



HDMI over HDBaseT Extender

User Manual

Model : HE02EX

4K 60Hz 4:4:4 HDMI & IR/R232 CAT5e Extender 100M



Introduction

HE02EX is a 4K HDMI over HDBaseT™ extender that can use an Ethernet cable to send uncompressed HDMI, bi-directional IR and RS232 signals with resolution up to 4K@60Hz 4:4:4 and transmission distance up to 100M. Its TX unit has a built-in local loop out port that can connect with an extra HDMI display and its RX unit has dual HDMI outputs for signal distribution.

Features

- Resolution up to 4K@60Hz 4:4:4.
- Signal extension up to 100M over CAT5e/6 cable.
- Built-in local loop out for an extra HDMI display at TX side.
- Built-in dual HDMI outputs for HDMI displays at RX side.
- Supports bi-directional IR, RS232 transmission.
- Supports CEC, and EDID pass through.

Installation View



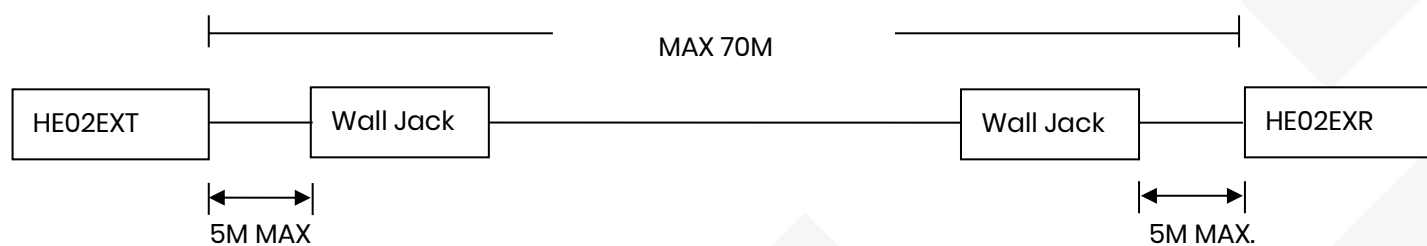
Cable

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 / CAT6	100m	Up to 1080p 60Hz 12bit
CAT6a / CAT7	100m	
CAT5e / CAT6	70m	Up to 4096x2160@60Hz 4:4:4
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



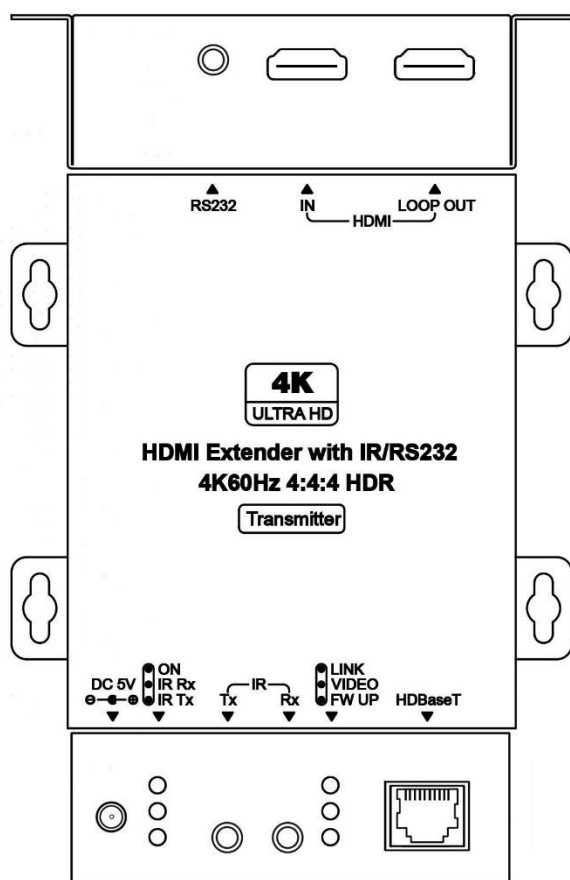
RJ45 Define

Video Link (TIA/EIA-568-B)

