



**Zenty | Professional A/V Solution Provider**

## **User Manual** <sup>[V1.0]</sup>



**4K60Hz HDMI 2x2 Seamless Matrix / Video Wall / Multi-Viewer**

**ZT-386 | ZT-VWC-ME44**



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**Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.**

## **SURGE PROTECTION DEVICE RECOMMENDED**

**This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.**

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## 1. Features

- 70m / 230ft. 4x4 HDMI 2.0 Seamless Matrix. 4 HDMI Inputs to 4 RJ45 Outputs with 4 HDMI Loops out
- Supports 4K@60HZ 4:4:4 8bit, HDCP 2.2
- **Seamless Matrix Mode:** 4 in 4 out no switching delay and signal loss
- **Video Wall Mode:** Up to 7 different modes built-in and supports cascading
- **Multi-Viewer Mode:** Display 4 videos on the same screen and has multiple modes built-in
- **Audio Matrix:** Analog audio embedded & extraction, the audio can be independently switching
- With EDID management
- Supports LPCM 2.0 Audio format
- Supports PoC (Power over Cable): RX powered by TX.
- Control via Panel button, Remote, RS232, TCP/IP Control

## 2. Package Contents

- (1) x Matrix and 4x Receivers
- (1) x 12V/4A DC power adapter (5.5\*2.1mm with screw)
- (1) x Remote control
- (9) x IR Transmitter cables and 9x Receiver cables
- (1) x CD for user manual & Command list
- (5) x 3Pin Phoenix terminal plug

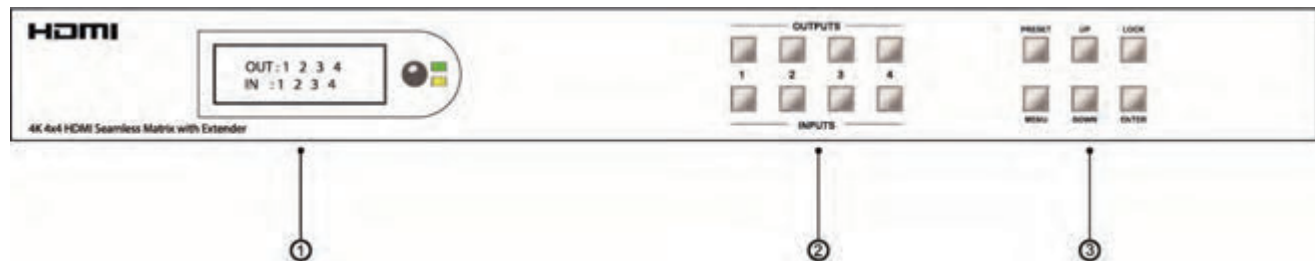
## 3. Specifications

|                             |                                                    |
|-----------------------------|----------------------------------------------------|
| Operating Temperature Range | -5 to +40°C(23 to +104 °F)                         |
| Storage Temperature Range   | -10 to +60°C(-14 to +140 °F)                       |
| Operating Humidity Range    | 5 to 90 % RH (no condensation)                     |
| Video Input Connectors      | 4x HDMI Type A, 19-pin, female                     |
| Video Output Connectors     | 4x RJ45 female and 4x HDMI Type A, 19-pin, female  |
| Bandwidth                   | 18Gbit/s                                           |
| Video Formats Supported     | 4K@60Hz, YUV4:4:4 8bit<br>4k@30Hz/1080P/1080i/720P |

|                         |                                                               |
|-------------------------|---------------------------------------------------------------|
| Audio Formats Supported | LPCM 2.0                                                      |
| HDCP Compliant          | HDCP 2.2 and HDCP 1.4                                         |
| Input ports             | 4x HDMI Ports                                                 |
| Output ports            | 4x RJ45 Ports and 4x HDMI Ports                               |
| Matrix mode             | 4x4 seamless switching                                        |
| Video wall mode         | Multiple video wall modes                                     |
| Multi-viewer mode       | Multiple multi-viewer modes                                   |
| Power Consumption       | 41 watts (Max.)                                               |
| Dimensions              | Matrix: L262 x W163 x H36 mm<br>Receiver: L110 x W68 x H13 mm |
| Mass (Main Unit)        | Matrix: 2710g / 5.97lbs<br>Receiver: 190g / 0.42lbs           |

