Zenty | Professional A/V Solution Provider

User Manual [V1.0]



4K@60Hz 8x8 HDMI Matrix Switch with Audio Routing

ZT-437 | ZT-MT88-AR

ZENTY ®
9807 EMILY LANE
STAFFORD, TX 77477
(844) 200-1945
SUPPORT@ZENTY.COM

SAFETY PRECAUTIONS

- Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply.
- Please keep the following in mind as you unpack and install this equipment:
- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

Table of Contents

1. Introduction 6
2. Applications 6
3. Package Contents 6
4. System Requirements 6
5. Features 7
6. Specifications 7
7. Operation Controls and Functions 8
    7.1 Front Panel 8
    7.2 Rear Panel 8
    7.3 LCD Screen Information 9
        7.3.1 Input / Output Channel Key Operation 9
        7.3.2 Video Switching Operation 10
        7.3.3 Output Audio On / Off Control 13
        7.3.4 Input Signal Control 14
        7.3.5 EDID Settings 15
    7.4 Preset Scene Settings 16
    7.5 System Configuration 17
        7.5.1 RS232 Parameter Settings 20
        7.5.2 LCD Screen Settings 22
        7.5.3 Menu Settings 23
        7.5.4 User EDID Settings 25
        7.5.5 System Settings 26
    7.6 Device Information Query 29
    7.7 Remote Control Description 32
8. Audio Introductions 32
    8.1 HDMI Audio 32

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8.2 Audio Extraction 32
8.2.1 Analog Audio Extraction 33
8.2.2 SPDIF Audio Extraction 33
8.3 Audio Embedding 33
8.4 ARC Audio 33
9. Routing Functionality & Use Cases 34
9.1 Primary Matrix Routing 34
9.2 Audio Matrix 34
9.3 Use Cases 34
9.3.1 Basic Audio Embedding 35
9.3.2 Routed HDMI 35
9.3.3 Routed Analog 37
10. EDID Management 38
11. RS232 Control 39
12. Web Control 41
12.1 Non-networked standalone control 41
12.2 Multi-use Remote Control in LAN 42
13. Status Interface 43
13.1 Input Interface 43
13.2 Output Interface 44
13.3 Primary Routing Matrix Interface 45
13.4 Audio Matrix Interface 46
13.5 Preset Interface 47
13.6 System Interface 47
14. Firmware Upgrade 49
15. Connection Diagram 50
16. Maintenance 51
17. Warranty 51

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18. Mail-In Service 51
19. Limited Warranty Limits and Exclusions 51

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1. Introduction

This 8x8 4K HDMI matrix supports transmission of video (resolutions up to 4K2K@60Hz, HDCP 2.2, HDMI 2.0) and multi-channel digital audio from 8 HDMI sources to 8 HDMI outputs and 8 SPDIF outputs. This matrix supports high resolution digital audio formats, such as Dolby TrueHD and DTS-HD Master Audio, as well as 3D content. In addition, this matrix also allows analog audio embedding and extracting from 8 analog audio inputs and 16 analog audio outputs. It supports independent audio routing and is controllable via front panel buttons, local IR, RS232, IP or webGUI. This unit also supports HDR 10 to bring the ultimate visual experience. It is designed to save end users' energy to allow for easy firmware updates via RS232 interface.

2. Applications

- Video/TV wall display
- Security surveillance and control
- Commercial advertising, display and control
- University lecture hall, display and control
- Retail sales and demonstration

3. Package Contents

- (1) x HDMI Matrix
- (1) x DC 12V/3A Power Supply
- (1) x Remote Control
- (1) x IR Ext. RX Cable
- (1) x Mounting Kit
- (1) x CD for Control Software & User Manual

4. System Requirements

- HDMl source equipment such as media players, game consoles or set-top boxes.
- HDMI receiving equipment such as HDTV, monitors, or audio amplifiers.
- The use of"Premium High-Speed HDMI" cables is highly recommended.

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5. Features

- HDMI 2.0 Matrix system with 8 inputs and 8 outputs
- Supports 4K60Hz YUV 4:4:4 and 3D with 18Gbps bandwidth
- Supports HDR10, HLG, Dolby Vision
- Supports EDID management, CEC and ARC
- Supports HDCP1.4/2.2 compliant
- 16 analog audio inputs and outputs, and 8 S/PDlF audio outputs
- Supports analog audio embedding and HDMl audio extraction
- Supports independent audio routing
- Supports LPCM2.0-5.1, Dolby Atmos and DTS-X
- Controllable via front-panel buttons, IR remote, RS232, Web GUI

6. Specifications

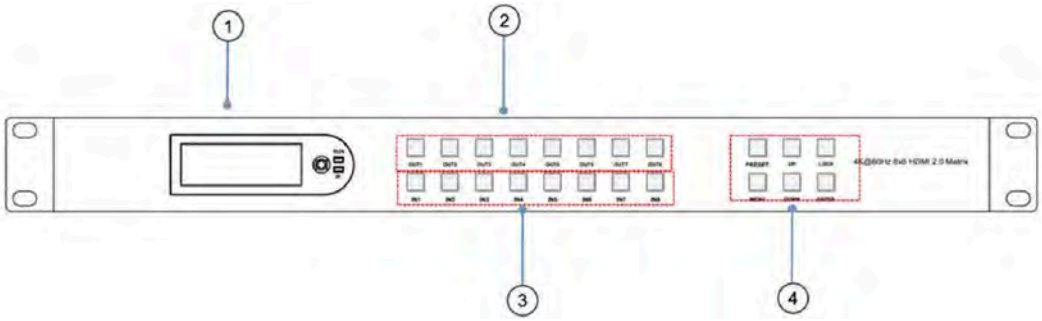
Bandwidth	18Gbps
Resolution	480p@60hz, 576P@50hz, 720P@60hz, 1080P@24hz, 1080P@50hz, 1080P@60hz, 4K@24hz, 4K@30hz, 4K@60hz YUV 4:2:0, 4K@60hzYUV4:4:4
Video Input Connectors	8 x HDMI Type A, 19-pin, female
Video Output Connectors	8 x HDMI Type A, 19-pin, female
Audio Input Connectors	8 x Analog audio 3.5mm female
Audio Output Connectors	8 x Analog audio 3.5mm female, 8 x SPDIF Coaxial
RS-232 Serial Port	DB9, female
Ethernet Port (IP Control)	RJ45, female
IR Ext. Port	1 x 3.5mm stereo jack

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Dimensions (W x H x D)	18.99" x 8.66" x 1.73"
Net Weight	6.17lbs
Operating Temperature	32°F ~ 104°F
Storage Temperature	14°F ~ 140°F
Power Consumption	28W (Max)

7. Operation Controls and Functions

7.1 Front Panel



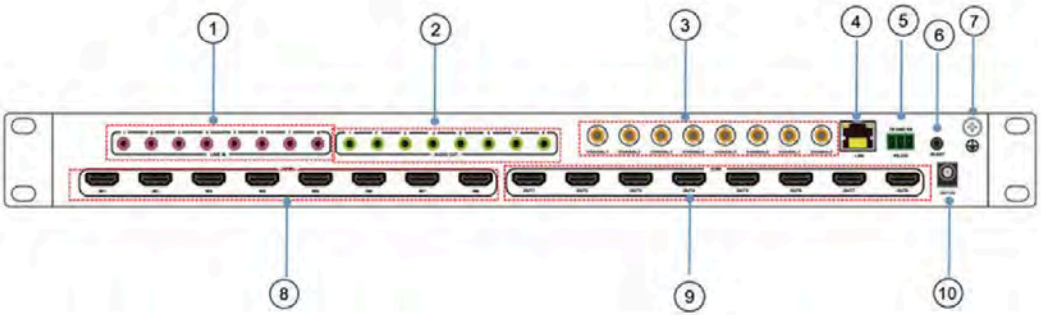
1. LCD: Shows matrix information

2. Output Buttons: Outputs 1~8

3. Input Buttons: Inputs 1 ~ 8

4. Function Buttons: Preset, Menu, Up, Down, Lock, and Enter buttons

7.2 Rear Panel



1. Audio In (Analog x 8)
2. Audio Out (Analog x 8)
3. Audio Out (SPDIF x 8)
4. Ethernet Port
5. RS232
6. IR Port
7. Grounding
8. HDMI Input x 8
9. HDMI Output x 9
10. Power On / Off

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7.3 LCD Screen Information



Device Startup



Channel Interface

7.3.1 Input / Output Channel Key Operation

Channel	**Button Method**
Any Key	First operation of the button can wake up the screen and complete the key function while the blue button light will light up
Input 1 ~ 8	Directly press the number key, such as the output channel 1, select the key “8” and press it (Select the output port and complete the video switching by entering the input channel number), long press can directly switch all outputs to one input
Output 1 ~ 8	Directly press the number key, such as the output channel 4, select the key “4” and press it again to cancel the selection. Long press any output channel number to select all channels, and long press again to cancel. If after pressing a button, no next operation is performed within 10 seconds, the operation state will end.

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Preset	Quick selection scene button
MENU	Function button: Short Press to enter the main menu interface or go back to the previous menu interface. Long press to enter the interface for viewing IP information. After entering the main menu, if there is no further operation within 30 seconds, the display will automatically return to the main interface of the video channel.
ENTER	Confirm button: Short press to enter the next-level menu. When there is no sub-menu at the next level, it serves as the function for setting the current settings options.
UP	Navigation key: Press briefly to indicate upward movement.
DOWN	Navigation key: Press briefly to indicate downward movement.
LOCK	Long press to lock (and long press again to unlock)

7.3.2 Video Switching Operation

The signal switch includes 8 free switching channels which can be configured as input/output according to the requirements forming a matrix of 1 x 8 ~ 8 x 8, which can switch to any input. Signal to 1 channel output or all channel outputs.

The specific operation is as follows:



Input/Output Channel Interface

Switching the input to the output:

Operation format: “output channel” + “input channel” or long press “input channel”

For example: Output port 1, 2, 4 switch to input 3

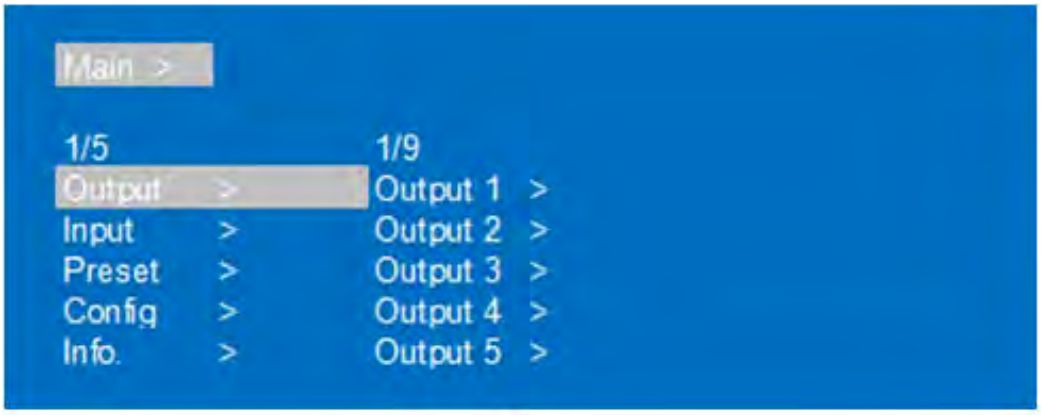
Operation: Press OUT number “1”, “2”, “4” + IN number “3” to complete the switch

For Example: Switch all outputs to input 4

Operation: Long press input number "4" to complete the switch

Output Signal Control:

Output interface has nine sub.menus: Outputl-Output8 and All. Switch the video source of the output port and turn on/off the output audio video signal.



Output Menu



Output Port Menu

Output Video Switch and On / Off

Switch any output to one input, or switch all outputs to one input; Default 8x8 matrix, 8 inputs and 8 outputs, one to one output.

Operation instructions:

①Select “Output" in the menu and press “ENTER”

②Then use “UP” “DOWN" button to select “output 1~8 or Al!”, The bottom color of the selected output

③Press “Enter" enter next page.

④Press “UP” “DOWN" button to select “Video”, press “Enter”

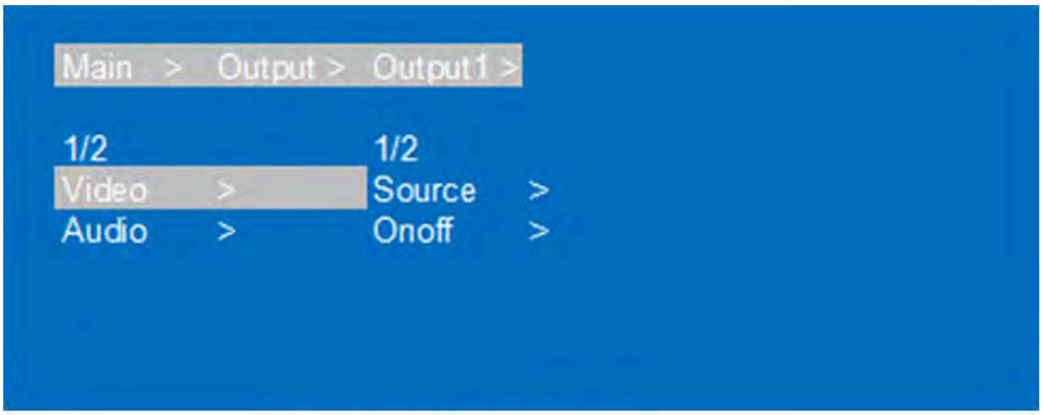
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⑤ Press “UP” “DOWN" button to select “Source”, press “Enter’

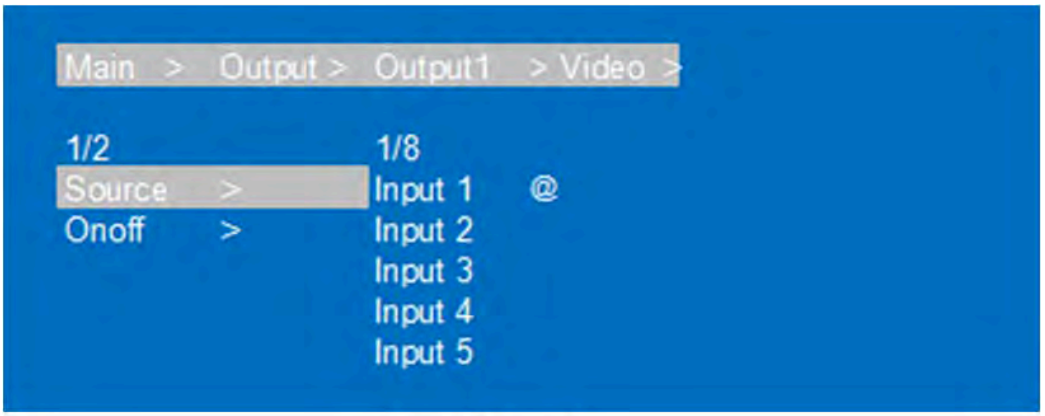
⑥Press “UP" “DOWN” button to select “Input 1~8", press “Enter”, switch done

⑦Press “MENU" button back to previous option, Press “Up" “DOWN" button to select “On/off”, Press “Enter" enter next page.

