HTE Owner's Manual

HDMI, RS-232, IR & Ethernet Extender over HDBaseT with 3D, 4K, POE Support

HTE Tx   **HTE Rx**

Package Contents

Please make sure all of the following items are included in the package:

- 1 x HTE Transmitter Module
- 1 x HTE Receiver Module
- 1 x Power adapter
- 1 x User Manual

Description

The PureLink HTE is a transmitter and receiver set for long distance extension of HDMI video and embedded audio with bi-directional control signals (RS-232 and IR) over single CAT 5/6/7- type cable. It is designed on HDBaseT technology which allows full 3D support with up to 330ft (100m) at 4K2K (UHD) resolution. A compact and low profile enclosure makes the HTE ideal for extending HDMI video, embedded multi-channel audio, bi-directional control signal, and Ethernet to limited space environment such as behind a flat-panel display.

PureLink HTE is HDCP compliant and it enables the reliable, long distance extension of HDMI signals, supporting Deep Color and full 3D and embedded HD lossless audio formats. In addition, EDID and HDCP communication is being maintained between a source and display. Also, the HTE includes an RS-232 and IR insertion port, allowing bi-directional control of an AV device.

Features

- **Zero loss & Zero noise delivery** of digital high definition video and audio signal using UTP connection, HTE delivers HD signals over CAT5/6/7-type cables without loss or digital interference maintaining the clarity and colors. Noise cancellation and error correction logic enhances HDMI video and audio signals over long distance.

- **Compact and Robust enclosure desig**n allows for discreet installation behind a flat-panel display.

- **Designed based on HDBaseT Technology**, supporting support Deep Color and full 3D support plus DTS-HD and Dolby TrueHD over a single low cost CATx interface with up to 330ft (100m) at Ultra HD (4K) or 1920x1200 resolution.

- Uncompressed high definition video up to 4K2K@30Hz@48bits and 3D.

- Controls signals including bi-directional RS-232 and IR function.

- Bi-Directional RS232 interface – commands and data can flow in both directions via RS232, allowing status requests and control of the destination unit.

- Max. Data Rate- 10.2 Gbps.

- HDCP (High-bandwidth Digital Content Protection) Support.

- HDMI version 1.4 Support.

- Audio transmission support LPCM 7.1@192KHz, Dolby TrueHD, DTS-HD MA.

- Support 10/100Mbps network, allow to connect the network TV or another internet devices.

- Support POE, only requires power on the transmitter

Model	HTE
Input Signal	HDMI
Output Signal	HDMI
Supporting Display Resolutions	VGA ~ WUXGA (up to 1920 x 1200 @ 60Hz), 480i ~ 1080p, Ultra HD (4K) @ 30Hz
Max. Distance	1920x1200 @ 60Hz or Ultra HD (4K) @30Hz: 330ft (100m)
Connector Type	DC Power Jack HDMI 19 Pin Female (Type A) RJ-45 IR Serial
Conformations	HDMI version 1.4 With HDCP
Power Rating	DC 24V , 1A
Dimension (WxDxH)	Tx: 3.5'' x 5.3'' x 1.2'' (88 x 135 x 30 mm) Rx: 3.5'' x 5.3'' x 1.2'' (88 x 135 x 30 mm)
Weight	Tx: 0.66 lbs (0.3 kg) Rx: 0.66 lbs (0.3 kg)

*Please use CAT6a/CAT7 cable for maximum distance transmission.