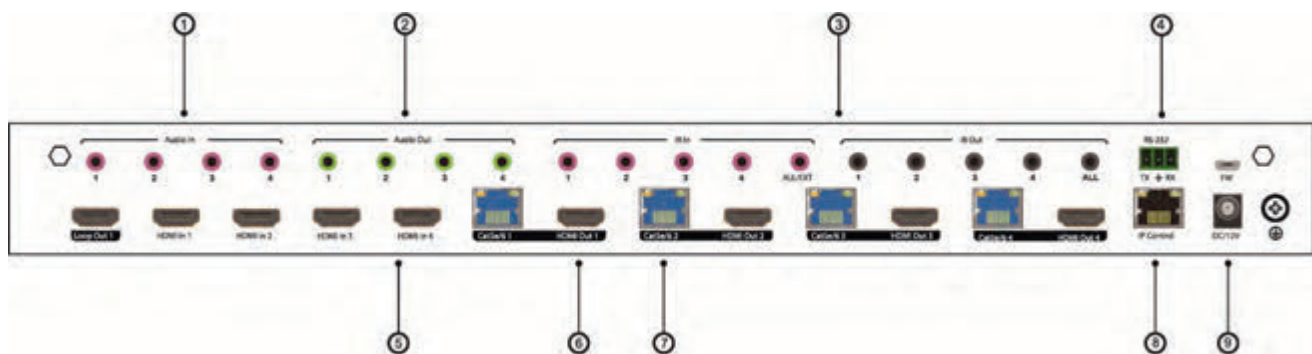
## 4. Panel Descriptions

### 4.1 Matrix Front Panel



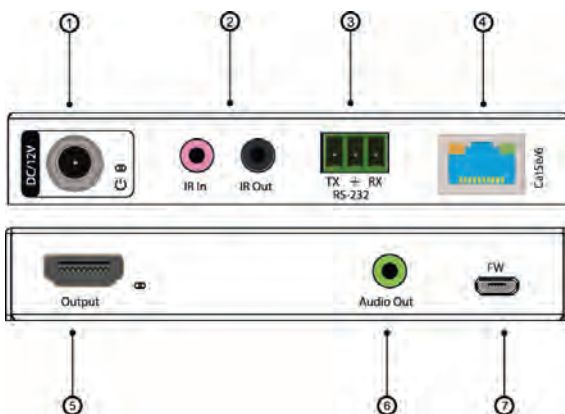
- ① LCD screen and IR receiving port, indicator light
- ② Output button OUT1~4 & Input button IN1~4
- ③ MENU button: PRESET; MANU; UP; DOWN; LOCK; ENTER

## 4.2 Matrix Rear Panel



- ① Audio In
- ② Audio Out
- ③ IR In & Out
- ④ RS232 port
- ⑤ HDMI IN x4 with 1x HDMI Loop out
- ⑥ HDMI OUT x4
- ⑦ RJ45 x4
- ⑧ Ethernet port
- ⑨ Power input 12V/4A and FW updating Port