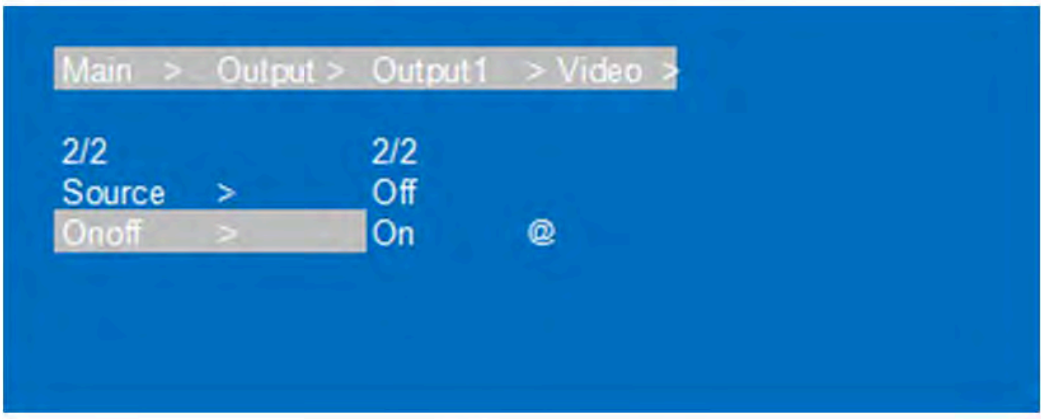
⑧Press “UP" “DOWN" button to select “On/Off", output video On/Off done. (This function is on by default)



Video Switch Interface



Input Port Select



On/Off Select Interface

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7.3.3 Output Audio On / Off Control

1) On/off output audio, include HDMI, Analog, SPDIF, ARC; ARC function is off by default.

Operation instructions: (turn off other audio is same)

2) Choose the input for outputting audio, including HDMI audio output input and analog audio separation input.

① Select “Output" and press “ENTER”

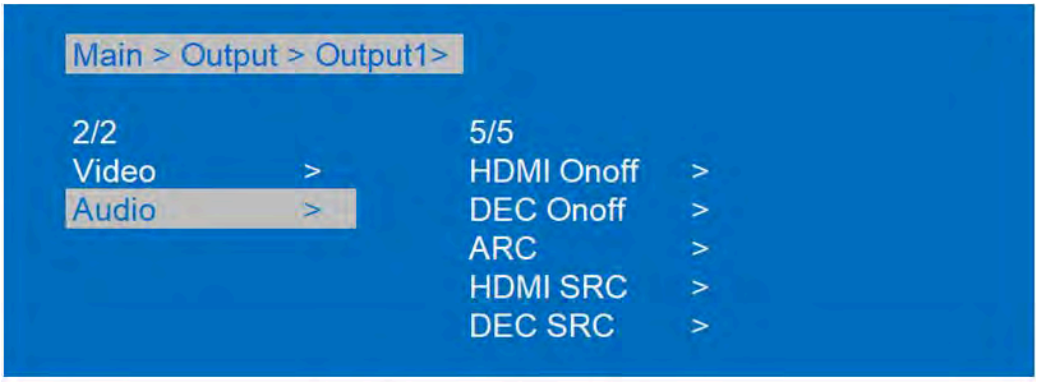
② Press “UP” “DOWN" button to select “Output 1~8 or All (means all outputs)". The bottom color of the selected output port becomes white.

③ Press “Enter”.

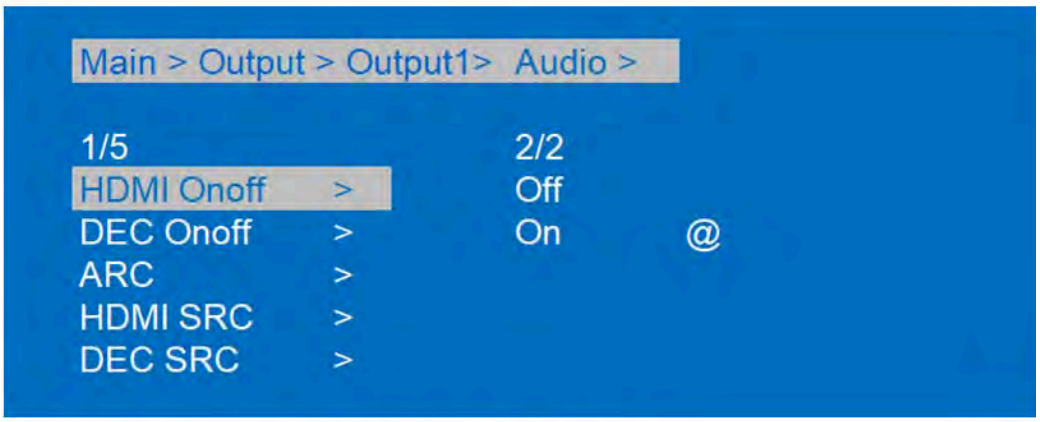
④ Press “UP” “DOWN” button to select “Audio”, press “ENTER”.

⑤ Press “UP" “DOWN" button to select the mode, press “ENTER”.

⑥ Press “UP" “DOWN” button to select “On/Off, output audio on/off done.



Audio control interface



Output Audio On/Off Interface

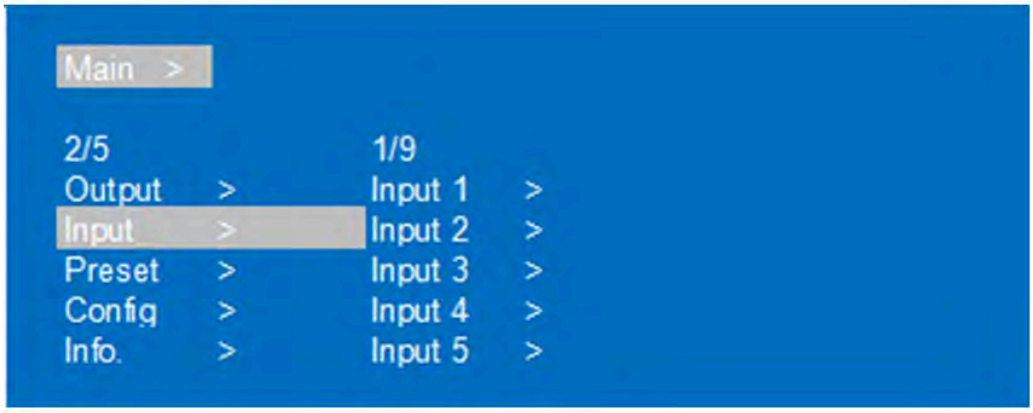
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Audio separation input interface

7.3.4 Input Signal Control

Input signal control interface has nine sub-menus: Input 1~8 and All (means all inputs), The third level sub-menu includes Video and EDID settings.



Input menu interface



Input Option Interface

1) On / Off Input Video

Turn on/off input video settings

Operation instructions:

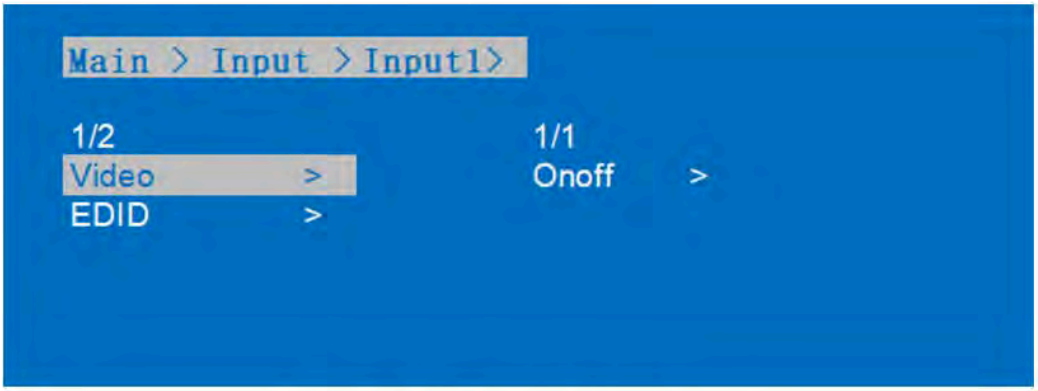
①Select “Input”, Press “ENTER”.

②Press “UP" “DOWN" button to select “Input 1~8 or All”, Press “ENTER”.

③Press “Up" “DOWN" button to select “Video”, Press “ENTER.

④Select “On/off”, Press “ENTER”.

⑤Press “UP” “DOWN” button to select “On/Off”, On/off input video done.



7.3.5 EDID Settings

EDID Mode can set each input's EDID, Include: Default EDID; User EDID; Copy EDID:1.4 are Default EDID, 5-8 are User EDID, 9.-16 are Copy output 1-8 EDID, 17 is temporary EDID

Operation instructions.

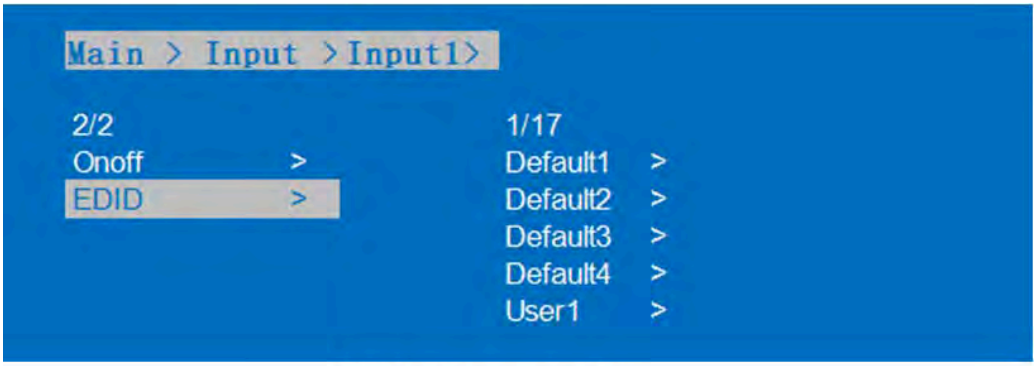
① Select “Input”. Press “ENTER"

② Press “UP” “DOWN" button to select “Input 1~8 or All”, Press “ENTER”

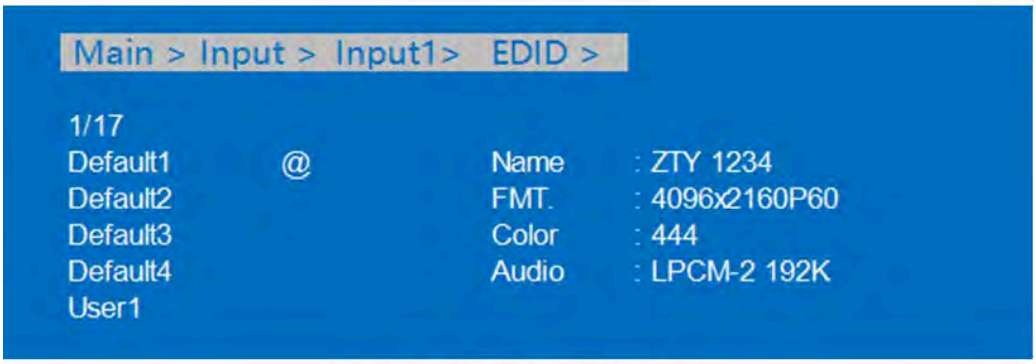
③ Press “UP” “DOWN" button to select “EDID”, Press “ENTER”

④ Press “UP” “DOWN" button to select EDID “Default1", Press “ENTER", setup complete

⑤ The selected EDID will show EDID details (name, Max resolution, audio format, sound track)



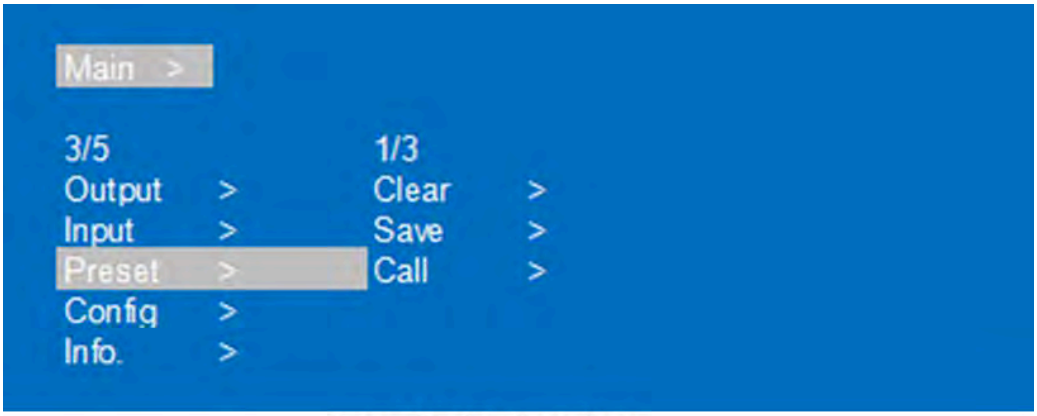
EDID settings interface



EDID information interface

7.4 Preset Scene Settings

Preset can save video, audio, EDlD, system settings, support 8 dilferences presets, It can be changed andcalled by web page, command and panel buttons. The default preset is same as the factory setting PTP.



Preset Option interface

Operation instructions:

① Select “Preset", Press “ENTER", then enter preset scene interface,

② Save preset: Select “Save" on preset interface, then select one of “Preset 1~8”; Press “ENTER”, save current scene.

③ Call preset: Select “Call" on preset interface, select one of the saved presets 1-8 presets; Press “ENTER”,Call the preset scene saved previously.