* Travel Range Specification

Cable Type	Range	Pixel clock rate	Video Data Rate	Supported Video
CAT5e/CAT6	100 m	<= 225 MHz	<= 5.3 Gbps (HD Video)	Up to 1080p, 60Hz, 36bpp (Data rates lower than 5.3 Gbps or below 225 MHz TMDS clock)
	70 m	> 225 MHz	> 5.3 Gbps (Ultra HD Video)	1080p 60Hz 48bpp, 1080p60Hz 3D, and Ultra HD (4K) @ 30Hz
CAT6a/CAT7	100 m	> 225 MHz	> 5.3 Gbps (Ultra HD Video)	1080p 60Hz 48bpp, 1080p60Hz 3D, and Ultra HD (4K) @ 30Hz

Operation and Reliability Specification

1. Operating Environment
   Temperature   : 32F ~ 131F (0℃~ 55℃)
   Humidity   : 10% ~ 80%
   Altitude   : 3,000m Max.

2. Transit Environment
   Temperature   : -13F ~ 140F (-25℃~ 60℃)
   Humidity   : 5% ~ 95%
   Altitude   : 15,000m Max.

3. Storage Environment
   Temperature   : -4F ~ 185F (-20℃~ 85℃)
   Humidity   : 5% ~ 95%
   Altitude   : 3,000m Max.

4. Reliability
   MTBF: 90% at over 50,000 hours aging test
   - In compliance with LCD Monitor reliability test standard

Installation and Connection Instructions

1. Turn off both the video source and the display before connecting any cables.
2. Connect CATx cable between the HTE transmitter and the HTE receiver.
3. Connect HDMI cable between the source and the HTE transmitter AND the HTE receiver and the display.
4. Connect the power supply unit to HTE transmitter module.
   (HTE receiver receives power from HTE transmitter)
5. Turn on Display.
6. Turn on Video Source.

How to terminate CATx cable

HTE was designed to conform to TIA/EIA-568-B standard. Please ensure that each PIN layout of HTE transmitter and HTE receiver are corresponding with the picture below before connecting the cable. Please note that CAT5e or above level cable enables to deliver better video quality and longer distance.

For HDBaseT →
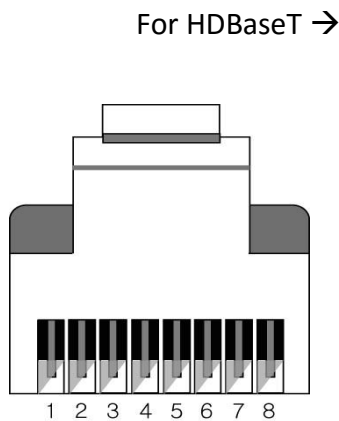
Pin	TIA/EIA-568B Wire color	Digital RGB
1	Orange/ White	DATA0 +
2	Orange	DATA0 -
3	Green/ White	DATA1
4	Blue	DATA2 +
5	Blue/ White	DATA2
6	Green	DATA1 -
7	Brown/ White	DATA3
8	Brown	DATA3 -

1 2 3 4 5 6 7 8

For 10/100Mbps Ethernet →

| Pin	TIA/EIA-568B Wire color	Digital RGB
1	Orange/ White	RX +
2	Orange	RX -
3	Green/ White	TX +
4	Blue	N/C
5	Blue/ White	N/C
6	Green	TX -
7	Brown/ White	N/C
8	Brown	N/C

CATx cable

Link cable recommend use high quality CAT5, CAT5e, CAT6, CAT6a, CAT7 UTP / STP or FTP cable.

