User Manual

HDTV1000TR

PoE IP Matrix Extender with WEB GUI Control

Version: V2020.001

1. Introduction

It's a IP video matrix is based on TCP/IP LAN technology to process and distribute HD video signal. Better than traditional video matrix system, use distributed system architecture and embed long distance transmission function inside, which advance largely reduce infrastructure invest and installation cost.

Based on this advance framework, it can realize seamlessly overlying and expansion, making sure that system is equipped with sound expansibility. It can set up accordingly to needs for some small systems at preliminary stage to reduce the investment. For example, a traditional matrix normally requires a system of 8TX+16RX or 16TX+16RX to configure a 5TX+10RX small system. But an actual 5TX+10RX configuration is enough when using this system. In the expansion of projects, we can add certain quantity of transmitter and receiver to meet the actual needs.

The Features and flexible networking structure enable this system to meet the requirements in meeting, education, small business and family scenario economically and efficiently.

It provides WEB UI to control system configuration, signal switch and batch scenarios setting, which making management more convenient for customers. It also provide CGI, SOCKET interface for customer to integrate this system into existing management system for central management.

2. Features

➢ Resolution up to 1080P@60Hz,
➢ The transmission distance up to 100m/330ft with POE
➢ Or up to 200m/658ft with DC12V power supply
➢ Support PoE(802.3AF), easy for installation, improve system robustness
➢ Support HDMI loop-out on sender
➢ Support seamless video switching, no black screen
➢ Support WEB UI for system management
➢ Provide CGI/SOCKET for accessing of up layer control system
➢ Support software update by WEB or command line
➢ Maximum up to 120 senders * 120 receivers

3. System Devices

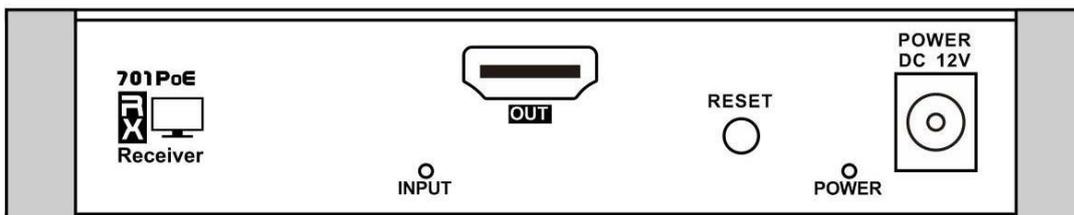The common IP video matrix system includes 3 devices
☛ Receiver
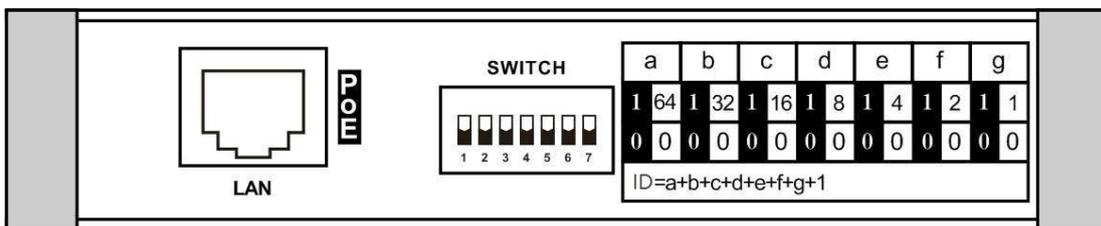 Sender
  Ethernet switch with IGMP&POE function

