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User Manual

4K@120Hz HDMI EXTENDER



HIGH-DEFINITION MULTIMEDIA INTERFACE

The terms HDMI, HDMI High-Definition Multimedia Interface, HDMI Trade dress and the HDMI Logos are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.

• Important Safety Instructions

1. To prevent electric shock, please ensure that all apparatus is properly grounded.
2. Do not place this apparatus near or over a radiator or heat register, or where it is exposed to direct sunlight.
3. Place the device in a well-ventilated area, do not block any ventilation openings.
4. Do not expose this apparatus to rain or place it near water. Any liquid that goes into the apparatus may cause a failure, fire, or electric shock.
5. Do not place the device on an uneven or unstable surface. The device may fall resulting in a malfunction.
6. Never insert anything metallic into the open parts of this apparatus. This may cause a danger of electric shock.
7. If a three-party power supply is used, please ensure that the power supply specifications meet the product requirements.

• Introduction

Featuring an HDMI transmitter and an HDMI receiver, this product achieves zero latency transmission via CAT6/6A/7 network cable of UHD audio and video signals. It supports 4K@60Hz video signal transmission up to 60 meters and 25 meters for 4K@120Hz. A variety of applications can be achieved with this kit, such as education, training, conferences, etc.

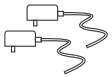
• Features

1. Zero latency transmission.
2. Support up to 4K@120Hz resolution, backward compatible.
3. Compatible with Cat6/6A/7network cable, transmission distance up to 60 meters for 4K@60Hz signal and 25 meters for 4K@100/120Hz signal.
4. Support RS-232 passthrough.
5. Support IR passback (20~60kHz).
6. Support HDR.
7. Support EDID passthrough and auto downscaling.
8. The receiver supports 3.5mm stereo output.
9. Lightning protection, surge protection, ESD protection.

• Package Contents


Transmitter x1


Receiver x1


DC5V/1A x2


User manual x1


IR receiver extension cable x1


IR blaster extension cable x1


Mounting ear x4

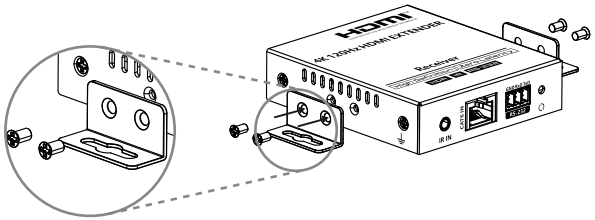

Screw x10


Terminal block (RS-232) x2

• Installation Requirements

Item	Description	Requirement
Signal source	Devices with HDMI port (PC, DVD, NVR, etc.)	HDMI cable ≤5m
Cable	CAT6/6A/7，following standard IEEE-568B	CAT6/6A/7≤60m
Display device	TVs, projectors, etc. with HDMI port	HDMI cable ≤5m

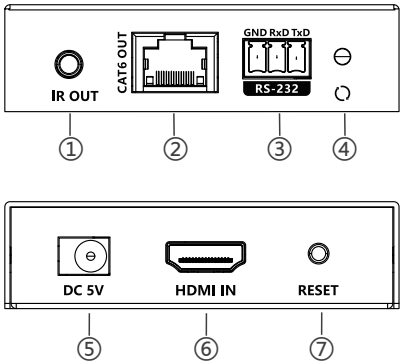
• Wall Mounting



Install the mounting ears on the unit according to the diagram, and select the wall mounting position to fix it.

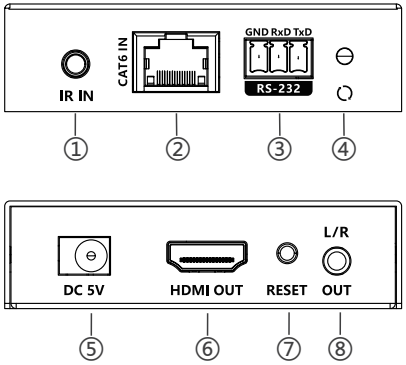
• Panel Description

1. Transmitter



①	IR output	Connect with IR blaster extension cable
②	RJ45 output	Connect with CAT6/6A/7 network cable
③	RS-232 (GND/RxD/TxD)	Used for RS-232 passthrough
④	Status indicator	When there is power and no HDMI signal, the indicator will flash, when there is HDMI signal, the indicator will light solid
⑤	DC 5V	Connect with DC 5V power adapter
⑥	HDMI input	Connect with HDMI source device with HDMI cable
⑦	Reset	Press to restart the device

2. Receiver



①	IR input	Connect with IR receiver extension cable
②	RJ45 input	Connect with CAT6/6A/7 network cable
③	RS-232 (GND/RxD/TxD)	Used for RS-232 passthrough
④	Status indicator	When there is power and no HDMI signal, the indicator will flash, when there is HDMI signal, the indicator will light solid
⑤	DC 5V	Connect with DC 5V power adapter
⑥	HDMI output	Connect with HDMI display device with HDMI cable
⑦	Reset	Press to restart the device
⑧	3.5mm stereo output	Connect with earphone or speaker