Transmission Distance

The maximum transmission distance up to 100meters, use lower resolution won't extend longer distance
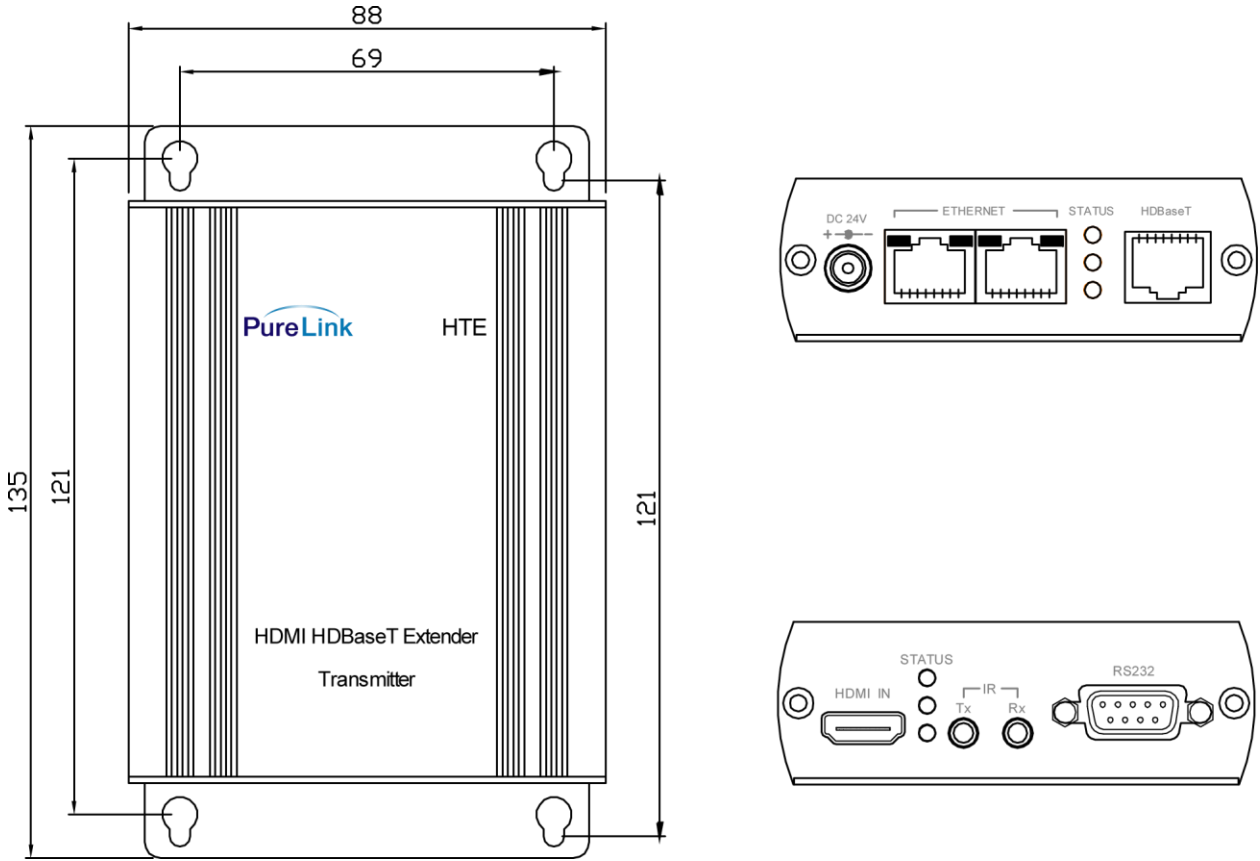
If connection through the wall socket, the cable length must less 5 meters between HDMI extender and wall jack, as below drawing:
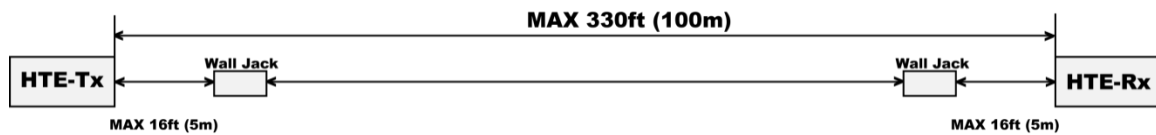
HTE Transmitter Specification

