



HDMI over HDBaseT Extender

# User Manual

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Model : HE02P

4K HDMI & IR/RS232/Ethernet/PoH CAT5e Extender 100M



## Introduction

HE02P is a 4K HDMI over HDBaseT™ extender that can use a Ethernet cable to send uncompressed HDMI bi-directional IR and RS232 signals with resolution up to 4K@60Hz 4:2:0 and transmission distance up to 100M. The extender also supports PoH (Power over HDBaseT), designed to provide power from one side (TX/ RX) to another. A built-in Ethernet port with 10/100 bandwidth on both TX and RX sides allows HE02P to connect with standard network devices such as 100Base-T routers, hubs, and computers.

## Features

- Resolution up to 4K@60Hz 4:2:0.
- Signal extension up to 100M over CAT5e/6 cable.
- Built-in 2 10/100Mbps Ethernet ports for network devices.
- Support PoH (Power over HDBaseT™), no external power required for RX unit.
- Supports bi-directional IR, RS232 transmission.
- Supports EDID, and CEC pass through.

## Installation view



## Cable

Link cable recommend use high quality Cat.5e, Cat.6, Cat.6a, Cat.7 UTP / STP or FTP cable. Poor quality cable or network connection or improper construction will cause unstable connection, video or sound disruptions, picture noise appears.

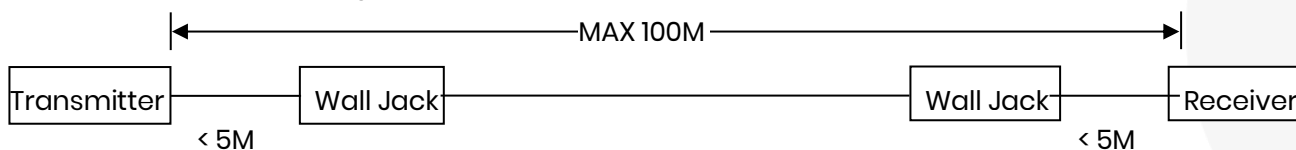
## Transmission Distance

The maximum transmission distance up to 100meters, use lower resolution won't extend longer distance.

## HDBaseT Distance chart by different cable

Cable Type	Range	Pixel Clock Rate	Video Data Rate	Supported Video
CAT5e / CAT6	100m	<=225Mhz	<=5.3Gbps (HD Video)	Up to 1080p 60Hz 36 bits
	70m	>225Mhz	>5.3Gbps (Ultra HD Video)	1080p 60Hz 48bits, 1080p 60Hz 3D, 4K x 2K 30Hz
CAT6a / CAT7	100m			

If connection through the wall socket, the cable length must less 5 meters between HDMI extender and wall jack, as below drawing:



10/100Mbps network connection using general CAT5e cable and working distance up to 100M.

## RJ45 Define

PIN	RJ45 JACK			
	Color	HDBaseT	10/100Mbps Ethernet	
1	W-O	DATA 0 +	RX +	
2	O	DATA 0 -	RX -	
3	W-G	DATA 1 +	TX +	
4	BL	DATA 2 +	N/C	
5	W-BL	DATA 2 -	N/C	
6	G	DATA 1 -	TX -	
7	W-BR	DATA 3 +	N/C	
8	BR	DATA 3 -	N/C	

## LED Indication

### HDMI Port Status LED

Color	LED Function	HE02PT	HE02PR
Green	Power	On: Power On	
Blue	IR Receive	On: IR Received Signal	
Red	IR Emitter	On: IR Emitting	

### HDBaseT Port Status LED

Color	LED Function	HE02PT	HE02PR
Green	HDBaseT Linking	On: HDBaseT Linking , Flash: Low Power Mode	
Blue	Reserve	No Function	
Red	HDMI	On: With HDCP , Flash: Without HDCP , Off: HDMI Unlink	

### 10/100 Ethernet Port

Color	LED Function	HE02PT	HE02PR
Green	Ethernet Linking	On: Linking , Flash: Data Transmission	
Yellow	Reserve	No Function	

### Low-power Mode

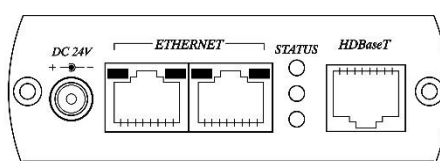
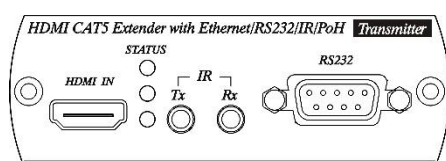
When there is no HDMI video signal input, or TV is not connected or power off, this product will enter a low-power mode to save power consumption of, under a low power mode still provides Ethernet, RS-232 (Max. 9600bps), IR, CEC of signal transmission.

### Caution

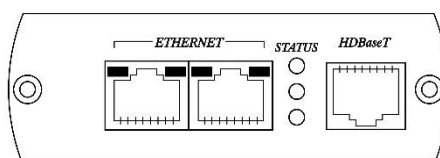
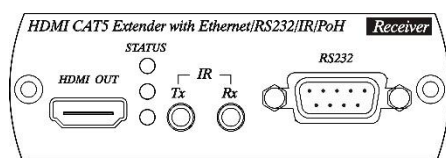
1. The wiring must away from any equipment with electromagnetic wave, i.e.: mobile phone, microwave, radio equipment, fluorescent lamp, high voltage power lines.
2. This device HDBaseT port is not general Ethernet signal which also carry power, do not connect with Network to avoid damage.
3. IR transmitter do not put near from receiver to avoid mutual interference.

### Panel view

#### HE02PT



#### HE02PR



## Package Include

Transmitter x 1 piece

Receiver x 1 piece

Power adapter DC24V 1AMP x 1 piece

IR Emitter cable x 2 pieces

IR Receiver cable x 2 pieces

## Specification

ITEM NO.	HE02PT	HE02PR
Support		
Compliance	HDMI 1.4, HDCP, DVI	
Max. Video Resolution	4K@30Hz 4:4:4	
Max. Transmission Distance	100M over CAT6 or greater cable	
Video Bandwidth	10.2 Gbps	
Audio Format	7.1 LPCM 192KHz, Dolby TrueHD, DTS-HD MA	
Network Bandwidth	10/ 100Mbps	
IR Support	30-60Khz, $\pm 15^\circ$ , 5M, Bi-directional	30-60Khz, $\pm 55^\circ$ , 5M, Bi-directional
RS232 Baud Rate	115200 bps/ Full Duplex	
Ports & Interfaces		
Video Input	1 x HDMI Type A	1 x HDBaseT
Video Output	1 x HDBaseT	2 x HDMI Type A
Ethernet Interface	1 x RJ45	1 x RJ45
RS232 Interface	1 x DB9 Female	1 x DB9 Male
IR Interface	1 x 3.5mm Phone Jack	1 x 3.5mm Phone Jack
Power		
Power Supply	DC 24V 1A Regulated	Power from HE02PT
Power Consumption	15W (Max), 5W (Low Power) in Total	
Ambient Temperature		
Operation	0 to 55°C	
Storage	-20 to 85°C	
Humidity	up to 95%	
Physical Characteristics		
Dimensions	88 x 135 x 30mm	88 x 135 x 30mm
Weight	300g	300g