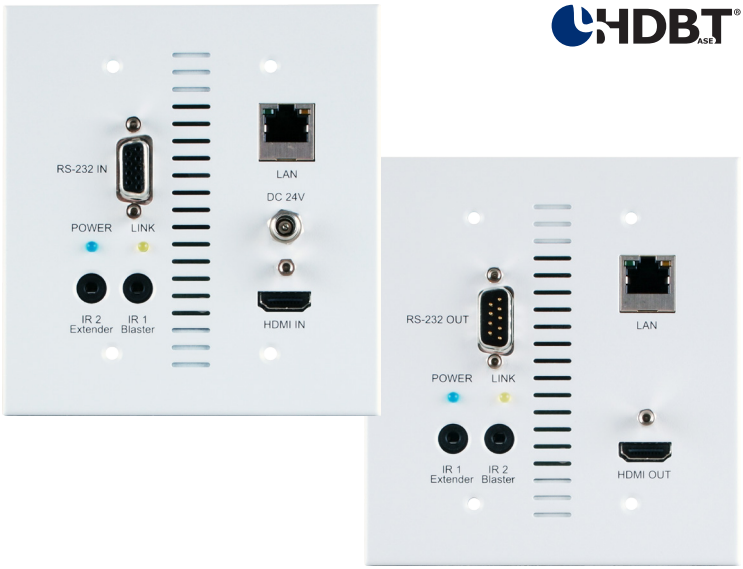
CH-507TXWPUS & RXWPUS

HDMI over Single CAT5e/6/7
Wall-plate Transmitter and Receiver



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

No part of this document may be reproduced, transmitted, transcribed, stored in a retrieval system, or any of its part translated into any language or computer file, in any form or by any means—electronic, mechanical, magnetic, optical, chemical, manual, or otherwise—without express written permission and consent from Cypress Technology.

© Copyright 2011 by Cypress Technology.

All Rights Reserved.

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
RDV1	30/09/13	Preliminary Release
VS0	23/05/14	Updated text/diagrams

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 6

6.4 RS-232 Cable Pin Definitions 6

7. Connection Diagrams **7**

7.1 Option 1: Point to Point 7

7.2 Option 2: Matrix System 8

8. Specifications **9**

8.1 Technical Specifications 9

8.2 CAT5e/6/7 Cable Specifications .. 10

9. Acronyms **10**

1. INTRODUCTION

The HDMI over Single CAT5e/6/7 Wall-plate Transmitter and Receiver set can send uncompressed video/audio and IP data over a single run of CAT5e/6/7 cable up to 100 meters. 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 Ethernet (PoE) 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

- HDMI over Single CAT5e/6/7 Transmitter
- HDMI over Single CAT5e/6/7 Receiver
- IR Blaster
- IR Extender
- 24 V/1.25 A DC Power Adaptor
- 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

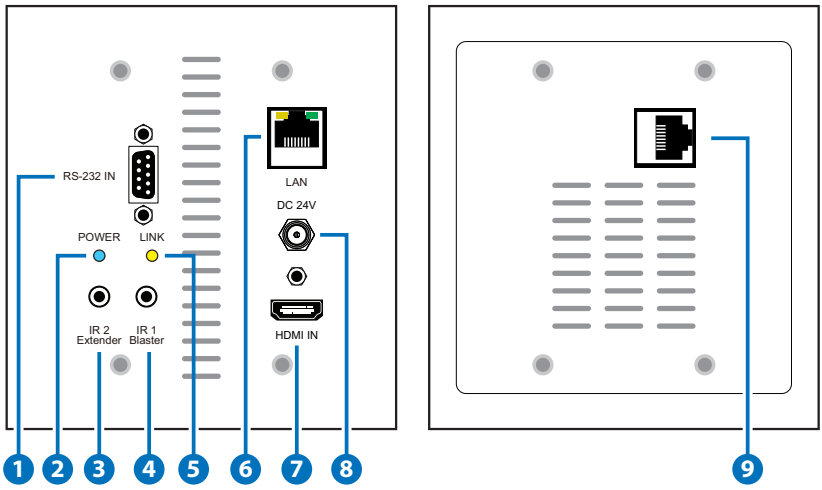
- HDMI (with 3D format and 4K2K resolution support), HDCP and DVI compliant
- Supports HDCP repeater and CEC bypass functions
- Simultaneous transmission of uncompressed video/audio and data over a single CAT5e/6/7 cable up to 100m/328ft
- HDBaseT™ 5Play convergence: uncompressed high-definition Video and Audio, LAN serving, Power over Ethernet (PoE) and IR/RS-232 Control pass-through
- Supports uncompressed video up to 4K2K resolution (3840×2160@30Hz or 4096×2160@24Hz)
- Supports pass-through of high-definition audio formats - LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio
- US 2Gang wall-plate design and installation friendly