## 4.3 Receiver Panel



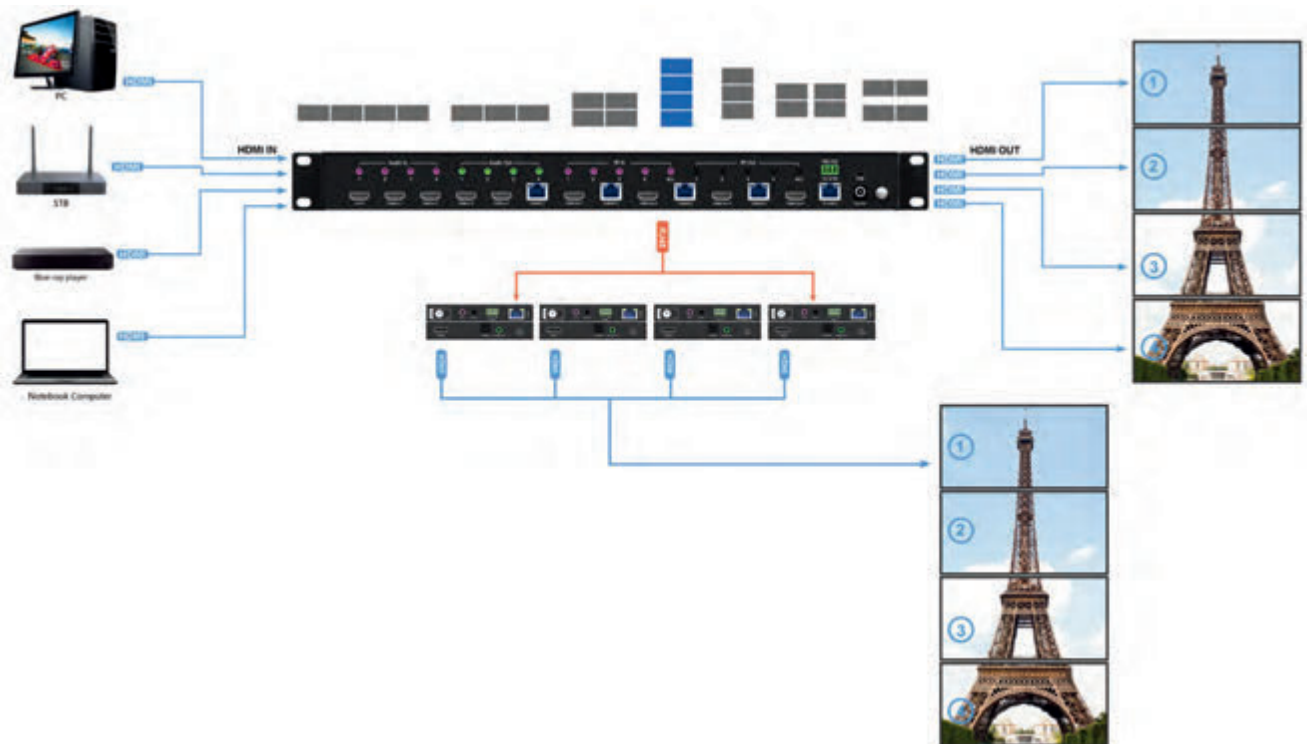
- ① DC/12V Power port
- ② Wide-Band IR Input and Output Ports
- ③ RS-232 Port
- ④ Cat5e/6 Port
- ⑤ HDMI Output Port
- ⑥ Audio Output Port
- ⑦ Firmware Port