Receiver
  Front Panel

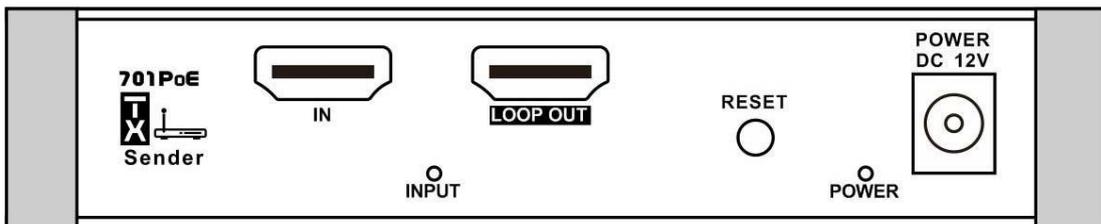| ID	Type	Description
Out	Output	HDMI video output
POWER DC 12V	Input	12V DC Power input (Output 12V DC when POE working)
Reset	Button	Long press to reset device
POWER	Indication Light	Light on when power on
INPUT	Indication Light	Light on when receive video data from sender Light off when no video data received

Back Panel

ID	Type	Description
LAN	Input / Output	FE LAN port
SWITCH	Input dip switch	IP Address setting

Sender

Front Panel

ID	Type	Description
IN	Input	HDMI video input
LOOP OUT	Output	HDMI video output
POWER DC 12V	Input	12V DC Power input(Output 12V DC when POE)
Reset	Button	Long press to reset device
POWER	Indication Light	Light on when power on

| INPUT | Indication Light | Light on when HDMI input valid |
| | | Light off when HDMI input none or invalid |

Back Panel
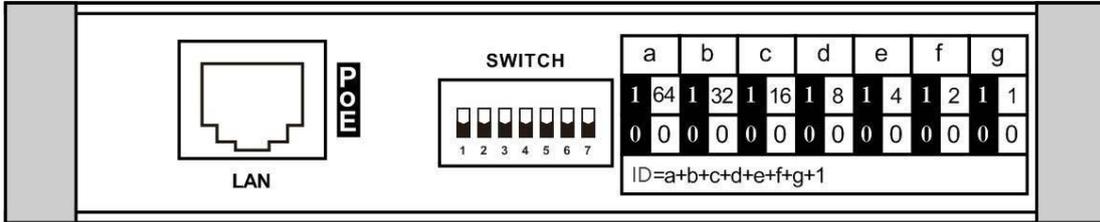
| ID	Type	Description
LAN	Input / Output	FE LAN port
SWITCH	Input dip switch	IP Address setting

IGMP Ethernet Switch

Recommend using the IGMP featured ethernet switch as back-haul network to

support large size matrix video distribution. The actually networking setting and

configuration is based on the system capacity and QoS requirements.

The sender and receiver support PoE function and also the IGMP Ethernet switch.
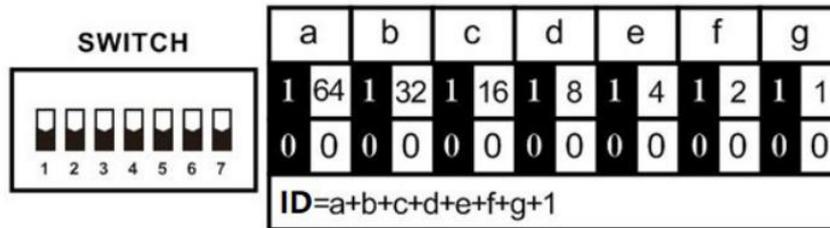

