Disclaimer

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User Manual

4K 60Hz HDMI KVM 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) Do not expose this device to rain or place it near water. Any liquid that goes into the device may cause a failure, fire, or electric shock.
2) Never insert anything metallic into the open parts of this device. This may cause a danger of electric shock.
3) Do not place this device near or over a radiator or heat register, or where it is exposed to direct sunlight.
4) The device should be repaired only by a qualified technician.
5) If a third-party power supply is used, please ensure that the power supply specifications meet the product requirements.

• Introduction

This product is a 4K@60Hz HDMI KVM extender kit consisting of a transmitter and a receiver, using ipcolor STREAM technology for high-definition, low-latency transmission. The 4K@60Hz HDMI signal can be extended up to 120m via category 6 and above network cables, supporting one-to-one connection, one-to-many connection via gigabit switch, or switch cascading. It also supports HDMI loop out, KVM, and RS-232 passthrough, and can be widely used in meetings, home entertainment, educational presentations, and other fields.

• Features

1. Adopting ipcolor STREAM technology can realize high-definition and low-latency transmission.
2. Supports up to 3840 x 2160@60Hz resolution, backwards compatible.
3. Compatible with Cat5/5e/6 or above network cables, transmission distance of Cat6 cable is 120 meters.
4. Supports one-to-one or one-to-many connections through the gigabit switch.

5. Supports RS-232 passthrough.
6. The transmitter supports HDMI loop out.
7. Supports KVM control signal passback.
8. The receiver supports USB2.0 devices such as USB flash drives, cameras, and touch screen devices (Due to network/USB bandwidth limitations, it does not support the simultaneous insertion of two or more USB flash drives or cameras).
9. The transmitter has a 3.5 mm audio input for sound embedding, the receiver has an independent 3.5 mm audio output.
10. Firmware can be upgraded through Micro USB.
11. Lightning protection, surge protection, ESD protection.
12. Supports stable 24/7 operation.

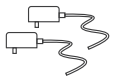
• Package Contents



Transmitter x1



Receiver x1



DC5V/2A
Power adapter x 2



User manual x1



Mounting ear x4



Screw x10



Grounding
Screw x2



Terminal block
(RS-232) x2

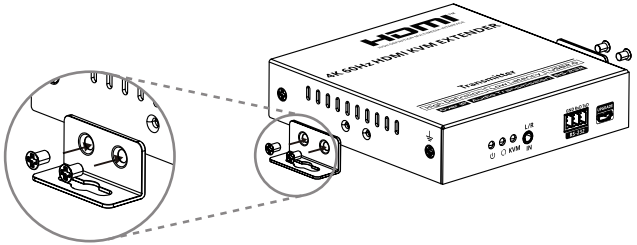


USB cablex1

• Installation Requirements

Item	Description	Requirement
Signal source device	PC, DVD, NVR, etc. with HDMI port	HDMI cable ≤ 5m
Cable	Cat5/5e/6 or above, following standard IEEE-568B	Cat6/6A/7 ≤ 120m
Display device	TV, projector, LED screen, etc. with HDMI port	HDMI cable ≤ 5m
Network switch	one-to-many or switch cascading	Gigabit switch

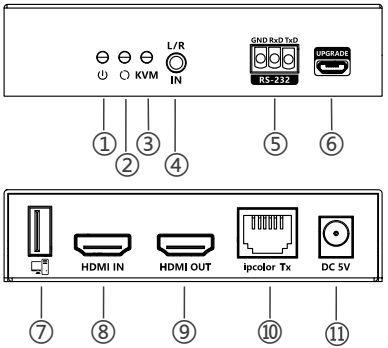
• Wall Mounting



Note: Choose the wall mounting position and attach the mounting ears to the unit according to the diagram.

