



HDMI over HDBaseT Extender

# User Manual

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Model : HE02EXP

4K 60Hz 4:4:4 HDMI & IR/R232/POH CAT5e Extender 70M



## Introduction

HE02EXP is a 4K HDMI over HDBaseT™ extender that can use an Ethernet cable to transfer uncompressed video & audio signals with resolution up to 4K@60Hz 4:4:4 and transmission distance is 70M. The extender also supports PoH (Power over HDBaseT™) to provide power from one side (Tx/ Rx) to another.

## Features

- Resolution up to 4K@60Hz 4:4:4, 70M.
- Signal extension up to 90M, 1080p@60Hz over CAT5e/6 cable.
- Support PoH (Power over HDBaseT™), power from either TX or RX.
- Supports bi-directional IR, RS232 transmission.
- Supports CEC, EDID pass through.

## Installation view



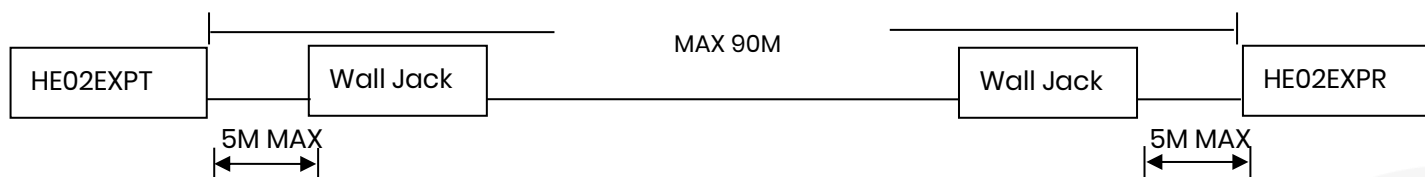
## Cable

Link cable recommend use high quality CAT5e, CAT6, CAT6a, CAT7 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.

## HDBaseT Distance Chart by Different Cable

Cable Type	Range	Supported Video
CAT5e	90m	Up to 1080p 60Hz
CAT6a / CAT7	90m	
CAT6a / CAT7	70m	Up to 4096x2160@60Hz 4:4:4