4. Operation diagram

4.1 Connection diagram
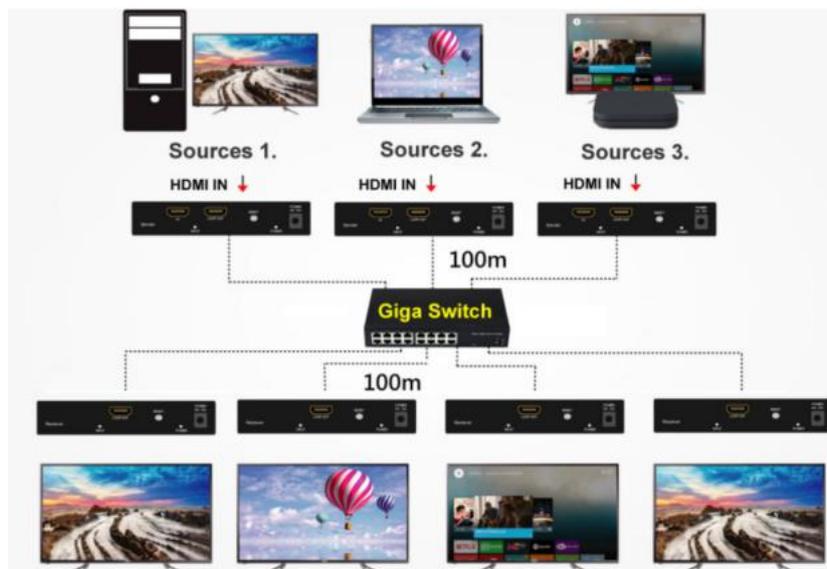
4.2 Device Configuration

Sender Configuration

Sender should be set IP address by DIP before working. The default IP address is 192.168.1.XXX. XXX is the DIP setting value ID + 200.

DIP setting value ID defined as figure below:

From left to right, value of the first dip switch is 64 at the upper position, 0 at the bottom position.

The value of the second dip switch is 32 at the upper, 0 at the bottom. The rest are done by the same mechanism. ID can be obtained by adding up each value. IP address = ID+200.

In current system configuration, the valid IP address of sender is between

192.168.1.201 - 192.168.1.224, which means the DIP switch ID should between 1 – 24.

Different devices should have different IP address same address will cause IP address confliction and system working abnormal.

Notice: Customer need video sources exceed 24 will use another set of software, which is not described in the scope of this document.

The picture below shows an example, device ID=16+2+1+1=20, sender IP address is 192.168.1.220:

The Main Control Unit Configuration

The main control unit and web server are working on the sender which IP address is 192.168.1.201.

So there should be one sender MUST set with IP address 192.168.1.201

If the main control unit sender hardware breaking down, user can set other sender device to IP address 192.168.1.201 to work as new main control unit.
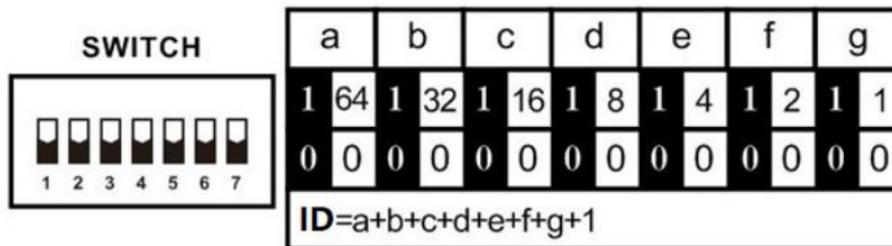
The picture below shows an example, sender device ID is 1, IP address is 192.168.1.201:

Receiver Configuration

Receiver should be set IP address by DIP before working. The default IP address is 192.168.1.XXX. XXX is the DIP setting value ID.

DIP setting value ID defined as figure below:

From left to right, value of the first dip switch is 64at the upper position, 0 at the bottom position.

The value of the second dip switch is 32 at the upper, 0 at the bottom. The rest are done by the same mechanism. Relavant IP address can be obtained by adding up each value.

In current system configuration, the valid IP address of receiver is between

192.168.1.1 - 192.168.1.96, which means the DIP switch should between 1 – 96.

Different devices should have different IP address, same address will cause IP address confliction and system working abnormal.

Notice: Customer need video displays exceed 96 will use another set of software, which is not described in the scope of this document.

The picture below shows an example, device ID=64+8+2+1+1=76, receiver IP address is 192.168.1.76:

IGMP Ethernet Switch Configuration

The Ethernet switches we provided are configured before delivery. User can use it without any software configuration.

5. Device Management

User can access WEB to manage sender or receiver and get information.This system also supports CGI /TCP /UDP for network control.

