



**Comprehensive**  
Connectivity Company

## **CHE-HDBT322**

**Pro AV/IT HDBaseT Extender over CAT5e/6/7 with Dual HDMI  
Outputs up to 330ft - Transmitter & Receiver**



**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	09/01/14	Preliminary Release



# CONTENTS

<b>1. Introduction.....</b>	<b>1</b>
<b>2. Applications .....</b>	<b>1</b>
<b>3. Package Contents .....</b>	<b>1</b>
<b>4. System Requirements.....</b>	<b>1</b>
<b>5. Features .....</b>	<b>2</b>
<b>6. Operation Controls and Functions.....</b>	<b>3</b>
6.1 Front Panel .....	3
6.2 Rear Panel.....	3
6.3 Transmitter Front and Rear Panels.	4
6.3 D-Sub 9-Pin Definitions .....	5
6.4 IR Cable Pin Assignment.....	6
<b>7. Connection Diagram .....</b>	<b>7</b>
<b>8. Specifications .....</b>	<b>8</b>
8.1 CAT5e/6/7 Cable Specification .....	9
<b>9. Acronyms .....</b>	<b>9</b>



## 1. INTRODUCTION

Comprehensive's HDBaseT extender with Dual Simultaneous HDMI Outputs, Transmitter & Receiver accept resolutions up to 1080p Full HD, 4Kx2K timing, 3D and multi-channel digital audio formats and sends to two HDTV outputs. The HDMI can be connected to HDMI display for instant nearby display and the CAT5e/6/7 can be connected to the Transmitter for distance up to 330 feet with Bidirectional PoE feature. Further, a total of 100Mbps Ethernet transmission rate allows all connected device to share the Ethernet service and Bidirectional PoE provides PoE to the Transmitter or received from compatible PoE Transmitter through CAT5e/6/7.

## 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

- HDBaseT Extender with Dual HDMI Outputs Transmitter & Receiver
- IR Receiver x 1
- 3.5mm Phone Jack to RS-232 Cable
- Operation Manual

## 4. SYSTEM REQUIREMENTS

Input HDMI over CAT5e/6/7 Transmitter and output display with HDMI input.

## 5. FEATURES

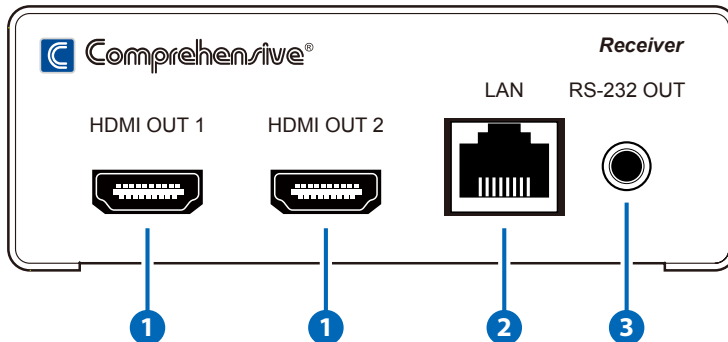
- HDMI with 3D & 4Kx2K supported, HDCP and DVI compliant
- HDMI outputs play identical video signal simultaneously
- Supports data rate from 250Mbps up to 3Gbps
- Supports wide range of PC resolutions from VGA to WUXGA and HDTV resolutions up to 4Kx2K (3840x2160@30Hz and 4096x2160@24Hz).
- Supports LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD
- Supports audio sampling rate from 32-192kHz sample rate
- Supports distances up to 330 feet through CAT5e/6/7 cables
- Supports Ethernet transmission rate up to 100Mbps
- Supports USB service port
- Supports Bidirectional IR control
- Supports RS-232 control
- Supports Bidirectional PoE

### **Note:**

1. *This system was tested with CAT6/23AWG cables, results may vary with cables of a different specification.*
2. *The PoE function is designed for powering compatible Transmitter units only non-PoE Transmitter will need their own power supply. Transmitter of another brand may not be compatible.*
3. *Displaying HDMI 4Kx2K resolution require the standard 4Kx2K HDMI cable and display in order for proper image displaying.*

## 6. OPERATION CONTROLS AND FUNCTIONS

### 6.1 Receiver Front Panel



#### 1 HDMI OUT 1 & 2:

Connect to HDMI displays for instant image display or cascade with another family type Transmitter. The unit will detect HDMI OUT 1's EDID when it obtain a 4Kx2K EDID and send out the signal accordingly to other output ports. If HDMI OUT 1's EDID is without a 4Kx2K's EDID the unit will detect all output's EDID and send out the signal that all output can accept.

This device obtain last memory function therefore, the device will use the last HDMI OUT 1's EDID when HDMI OUT 1 is not connected to a display after power cycling or switch in between the EDID setting.