④ Clear preset: Select “Clear" on preset interface, select one of the saved presets 1-8 presets; Press“ENTER”. this preset will return default.



Sence Present Interface

Present Operation Interface

7.5 System Configuration

System configuration can set the device's network parameter, RS.232 baud rate, LCD sereen, Menu, User EDID, system parameter.



System Configuration Interface

Network parameter settings

Set DHCP/IP/MASK/GW/Port/DNS/MAC

1) DHCP: Default Of(Static), After turn on (Dynamic), IP/MASK/GW are unable to set.

2) IP address: Default 192.168.1.168

3) MASK address: Default 255.255.255.0

4) GW: Default 192.168.1.1

5) PORT: TCP & UDP port, Default TCP 5000, UDP 5001.

6) DNS: Default 144.144.144.144 (unalterable)

Operation instructions:

① Select “Config”, Press “ENTER”

② Press “UP" “DOWN" button to select“Network”, Press“ENTER”

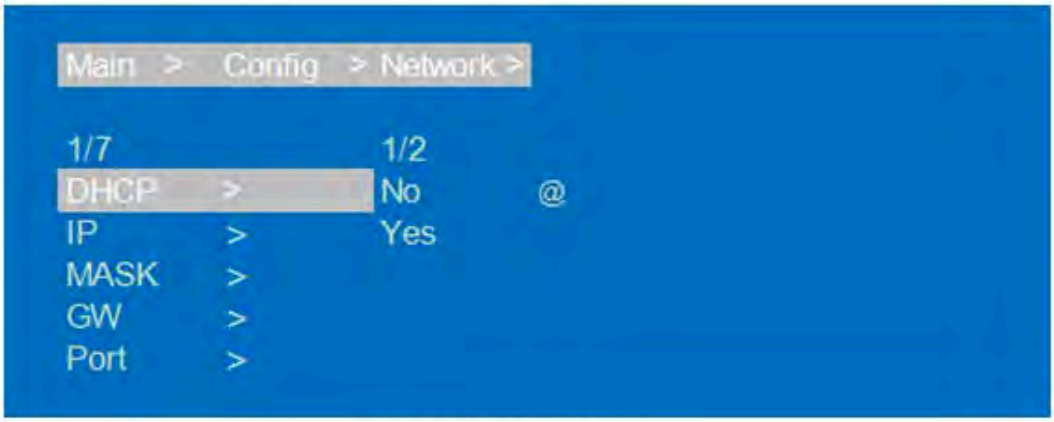
③ Press “UP” “DOWN" button to select “DHCP”, Press “ENTER", you can select “Yes/On" to turn on/off DHCP

④ Press “MENU”, Select “IP/MASK/GW/Port/DNS/MAC”, Press “ENTER”

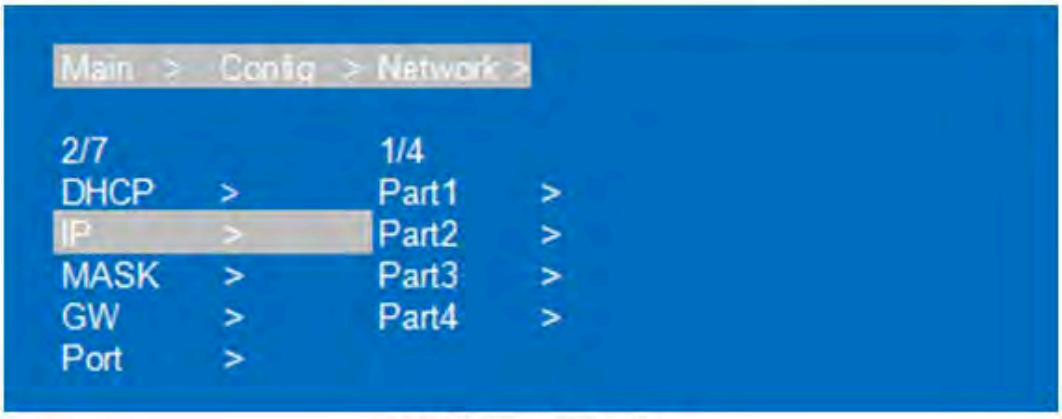
⑤ Such as change IP address: After select IP, enter and select Part 1~4, then Set IP address parameters for each part; Press “Enter” again, LCD will show the current network parameters. (Do the same for other parameters)



Network Parameter Settings Interface

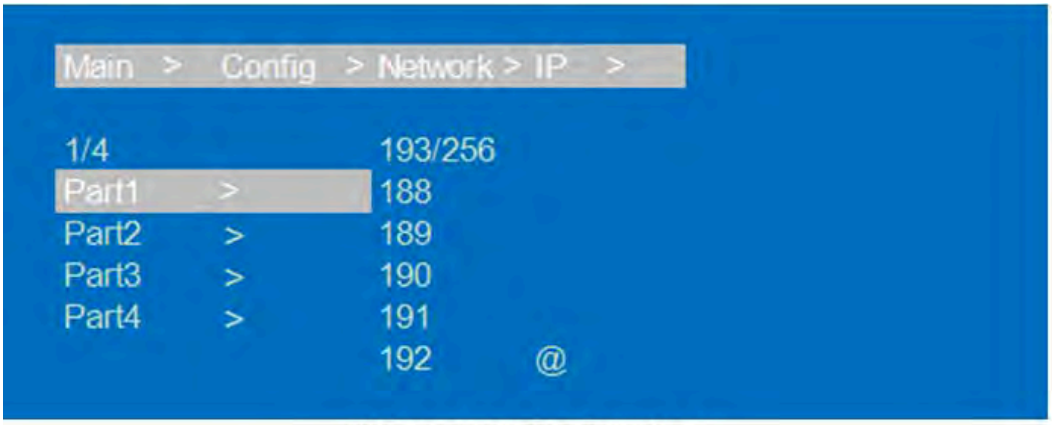


DHCP Settings Intertace

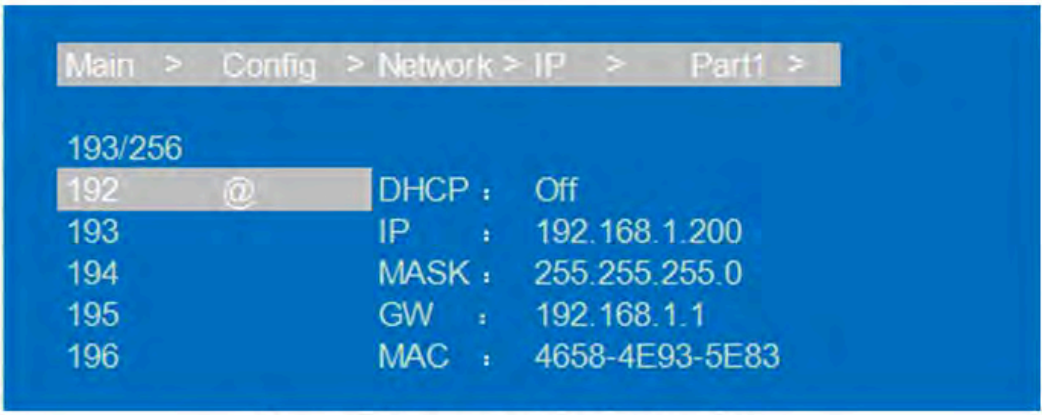


IP Settings Intertace

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IP Parameter Set Interface



Network Parameter Display Interface

7.5.1 RS232 Parameter Settings

It can change device's baud rate, but Data/Stop/Parity are used for checking and cannot be set1)Baud: device's baud rate provide 6 choices, 115200, 57600, 38400, 19200, 9600, 4800. The device is 115200 by default.

2) Data/Stop/Parity: is used only for view and cannot be changed, unless you use the highest account.

3)The underscore show that this parameter cannot be set.

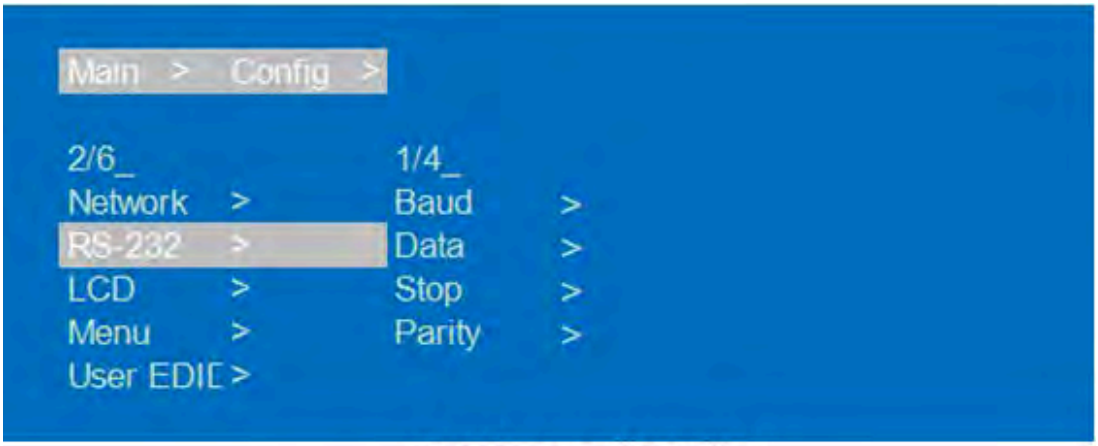
Operation instructions:

① Select “Config”, Press “ENTER”

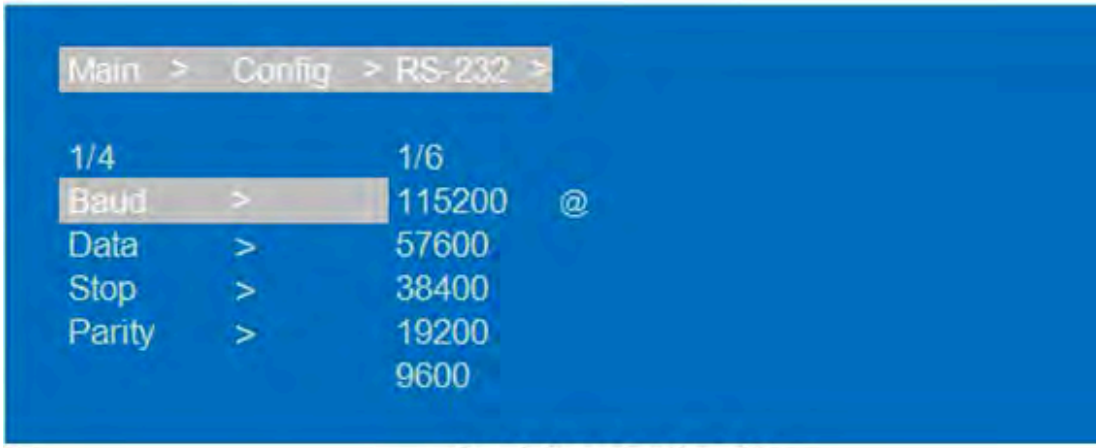
② Press “UP" “DOWN” button to select “RS-232", Press “ENTER”

③ Press “UP" “DOWN” button to select “Baud”, Press “ENTER”

④ Press “UP" “DOWN” button to select Baud rate you need, Press “ENTER”, Baud rate set done



RS232 Control Interface



Baud Rate Set Interface



Data Display Interface

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7.5.2 LCD Screen Settings

You can set LCD screen's bright and Screen rest time, Bright is 8 by default, Screen rest time is 30s by default.

Operation instructions:

① Select “Config”, Press “ENTER”

② Press "UP” “DOWN” button to select “LCD”, Press “ENTER”

③ Press "UP" “DOWN” button to select “Bright”, Press “ENTER”

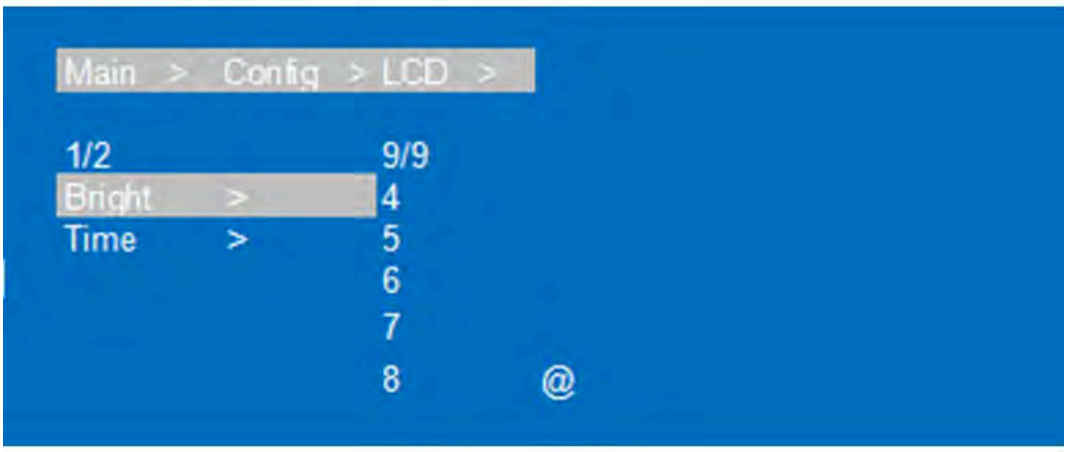
④ Press “UP" “DOWN” button to select LCD brightness level, The higher the brightness level, the greater the brightness, otherwise the lower the brightness.

⑤ Press “MENU", then press “Up" “DOWN" button to select “Time", Press “ENTER”

⑥ Press "UP" "DOWN, button to select screen rest time

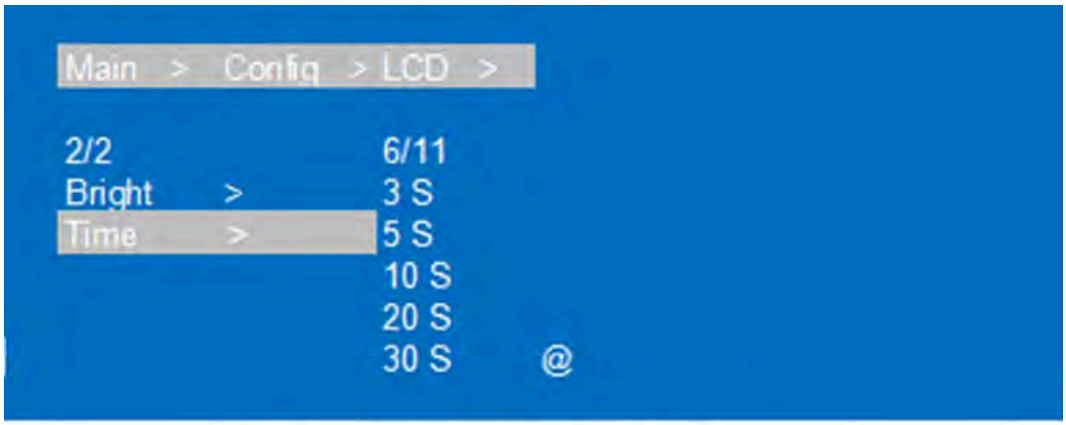


LCD Settings Interface



LCD Brightness Settings Interface

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Screen Rest Time Settings Intertace

7.5.3 Menu Settings

You can set menu time, Select-run, LV-Read

l) Time: No next operation within 30s and return to the channel interface.

