User Manual

4K 60Hz HDMI OVER IP MATRIX

HIGH-DEFINITION MULTIMEDIA INTERFACE

• 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.

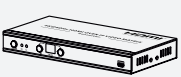
• Introduction

This 4K@60Hz HDMI over IP matrix kit, including a transmitter and a receiver, realizing switching, extending and distributing 4K@60Hz audio and video signals via the IGMP switch. Built on ipcolor STREAM™ technology to deliver high-definition and low-latency transmission. The transmitter can extend 256 signal sources and switch to 256 receiving terminals. The HDMI signal can be extended up to 120 meters over Category 6 or higher-level networking cables while supporting one-to-one connection and many-to-many connection. Widely used in audiovisual conference, transportation control center, radio and television, education and training and other fields.

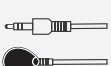
• Features

1. Built on ipcolor STREAM™ technology to deliver high-definition and low-latency transmission.
2. Supports up to 3840 x 2160@60Hz resolution, backwards compatible.
3. Compatible with Cat5e/6 or higher-level networking cables, transmission distance of Cat6 cable is 120 meters.
4. Supports one-to-one or many-to-many connections through the gigabit switch.
5. Supports IR pass-back(20 ~ 60KHz);
6. Creating multi-screen splicing with up to 5x5 (also include 1x1/1x2/1x3/1x4/1x5/2x1/2x2/2x3/2x4/2x5/3x1/3x2/3x3/3x4/3x5/4x1/4x2/4x3/4x4/4x5/5x1/5x2/5x3/5x4/5x5) video wall through switch and controlled by APP.
7. Supports 256 signal source inputs and 256 signal outputs, providing flexible many-to-many matrix configuration (Require APP control operation while connecting more than 100 TX-to-RXs).
8. Firmware upgrading via Micro USB port.
9. Lightning protection, surge protection, ESD protection.
10. Supports stable 24/7 operation.

• Package Contents

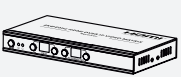


Transmitter x1

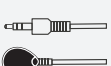


IR blaster extension cable x1

OR



Receiver x1



IR receiver extension cable x1

User manual x1

Mounting ear x2

Screw x5

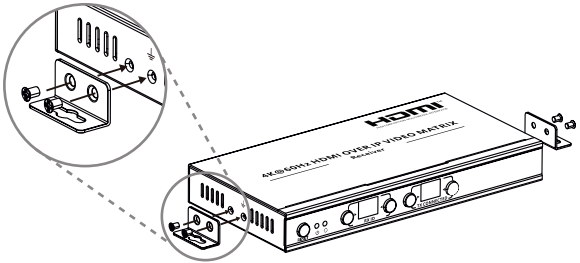
Grounding
Screw x1

DC5V/2A
Power adapter x 1

• Installation Requirements

Item	Description	Requirement
Signal source device	PC, DVD, NVR, etc. with HDMI port	HDMI cable ≤ 5m
Cable	Cat5e/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 cascade	IGMP Gigabit switch
Router	Use the APP to control the product while in the same network	Gigabit bandwidth or higher