#### 2 LAN:

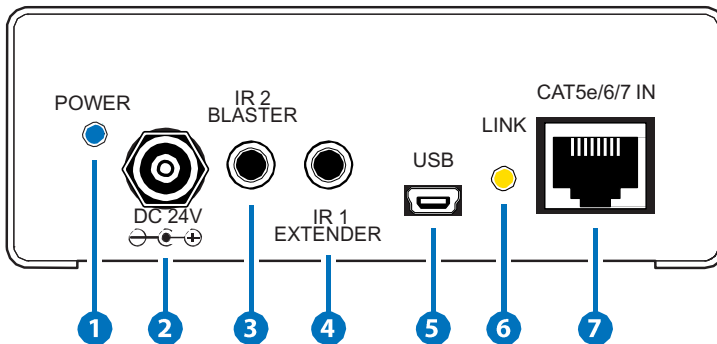
Connect to intranet or internet service system for a total sharing rate of 100Mbps within the link of Receiver.

**Warning: DO NOT connect this slot with any of the CAT5e/6/7 port, doing so may trigger a power shot down and ruin the device.**

#### 3 RS-232 OUT:

Connect to a RS-232 enabled device (with supplied 3.5mm Phone Jack to D-Sub 9-Pin male adaptor) for transmit of RS-232 commands.

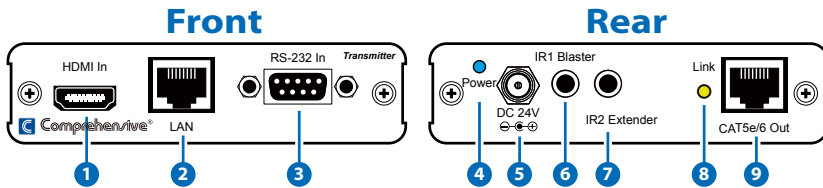
## 6.2 Rear Panel



- 1 POWER LED:**  
Once the power supply is connected the LED will illuminate.
- 2 DC 24V:**  
Plug the 24V DC power supply into the unit and connect the adaptor to an AC outlet.
- 3 IR 2 BLASTER:**  
Connect to the supplied IR Blaster cable for IR signal transmission. Place the IR Blaster in direct line-of-sight of the equipment to be controlled.
- 4 IR 1 EXTENDER:**  
Connect to the supplied IR Extender cable for IR signal reception. Ensure that remote controller being used is within the direct line-of-sight of the IR Extender.
- 5 USB:**  
This port is reserved for firmware update only.
- 6 LINK LED:**  
The link LED will illuminate when both the input source and output display signals are connected through CAT cable. When it blinks regularly it states the display is NOT sending signals to Receiver but the Transmitter and Receiver are linked and if it blink irregularly it states an error has occurred.
- 7 CAT5e/6/7 IN:**  
Connect this port to Transmitter with CAT5e/6/7 cable to extend the signal up to 330ft.



## 6.3 Transmitter Front and Rear Panels

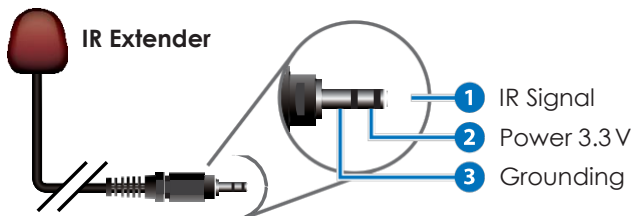
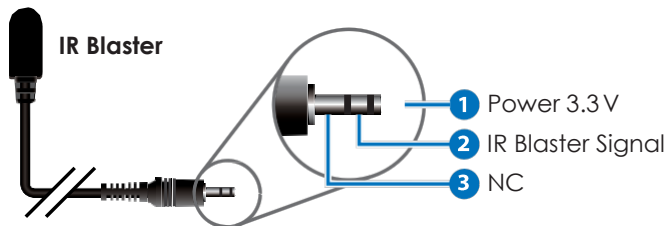


- ❶ **HDMI In:** Connect to HDMI source equipment such as a DVD or Blu-ray player.
- ❷ **LAN:** Connect to an internet or network connection.
- ❸ **RS-232 In:** Connect to a PC or laptop with D-Sub 9 pin male cable for the transmission of RS-232 commands.
- ❹ **Power LED:** This blue LED will illuminate when the device is connected to a power supply.
- ❺ **DC 24V:** Plug the 24V DC power supply into the unit and connect the adaptor to an AC outlet.
- ❻ **IR 1 Blaster:** Connect to the supplied IR blaster cable for IR signal transmission. Place the IR blaster in direct line-of-sight of the equipment to be controlled.
- ❼ **IR 2 Extender:** Connect to the supplied IR receiver cables for IR signal reception. Ensure that remote being used is within the direct line-of-sight of the IR extender.
- ❽ **Link LED:** The yellow LED will illuminate when both the input and output signals are connected.
- ❾ **CAT5e/6 Out:** Connect to the receiver unit with a Single CAT5e/6 cable for transmission of all data signals.