2) Select-run: The default is Disable, Press the button to switch parameters to complete the setting. No need press "Enter".

3) Ly-Read: The default level is 1. It's not possible to switch level directly, unless you get client access and then switch by command. (Note that a low level can't set a high level)

Operation instructions:

① Select “Config", Pres "ENTER"

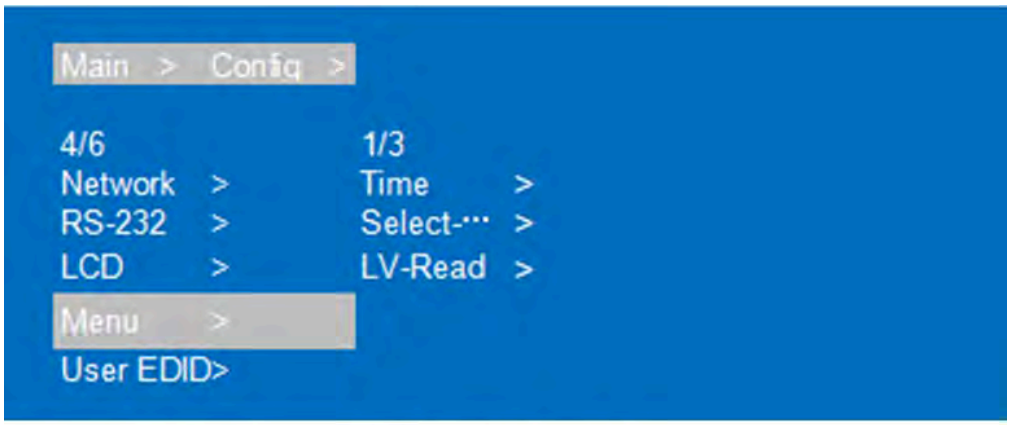
② Press "Up” “DOWN” button to select “Menu”, Press “ENTER”

③ Press "Up” “DOWN” button to select “Time”, Press “ENTER”

④ Press "UP, “DOWN", button to select the time you need

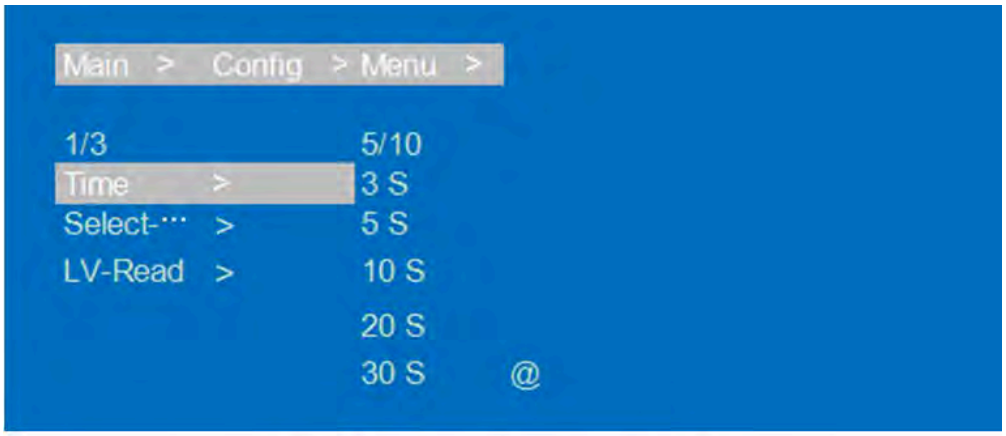
⑤ Press “MENU”, Press “UP” “DOWN” button to select “Select-run”, Press “ENTER”

⑥ Press "Up" “DOWN" button to select “Disable/Enable”, settings done

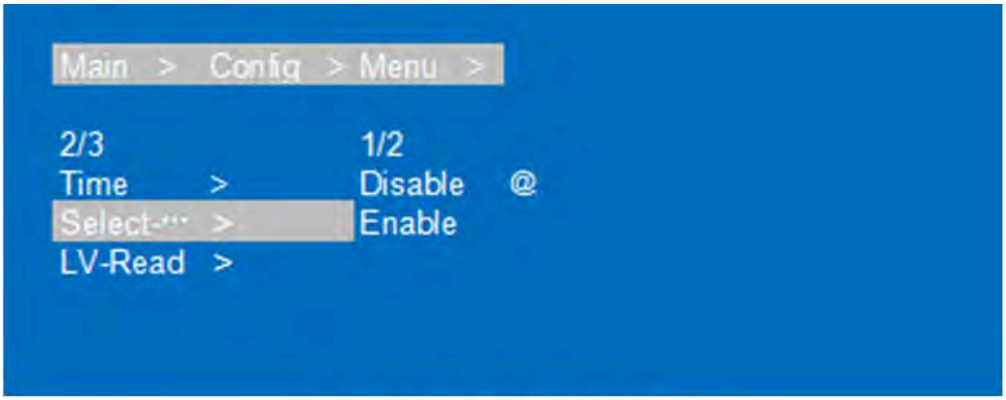


Menu Settings Interface

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Exit Menu Time Settings Interface



Select-Run Settings Interface



LV-Read Settings Interface

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7.5.4 User EDID Settings

You can save default EDID, output EDID and temporary EDID to the User EDID

Operation instructions:

① Select “Config”, Press “ENTER”

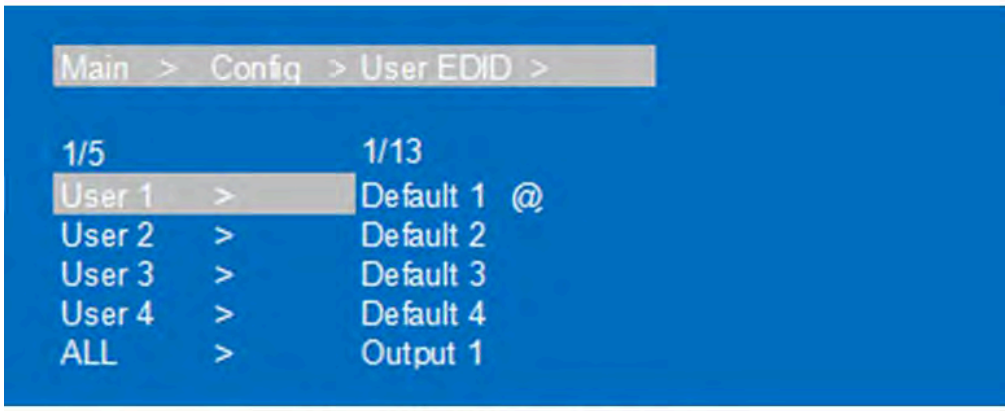
② Press “Up” “DOWN” button to select “User EDID”, Press “ENTER”

③ Press “Up” “DOWN” button to select “User l~4 or ALL”, Press “ENTER”

④ Press “UP” “DOWN”button to select default EDID, output EDID or temporary EDID to save User EDID, while you can check EDID information.



User EDID Settings Interface



User EDID Choose Interface

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EDID Infommation Display Interface

7.5.5 System Settings

You can set device's Reboot, Timing switch, Factory data reset.

1) Reboot: Restart device

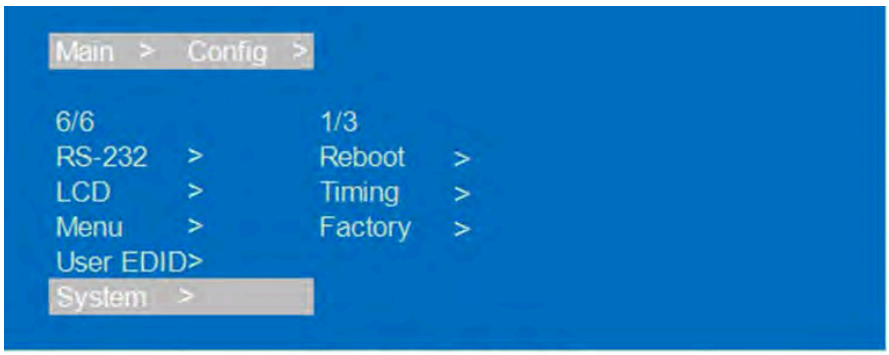
Operation instructions:

① Select “Config”, Press "ENTER”

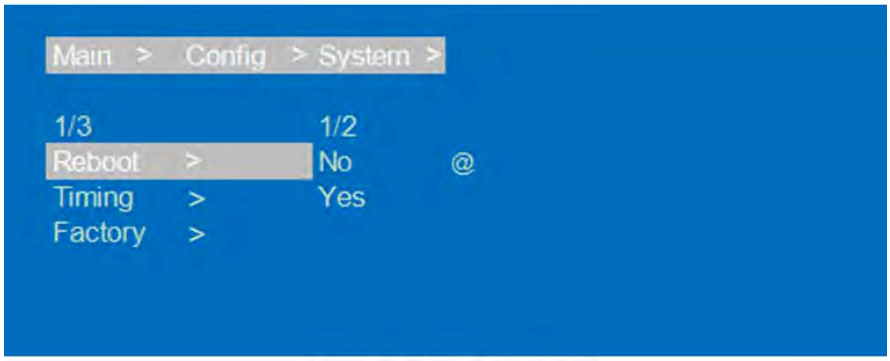
② Press “UP” “DOWN” button to select “System”, Press “ENTER”

③ Press “UP” “DOWN” button to select “Reboot + Press “ENTER”

④ Press “UP” “DOWN” button to select “Yes” + Press “ENTER”, device reboot has finished.



System Settings Interlace



Device Reboot Interface

2) Timing switch settings: The default is Endless, no timing Settings, The timing units are S/M/H DSecond/minute/hour/day

Operation instructions:

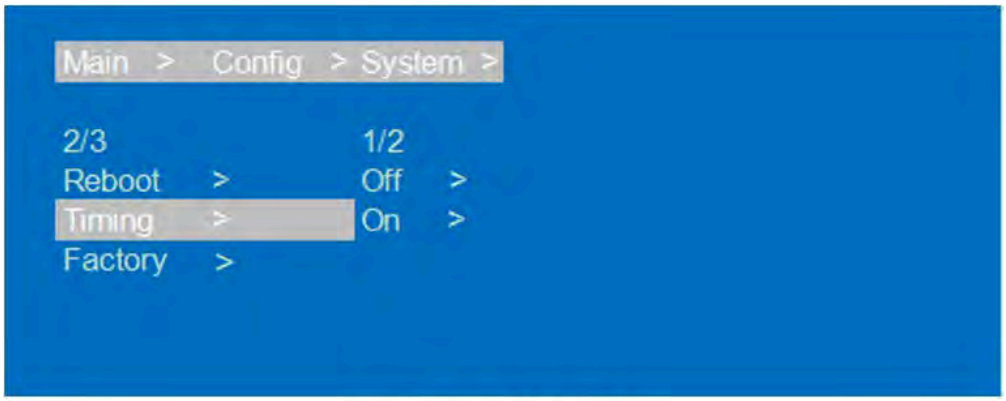
① Select “Config”, Press “ENTER”

② Press “Up” “DOWN” button to select “System”, Press “ENTER”

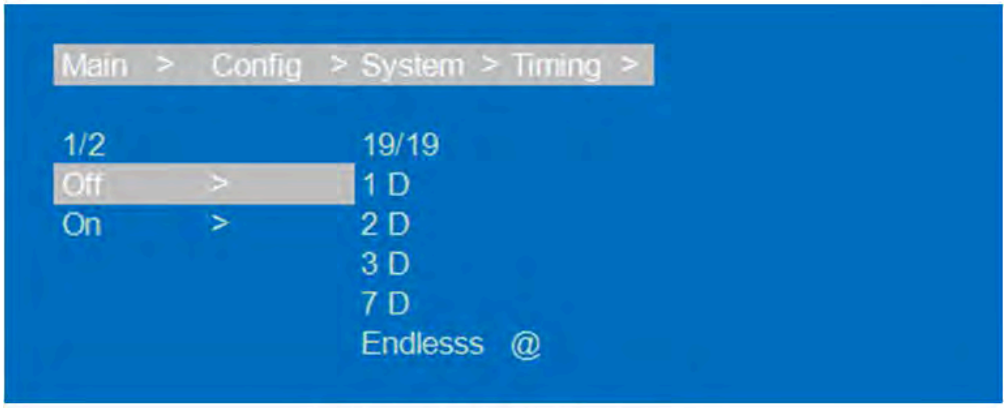
③ Press “UP” “DOWN” button to select “Timing” + Press “ENTER”

④ Press “UP” “DOWN” button to select “Off/On”, Press “ENTER”

⑤ Press “UP”, “DOWN” button to select time you need



Timing Switch Interface



Timing Switeh Time Intertace

3) Factory data reset: Device function initialization Settings.General will restore some factory settings. User will restore all settings, etc. to default, but account will not be restored to default.