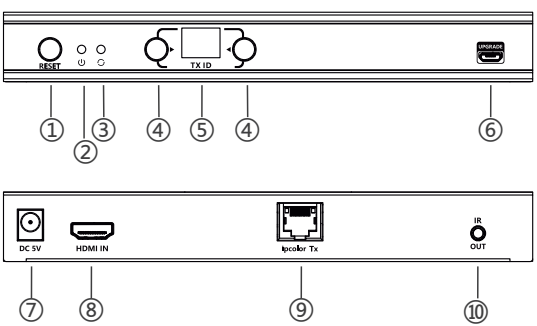
• Wall Mounting



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

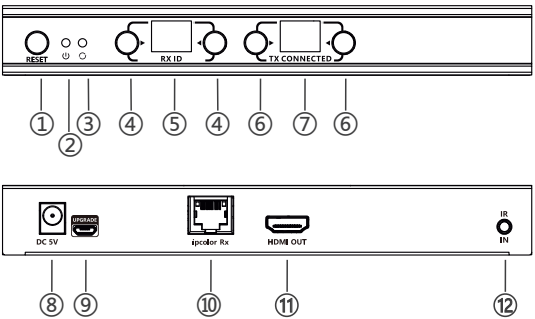
• Panel Description

1. Transmitter(Tx)



①	Reset	1) Press to restart the device 2) Press and hold for 5 seconds to restore factory settings
②	Power indicator	Indicator lights up when power is applied
③	Status indicator	1) Light off: The transmitter and the receiver have not established a connection 2) Flash: The transmitter and the receiver are connected but no video data transmission 3) Steady on: The video data is transmitting
④	Transmitter ID setting button	Set up the ID of the transmitter When using more than one TX, you need to change the TX ID to a different number, such as 01/02/03
⑤	Transmitter ID indicator	Indicate the ID of the transmitter
⑥	Micro USB port	For firmware upgrading
⑦	Power	Connect with DC5V/2A power adapter
⑧	HDMI input	Connect with HDMI source device
⑨	ipcolor Tx	Connect with CAT5e/6 or higher-level networking cables
⑩	IR output	Connect with IR blaster extension cable

2. Receiver(Rx)



①	Reset	1) Press to restart the device 2) Press and hold for 5 seconds to restore factory settings
②	Power indicator	Indicator lights up when power is applied
③	Status indicator	1) Light off: The transmitter and the receiver have not established a connection 2) Flash: The transmitter and the receiver are connected but no video data transmission 3) Steady on: The video data is transmitting
④	Receiver ID setting button	Set up the ID of the receiver
⑤	Receiver ID indicator	Indicate the ID of the receiver
⑥	Transmitter connected ID setting button	Set the ID of the transmitter connected

⑦	Transmitter connected ID indicator	Indicate the ID of the transmitter connected
⑧	Power	Connect with DC5V/2A power adapter
⑨	Micro USB port	For firmware upgrading
⑩	ipcolor Rx	Connect with CAT5e/6 or higher-level networking cables
⑪	HDMI output	Connect with HDMI display device
⑫	IR input	Connect with IR receiver extension cable

• Installation Procedures

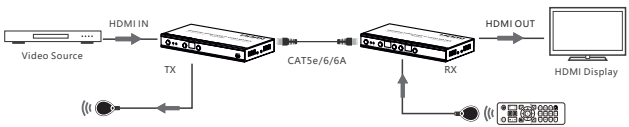
1. How to make a network cable

Follow the standard of IEEE-568B:

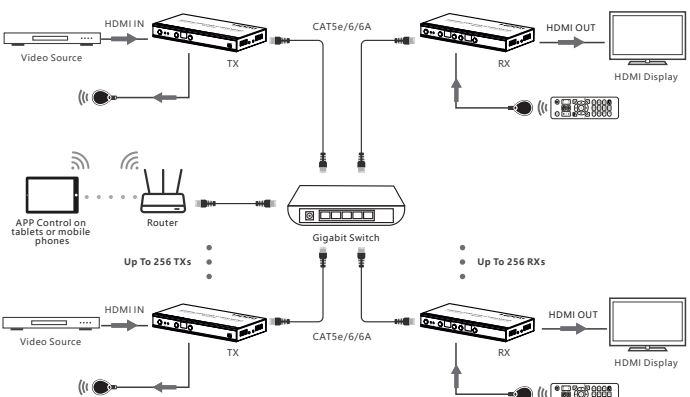
1-white and orange 2-orange 3-white and green 4-blue
5-white and blue 6-green 7-white and brown 8-brown

