

HDMI (HDBaseT) CAT5 Extender Series

ITEM NO.: HE02EX 4K 60Hz 4:4:4 HDMI & IR/RS232 CAT5e Extender

HE02EX HDMI CAT5 Extender is using only one cost effective CAT5E/6 cable to extend your 4K UHD 60Hz 4:4:4 display up to 100M. With Bi-directional RS232 and IR function to delivers significant value to the entire home and commercial entertainment system.

HE02EX 4K 60Hz 4:4:4 HDMI with IR/RS232 CAT5e Extender

- Extends HDMI 4K UHD, RS232 and IR signal over one CAT5e/6 cable.
- **HDMI 2.0, HDCP 2.2/1.4 & DVI Compliant.**
- **Support 4K UHD capability@60Hz with 4:4:4, HDR.**
- **Support 1080p@60Hz@48bits at 100M, 4K@60hz at 70M.**
- Transmitter built in local loop out for local display.
- Receiver built in dual HDMI output for two output display.
- Audio supports up to LPCM 7.1 @ 192KHz, Dolby TrueHD, DTS-HD MA
- Bi-directional IR, support 30-60khz.
- Bi-Directional RS232.
- Support CEC, EDID pass through
- 18Gbps (6Gbps per color)

Installation view:



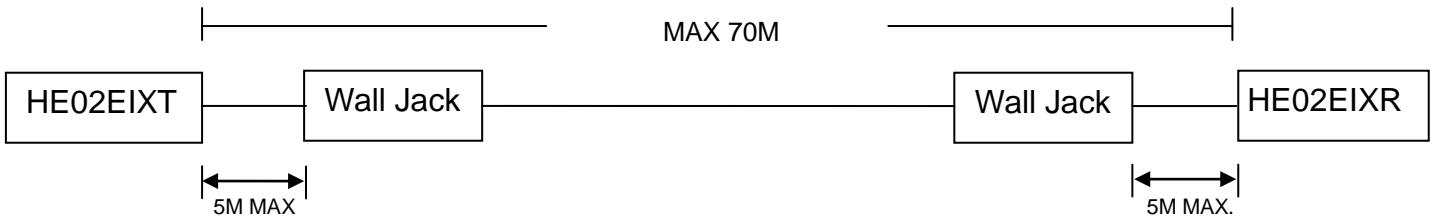
Cable:

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



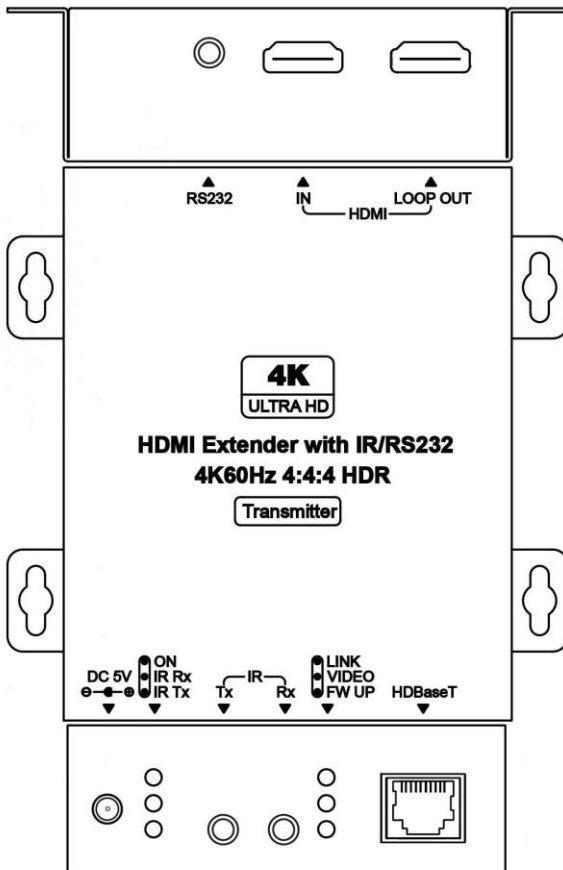
RJ45 Define:

Video Link (TIA/EIA-568-B)