Operation instructions:

① Select “Config”, Press “ENTER”

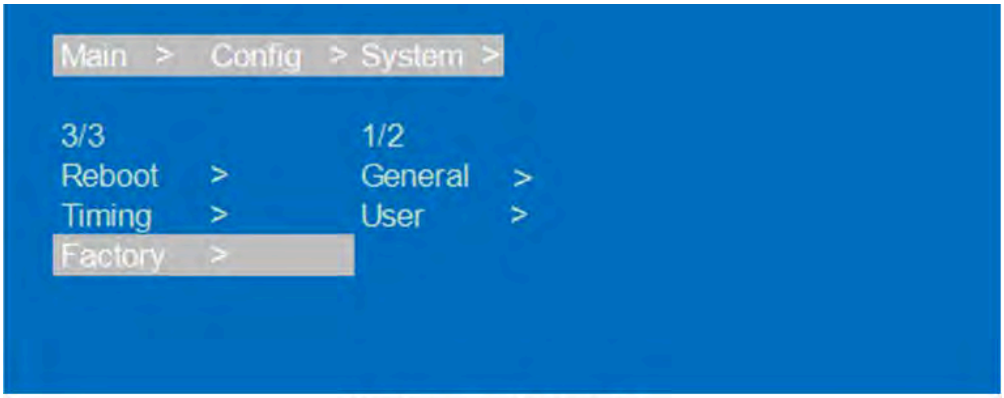
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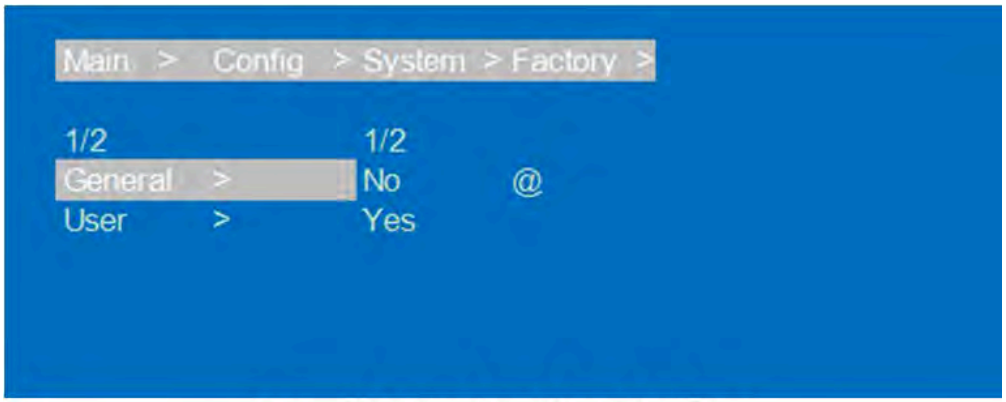
② Press “Up” “DOWN” button to select “System”, Press “ENTER”

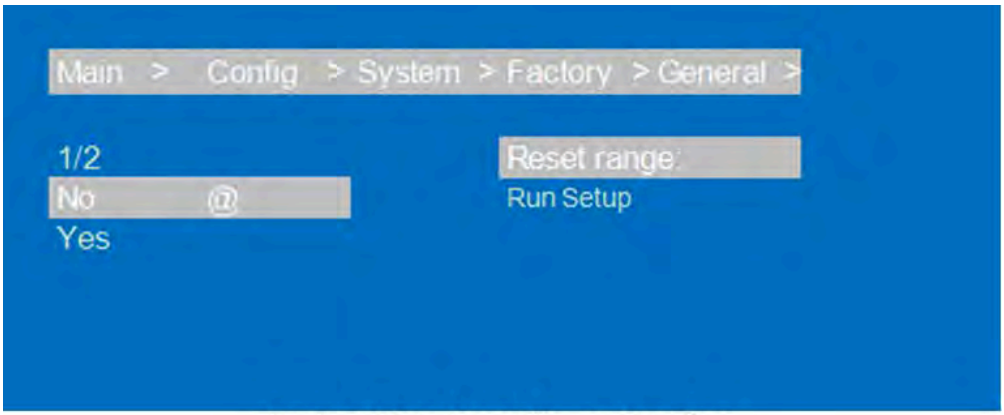
③ Press “UP” “DOWN” button to select “General” + Press “ENTER”

④ Press “UP” “DOWN” button to select “Yes”, Device factory data reset done.

Note: After all tests are completed, send the command "factory2 mode=255" (This command will restore the account to default, and reset the running time, etc.)







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7.6 Device Information Query

Device information: input information, output information, system information

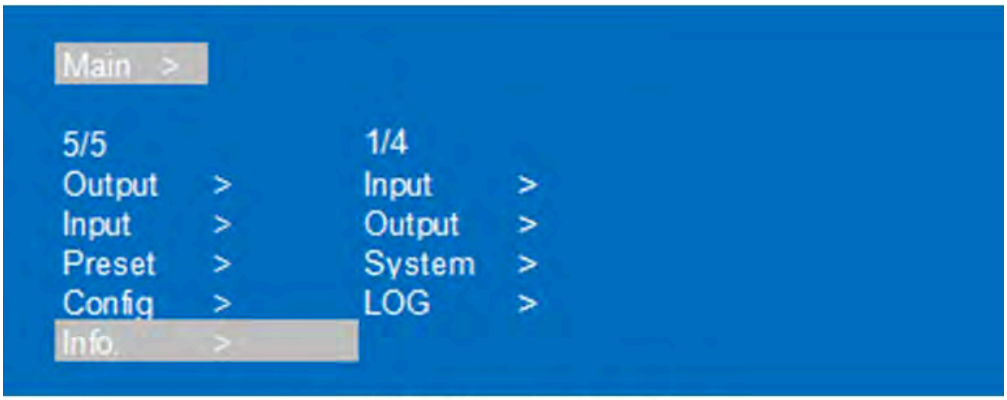
1) Input information: Input connection status, Input resolution, Color gamut color depth, audio format and input HDCP version.

2) Output information: Can read some of the information from the TV.Operation instructions.

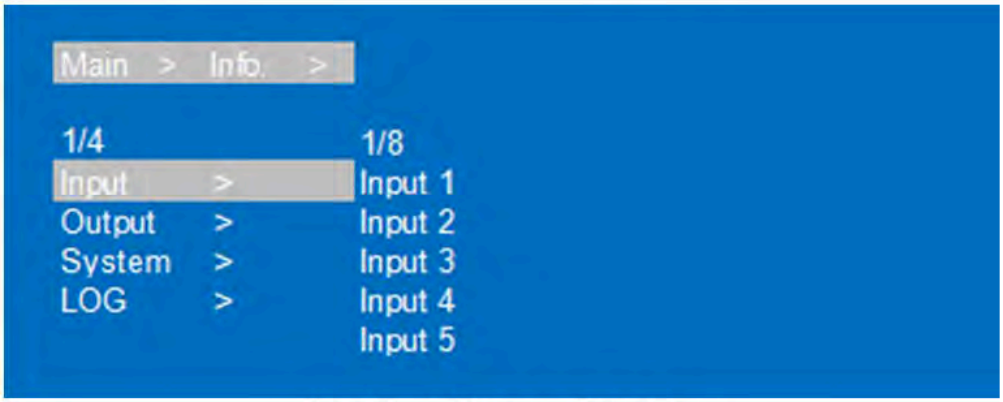
① Select “INFO”, Press “ENTER”

② Press “UP” “DOWN” button to select “Input/Output”, Press “ENTER”

③ Press “UP” “DOWN" button to select input output port, then see input/output information



Device Information Interface



Input Port Choosing Interface



Input Information Display Interface

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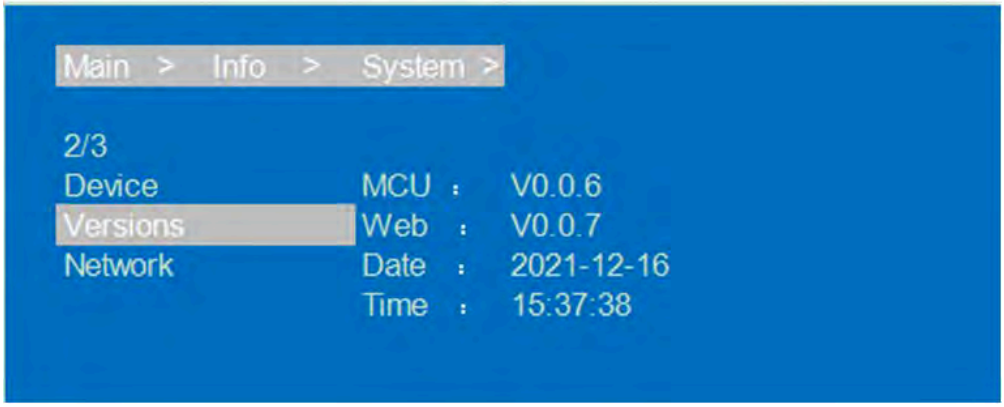
3) System interface: is used for checking device system information (Manufacturer/Device lD/device type), Version (MCU/web page) and Network parameter (lP/GW. Mask)Operation instruction:

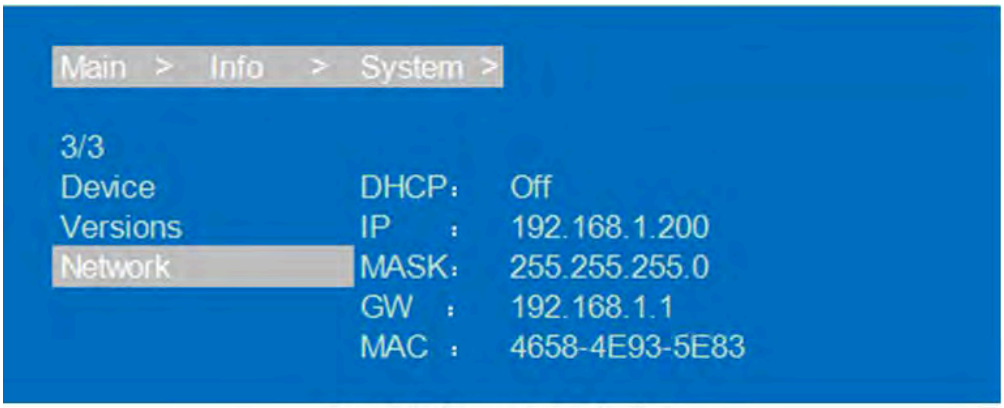
① Select “INFO”, Press “ENTER”

② Press “UP” “DOWN” button to select “Device”. Press “ENTER”

③ Press “UP” “DOWN” button to select “Device/Versions/Network”, then you can check information



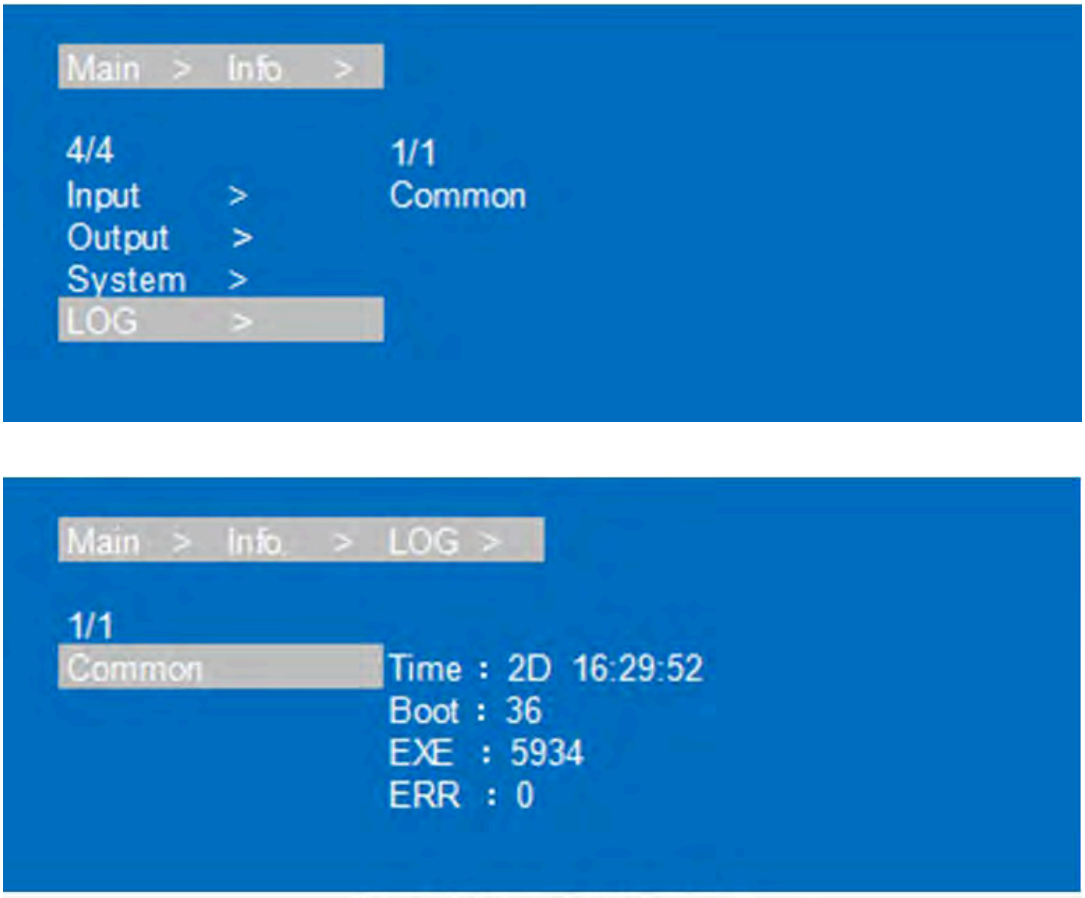




Input Information Display

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4) LOG: it used for checking device information: running time, startup times, operation times, runs errors times.



Input Information Display

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7.7 Remote Control Description



1. Standby Mode
2. Silence
3. 1 .. 8: Video switching.
   operation format: "number + downward + input"
   For example: 1 + ▼ + 2, Output 1 is switched to Input 2.
4. ◀ ▶: Quickly switch between left and right
5. ■: Image closed
6. ⌂: Home button
7. ALL: Select All Button
8. ▲ ▼: Navigation key: Page up and page down
9. ◀ ▶: Navigation key: Corresponds to the menu and enter keys on the operation panel.
10. OK: Enter key
11. ⟳: Display IP information
12. Back: Return to the previous menu level
13. ⧉: Quickly access preset, press briefly to switch between them One by one.
14. −: "Short press + number" to invoke the specified preset
    For example: − + 1
15. , , , : The 0, 5, 6, 7, 8, 9 numeric keys are reserved and currently have no functions.

8. Audio Introductions

8.1 HDMI Audio

HDMI audio support PCM2.0-7.1/32-192KHZ/16-24bit, Dolby/DTS/Dolby Atmos/DTS-HD, and maximum 7.1 channels, but the supported audio format, channel, and sampling rate depend on the EDID.

8.2 Audio Extraction

Analog audio only support PCM2.0, 32-192KHZ, 16-24B1T; S/PDIF audio output support PCM/ Dolby/DTS, 32-96KHZ, 16-24bit, maximum 5.1 channels

8.2.1. Analog Audio Extraction

① When the 8x8 matrix is selected for one-to-one output, the analog audio output can only output the audio of the port.