2. Connection Diagrams

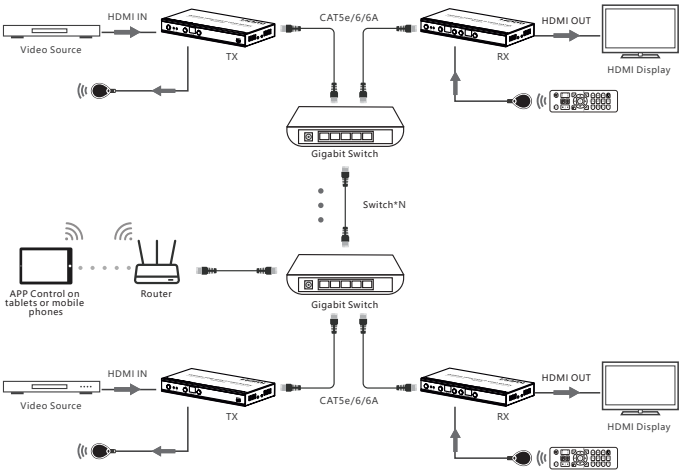
2.1 One-to-one connection



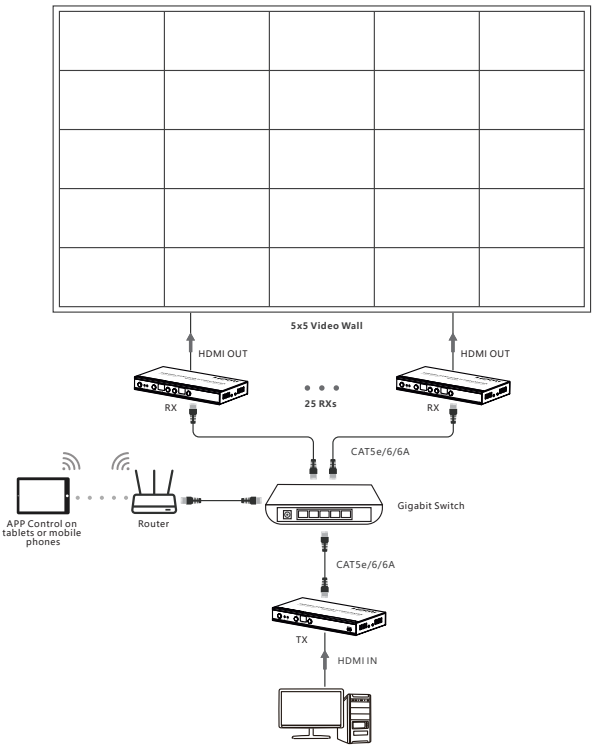
2.2 Many-to-many connection (through gigabit switch):



2.3 Many-to-many switch cascade connection (through gigabit switch):



2.4 Creating multi-screen splicing with up to 5x5 video wall through switch and controlled by APP.

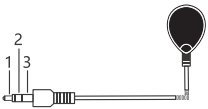


Note: It is suggested to use gigabit (1000 Mbps) IGMP switches in LAN transmission. DO NOT mix 100Mbps and gigabit switches when using switches cascading. The capacity of connecting transmitters and receicers units when using switch cascading depends on the switch bandwidth.

3. Connection Instructions

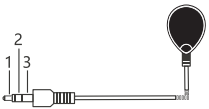
1) Connect the source device to the HDMI IN port of the transmitter with an HDMI cable, and connect the HDMI OUT port of the receiver to the display device with another HDMI cable.
2) If the connection is one-to-one, connect the RJ45 port of the transmitter and receiver with a Ethernet cable. If the connection is one-to-many, utilize the IGMP gigabit switch as a bridge to connect the transmitter and receivers with Ethernet cables.
3) IR pass-back: insert the IR blaster extension cable into IR OUT and the IR receiver extension cable into IR IN.
4) 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, IR receiver extension cable should plug in the IR IN port of the 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.

5. ID control

Adjust the ID indicator value of the LED display by pressing the buttons on the left and right of "TX ID"  on the transmitters, and "RX ID"  and "TX CONNECTED"  on the receivers.

The left button controls the left digit, and the right button controls the right digit (the original display value of "00", after pressing both the left and right button, the display value of the LED display changes to "11").

The connection is established when the display value of "TX ID" on the transmitters is the same as that of "TX CONNECTED" on the receivers.

Short press: Set the IGMP group and display the settled value, the product automatically switches to the corresponding IGMP group after 5 seconds pressing.

6. Computer software control

6.1 Network access

Connect your PC/computer with the off-the-shelf IGMP Ethernet switch via a single Ethernet cable.

6.2 PC/computer setting

Set the PC/computer's IP to 192.168.1.xxx (xxx can be 0 to 255), which as same as the IP segment of TX unit and RX unit.