Transmitter Module Dimensions (W x D x H): 3.5'' x 5.3'' x 1.2'' (88 x 135 x 30 mm)
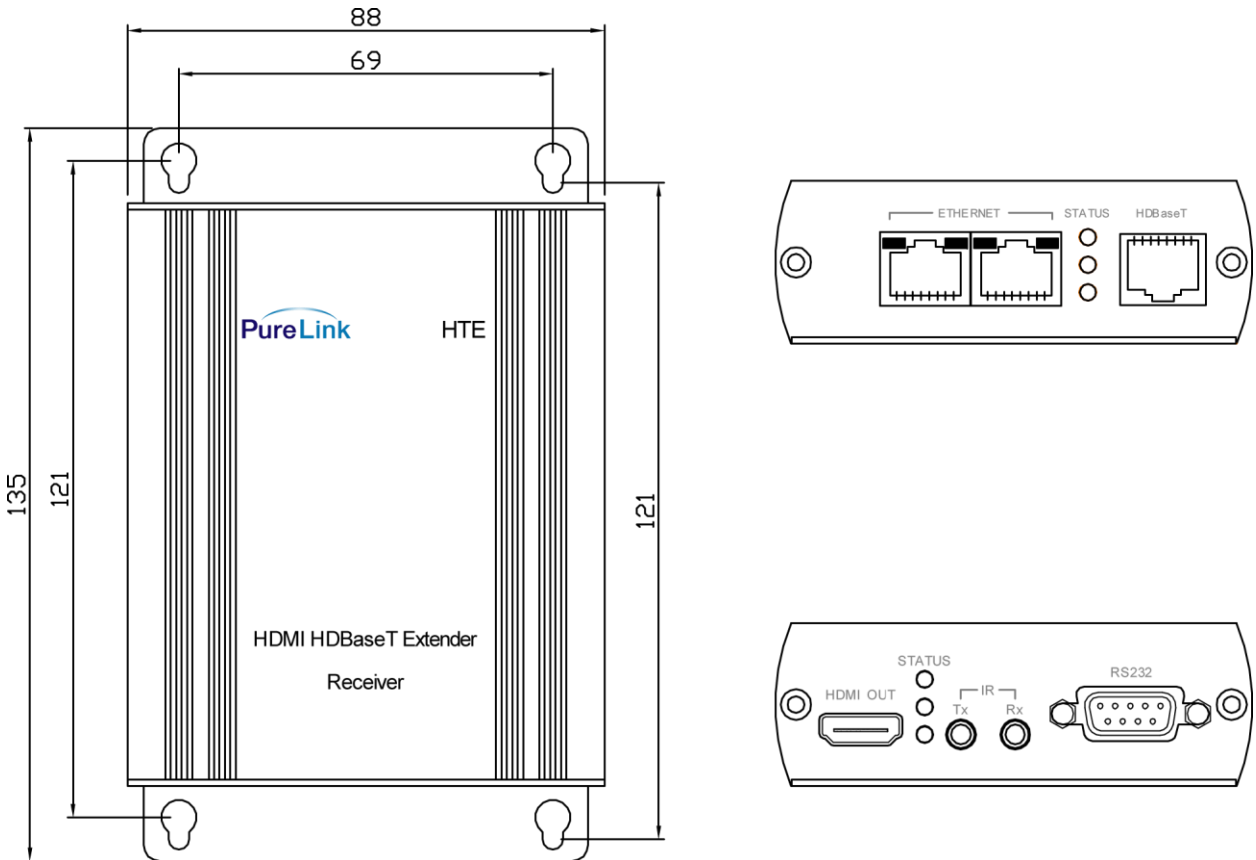Transmitter Module Weight : 0.66 lbs (0.3 kg)

Connection Ports:

HDMI IN: HDMI input
Green LED: Power On/Off Indication
Blue LED: IR receive
Red LED: IR transmit
IR Tx : IR output
IR Rx : IR input
RS232 : Bi-directional serial communication port
DC 24V :Power supply unit Input
RJ-45(CATx) : 2 x Ethernet
                1 x HDBaseT output

HTE Receiver Specification

Receiver Module Dimensions (W x D x H): 3.5'' x 5.3'' x 1.2'' (88 x 135 x 30 mm)
Receiver Module Weight : 0.66 lbs (0.3 kg)

Connection Ports:

HDMI OUT: HDMI output
Green LED: Power On/Off Indication
Blue LED: IR receive
Red LED: IR transmit
IR Tx : IR output
IR Rx : IR input
RS232 : Bi-directional serial communication port
RJ-45(CATx) : 2 x Ethernet
              1 x HDBaseT output

LED Indication:

IR Status:

