HDBaseT HDMI over Single CAT5e/6/7 Transmitter and Receiver with LAN/PoE/RS-232/IR - # 15222 / #15223

Operation Manual

CONVERTERS.TV

Introduction

The CH-2507 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 with the added benefit of control through the built-in RS-232 and IR ports and a bidirectional LAN serving connection. The transmitter (PD) can be powered by the PoE (48V) function of the receiver (PSE), allowing for greater flexibility in installations.

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
- Support standard 48V power from Receiver (PSE) to Transmitter (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 Transmitter units only—non-PoE Transmitters will need their own power supply. Transmitters 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.

Applications

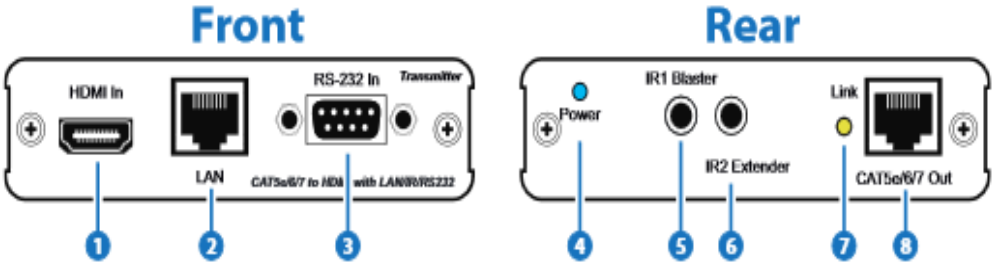
- 48V PoE from Receiver (PSE) to Transmitter (PD)
- Household entertainment sharing and control
- Lecture room display and control
- Showroom display and control
- Meeting room presentation and control
- Classroom display and control

System Requirements

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

Operation Controls and Functions

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.

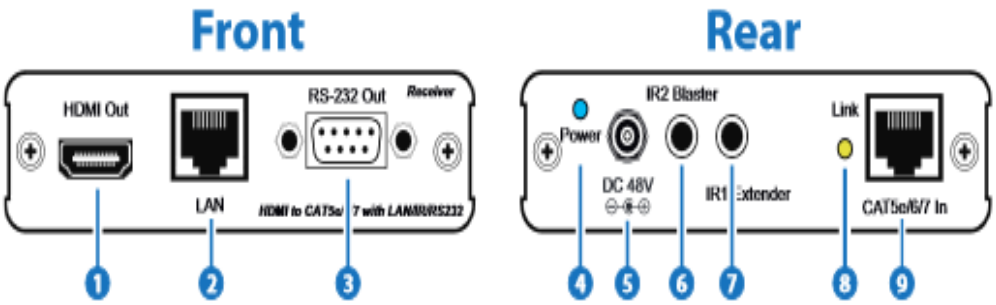
5. IR1 BLASTER:
Connect an IR Blaster cable for IR signal transmission.
IR signals received by an IR extender connected to the receiver unit will be transmitted by this blaster. Place the IR Blaster in direct line-of-sight of the equipment to be controlled.

6. 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.

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 OUT:
Connect to the receiver unit with a Single CAT5e/6/7 cable for transmission of all data signals.

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)

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. DC 48V:
Connect the 48 V DC power supply to the receiver and plug the adaptor into an AC outlet.

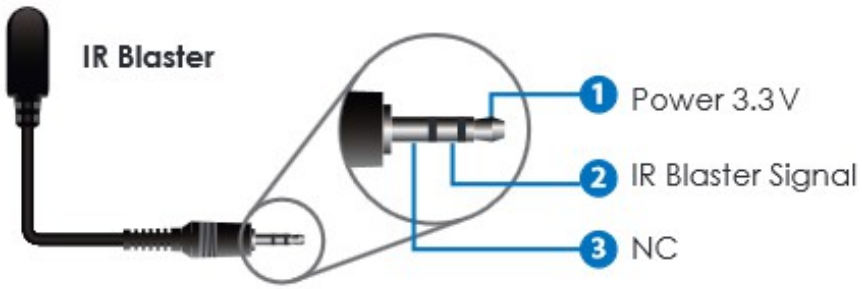
6. IR2 BLASTER:
Connect an IR Blaster cable for IR signal transmission.
IR signals received by an IR extender connected to the transmitter unit will be transmitted by this blaster. Place the IR Blaster in direct line-of-sight of the equipment to be controlled

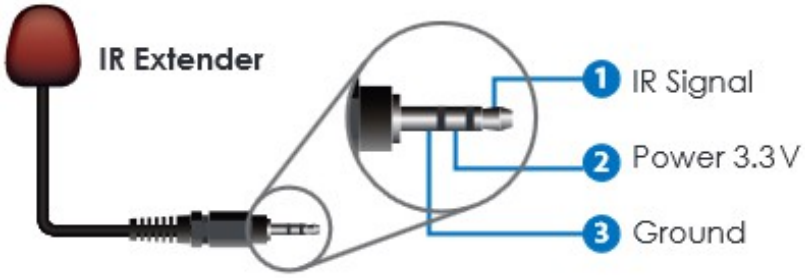
7. IR1 EXTENDER:
Connect an IR Extender cable for IR signal reception.
Signals received will be transmitted from any IR blaster connected to the tranmitter unit. Ensure that the remote being used is within the direct line-of-sight of the IR Extender