6.3 Web download

Download iMCS Control from the website:

https://www.ipcolor.org/download.html

or scan the QR code below via a browser to download

6.4 Web operation

Open the application program "iMCS Control", the interface display as Figure 1

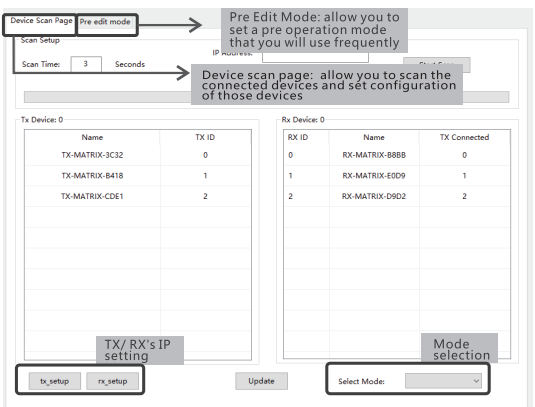


Figure-1

6.5 IP setting

1) Transmitter and Receiver have their own default IP address.

- Transmitter's default IP: 192.168.1.210;
- Receiver's default IP: 192.168.1.220.

Generally, it is no need to change the original IP address, as the system can work normally even though multiple Transmitter units and multiple Receiver units connected into the system with their default IP address. If IP setting is needed, please follow up the operation as Figure 2 (here make an example of Transmitter's IP setting only, Receiver's setting is the same as Transmitter's).

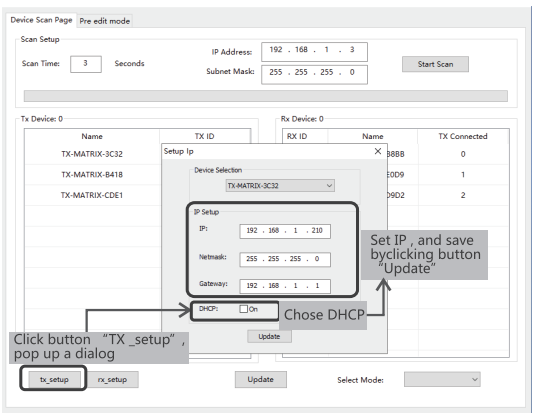


Figure-2

2) Device scanning and setting (here make an example of Transmitter's setting only, Receiver's setting is same as Transmitter's). Click button "Start Scan", the scanned result show as Figure 3.

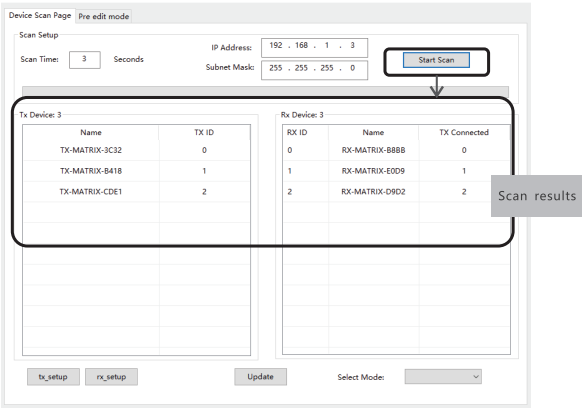


Figure-3

3) Device Name setting as Figure 4.

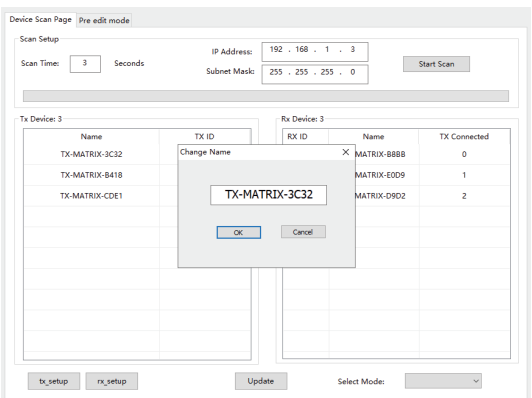


Figure-4

4) Device channel (Transmitter ID) setting as Figure 5.