• Installation Procedures

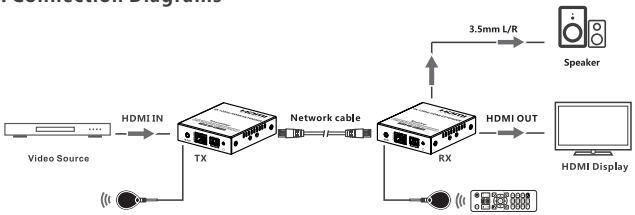
1. How to make a network cable



Follow the standard of IEEE-568B:

1-white and orange 2-orange 3-white and green 4-blue
5-white and blue 6-green 7-white and brown 8-brown

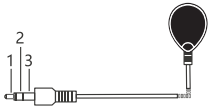
2. Connection Diagrams



3. Connection Instructions

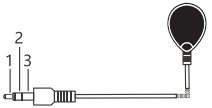
1) Connect the source device to the HDMI IN port of the transmitter with an HDMI cable, and connect the HDMI OUT port of the receiver to the display device with another HDMI cable.
2) Use a Cat6/6A/7 cable to connect the RJ45 port of the transmitter and receiver.
3) If using IR passthrough, the IR blaster extension cable should plug in the IR OUT port of the transmitter, the IR receiver extension cable should plug in the IR IN port of the receiver.
4) If you need to output audio additionally, connect the speaker to the L/R port with a 3.5mm stereo audio cable.
5) Plug the power supply into the devices to get started.

4. IR User Guide



IR blaster

1. Power
2. IR Signal
3. Null



IR receiver

1. Power
2. IR Signal
3. Grounding

1) IR blaster extension cable should plug in the IR OUT port of the transmitter or receiver, IR receiver extension cable should plug in the IR IN port of the transmitter or receiver.
2) The emitter of the IR blaster extension cable should be as close as possible to the IR receiving window of the source device.
3) Point the remote control at the receiving head of the IR receiver extension cable to operate.

Note: IR passback and RS-232 passthrough cannot be used or connected simultaneously to avoid interference.

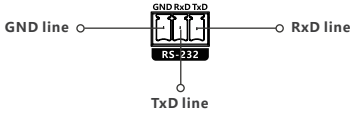
5. RS-232 bi-directional passback function:

5.1 Baud rate

Different encoding mechanisms cannot be mixed, the baud rate of the RS-232 port of this transmitter and receiver is 2400, 4800, 9600, 19200, 38400, 57600, 115200.

5.2 Line order

Make sure the RS-232 serial line is firmly connected and that the serial data line is connected correctly as follows:



If the RS-232 serial does not work by following the above connection, please try to change the order of the TXD line and RXD line.

• FAQ

Q: The devices are connected correctly, but why is there no image displayed?

A: 1) Please make sure the HDMI cable meets the transmission requirements. (e.g. 4K HDMI cable)
2) Please check and make sure the network cable is connected well.
3) Restart the transmitter or receiver by pressing the reset button.

Q: Why does the display occasionally have a black screen?

A: 1) Check if the length of the cable is within the specified range.
2) Reset the transmitter or receiver to re-built the connection.

Q: Why is the display color abnormal or no sound?

A: 1) Reset the transmitter or receiver to re-built the connection.
2) Check if the HDMI cables are connected well.
3) Reconnect the network cable.

Technical Parameters

Item	Transmitter	Receiver
Video Signal		
Input interface	1x HDMI	1x RJ45
Output interface	1x RJ45	1x HDMI
HDMI Length	≤5m	≤5m
Maximum transfer rate	18Gbps	
Compatibility	HDMI 2.0	
	HDCP 2.2, HDCP 1.4	
Resolutions	1280x720, 1280x960, 1366x768, 1440x900, 1680x1050, 1920x1080, 1920x1200, 720p@50/60Hz, 1080i@50/60Hz, 1080p@24/25/30/50/60/120Hz, 2560x1440@50/60/120/144Hz, 3840x2160@24/25/30/50/60/100/120Hz, 4096x2160@24/25/30/50/60Hz	
Connection types	One-to-one connection	
Transmission distance	CAT6/6A/7: 4K@60Hz≤60m 2560×1440@144Hz≤30m 4K@120Hz≤25m	
Audio		
Input interface	1x HDMI	N/A
Output interface	N/A	1x HDMI 1×3.5mm L/R
HDMI out	PCM, DolbyDigital 5.1, DTS 5.1	
3.5mm L/R output	PCM	
Command Signal		
IR interface	1x 3.5mm IR out	1x 3.5mm IR in
IR receiving range	≤5m	

IR frequency	20kHz~60kHz	
RS-232 (GND/RxD/TxD)	Support baud rate: 2400, 4800, 9600, 19200, 38400, 57600, 115200	
Power		
Power supply	DC 5V/1A	DC 5V/1A
Power consumption	TX ≤ 3W	RX ≤ 3W
Operating Environment		
Working temperature	-20℃~70℃	
Storage temperature	-30℃~70℃	
Humidity	0~90%RH (no condensation)	
Physical Properties		
Housing	Iron	
Weight	TX: 185g	RX: 185g
Color	Black	
Dimensions	85.0(L)*76.0(W)*20.6(H)mm	
Protection	ESD protection 1a Contact discharge level 2 (±4KV) 1b Air discharge level 3 (±8KV) Implementation of the standard: IEC61000-4-2	
	Lightning protection, surge protection	