## 5. Wiring Diagram

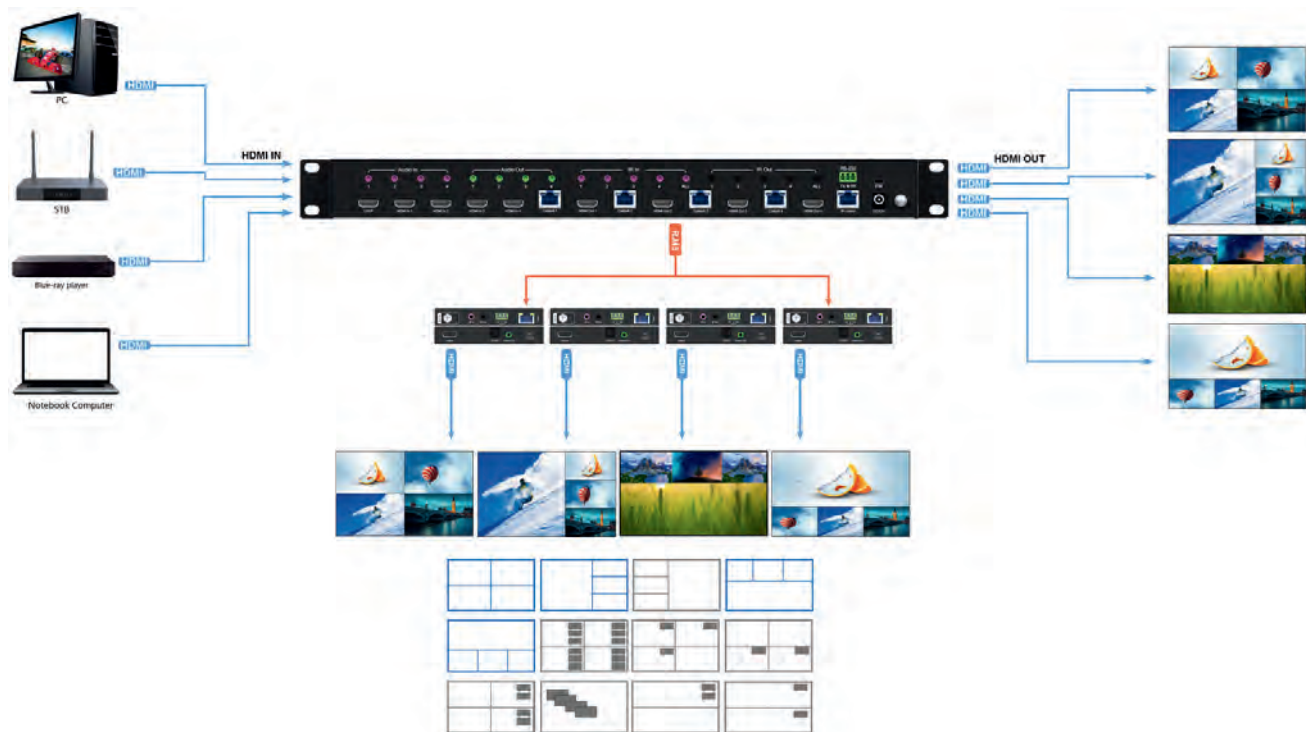
### 5.1 Seamless Matrix Mode



### 5.2 Video Wall Mode



## 5.3 Multi-Viewer Mode



## 6. Input / Output Channel Key Operation

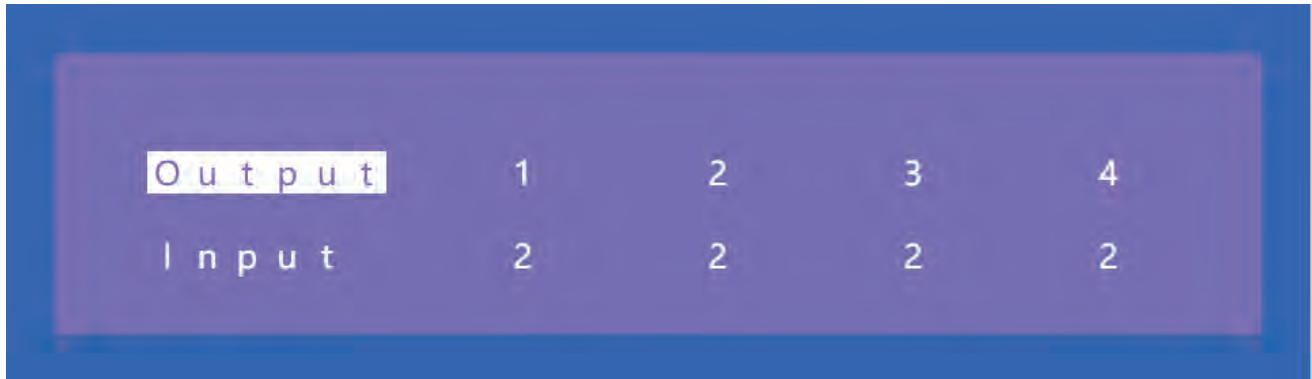
| Channel | Button Method                                                                                                                                                                                                                                                                      |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OUT 1-4 | <ol style="list-style-type: none"> <li>1. Directly press the number key, such as input channel 1, and select "1" to press (only when the output port is selected, the input channel number will be valid)</li> <li>2. Long press means all outputs select current input</li> </ol> |
| IN 1-4  | Directly press the number key, such as the output channel 2, press button "2" and press it again to cancel the selection;                                                                                                                                                          |
| MENU    | Function Button; Enter the function option or back to previous option                                                                                                                                                                                                              |
| ENTER   | Confirm Button: enter function selection mode                                                                                                                                                                                                                                      |
| UP      | Button for UP option                                                                                                                                                                                                                                                               |
| DOWN    | Button for NEXT option                                                                                                                                                                                                                                                             |
| PRESET  | Preset, short press to quickly enter the preset                                                                                                                                                                                                                                    |
| LOCK    | Long press to LOCK, Long press again to UNLOCK                                                                                                                                                                                                                                     |

## 7. Panel Control

### 7.1 Video

Signal switching includes 4 switching channels, which can be configured as input/output according to requirements to form a matrix of  $1 \times 4 \sim 4 \times 4$ . It can switch any input signal to the outputs

Operation format: “output channel” + “input channel”.