② When the HDMI output port is muted, coaxial and analog audio output will not be affected

③ Analog audio only support PCM2.0, otherwise Auto-Mute

④ Analog audio left and right channels cannot be reversed output

⑤ Analog audio output is free from noise, cross-talk, distortion, or other anomaly

8.2.2. SPDIF Audio Extraction

① When the 8x8 matrix is selected for one-to-one output, the coaxial audio output can only output the audio of the port.

② When the HDMI output port is muted, coaxial and analog audio output will not be affected

③ Analog audio output is free from noise, cross-talk, distortion, or other anomaly

8.3. Audio Embedding

8 x analog audio support embedded, LINE IN l~8 correspond HDMI IN l~8 Analog audio only support PCM2.0 format audio. After the audio embedding function is turned on, embedded audio can be output through HDMI analog/SPDIF ports.

8.4. ARC Audio

Supports output l~8 audio transmission back to SPDIF 1~8 and PCM/DTS/DOLBY 5.1 audio format.

Operation instruction:

1. HDMI source and TV both need support CEC, Ty also need support ARC. You need to turn on the TV and HDMI source CEC and ARC functions.
2. HDMI source connects to TV
3. TV's HDMI ARC port connects to output 1~8
4. Use a coaxial cable to connect the power amplifier to SPDIF port (correspond HDMI ARC output)
5. Turn on device's ARC function by panel button command/WEB, done.

9. Routing Functionality & Use Cases

9.1 Primary Matrix Routing

On the left, you've got your HDMI Outputs — Out 1 through Out 8. Across the top, you've got all your HDMI Inputs — In 1 through In 8.

Each blue box in the grid shows which input is currently feeding into which output. So for example, if Out 3 says "HDMI IN 3," that means Output 3 is showing content from Input 3.

Want to change the source for an output? Just click one of the boxes in the row for that output, and it'll switch right over to the new input. The yellow-highlighted text in brackets next to the HDMI Output labels represents the HDMI audio source we selected earlier on the HDMI Output page.

9.2 Audio Matrix

This section allows you to route audio signals independently from video, directing them to your analog and coaxial (also known as SPDIF) outputs. It's important to understand that each analog 3.5mm output is permanently linked to its matching SPDIF output. For example, Analog Out 1 is always paired with SPDIF 1, Analog Out 2 with SPDIF 2, and so on. These groupings are fixed and cannot be changed or separated.

At the top of the matrix, you'll see audio output channels labeled AO 1 through AO 8, along with a global AO On/Off toggle. This switch enables or disables all audio outputs simultaneously.

Each row in the matrix represents an available audio input—either from one of the HDMI inputs (1 through 8) or Analog audio inputs (1 through 8). By clicking any of the buttons in the matrix, you assign a specific input to a specific output. For example, you might route Analog In 1 to AO 4, or HDMI In 6 to AO 2, depending on your configuration.

At the bottom of each column, you'll notice a label indicating the currently selected audio routing mode: Routed HDMI or Routed Analog. By default, Routed HDMI is selected. Both of these options are dynamic and linked directly to the settings on the Primary Routing Matrix page. This means that the audio output will automatically follow any video routing changes made on that page.

9.3 Use Cases

The goal here is to highlight some of the powerful and flexible audio options available, and to break down how both Routed HDMI and Routed Analog work. each analog 3.5mm output, SPDIF output, and HDMI output is tied together by port number. So, for example, Analog Out 1, SPDIF 1, and HDMI Out 1 all correspond to Output 1.

However, it's important to note that only the analog and SPDIF outputs share the same audio signal—they're locked together. Although the HDMI output appears grouped with them, it can be assigned a completely different audio source via the HDMI Output tab.

9.3.1 Basic Audio Embedding

Let's walk through a use case. You have HDMI Output 5 labeled as "Lounge TV", currently showing a football game from HDMI Input 3.
Now, you want to embed background music from HDMI Input 8 so guests in the lounge hear music instead of game commentary.

Step 1: Embed Music via HDMI Output Tab

- Go to the HDMI Output tab.
- Locate Output 5 (Lounge TV).
- In the HDMI Audio Source dropdown, select HDMI IN 8.

Lounge TV continues showing the football game from HDMI IN 3, but audio is now replaced with the music from HDMI IN 8.

Step 2: Match Audio on Analog & SPDIF Outputs

- Head to the Audio Matrix tab.
- Under AO5 (Analog Out 5), select HDMI IN 8.

Now, both Analog Out 5 and SPDIF Out 5 are outputting the same music from HDMI IN 8.
Everything connected to Output 5—HDMI, analog, and SPDIF—is playing the same audio source: music.

Step 3: Change Video Source Without Affecting Audio

Later, you decide to change Lounge TV's video content from the football game to a slideshow on HDMI Input 6.

- Go to the Primary Routing Matrix tab.
- Change HDMI Output 5 from Input 3 to Input 6.

Lounge TV will now display the slideshow video, but audio will still play music from HDMI IN 8, because it's locked independently in the HDMI Output tab and Audio Matrix.

9.3.2 Routed HDMI

Let's take a look at how the Routed HDMI setting works. This mode is ideal for basic routing where audio and video stay linked to the same source.
You currently have a movie playing on HDMI Output 1 (e.g., "Fast & Furious" from HDMI Input 3) and want to switch to a college football game on ESPN, which is connected to HDMI Input 7.

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Your goal is to:

- Switch both video and audio to ESPN (Input 7) on HDMI Output 1.
- Also have the analog and SPDIF outputs (AO1) follow the same change.
- Ensure everything stays synced when switching between sources in the future.

Step-by-Step Breakdown:

Step 1: Set HDMI Output 1 to Routed HDMI

- Go to the HDMI Output tab.
- Locate Output 1.
- Set the HDMI Audio Source to "Routed HDMI (Default)".

This links HDMI Output 1's audio to follow its video source from the Primary Routing Matrix.

Step 2: Route Video to Input 7 (ESPN)

- Head to the Primary Routing Matrix tab.
- Set HDMI Output 1 to HDMI Input 7.

The system now switches both the video and audio on HDMI Output 1 to Input 7 (ESPN), because "Routed HDMI" is active.

You can confirm this by looking at the HDMI Output tab, where the yellow highlight shows the currently routed audio input.

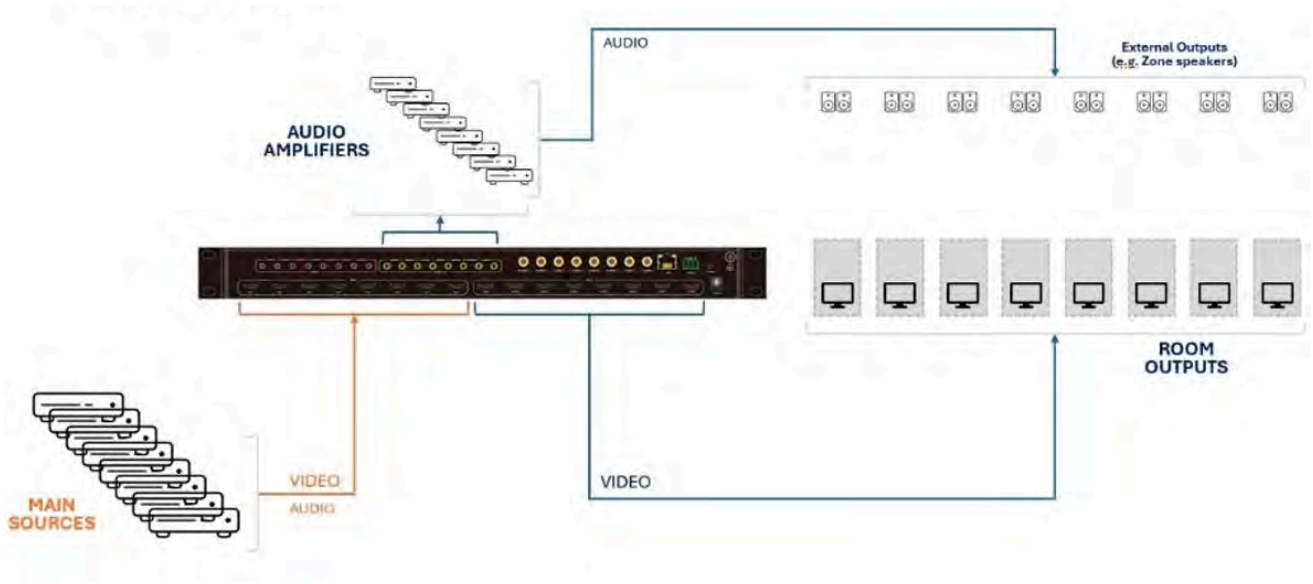
Step 3: Sync Analog/SPDIF Audio to Follow HDMI

- Go to the Audio Matrix tab.
- Under AO 1 (Analog Out 1), select "HDMI IN 7" or set AO 1 to Routed HDMI.

Analog Out 1 and SPDIF Out 1 will now output the same audio as HDMI IN 7, matching the TV connected to HDMI Output 1.

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Routed HDMI



9.3.3 Routed Analog

Routed Analog works similarly to Routed HDMI, except it allows embedded analog audio to follow the HDMI input signal automatically. It's especially useful when you want to pair external analog audio (like from a music player or mic input) with video from a specific HDMI source.

Routing Behavior:

When Routed Analog is selected as the HDMI Audio Source on the HDMI Output tab, the system behaves as follows:

- It dynamically links Analog Input X with HDMI Input X (1-to-1).
- Whatever HDMI input is selected on the HDMI Output, the corresponding Analog Input will automatically be used for audio.
- The same logic applies in the Audio Matrix tab: selecting a video source automatically selects the linked analog input.

Example Scenario:

Let's say we are using HDMI Input 3 for a digital signage player, but we want to play background music embedded via Analog Input 3.

Step-by-step:

1. **Video Routing:**

On the Primary Routing Matrix, set HDMI Output 2 to HDMI Input 3.

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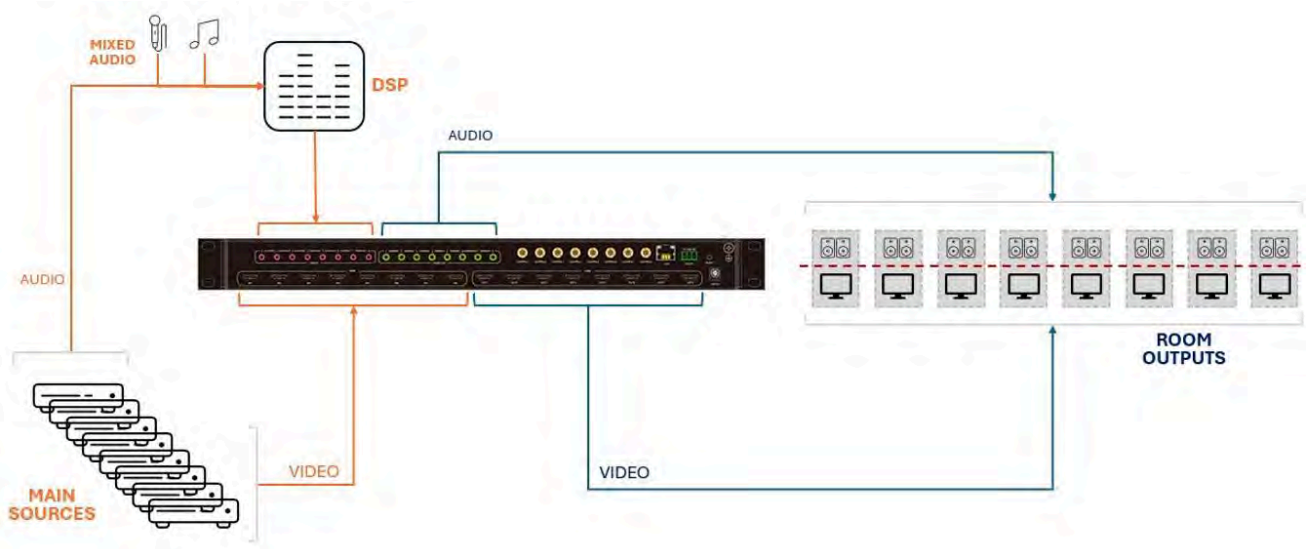
2. Audio Source Selection:

- On the HDMI Output tab, for Output 2, set the HDMI Audio Source to Routed Analog.
  - This causes Analog Input 3 to be used for audio automatically, since HDMI Input 3 is selected.

3. Analog/SPDIF Output:

- In the Audio Matrix, for AO2, select HDMI IN 3 to pass the Analog In 3 signal to Analog Out 2 or SPDIF Out 2.