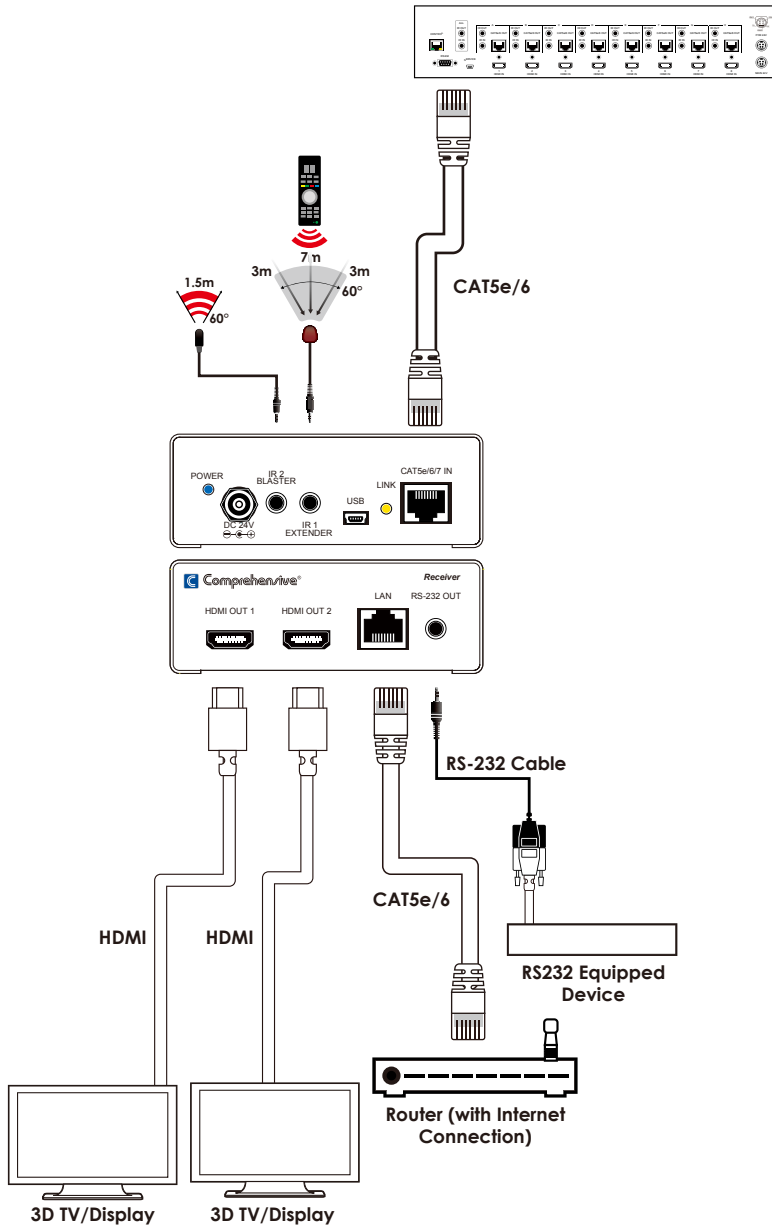
## 6.4 D-Sub 9-Pin Definitions

Pin	Define
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

## 6.5 IR Cable Pin Assignment



## 7. CONNECTION DIAGRAM



## 8. SPECIFICATIONS

<b>Video Bandwidth</b>	340Mbps/10.2Gbps
<b>Transmitter Input ports</b>	1 x HDMI, 1 x IR Extender, 1 x LAN, 1 x RS-232 1 x USB (Service only)
<b>CAT5e/6/7 Input Cable Distance</b>	Up to 330 Feet
<b>Receiver Output ports</b>	2 x HDMI, 1 x RS-232 1 x IR Blaster,
<b>HDMI Output Cable Distance</b>	Up to 32 ft@8 or12-bit 1080p
<b>Resolution</b>	Up to 4Kx2K (3840x2160@30Hz/4096x2160@24Hz)
<b>IR Frequency</b>	30 ~50kHz
<b>Power Supply</b>	24V / 1.25A DC (US/EU standards, CE/FCC/ UL certified)
<b>ESD Protection</b>	Human-body Model: ±8kV (air-gap discharge) ±4kV (contact discharge)
<b>Dimensions</b>	3.9" x 4.4" x 1.5" Transmitter 4" x 4.2" x 0.9" Receiver
<b>Weight</b>	1.17lbs
<b>Chassis Material</b>	Metal
<b>Silkscreen Color</b>	Black
<b>Operating Temperature</b>	0 °C~40 °C
<b>Storage Temperature</b>	-20 °C ~ 60 °C/-4 °F~140 °F
<b>Relative Humidity</b>	20~90% RH (non-condensing)
<b>Power Consumption</b>	10W

## 8.1 CAT5e/6/7 Cable Specification

Cable Type	Range	Pixel clock rate	Video Data Rate	Supported Video
CAT5e/6/7	330 ft	<=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).
	230 ft	>225 MHz	> 5.3 Gbps (Ultra HD Video)	4K2K, 30Hz video formats
CAT6A/7	330 ft	>225 MHz	> 5.3 Gbps (Ultra HD Video)	4K2K, 30Hz video formats

## 9. ACRONYMS

ACRONYM	COMPLETE TERM
<b>4Kx2K</b>	3840x2160 / 4096x2160
<b>DTS</b>	Digital Theater System
<b>EDID</b>	Extended Display Identification Data
<b>HDCP</b>	High-bandwidth Digital Content Protection
<b>HDMI</b>	High-Definition Multimedia Interface
<b>HDTV</b>	High-Definition Television



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