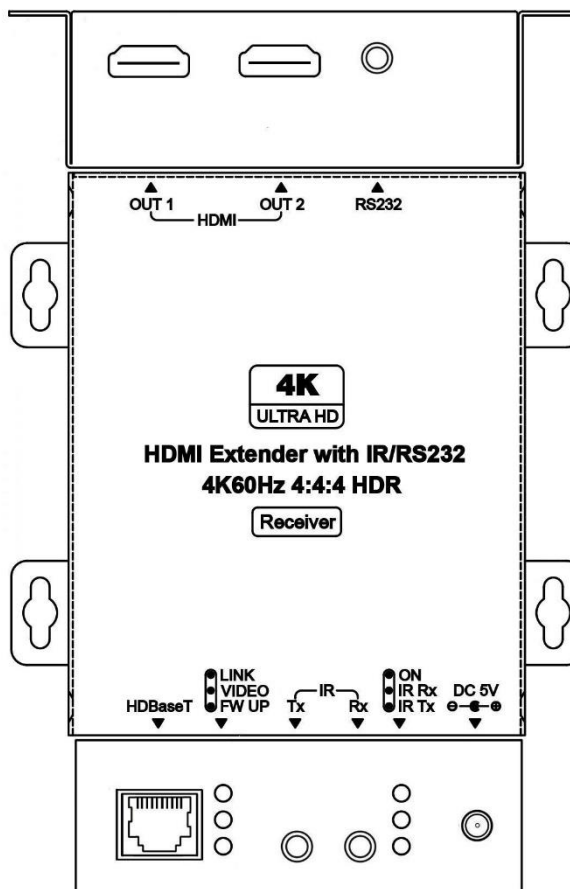
- | | |
|-----------------|---------|
| 1. Orange-white | DATA0 + |
| 2. Orange | DATA0 - |
| 3. Green-white | DATA1 + |
| 4. Blue | DATA2 + |
| 5. Blue-white | DATA2 - |
| 6. Green | DATA1 - |
| 7. Brown-white | DATA3 + |
| 8. Brown | DATA3 - |

Panel View

HE02EXT



HE02EXR

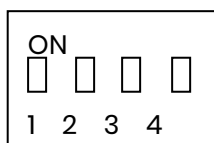


LED Instruction

Status	Color	HE02EXT	HE02EXR
LINK	GREEN	ON: HDBaseT Linking	
VIDEO	BLUE	ON: Input signal 4K@60Hz 4:4:4	
FW UP	RED	ON: Firmware Update	

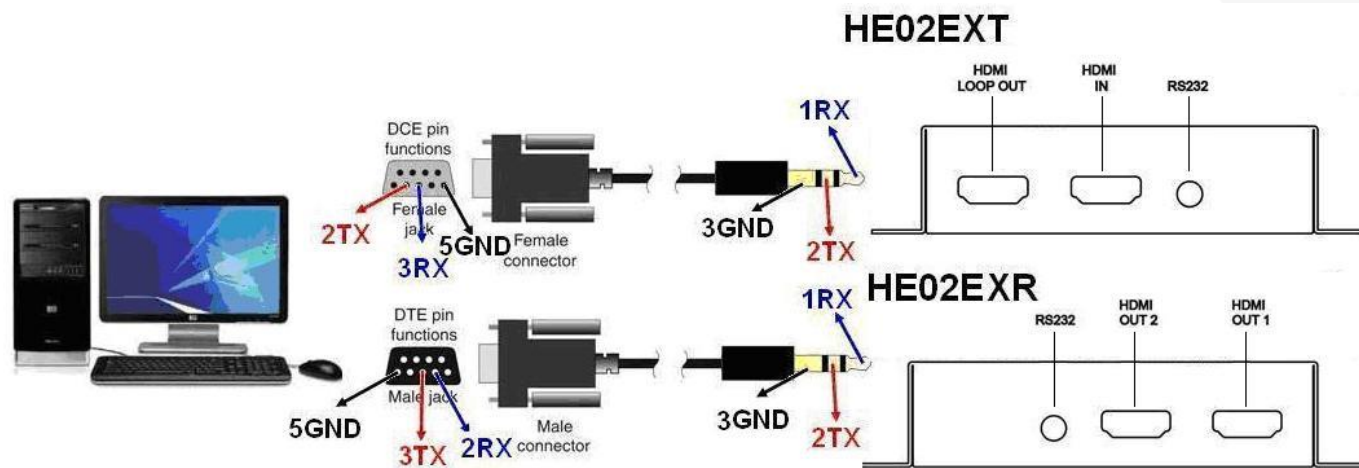
Status	Color	HE02EIXT	HE02EIXR
ON	GREEN	ON: Power normal	
IR RX	BLUE	ON: Receiving IR signal	
IR TX	RED	ON: Sending IR signal	