Note:

1. *This system was tested with CAT6/23AWG and CAT5e/24AWG cables, results may vary with cables of a different specification.*
2. *The PoE function is designed for powering compatible Transmitter and Receiver units only—non-PoE units will need their own power supply. Transmitters/Receivers from other brands may not be compatible.*
3. *For playback of 4K×2K HDMI source signals, a 4K×2K capable display and High Speed HDMI cables are required.*

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Transmitter Front and Rear Panels



1. **RS-232 IN:** Connect to a PC/laptop or RS-232 control system with D-sub 9-pin male cable for the transmission of RS-232 commands.
2. **POWER LED:** This LED will illuminate when the transmitter is connected to a power supply.
3. **IR 2 Extender:** Connect an IR Extender cable for IR signal reception. Signals received will be transmitted from any IR blaster connected to the receiver unit. Ensure that the remote being used is within the direct line-of-sight of the IR Extender.
4. **IR 1 Blaster:** Connect an IR Blaster cable for IR signal transmission. IR signals received by an IR extender connected to the receiver unit will be transmitted by this blaster. Place the IR Blaster in direct line-of-sight of the equipment to be controlled.
5. **LINK LED:** This LED will illuminate when both the source connected to the transmitter and the display connected to the receiver are connected.
6. **LAN:** Connect to an active network for LAN serving and Telnet/ Web GUI control.

   When the transmitter or any compatible LAN equipped receivers

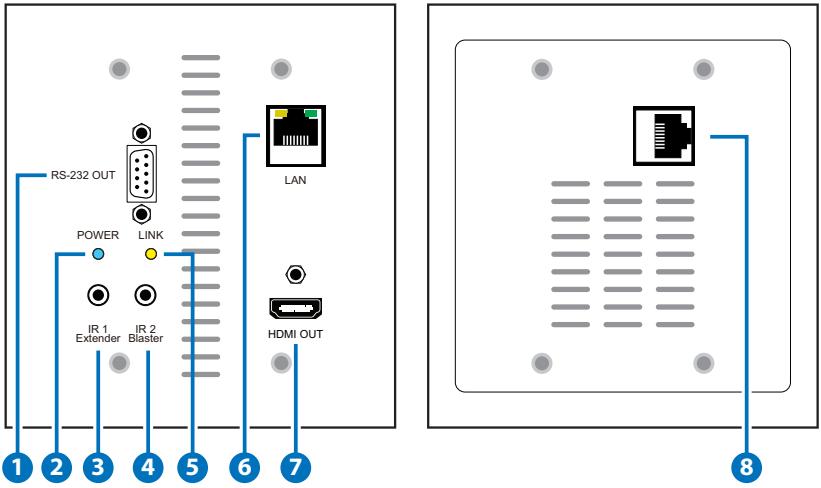
are connected to a network, this allows the network access (including internet access if available) to be shared between the transmitter and connected receiver. Connect any Ethernet equipped device e.g. a Smart TV or games console to the LAN port of a receiver for that device to share the network/internet access.

7. **HDMI IN:** Connect to an HDMI source device such as a DVD or Blu-ray player.

8. **DC 24V:** Connect the 24V DC power supply to the transmitter and plug the adaptor into an AC outlet.

9. **CAT5e/6/7 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. **RS-232 OUT:** Connect to the device that is to be controlled (via D-sub 9-pin female cable) by RS-232 commands

2. **POWER LED:** This LED will illuminate when the receiver is receiving a power supply via PoE from a compatible transmitter unit.

3. **IR 1 Extender:** Connect an IR Extender cable for IR signal reception. Signals received will be transmitted from any IR blaster connected to the transmitter unit. Ensure that the remote being used is within

the direct line-of-sight of the IR Extender.

