



# CH-1507TX & CH-1507RX

HDMI to CAT5e/6/7 Transmitter and Receiver with  
LAN/IR/RS-232/PoE



Operation Manual



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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 DD/MM/YY	SUMMARY OF CHANGE
VR0	21/10/13	Preliminary Release
VS1	09/12/13	Updated Text/Diagrams



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## 1. INTRODUCTION

The CH-1507 Transmitter and Receiver set can send uncompressed audio/video and IP data over a single run of CAT5e/6/7 cable at a distance of up to 100 meters. It has the added benefit of control through the built-in RS-232 and IR ports and a bi-directional LAN serving connection. The receiver (PD) can be powered by the PoE (48V) function of the transmitter (PSE), allowing for greater flexibility in installations

## 2. APPLICATIONS

- 48V PoE (Power over Ethernet) from Transmitter (PSE) to Receiver (PD)
- 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 to CAT5e/6/7 (with LAN/IR/RS-232) Transmitter
- 1×CAT5e/6/7 to HDMI (with LAN/IR/RS-232) Receiver
- 1×IR Blaster
- 1×IR Extender
- 1×48V/0.83A DC Power Adaptor
- Operation Manual

## 4. SYSTEM REQUIREMENTS

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

## 5. FEATURES

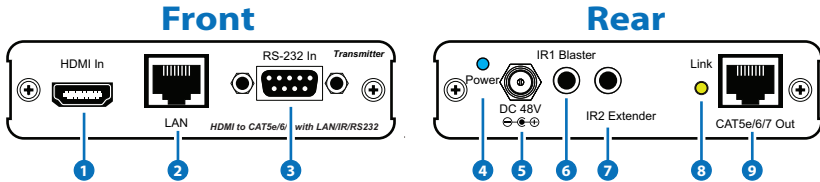
- HDMI with 3D, 4K×2K support, HDCP and DVI compliant
- Simultaneous transmission of uncompressed data over a single CAT5e/6/7 cable up to 100m/328ft
- HDBaseT™ 5Play™ convergence: uncompressed high definition Video and Audio, LAN serving, Power over Ethernet and RS-232/IR control
- Uncompressed video support up to 1080p@60 Hz/36-bit
- High definition audio support up to LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio
- Supports audio sampling rates of 32kHz to 192kHz
- Supports standard 48V power from Transmitter (PSE) to Receiver (PD)
- Supports CEC bypass
- Installation friendly

### Note:

1. *This system was tested with CAT5e/6/7 cables, results may vary with cables of a different specification.*
2. *The standard 48V PoE function is designed for powering compatible Receiver units only—non-PoE Receivers will need their own power supply. 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

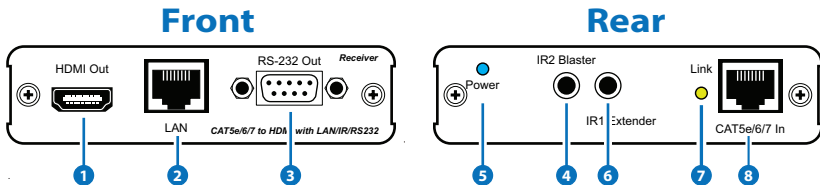
### 6.1 Transmitter Front and Rear Panels



- 1 HDMI IN:** Connect to HDMI source equipment such as a DVD or Blu-ray player.
- 2 LAN:** Connect to an active network for LAN serving. This allows network access (including internet access if available) to be shared to any device (e.g. a smart TV or games console) connected to the LAN port of the receiver  
**Warning: DO NOT connect the LAN connection to the CAT5e/6/7 output, doing so may trigger a power shut down and may damage the device.**
- 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 device is connected to a power supply.
- 5 DC 48V:** Connect the 48V DC power supply to the transmitter and Plug the adaptor into an AC outlet.
- 6 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.
- 7 IR2 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.
- 8 LINK LED:** The yellow LED will illuminate when both the source connected to the transmitter and the display connected to the receiver are connected. The LED will blink regularly to indicate that no signal is being received from the display and irregularly to indicate that an error has occurred.
- 9 CAT5e/6/7 OUT:** Connect to the receiver unit with a single CAT5e/6/7 cable for transmission of all data signals.