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

IR Cable Pin Assignment

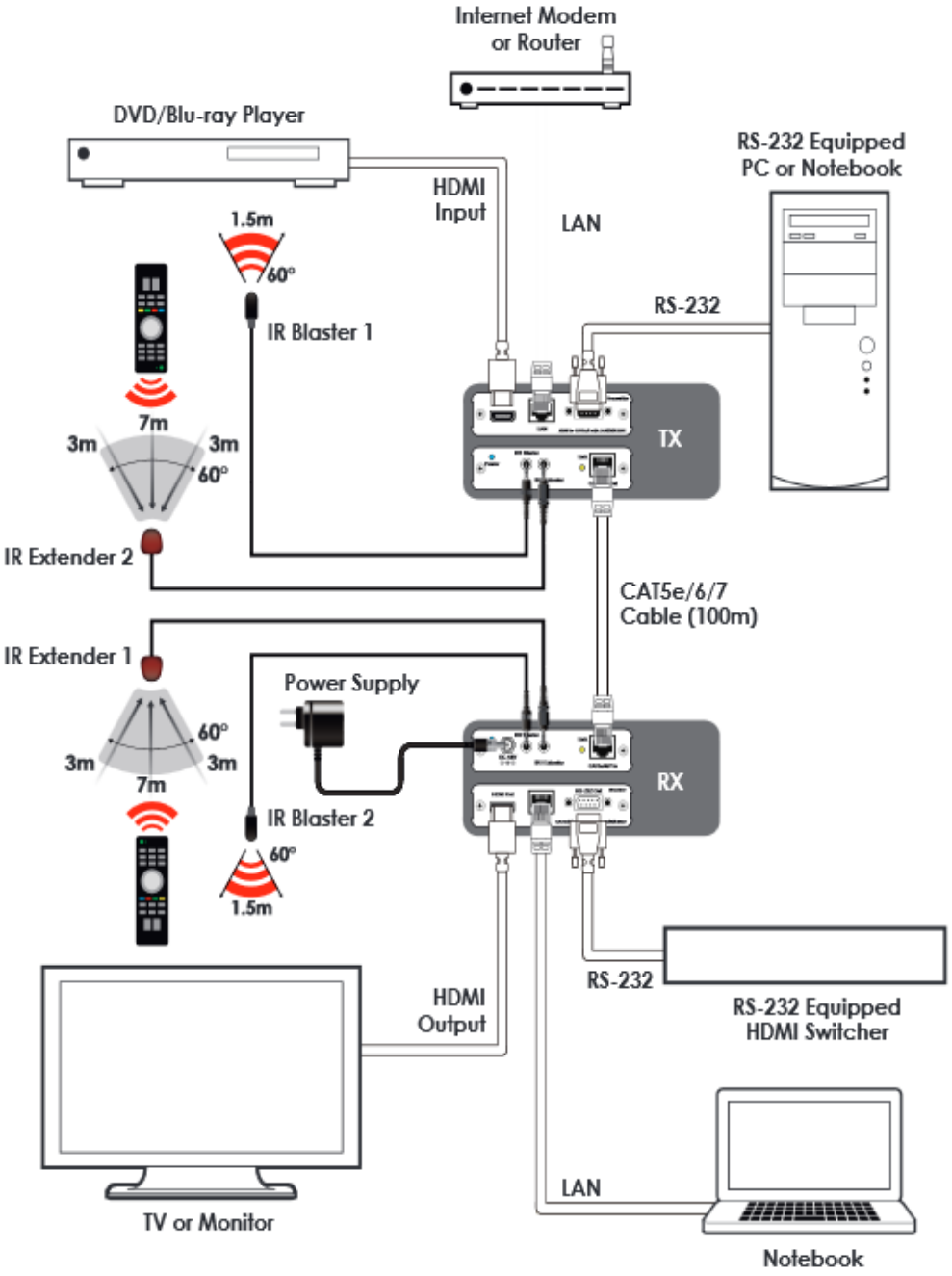




D-Sub 9-Pin Definitions

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

Connection Diagram



Specifications

Video Bandwidth	300MHz / 10.2Gbps
Ethernet Speed	100Mbps
Transmitter	
Input Ports	1×HDMI, 1×IR Extender,1×RS-232, 1×LAN
Output Ports	1×CAT5e/6/7, 1×IR Blaster
Receiver	
Input Ports	1×CAT5e/6/7, 1×IR Extender
Output Ports	1×HDMI, 1×RS-232, 1×IR Blaster, 1×LAN
HDMI In Cable Distance	15m/1080p@8-bit or 6m/1080p@12-bit
HDMI Out Cable Distance	15m/1080p@8-bit or 10m/1080p@12-bit
CAT6 Cable Distance	Up to 100m
HDMI Resolutions Support	480i~1080p@50/60, 1080p@24, 3D, 4K×2K@24/25/30 & VGA~WUXGA
IR Frequency	30~50kHz
ESD Protection	Human Body Model: ±8kV (air-gap discharge) ±4kV (contact discharge)
Power Supply	48 V/0.83 A DC (US/EU Standards, CE/FCC/ UL certified)
Dimensions	102mm (W)×107mm (D)×25mm (H)/TX 102mm (W)×113.5mm (D)×25mm (H)/RX
Weight	252g/TX, 272g/RX
Chassis Material	Aluminum
Chassis Color	Silver
Power Consumption	15 W
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

CAT5e/6/7 Cable Specification

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, 60Hz, 36bits, 3D (data rates lower than 5.3 Gbps or below 225MHz TMDS clock)
	70 m	>225 MHz	> 5.3 Gbps (Ultra HD Video)	4K×2K, 30Hz videoformats