4. **IR 2 Blaster:** Connect an IR Blaster cable for IR signal transmission. IR signals received by an IR extender connected to the transmitter unit will be transmitted by this blaster. Place the IR Blaster in direct line-of-sight of the equipment to be controlled.

5. **LINK LED:** This LED will illuminate when both the source connected to the transmitter and the display connected to the receiver are connected.

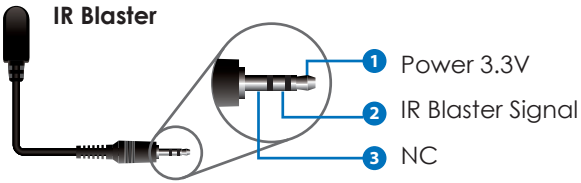
6. **LAN:** Connect to an active network for LAN serving and Telnet/ Web GUI control.

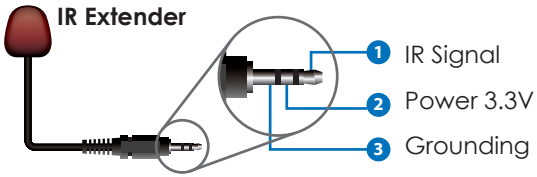
   When the transmitter or any compatible LAN equipped receivers are connected to a network, this allows the network access (including internet access if available) to be shared between the transmitter and connected receiver. Connect any Ethernet equipped device e.g. a Smart TV or games console to the LAN port of a receiver for that device to share the network/internet access.

7. **HDMI OUT:** Connect to a HDMI equipped TV/monitor for display of the HDMI input source signal.