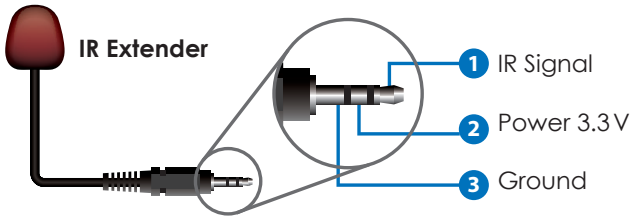
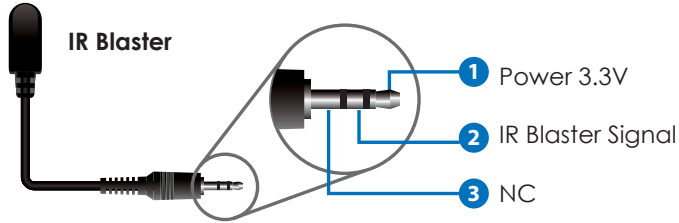


## 6.2 Receiver Front and Rear Panels



- 1 **HDMI OUT:** Connect to a HDMI equipped TV/monitor for display of the HDMI input source signal.
- 2 **LAN:** Connect to a LAN equipped device (such as a smart TV or games console) to share the network access (including internet access if available).  
**Warning: DO NOT connect the LAN connection to the CAT5e/6/7 output, doing so may trigger a power shut down and may damage the device.**
- 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 device is connected to a power supply.
- 5 **IR2 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.
- 6 **IR1 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.
- 7 **LINK LED:** The yellow LED will illuminate when both the source connected to the transmitter and the display connected to the receiver are connected. The LED will blink regularly to indicate that no signal is being received from the display and irregularly to indicate that an error has occurred.
- 8 **CAT5e/6/7 IN:** Connect to the transmitter unit with a single CAT5e/6/7 cable for transmission of all data signals.