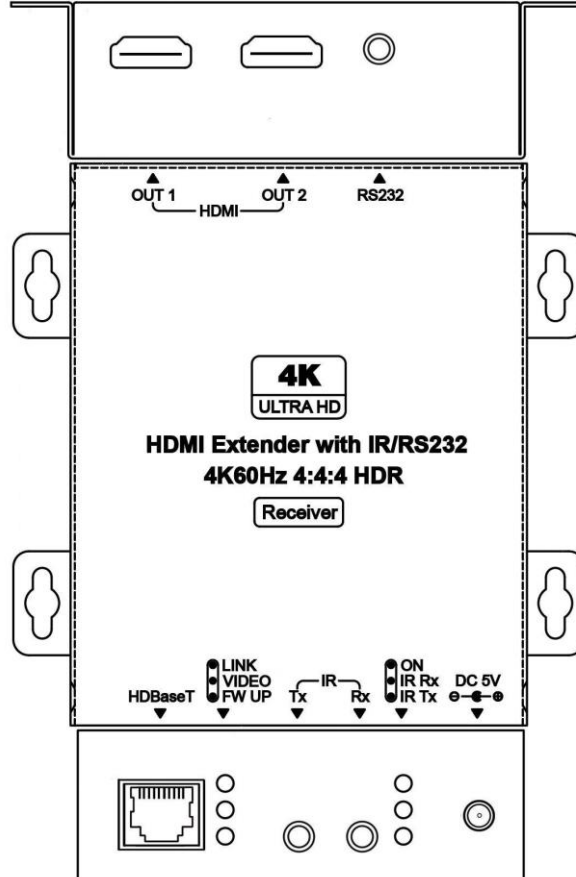
- | | |
|-----------------|---------|
| 1. Orange-white | DATA0 + |
| 2. Orange | DATA0 - |
| 3. Green-white | DATA1 + |
| 4. Blue | DATA2 + |
| 5. Blue-white | DATA2 - |
| 6. Green | DATA1 - |
| 7. Brown-white | DATA3 + |
| 8. Brown | DATA3 - |

Panel view:

HE02EXT



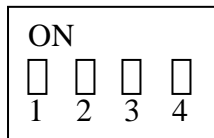
HE02EXR



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	

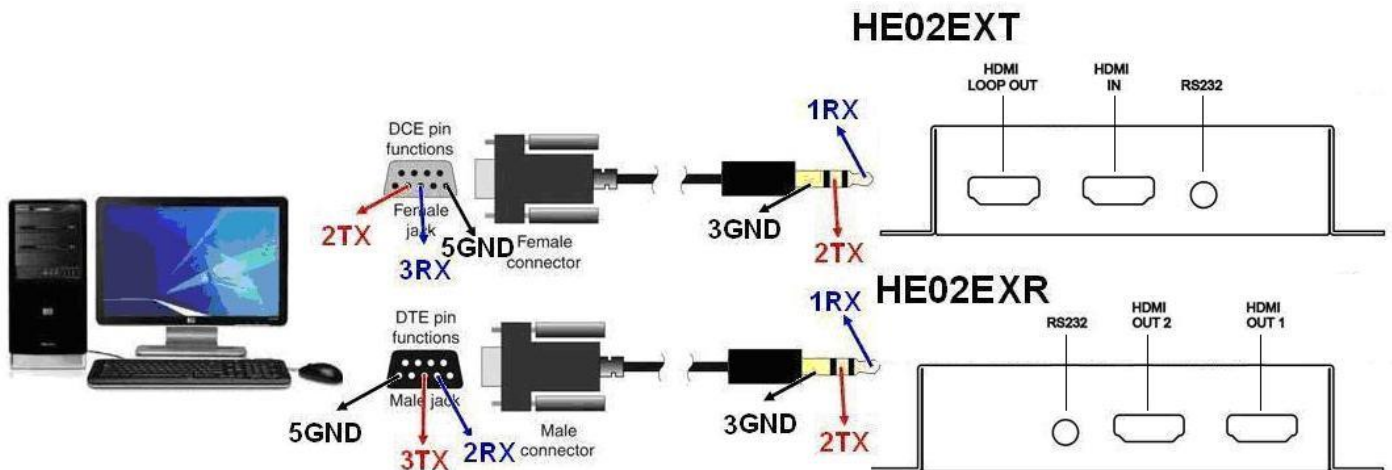
Firmware updated Switch:



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 (M)/3.5mm STEREO PHONE JACK Cable (Optional Order)



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
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
HDMI Input Connector	HDMI Type A x 1	X
HDMI Output Connector	HDMI Type A x 1	HDMI Type A x 2
HDMI Video Support	1080p @ 60Hz @ 48bpp · 3D · 4K/60Hz/4:4:4	
HDMI Audio Support	Up to 7.1 LPCM 192KHz / Dolby TrueHD / DTS-HD MA	
HDBaseT Connector	RJ45 x 1	
HDBaseT Distace	100M	
RS-232 Connector	DB9(F)/3.5mm STEREO PHONE JACK	DB9(M)/3.5mm STEREO PHONE JACK
RS-232 Baud Rate	115200 bps / full duplex	
IR Input/Output	3.5mm Phone Jack x 2	
IR Carrier Frequecnny/Angle/Distance	30~60KHz / T : ± 10° / R : ± 55° / 5M /Bi-directional	
Power Consumption	1Amp, Low Power: 263mA	1.6Amp, Low Power: 324mA
Power Adapter	DC 5V 2A	
Temperature	Operation: 0 to 55°C, Storage: -20 TO 85°C, Humidity: up to 95%	
Dimensions mm	109.6 x 109.5 x 30	
Weight g	270	285



Rev. A