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

6.3 IR Cable Pin Assignment



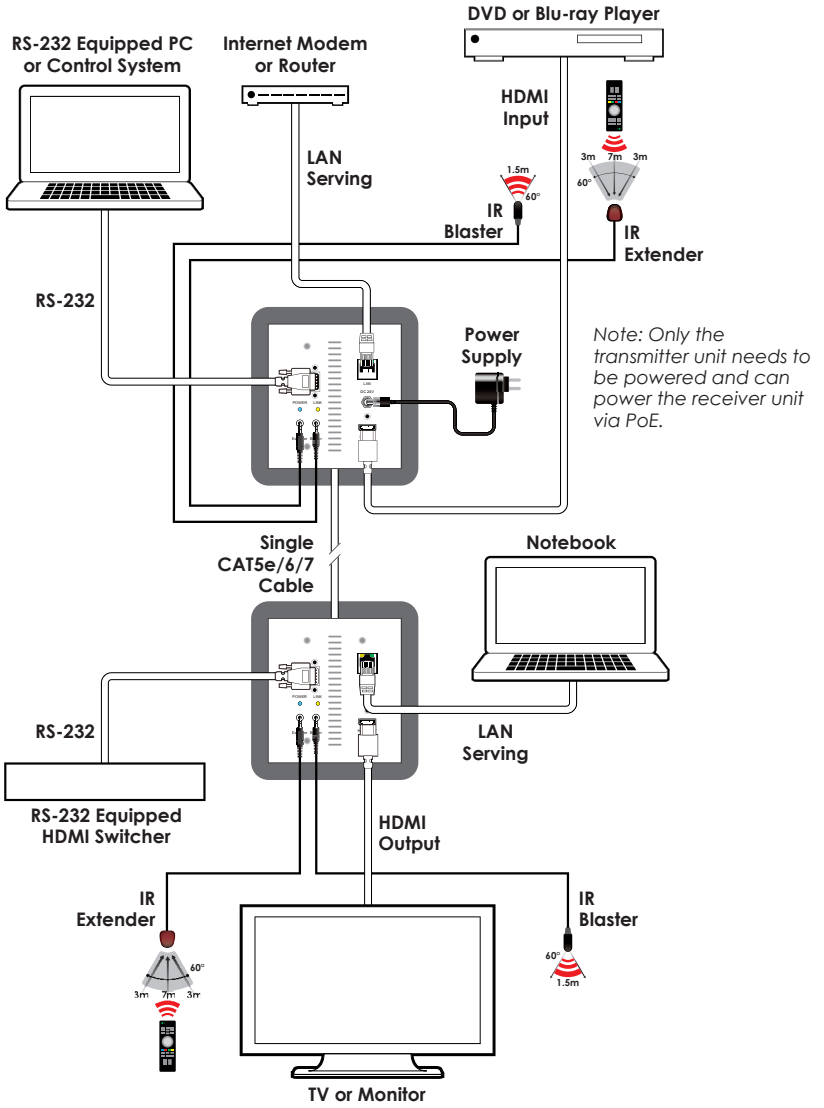


6.4 RS-232 Cable Pin Definitions

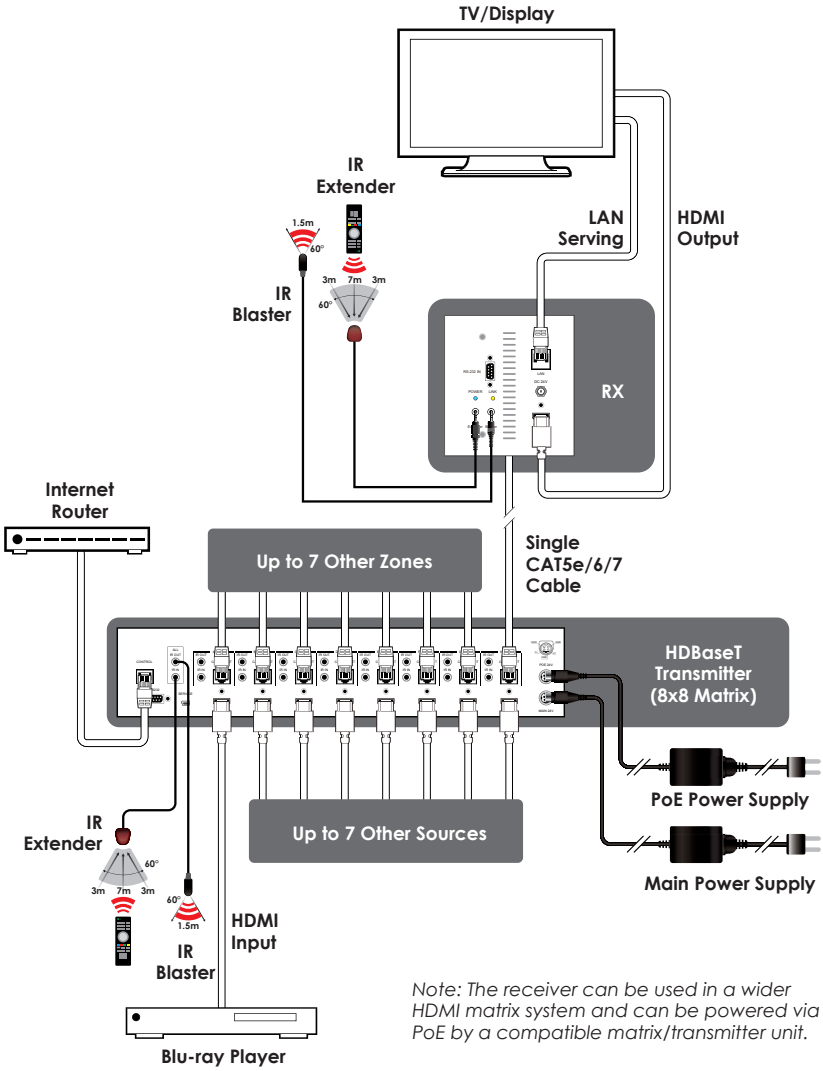
PIN	TX/RX DEFINITION
1	N/C
2	TxD/RxD
3	RxD/TxD
4	N/C
5	GND
6	N/C
7	N/C
8	N/C
9	N/C

7. CONNECTION DIAGRAMS

7.1 Option 1: Point to Point



7.2 Option 2: Matrix System



Note: The receiver can be used in a wider HDMI matrix system and can be powered via PoE by a compatible matrix/transmitter unit.

8. SPECIFICATIONS

8.1 Technical Specifications

Video Bandwidth	340 MHz/10.2 Gbps
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
CAT5e/6/7 Cable Distances	Up to 100 meters
HDMI Resolutions	Up to 4K2K (3840×2160@30 Hz/ 4096×2160@24 Hz)
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	119.5 mm(W)×110 mm(D)×40 mm(H)/Each
Weight	353 g/Each
Chassis Material	Metal
Color	White
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 (no condensation)
Power Consumption	15 W

8.2 CAT5e/6/7 Cable Specifications

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	>225 MHz	>5.3 Gbps (Ultra HD Video)	4K2K, 30 Hz video formats

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

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

MPM-507TXRXWPUS