Firmware updated Switch



- | | |
|-------------------|--|
| 1. RS232 | ON: Firmware Update, OFF: RS232 Extender |
| 2. Reserve | Must Keep Off |
| 3. Low Power Mode | ON: Turn off power saving mode, OFF: Turn on power saving mode |
| 4. Reserve | Must Keep Off |

RS232 Define



DB9 (F)/3.5mm STEREO PHONE JACK

RS232		3.5 mm Phone Jack	
Footprint	Define	Footprint	Define
Pin 2	TX	Pin 1	RX
Pin 3	RX	Pin 2	TX
Pin 5	GND	Pin 3	GND

DB9 (M)/3.5mm STEREO PHONE JACK

RS232		3.5 mm Phone Jack	
Footprint	Define	Footprint	Define
Pin 2	RX	Pin 1	RX
Pin 3	TX	Pin 2	TX
Pin 5	GND	Pin 3	GND

Package Include

- | | |
|---------------------------------|-----|
| HE02EXT | x 1 |
| HE02EXR | x 1 |
| DC 5V 2A Adapter | x 2 |
| IR Receiver Cable | x 1 |
| IR Emitter Cable | x 1 |
| DB9 (M)/3.5mm STEREO PHONE JACK | x 1 |
| DB9 (F)/3.5mm STEREO PHONE JACK | 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 EDID pass through for HE02EXT transmitter input and HE02EXR receiver output 1 only.
4. CEC works for HE02EXT transmitter input and HE02EXR receiver output 1 only.
5. 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.
6. This device HDBaseT port is not general Ethernet signal; do not connect with Network devices to avoid damage.
7. IR transmitter do not put near from receiver to avoid mutual interference.

Specification

ITEM NO.	HE02EXT	HE02EXR
Support		
Compliance	HDMI 2.0, HDCP 2.2, 1.4, DVI	
Max. Video Resolution	4K@60Hz 4:4:4	
Max. Transmission Distance	100M over CAT6 or greater cable	
Video Bandwidth	18 Gbps	
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
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
RS232 Interface	1 x DB9(F)/ 3.5mm Stereo Phone Jack	1 x DB9(M)/ 3.5mm Stereo Phone Jack
IR Interface	1 x 3.5mm Phone Jack	1 x 3.5mm Phone Jack
Power		
Power Supply	DC 5V 2A	DC 5V 2A
Power Consumption	1A (Max), 263mA (Low Power)	1.6A (Max), 324mA (Low Power)
Ambient Temperature		
Operation	0 to 55°C	
Storage	-20 to 85°C	
Humidity	up to 95%	
Physical Characteristics		
Dimensions	109.6 x 109.5 x 30mm	109.6 x 109.5 x 30mm
Weight	270g	285g