WEB GUI Management

Users can use universal web browser IE, Firefox, Chrome, Safari etc. to visit device management web page. The web browser can run in PC, Pad, Phone with Windows, MacOS, Linux, ios, Android operating systems.

* Notice: For different OS, device or web browser, the web page appearance could be slightly different.

The URL of device management web page is http://device_IP_address/System.html format. Say if the device IP address is 192.168.1.218, then the URL is *http://192.168.1.218/System.html*.

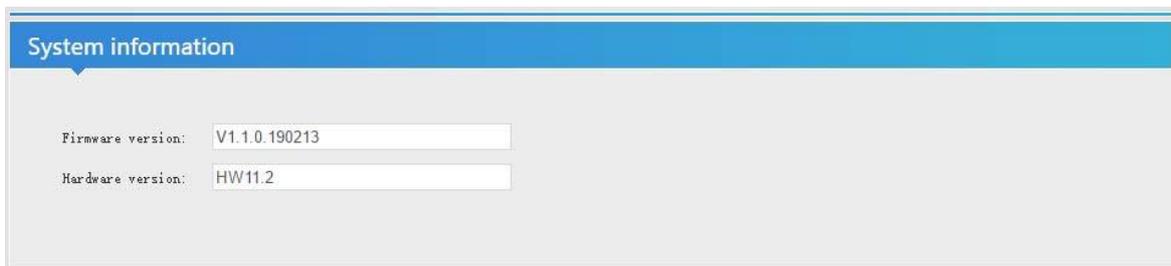The WEB page shows as below:
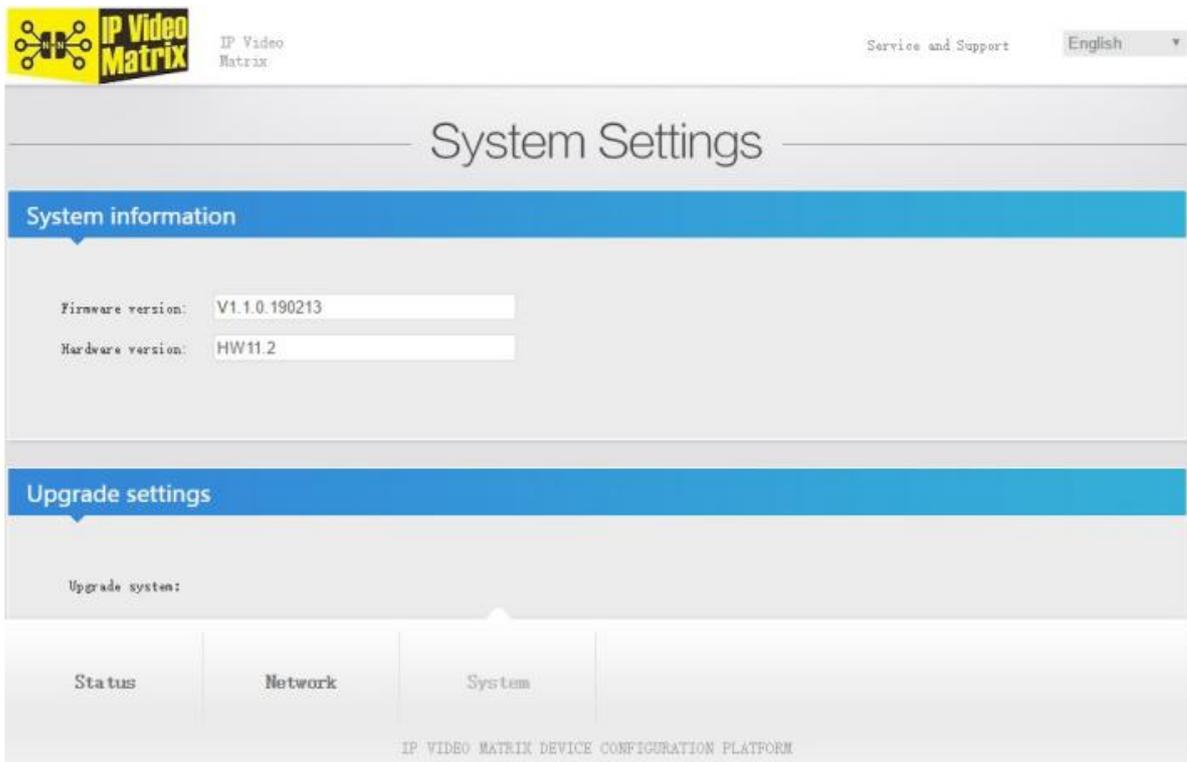
Bottom menu can switch System/Network/Status page.