Routed Analog



10. EDID Management

The device includes 4 EDID modes: Default EDID, User EDID, Output EDID, Temp1, control EDID by WEB and RS232. Factory Default: Default1 4K60 444 2CH

The instructions are follows:

I. Send instruction: #edid d in%8,d source=%d switch ED1D, "in%8,d" parameter need to input 255 or0~7 (255 means all input), source=%d=0~24(Correspond the table below)

EDID Mode	EDID Index	EDID
Default EDID	0	4096x2160@60-444 HLG 2CH (default)
	1	4096x2160@60-420 HLG 2CH
	2	4096x2160@30-444 HLG 2CH
	3	1920x1080P@120-444 HLG 2CH
User EDID	4-7	When manufactured, there is no EDID. User can set their own EDID. It has a power-off memory function. The set EDID will automatically overwrite the previous one.
Output EDID	8-15	Copy output 1-8 ports' EDID with storage definition without power off memory.
Temp1	24	Temporary EDID
Note: The above EDID supports 4K downscaler1080P		

11. RS232 Control

Control software operation:

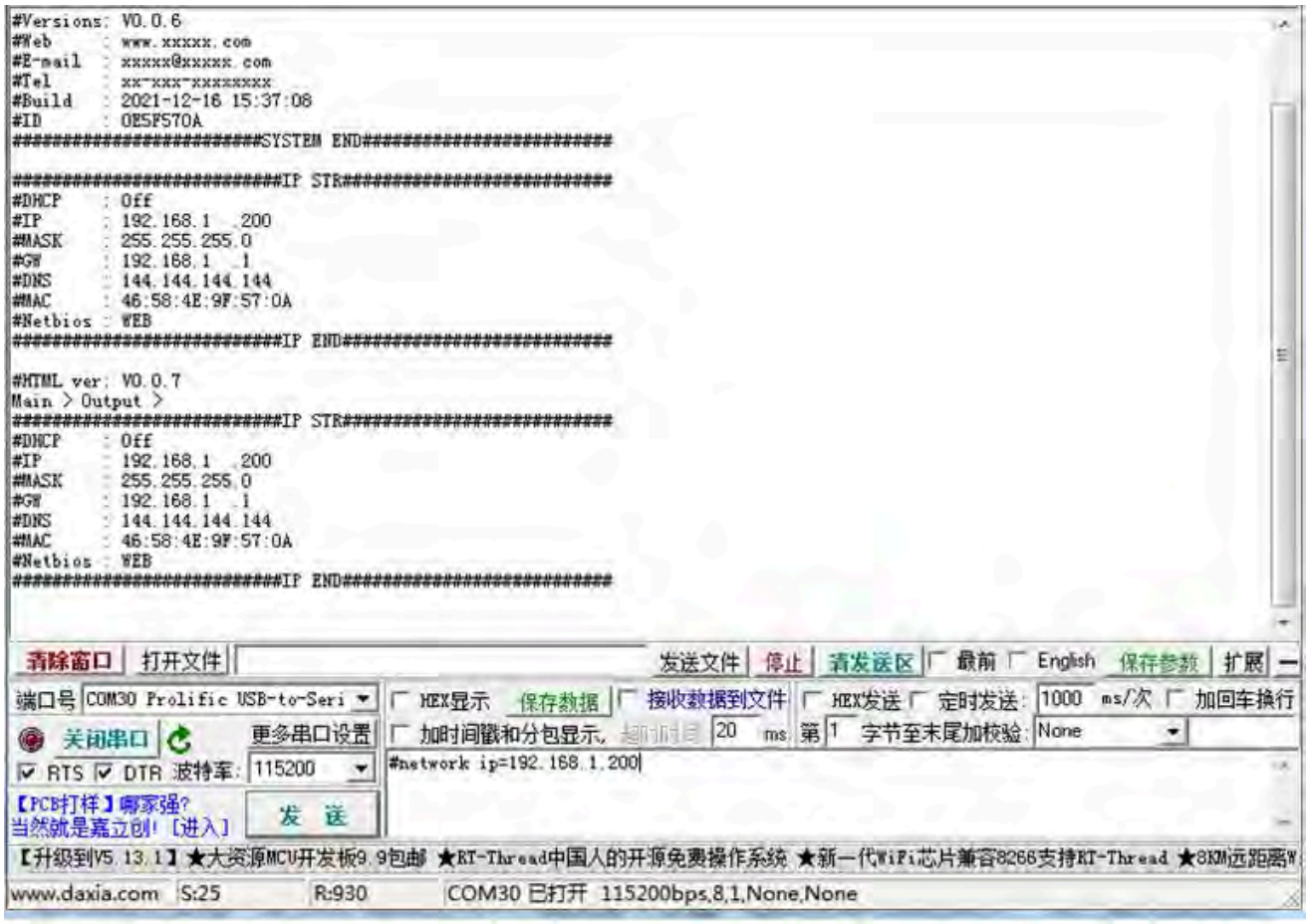
The serial control software is illustrated with SSCOM32 as an example

Basic Settings



Double click the software in the installation package to run specifically (as shown in figure l below) and install the RS232 software on the computer.

Enter the main interface of the software as shown below.



In the parameter configuration area, select the serial port number that the serial line connects to the PC

Baud rate:115200 (default)

Data location: 8

Stop bit: 1

Check bit: no

Enter Port Command in Send options

Test method: ZT-437 is connected to the PC via a USB-to-serial port adapter. Set the product's baud rate to be the same as that of the serial port assistant, and input commands for testing.

For example, to change the IP address: "#network ip=192.168.1.168". Check on the LCD display whether the IP address has been changed successfully.

Note: 1. Note: After each factory reset, you must first log in to the level 1 account ("#account login id=admin psd=123456"); otherwise, the entire factory reset will have no effect.

2. After all tests are completed, send the command “#factory2 mode=255” to restore all settings to factory defaults.

12. Web Control

The host connects to control devices via a TCP/IP network port (e.g., PC) and can be controlled via a GUI-based human-machine interface. Control modes include:

1. Standalone control by connecting to a single non-networked computer.
2. Simultaneous multi-machine control through LAN integration.

12.1 Non-networked standalone control

If both devices share the same IP subnet, Direct connection enables control.

If there is a difference, Adjust the control PC's IP address and subnet mask to match the host's subnet.

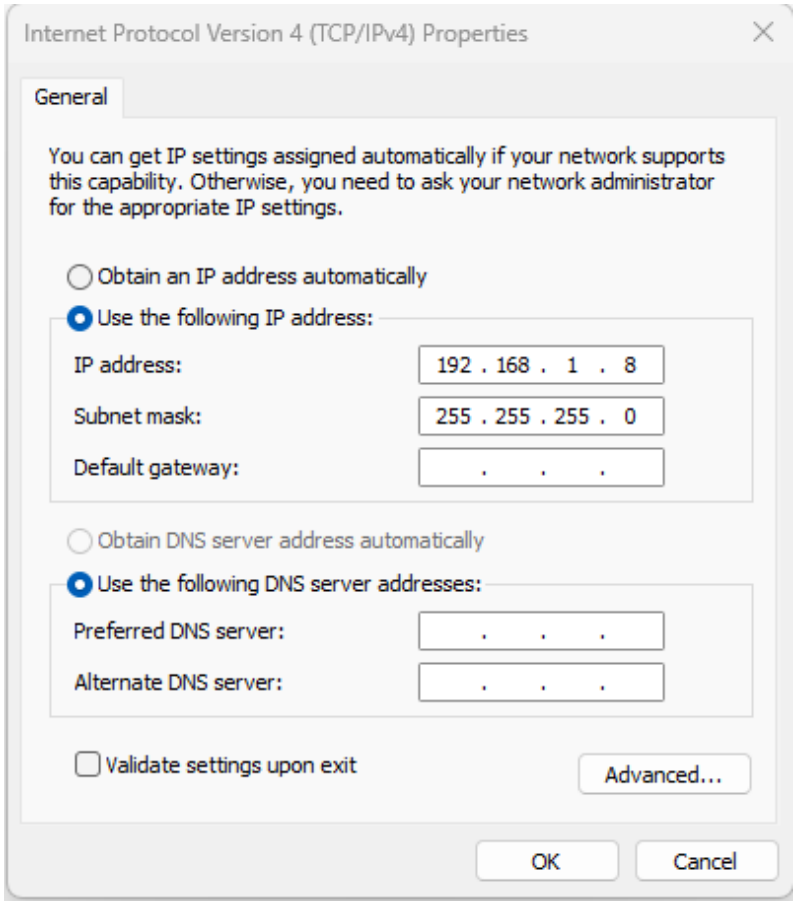
Static IP Add: 192.168.1.168

MASK：255.255.255.0

GW：192.168.1.1

MAC：4657-4　E9F-570A

(The MAC address will change along with the GUI module.)



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12.2 Multi-Use Remote Control in LAN

Connect devices to the LAN to enable multi-user remote control

(The host's IP subnet matches the LAN subnet, enable DHCP on the device)



Login: After the settings are completed, open the browser and enter the default IP address then input the account and password and you can enter the web control interface.

IP address: **192.168.1.168**

Account: **admin**

Password: **admin**



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13. Status Interface

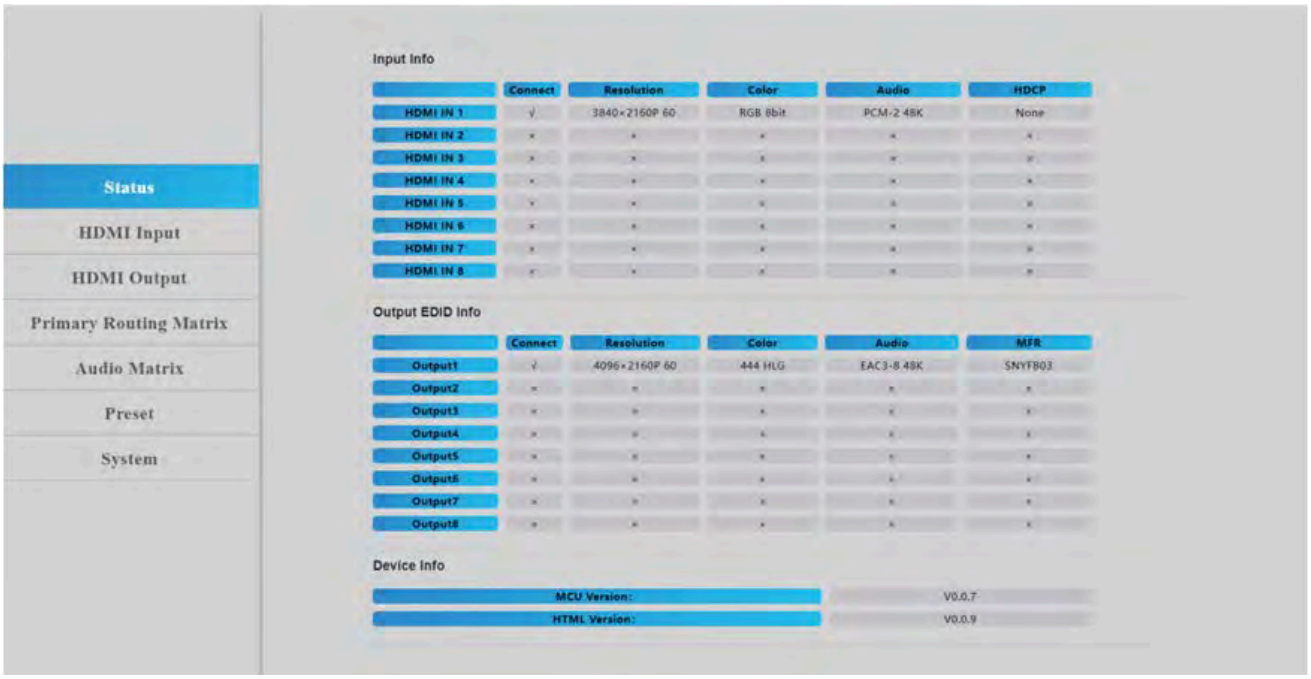
Status interface include 3 parts: input information, output information and device version information

1. Input info: Displays the status and information of the current device input port, Includes the connection status, input resolution, gamut color depth, HDCP version information and input audio format of each input port.

2. Output EDID info: Displays the status and information about the output port, Includes the connection status, output resolution and color gamut, output audio format, EDID manufacturer of each output port.

3. Device info: Displays the current name of the device, MCU and HTML of version number (Same as on the screen)

4. “√” shows that open or connect normally, “x” shows that close or not connected.



13.1 Input Interface

Interface introduction: This page is mainly used for renaming input ports, switching video signals (opened by default), switching audio input, selecting EDID, and switching audio source signals.

1. Alias: Modify the current name of input port, support l~l5 characters (numbers, letters and underscores) which is synchronized with the screen.

2. Video: Switch input video, Once the input video is on, the audio extraction output is muted

3. Switch EDID: Set default, copy, user EDID, and show EDID information (HDR, audio channel,resolution.color gamut)

4. User EDID: Save default/copy EDID to User EDID, and upgrade the BIN file to the User EDID

5. All: select all input ports to realize fast switch.



13.2 Output Interface

Interface introduction: The page used for port renaming, switching output video (on by default) switching audio output (HDMI Analog/SPDIF), ARC function (off by default).

1. Alias: Modify the current name of output port, support l~15 characters (numbers, letters and underscores) which is synchronized with the screen.

2. HDMI Video: Switch output video, close the output port video does not affect the audio extraction function. the 5V output needs to be turned off at the same time.

3. HDMI Audio: Switch HDMI output audio, on by default.

4. HDMI Audio Source: Switch audio source. The drop down list "HDMI" indicates selecting the input source audio, while "ENC" indicates selecting the embedded audio input.

5. ARC: Switch ARC audio return output, off by default.

6. CEC: TV with CEC function, support start up, shutdown cannot be supported.

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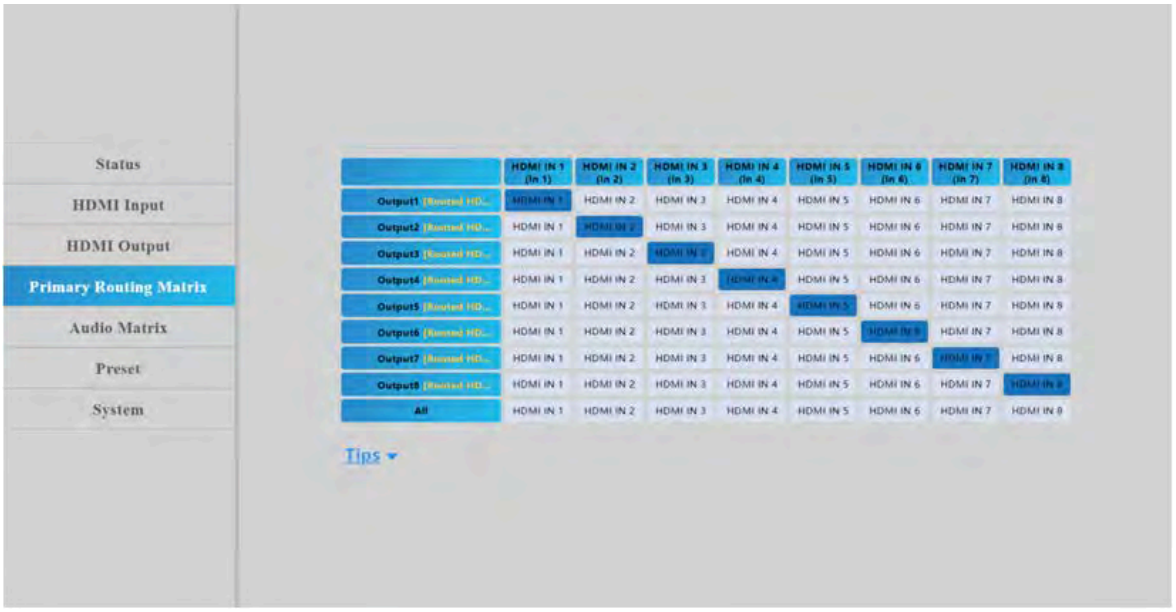
Operation instructions:

1. Double click the left mouse button to enter the name editing to customize the name, the output port name modifies done.