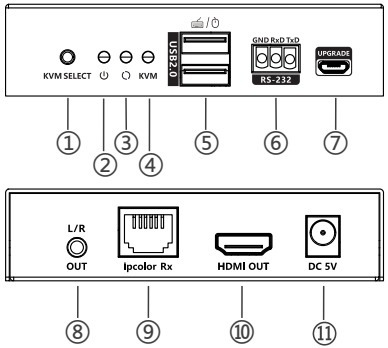
• Panel Description

1. Transmitter



①	Power indicator	The indicator will turn on when the power is turned on
②	Status indicator	1) **Light off**: The transmitter and the receiver have not established a connection 2) **Slow flash**: The transmitter and the receiver are connected but no video data transmission (gigabit Ethernet) 3) **Quick flash**: The transmitter and the receiver are connected but no video data transmission (100M Ethernet) 4) **Steady on**: The video data is transmitting
③	KVM indicator	1) **Light flashing**: The USB data is transmitting 2) **Steady on**: The computer and the USB port are connected
④	L/R IN	Connect to the audio source device with 3.5mm stereo audio cable
⑤	RS-232 (GND/RXD/TXD)	Used for RS-232 passthrough
⑥	Micro USB port	Used for firmware upgrading
⑦	USB-A port	Connect to the computer with USB cable
⑧	HDMI in	Connect with HDMI source device
⑨	HDMI out	Connect with local HDMI display device
⑩	ipcolor Tx (RJ45)	Connect with the network cable
⑪	DC 5V	Connect with DC5V/2A power adapter

2. Receiver



①	KVM SELECT	Press the button to enable the KVM function (Especially in the one-to-many situation)
②	Power indicator	The indicator will turn on when the power is turned on

③	Status indicator	1) **Light off**: The transmitter and the receiver have not established a connection 2) **Slow flash**: The transmitter and the receiver are connected but no video data transmission (gigabit Ethernet) 3) **Quick flash**: The transmitter and the receiver are connected but no video data transmission (100M Ethernet) 4) **Steady on**: The video data is transmitting
④	KVM indicator	1) **Light flashing**: The USB data is transmitting 2) **Steady on**: Connected KVM with transmitter
⑤	USB2.0 port	1) Connect the mouse and the keyboard 2) Connect USB2.0 devices such as USB flash drives, cameras, and touch screen
⑥	RS-232 (GND/RXD/TXD)	Used for RS-232 passthrough
⑦	Micro USB port	Used for firmware upgrading
⑧	L/R OUT	Connect to the audio device with 3.5mm stereo audio cable
⑨	ipcolor Rx (RJ45)	Connect with the network cable
⑩	HDMI out	Connect with HDMI display device
⑪	DC 5V	Connect with DC5V/2A power adapter

• Installation Procedures

1. How to make a network cable

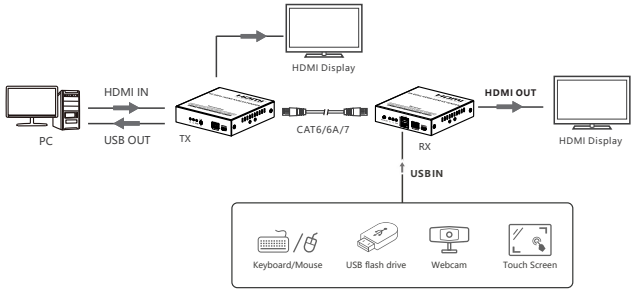


Follow the standard of IEEE-568B:

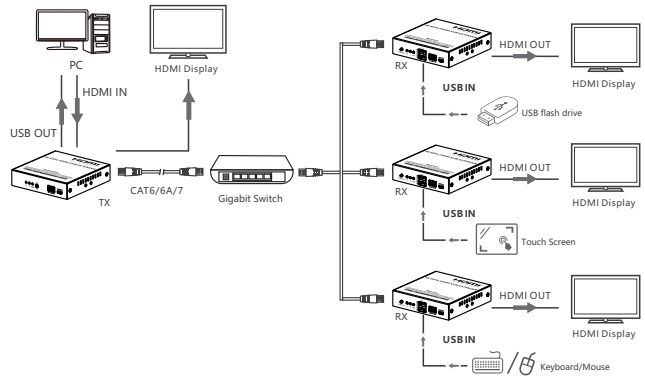
1-white and orange 2-orange 3-white and green 4-blue
5-white and blue 6-green 7-white and brown 8-brown

2. Connection Diagrams

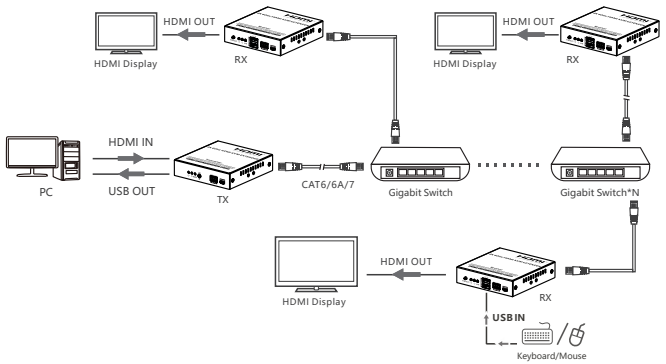
2.1 One-to-one connection



2.2 One-to-many connection (through gigabit switch):



2.3 One-to-many connection (cascade of gigabit switches):



Note: It is suggested to use gigabit (1000 Mbps) switches in LAN transmission.