System Settings

System information

System information shows software and hardware version:

Upgrade Settings

User click file browse button to choose local file and click Upload button to upgrade

software, etc.

System Settings

Click Reboot button to reboot device.

Click Reset button, device will remove current settings and reset system default
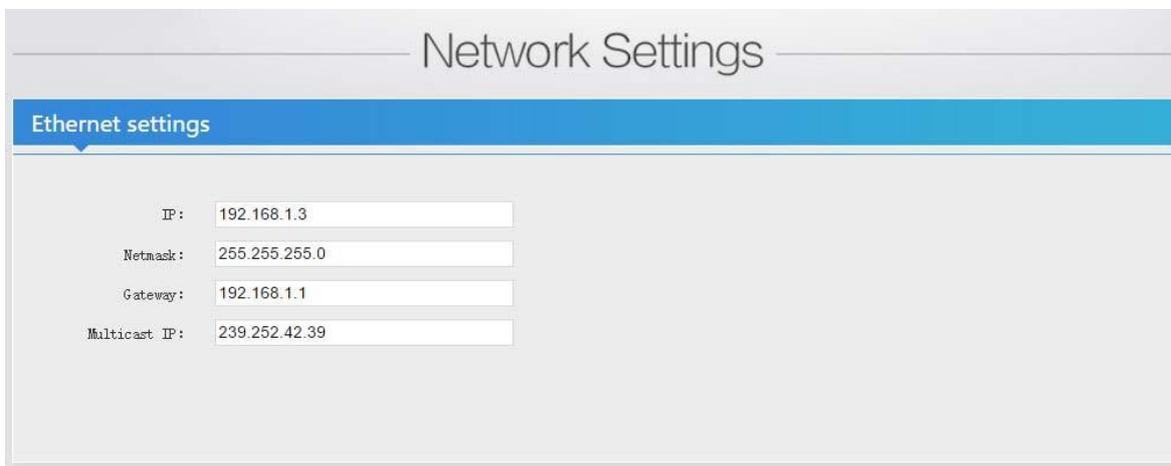

settings.

Network Settings

Network settings page shows Ethernet network setting of current device.
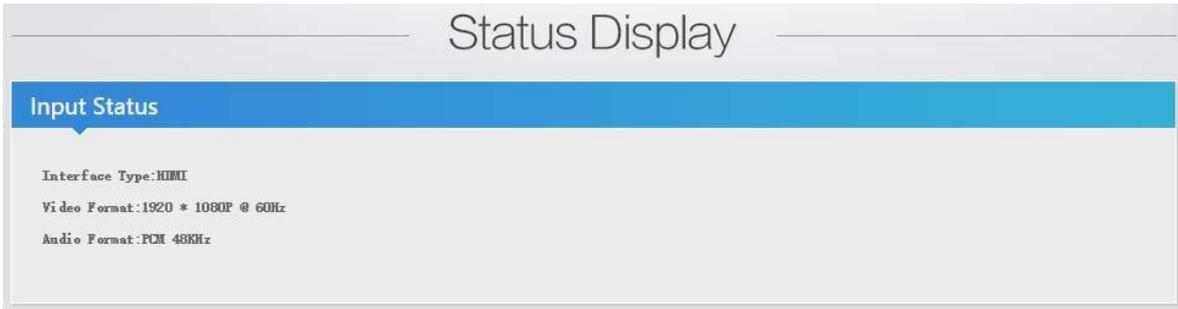