2. Click the two-way button to complete the switch setting of output video, audio and ARC function. Green means on and gray means off.

13.3. Primary Routing Matrix Interface

Interface introduction: The page is used for displaying the input source corresponding to the current output port, Switching the input to an output port and output the image: Vertical axis means output port selection, abscissa axis means input port selection. All means select all outputs.

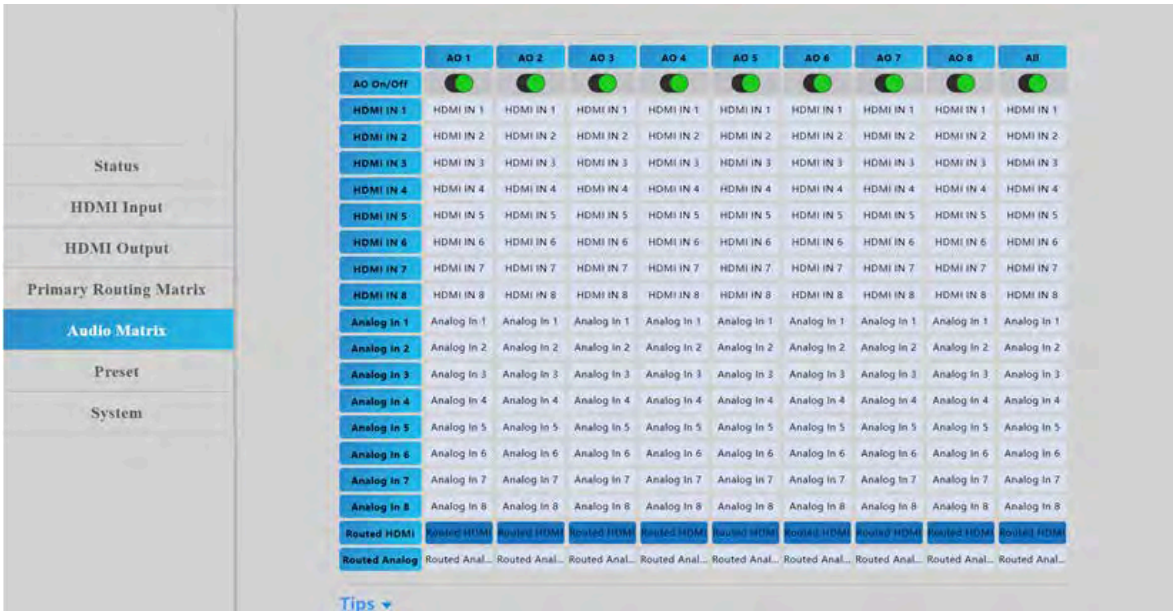


Operation instructions: Click the input box to switch the corresponding output port, The above picture show the PIP one to one output.

13.4. Audio Matrix Interface

This page is used for switching the audio separation matrix. The horizontal axis represents the selection of output ports, the vertical axis represents the selection of input sources, and "All" indicates selecting all output ports.

AO On/Off: Audio separation switch, on by default.



Operation instructions: click on the corresponding input box to complete the switching of the corresponding audio separation matrix.

13.5 Preset Interface

The page is used for renaming, saving, calling and clearing of preset scene.

1. The device can preset 8 scenes and support scene renaming.

2. Clear means clears the current saved scene.

3. Save means save the current changed scene, the video, audio and system settings can be saved, but network parameter cannot be saved.

4. Call means call the changed scene



Operation instructions:

1. Double click the left mouse button(Preset1). Click enter to the name edit box, custom name done

2. Click Clear, scene clear done

3. Click Save, save the current scene

4. Click Call, call the saved scene

13.6 System Interface

The page can modify and show network parameters and control protocol parameters, modify web login account and password, reboot device, general restore factory, user restore factory.

1. Mac address can only be displayed and cannot be modified.

2. IP address is 192.168.1.168 by default, it can be modified.

① After DHCP is opened, dynamic IP is used, in this case, the IP address cannot be modified and can assign by router.

② After DHCP is olf, static IP is used, in this case, the IP address can be modified. After the modification, click Apply.

3. MASK and GW address can be modified, but the prerequisites are same as the IP address.

4. DHCP use two-way button as switch, click directly to open DHCP, Green button means open DHCP, Gray means close DHCP.

5. Account management: Enter your account and password in the white box, Click Apply, It takes effect on next login, support 1~15 characters (numbers, letters and underscores)

6. Click Reboot/Factory General/Factory User, click enter according to the prompt, Device Reboot/ restore factory done.

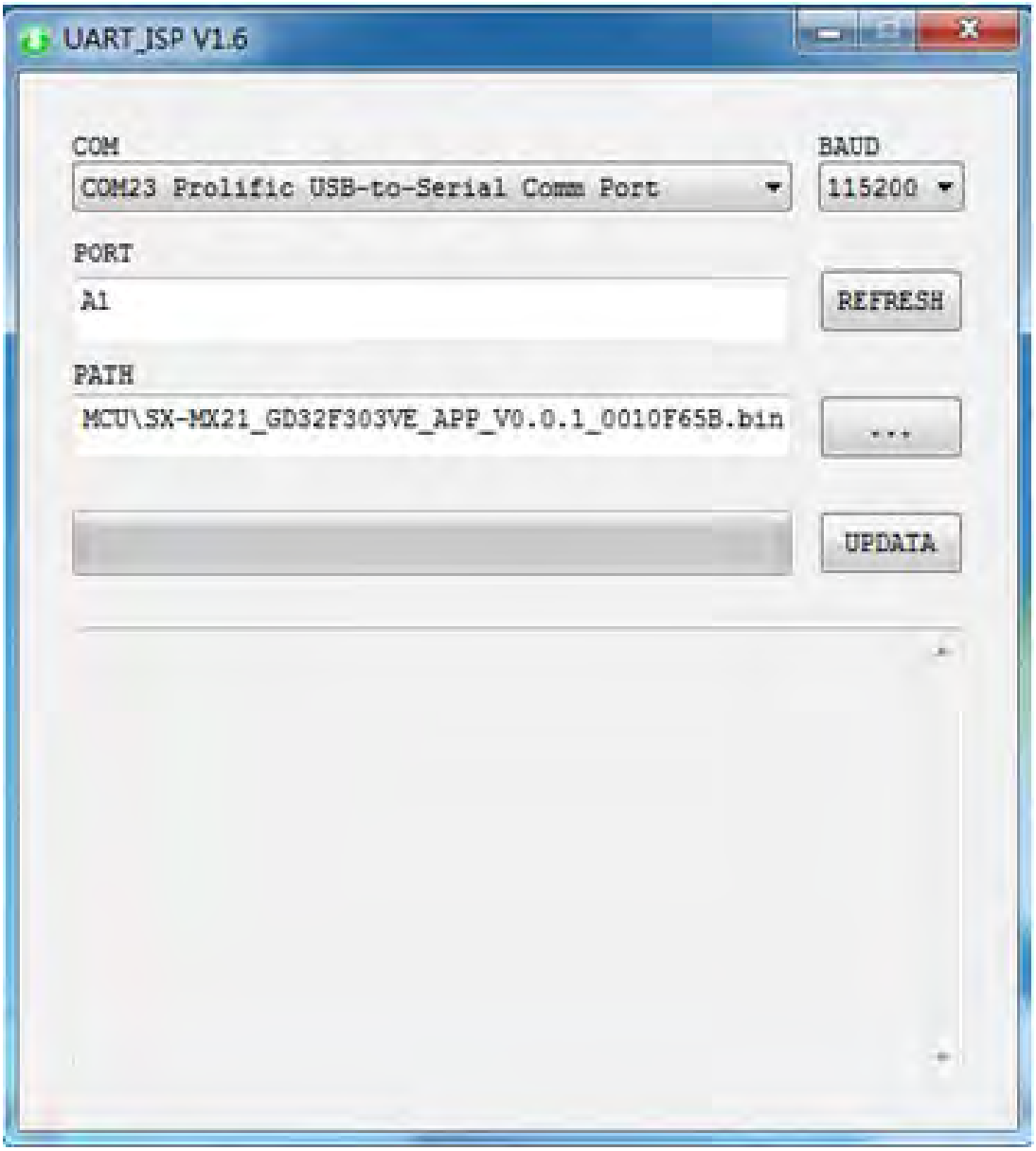


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14. Firmware Upgrade

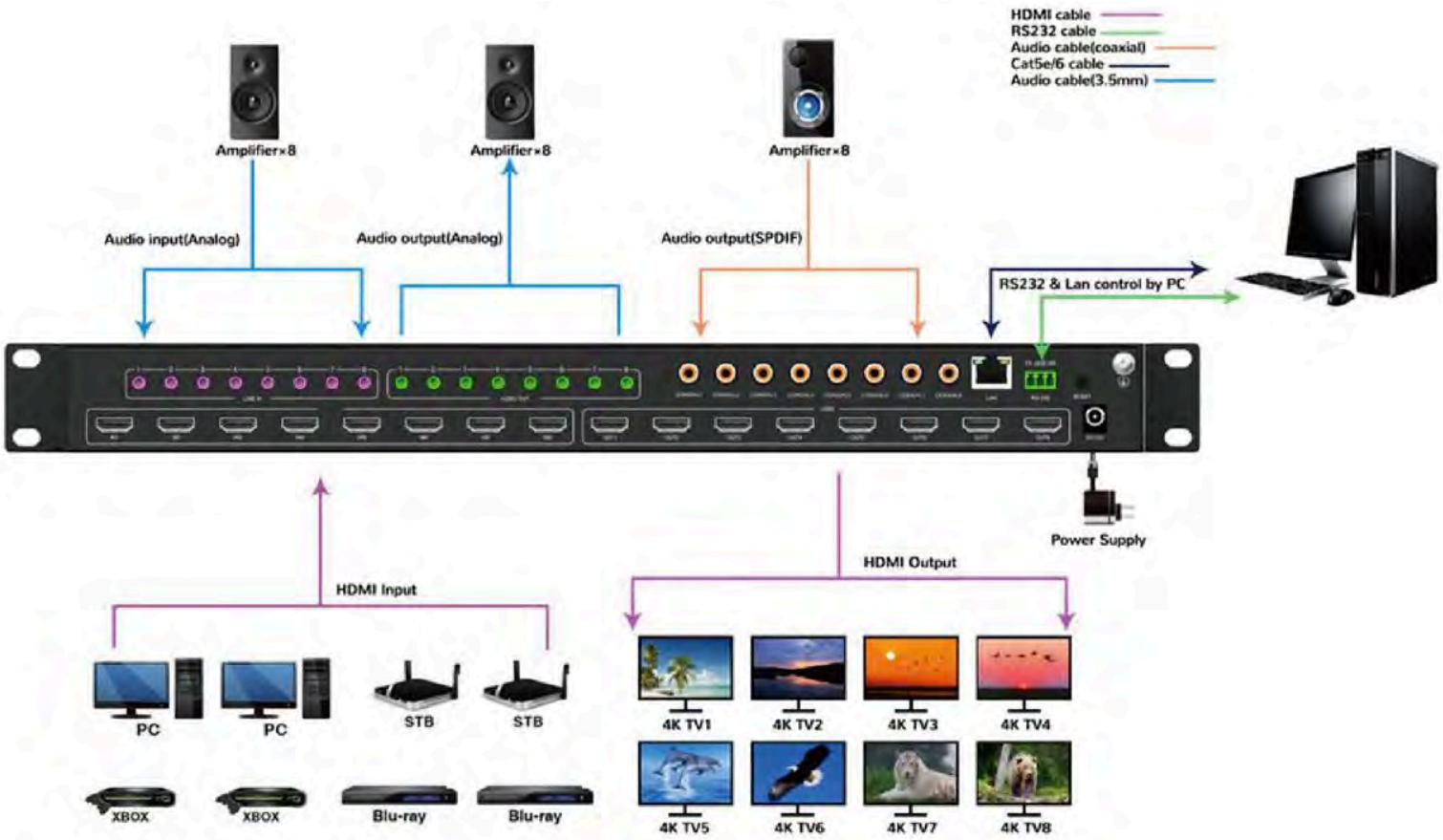
Operation instructions.

1. Connect PC and Device with RS232, open software UART ISP Vl.6.exe on PC.
2. Click “Refresh" refresh the serial port number and select the correct serial port number
3. Baud data is 115200 by default.
4. Input “Al" on the port, Select the path where the program resides to upgrade the MCU.
5. Input “F0" on the port, Select the path where the program resides to upgrade the web page.Click “Update”, the system starts to update until "Succeed" is displayed in the information bar, update done.



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15. Connection Diagram



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16. Maintenance

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner, or benzine to clean.

17. Warranty

If your product does not work properly because of a defect in materials of workmanship, our company (referred to as "the warrantor") will, for the length of the period indicated as below, "Parts and Labor (5) Years", which starts with the date of original purchase ("Limited Warranty period"), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.
During the "Labor" limited warranty period, there will be no charge for labor. During the "Parts" warranty period, there will be no charge for parts. You must mail-in your product during the warranty period. This Limited Warranty is extended only to the original purchaser and only covers products purchased as new. A purchase receipt or other proof of original purchase date is required for Limited Warranty service.

18. Mail-In Service

When shipping the unit, carefully pack and send it prepaid, adequately insured, and preferably in the original carton. Include a letter detailing the complaint and provide a daytime phone and/or email address where you can be reached phone and/or email address where you can be reached.

19. Limited Warranty Limits and Exclusions

This Limited Warranty ONLY COVERS failures due to defects in material or workmanship and DOES NOT COVER normal wear and tear or cosmetic damage. The Limited Warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by
products not supplied by warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, mis-adjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or service by anyone other than a Factory Service center or other Authorized Servicer, or damage that is attributed to acts of God.

There are no express warranties except as listed under "Limited Warranty Coverage". The warrantor is not liable for incidental or consequential damages resulting from the use of this product or arising out of any breach of this warranty. (As examples, this excludes damages for lost time, cost of having someone

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remove or re-install an installed unit if applicable, travel to and from the service, loss of or damage to media or images, data or other recorded content. The items listed are not exclusive but are for illustration only). Parts and service, which are not covered by this limited warranty, are your responsibility.



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WWW.ZENTY.COM
9807 EMILY LANE
STAFFORD, TX 77477

(844) 200-1945
SUPPORT@ZENTY.COM
SALES@ZENTY.COM