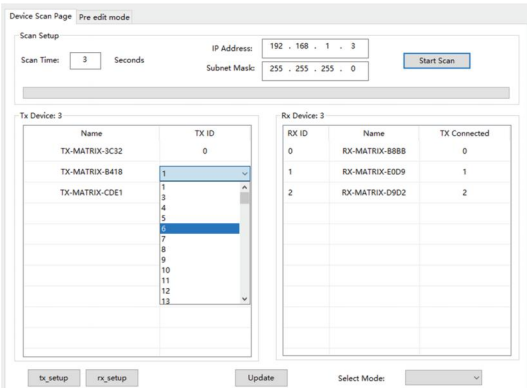


Figure-5

5) Pre-operation mode editing as Figure 6.

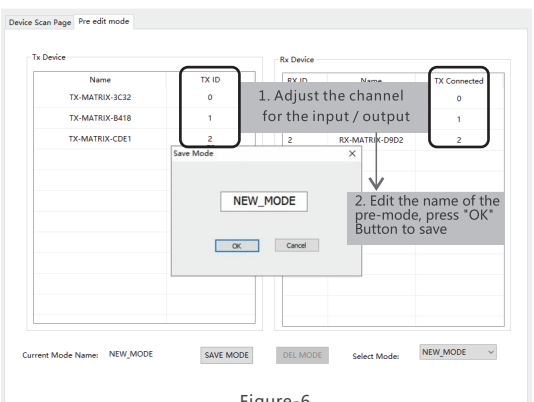


Figure-6

6) Operation mode selection setting as Figure 7, click button "Select Mode" to choose the mode needed.

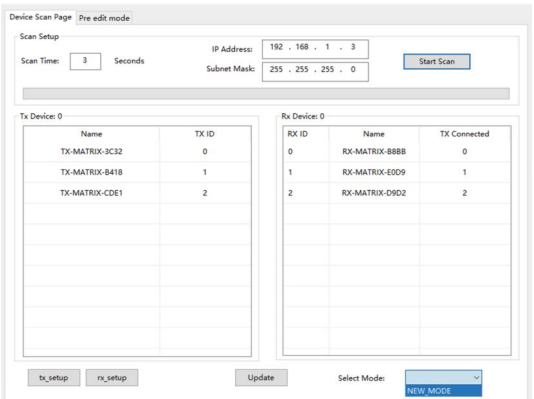


Figure-7

7. Download iMCS APP

Download iMCS APP from the website:

https://www.ipcolor.org/download.html

or scan the QR code below via a browser to download

Note: Recommend using a tablet with a SOC Snapdragon 865 or above, 8GB or more of RAM, and a gigabit network to guarantee the optimal experience.

• FAQ

Q: Why the status indicator is off?
A: Please check whether all equipment is powered on and the networking 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 Ethernet cable is within the specified range, the length of HDMI cable is recommended to be ≤ 5 meters.
2) Press the "reset" button on TX and RX panels to restart and reconnect.

• Technical Parameters

Item	Transmitter(Tx)	Receiver(Rx)
Video		
Input interface	1×HDMI	1×RJ45
Output interface	1×RJ45	1×HDMI
HDMI length	≤ 5m	≤ 5m
Maximum transfer rate	18Gbps	
Compatibility	HDMI 2.0	
	HDCP 1.4/HDCP 2.2	
Resolutions	4096x2160@24/30Hz, 3840x2160@24/30/50/60Hz, 1080p@50/60Hz,720p@50/60Hz, 1920x1200@60Hz, 2560x1440@60Hz	
Connection types	One-to-one connection Many-to-many connection Switch cascading	
Transmission distance	CAT5E 100m / CAT6 120m	
Transmission latency	4K@60Hz: 130~200ms 1080P@60Hz: 70~130ms	
Audio signal		
Input interface	1×HDMI	1×RJ45
Output interface	1×RJ45	1×HDMI
HDMI output	LPCM 2.0	
Command Signal		
Input interface	1x 3.5mm IR output	1x 3.5mm IR input
IR receiving range	≤ 5m	
IR frequency	20kHz~60kHz	

Power		
Power Supply	DC 5V/2A	DC 5V/2A
Power Consumption	TX ≤ 5.5W	RX ≤ 3.5W
Operating Environment		
Working temperature	- 20℃~60℃	
Storage temperature	- 30℃~70℃	
Humidity	0~90%RH (no condensation)	
Physical Properties		
Housing	Iron	
Weight	503g	500g
Color	Black	
Dimensions	191.0(L)*96.0(W)*25.0(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	

Disclaimer

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