Status Display

Sender device status display page shows current video input format and audio format information. Receiver device has no status display information

Status Display

Input Status

Interface Type:HDMI

Video Format:1920 * 1080P @ 60Hz

Audio Format:PCM 48KHz

# 6 . Matrix WEB GUI Control Switch

After type the configuration and wire connection, now users are ready to do login on the browser and start the switching, the matrix switch control WEB GUI is showing as below:

Receiver devices panel on left, configure receiver's device name, video source device. The display device button aligned in the sequence of IP address.

Scenario mode switch &Video source selection panel on right. Scenario mode switch record all device connection map and recall to execute batch switching. This panel shows video source selection in video switch function processing.

Device name configuration panel on bottom.
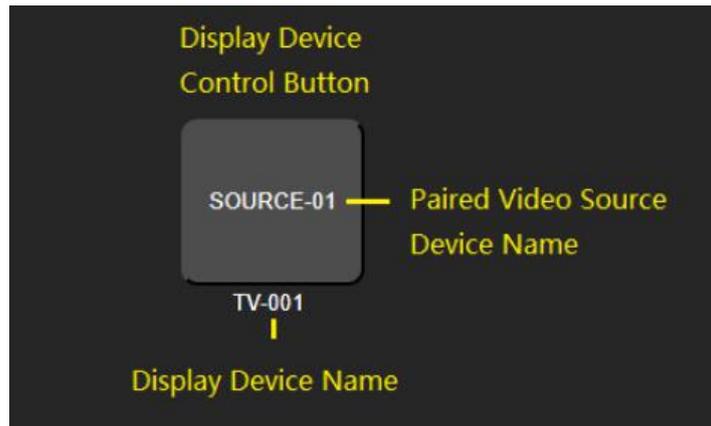
Video Switch

✦Click display device control button on left panel

✦Video source listed on right panel

✦Select the video source to switch
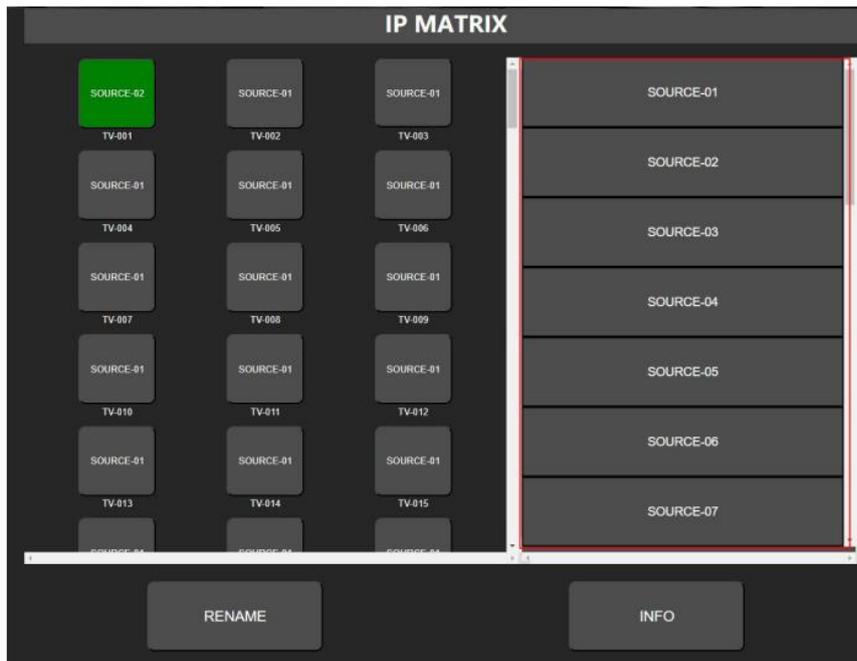
Scenario Mode Switch

✦Click Mode button on right panel

✦Pop menu selection: "APPLY" "SAVE MODE" "CANCEL"

🚶APPLY: execute switching based on the stored connect map in this mode.