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) If it's a one -to -one connection, use a network cable to connect the RJ45 port of the transmitter and receiver. If it is a one -to - many connection, use the gigabit switch as a bridge to connect the transmitter and the receivers with the network cable respectively.

3) If using HDMI loop out, connect the display device to the HDMI OUT port of the transmitter.
4) If using the USB function, connect the keyboard/ mouse/USB flash drives/cameras/touch screen to the USB2.0 port of the receiver and connect the computer to the USB port of the transmitter via the USB cable.
5) If you need to output additional audio sources from the receiver or extend only L/R stereo audio, connect the receiver's L/R OUT port to the audio device using a 3.5mm stereo audio cable.*
6) Plug the power supply into the devices to get started.

*

a. When the HDMI IN port of the transmitter is connected and the L/R IN port is not connected, the HDMI audio source can output from the HDMI OUT and L/R OUT ports of the receiver simultaneously.
b. When the HDMI IN port and the L/R IN port of the transmitter is both connected, the L/R stereo audio source can output from the HDMI OUT and L/R OUT ports of the receiver simultaneously.
c. When the L/R IN port of the transmitter is connected and the HDMI IN is not connected, it can be used as an audio extender, the L/R stereo audio source can only output from the L/R OUT port of the receiver.

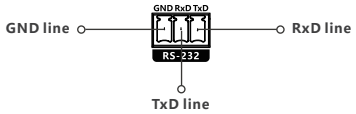
4. RS-232 function:

4.1 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.

4.2 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.

4.3 Check baud rate

If you need to check the baud rate, set the baud rate value of the serial port test tool to the default value of 115200, connect the serial port test tool to the product, and then power on the product. The baud rate printed at this time is the current baud rate. For example:
"Baudrate:9600", that is, the baud rate value is 9600.

4.4 Set baud rate

For example: the baud rate of the product is 9600, and the baud rate of the serial port test tool is 115200. At this time, the baud rate of the serial port test tool must be set to 9600, which is consistent with the product, and then input the command you want to set "Bset:19200", if "Succeed" is displayed after sending data, the baud rate 19200 is set successfully.

• FAQ

Q: Why the status indicator is off?
A: Please check whether all equipment is powered on and the network cable is connected properly.

Q: Why is the status indicator has been flashing?
A: 1) Please check whether there is HDMI signal input for the TX.
2) Try to connect the signal source directly to the display device, or try to change the signal source and HDMI cable and test again.

Q: Why is the output image unstable?
A: 1) Check whether the length of the network cable is within the specified range.
2) The length of HDMI cable is recommended to be ≤ 5 meters.
3) Press the "reset" button on TX and RX panels to restart and reconnect.

• Technical Parameters

Item	Transmitter	Receiver
Video		
Input interface	1x HDMI	1x RJ45
Output interface	1x HDMI 1x RJ45	1x HDMI
HDMI length	≤ 5m	≤ 5m
Maximum transfer rate	18Gbps	
Compatibility	HDMI 2.0	
	HDCP 1.4/HDCP 2.2	
Resolutions	3840x2160@24/30/50/60Hz, 1080p@50/60Hz, 720p@50/60Hz, 1920x1200@60Hz, 2560x1440@60Hz	
Connection types	One-to-one connection One-to-many connection Switch cascading	
Transmission distance	Cat6/6A/7≤120m	
Transmission latency	80~140ms	
Audio Signal		
Input interface	1x HDMI 1x 3 . 5mm L/R	1x RJ45
Output interface	1x HDMI 1x RJ45	1x HDMI 1x 3.5mm L/R
HDMI output	LPCM 2.0	
3. 5mm L/R output	PCM	
Command Signal		
RS-232 (GND/RXD/TXD)	Default baud rate: 115200 Supported: 2400, 4800, 9600, 19200, 38400, 57600, 115200	

USB devices		
USB1.1	Mouse and keyboard	
USB2.0	USB2.0 flash drives, cameras, touch screen	
Power		
Power Supply	DC 5V/2A	DC 5V/2A
Power Consumption	TX ≤ 5.5W	RX ≤ 4W
Operating Environment		
Working temperature	- 20℃~60℃	
Storage temperature	- 30℃~70℃	
Humidity	0~90%RH (no condensation)	
Physical Properties		
Housing	Iron	
Weight	TX: 311g	RX: 302g
Color	Black	
Dimensions	106.0(L)*103.0(W)*25(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	