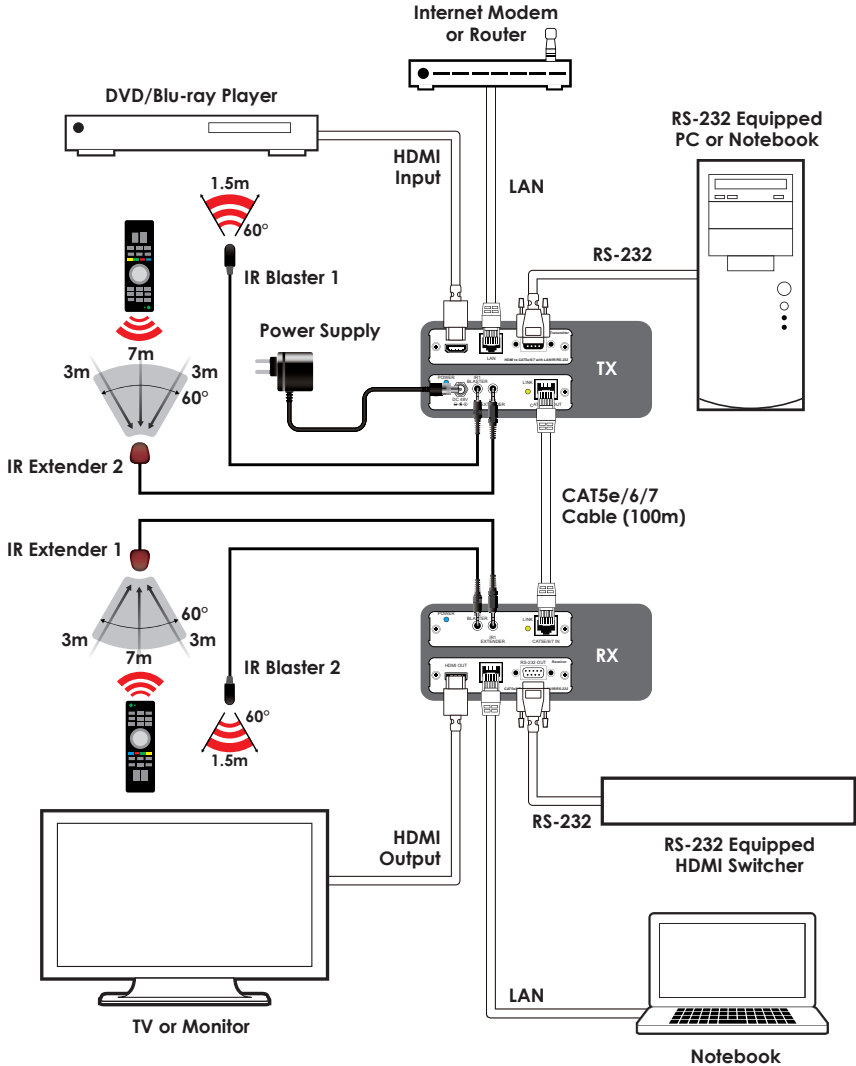
### 6.3. IR Cable Pin Assignment



### 6.4. 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

## 7. CONNECTION DIAGRAM





## 8. SPECIFICATIONS

### 8.1 Technical Specifications

<b>Video Bandwidth</b>	300MHz/10.2Gbps
<b>Ethernet Speed</b>	100 Mbps
<b>Transmitter</b>	
<b>Input Ports</b>	1×HDMI, 1×IR Extender, 1×RS-232, 1×LAN
<b>Output Ports</b>	1×CAT5e/6/7, 1×IR Blaster
<b>Receiver</b>	
<b>Input Ports</b>	1×CAT5e/6/7, 1×IR Extender
<b>Output Ports</b>	1×HDMI, 1×RS-232, 1×IR Blaster, 1×LAN
<b>HDMI In Cable Distance</b>	15m/1080p@8-bit or 6m/1080p@12-bit
<b>HDMI Out Cable Distance</b>	15m/1080p@8-bit or 10m/1080p@12-bit
<b>CAT6 Cable Distance</b>	Up to 100m
<b>HDMI Resolutions Support</b>	480i~1080p@50/60, 1080p@24, 3D, 4K×2K@24/25/30 & VGA~WUXGA
<b>IR Frequency</b>	30~50 kHz
<b>ESD Protection</b>	Human Body Model: ±8kV (air-gap discharge) ±4kV (contact discharge)
<b>Power Supply</b>	48V/0.83A DC (US/EU Standards, CE/FCC/UL certified)
<b>Dimensions</b>	102mm (W)×113.5mm (D)×25mm (H)/TX 102mm (W)×107mm (D)×25mm (H)/RX
<b>Weight</b>	262g/TX, 262g/RX
<b>Chassis Material</b>	Aluminum
<b>Chassis Color</b>	Silver
<b>Power Consumption</b>	15W
<b>Operating Temperature</b>	0 °C~40 °C/32 °F ~104 °F
<b>Storage Temperature</b>	-20 °C~60 °C/-4 °F~140 °F
<b>Relative Humidity</b>	20~90% RH (non-condensing)

## 8.2 CAT5e/6/7 Cable Specification

Cable Type	Range	Pixel Clock	Video Data	Supported Video
		Rate	Rate	
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)	4K×2K, 30Hz video formats

## 9. ACRONYMS

ACRONYM	COMPLETE TERM
<b>CAT5e</b>	Category 5 Cable
<b>CAT6</b>	Category 6 Cable
<b>CEC</b>	Consumer Electronics Control
<b>DVI</b>	Digital Visual Interface
<b>HDCP</b>	High-bandwidth Digital Content Protection
<b>HDMI</b>	High Definition Multimedia Interface
<b>IR</b>	Infrared
<b>PD</b>	Powered Device
<b>PSE</b>	Power Sourcing Equipment







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