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



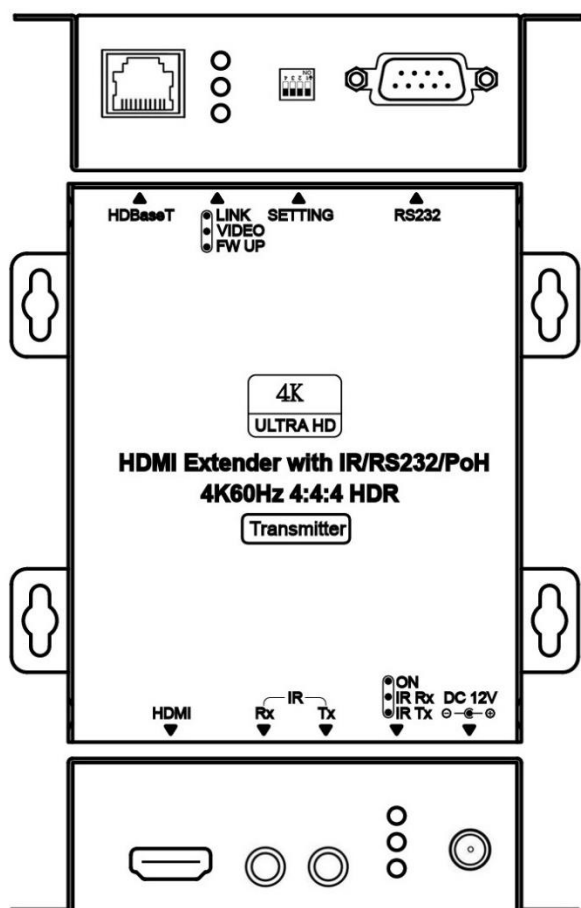
## RJ45 Define

### Video Link (TIA/EIA-568-B)

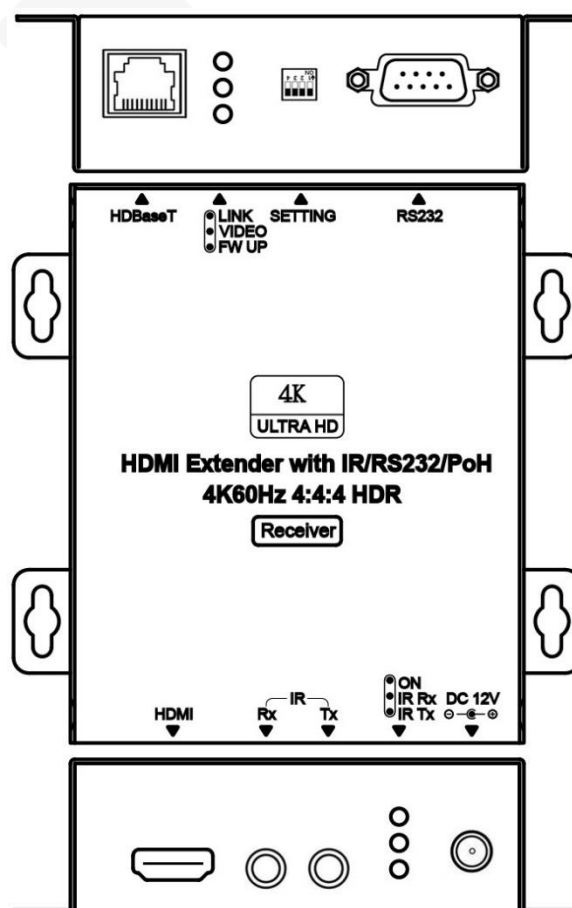
- |                 |         |
|-----------------|---------|
| 1. Orange-white | DATA0 + |
| 2. Orange       | DATA0 - |
| 3. Green-white  | DATA1 + |
| 4. Blue         | DATA2 + |
| 5. Blue-white   | DATA2 - |
| 6. Green        | DATA1 - |
| 7. Brown-white  | DATA3 + |
| 8. Brown        | DATA3 - |

## Panel view

### HE02EXPT



### HE02EXPR



## LED Instruction

Color	Status	HE02EXPT	HE02EXPR
GREEN	LINK	ON: HDBaseT Linking	
BLUE	Reserved	N/A	
RED	FW UP	ON: Firmware Update	

Color	Status	HE02EXPT	HE02EXPR
GREEN	ON	ON: Power normal	
BLUE	IR RX	ON: Receiving IR signal	
RED	IR TX	ON: Sending IR signal	

## Firmware updated Switch



1. Reserved
2. Manufacture Setting
3. Manufacture Setting
4. Manufacture Setting

## RS232 Define

### DB9 FEMALE

RS232	
Footprint	Define
Pin 2	TX
Pin 3	RX
Pin 5	GND

### DB9 MALE

RS232	
Footprint	Define
Pin 2	RX
Pin 3	TX
Pin 5	GND

## Package Include

HE02EXPT	x 1
HE02EXPR	x 1
DC12V 1.5A Adapter	x 1
IR Receiver Cable	x 1
IR Emitter Cable	x 1
Mounting Screw pack	x 2

## Trouble Shooting

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 Under HDMI 2.0 mode, must use Premium certified HDMI cable.
3. Under HDCP 2.2 mode: any one monitor HDCP authorization failed will cause no video status, other connecting monitors will be also failed. Then monitor testing must be one by one to find which monitor HDCP failed.
4. This device HDBaseT port is not general Ethernet signal; do not connect with Network devices to avoid damage.
5. IR transmitter do not put near from receiver to avoid mutual interference.

## Specification:

ITEM NO.	HE02EXPT	HE02EXPR
<b>Support</b>		
Compliance	HDMI 2.0, HDCP 2.2, 1.4, DVI	
Max. Video Resolution	4K@60Hz 4:4:4	
Max. Transmission Distance	90M over CAT6 or greater cable	
Video Bandwidth	18 Gbps	
RS232 Baud Rate	115200 bps/ Full Duplex	
Audio Format	7.1 LPCM 192KHz, Dolby TrueHD, DTS-HD MA	
IR Support	30-60Khz, $\pm 15^\circ$ , 5M, Bi-directional	30-60Khz, $\pm 55^\circ$ , 5M, Bi-directional
<b>Ports &amp; Interfaces</b>		
Video Input	1 x HDMI Type A	1 x HDBaseT
Video Output	1 x HDBaseT	2 x HDMI Type A
RS232 Interface	1 x DB9 Female	1 x DB9 Male
IR Interface	1 x 3.5mm Phone Jack	1 x 3.5mm Phone Jack
<b>Power</b>		
Power Supply	DC 12V 1.5A	DC 12V 1.5A
Power Consumption	5.4W (Max), 2W (Low Power)	7.32W (Max), 1.8W (Low Power)
<b>Ambient Temperature</b>		
Operation	0 to 55°C	
Storage	-20 to 85°C	
Humidity	up to 90%	
<b>Physical Characteristics</b>		
Dimensions	109.6 x 109.5 x 30mm	109.6 x 109.5 x 30mm
Weight	260g	275g