🚶SAVE MODE: store current running devices connection map in this mode and remove

previous record.

🚶CANCEL: back to main menu.
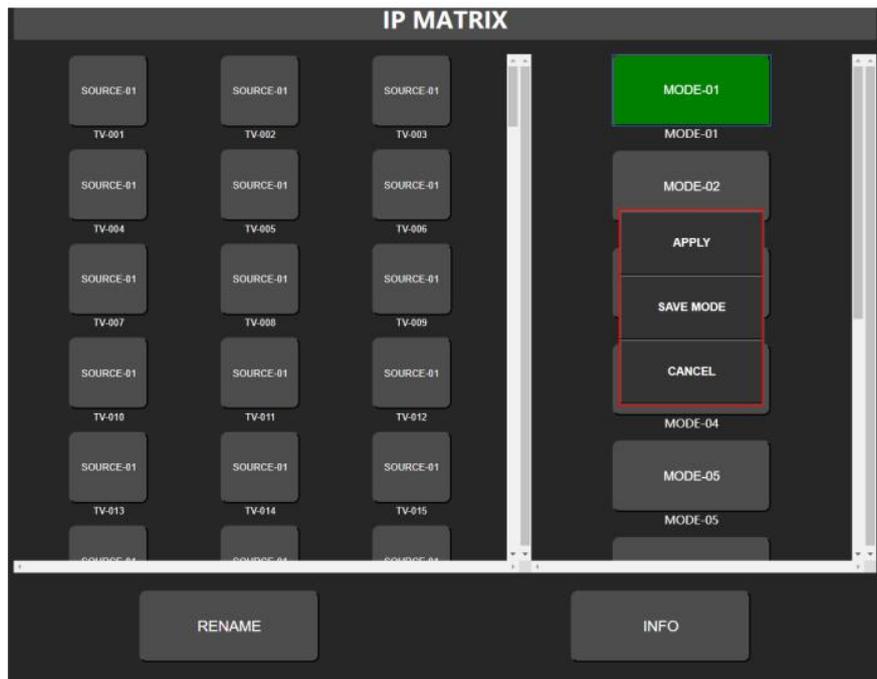
Device and Mode name setting

✦Click "RENAME" button on bottom panel

✦Menu pop to choose device type or mode

🚶CHANGE TV NAME: change receiver device name.

🚶CHANGE SOURCE NAME: change sender device name.

🚶CHANGE MODE NAME: change mode name.

Type in new name on right panel and click OK to sav

Notice: Name string should use english characters and digits

7. After-Sales

7.1 Warranty Information

The Company warrants that the process and materials of the product are not defective under normal use and service for 2 (2) years following the date of purchase from the Company or its authorized distributors.

If the product does not work within the guaranteed warranty period, the company will choose and pay for the repair of the defective product or component, the delivery of the equivalent product or component to the user for replacement of the defective item, or refund the payment which users have made.

The replaced product will become the property of the Company.

The replacement product could be new or repaired.

Whichever is longer, any replacement or repaired of the product or component is for a period of ninety (90) days or the remaining period of the initial warranty. The Company shall not be responsible for any software, firmware, information, or memory data contained in, stored in, or integrated with the product repaired by the customer's return, whether or not during the warranty period.

7.2 Warranty limitations and exceptions

Except above limited warranty, if the product is damaged by over usage, incorrectly use, ignore, accident, unusual physical pressure or voltage, unauthorized modification, alteration or services rendered by someone other than the Company or its authorized agent, the company will not have to bear additional obligations. Except using the product properly in the proper application or normal usage

8. Version Information

Description of version		
Date	Version number	Description
Jan, 2020	V1.01.01	First version