Color	LED Function	HTE Tx	HTE Rx
GREEN	Power	On: power on	
BLUE	IR Receive	On: IR received signal	
RED	IR Emit	On: IR emitting	

HTBaseT Status:

Color	LED Function	HTE Tx	HTE Rx
GREEN	HDBaseT Linking	On: HDBaseT linking	
BLUE	Reserve	No Function	
RED	HDCP	On: with HDCP / Flash: Without HDCP / Off: HDMI disconnect	

10/100 Ethernet Port:

Color	LED Function	HTE Tx	HTE Rx
GREEN	Ethernet linking	On: Linking /Flash: data transmission	
YELLOW	Reserve	No Function	

Low Power Mode:

When there is no HDMI video signal input, or TV is not connected or power off, HTE will enter a low-power mode to save power consumption. When it is on a low power mode, it still provides Ethernet, RS-232, IR, and CEC signal transmission.

Caution:

1. The wiring must away from any equipment with electromagnetic wave, i.e.: mobile phone, microwave, radio equipment, fluorescent lamp, high voltage power lines.

2. This device is not a network equipment, do not connect with Network to avoid damage.

3. IR transmitter do not put near from receiver to avoid mutual interference.

Technical Specification

Frequency Range:	25 ~ 165 MHz
Supporting Resolutions:	Up to 1080p / 60Hz / 48 bit
	Up to Ultra HD (4K) / 30Hz
	Up to 1920x1200 / 60Hz
I/O Signal Standard:	HDMI 1.4
Max Distance:	Max 330ft (100m) at 4K2K@30Hz /
	1920x1200@60Hz
RS-232 Connector:	Transmitter: DB9 Female
	Receiver: DB9 male
RS-232 Baud Rate:	Up to 115200 bps / Full Duplex
IR Carrier:	38Khz / ±10° / 5M / 2 Way
UTP Cable specification:	CAT5/5e/6/6a/7
Ethernet Connector:	RJ-45 with 2 LED
Ethernet Data Rate:	10 / 100Mbps
Ethernet Distance:	Max 330ft (100m)
Input Ports:	HDMI Female 19P (Type A) / RJ-45
Output Ports:	HDMI Female 19P (Type A) / RJ-45
Power Consumption:	Min Total 5W,
	Max Total 15W
Power Rating:	24V DC / 1A
Weight:	Transmitter – 0.66 lbs (0.3 kg)
	Receiver – 0.66 lbs (0.3 kg)

Warranty

One (1) Year Warranty

Dtrovision warrants this HDMI, RS-232, IR, and Ethernet Extender over CATx with 3D, 4K, POE Support to be free from defects in workmanship and materials, under normal use and service, for a period of one (1) year from the date of purchase from Dtrovision or its authorized resellers.

If a product does not work as warranted during the applicable warranty period, Dtrovision shall, at its option and expense, repair the defective product or part, deliver to customer an equivalent product or part to replace the defective item, or refund to customer the purchase price paid for the defective product.

All products that are replaced will become the property of Dtrovision.

Replacement products may be new or reconditioned.

Dtrovision shall not be responsible for any software, firmware, information, or memory data of customer contained in, stored on, or integrated with any products returned to Dtrovision for repair under warranty or not.

Warranty Limitation and Exclusion

Dtrovision shall have no further obligation under the foregoing limited warranty if the product has been damaged due to abuse, misuse, neglect, accident, unusual physical or electrical stress, unauthorized modifications, tampering, alterations, or service other than by Dtrovision or its authorized agents, causes other than from ordinary use or failure to properly use the Product in the application for which said Product is intended.

FCC/CE Statement

This device complies with part 15 of FCC Rules and EN 55022/55024/61000-3 for CE certification. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must not accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 and 2 of FCC Rules and EN 55022/55024/61000-3 for CE certification. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and. if not installed and used in accordance with the instruction guide, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult a service representative for help.

Properly shielded and grounded cables and connectors must be used in order to comply with FCC/CE emission limits. Changes or modifications not expressly approved by the party responsible for compliance could void the user s authority to operate the equipment.