For example:

1. Switch output 1 to input 4 source

Operation: press “1” in Output area + “4” in IN area to complete the switch

2. Output 2, 1, 3 switch to input 2 source

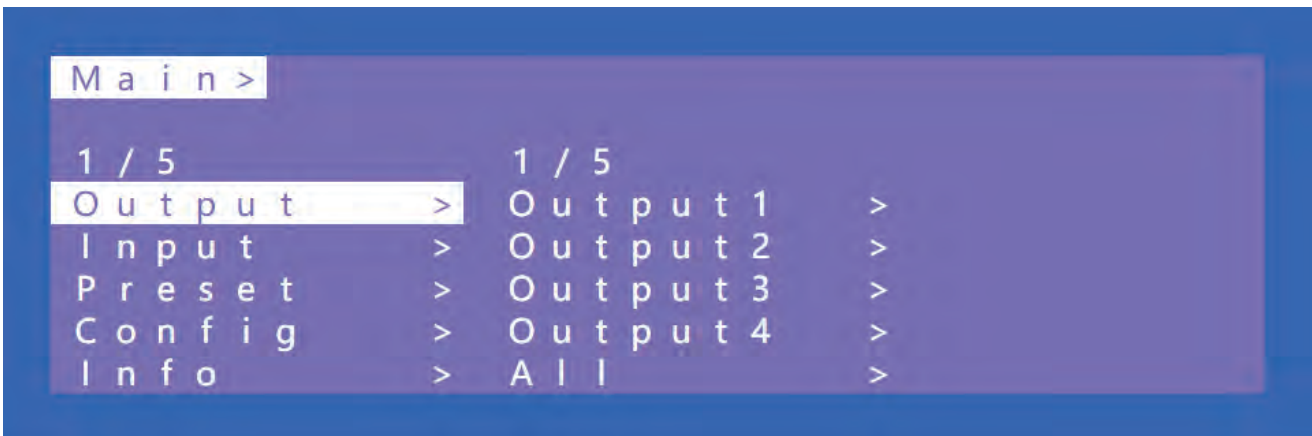
Operation: press “2”, “1” and “3” in Output area + “2” in IN source area to complete the switch

3. Switch all outputs to input 4 source

Operation: Long press “4” in Output area + Short press “4” in IN area to complete the switch.

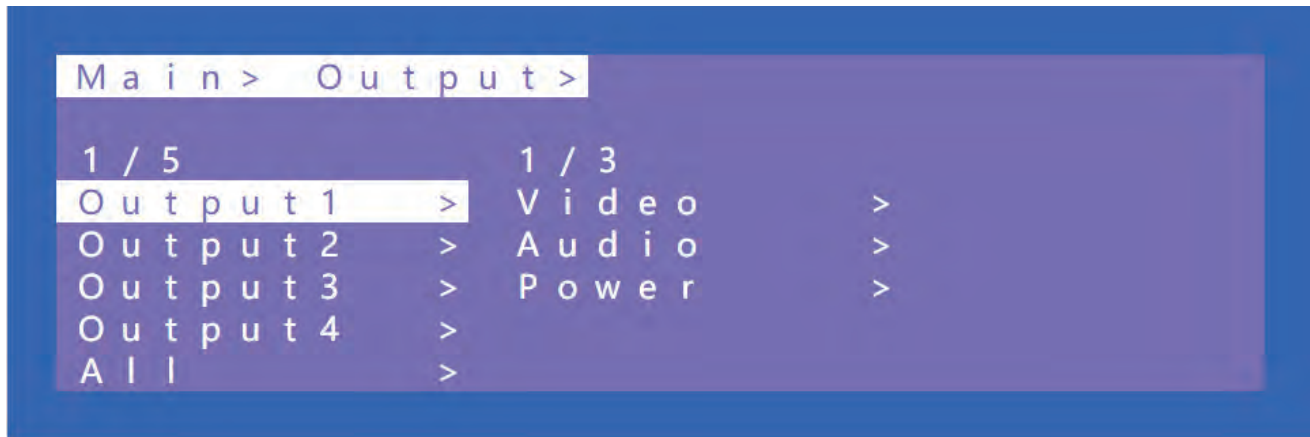
### 7.2 Main Menu

Main menu is divided into 5 modules, which are Output, Input, Preset, Config, Info. Each module has multiple sub-menus that need to be set up accordingly.



## 7.3 Output

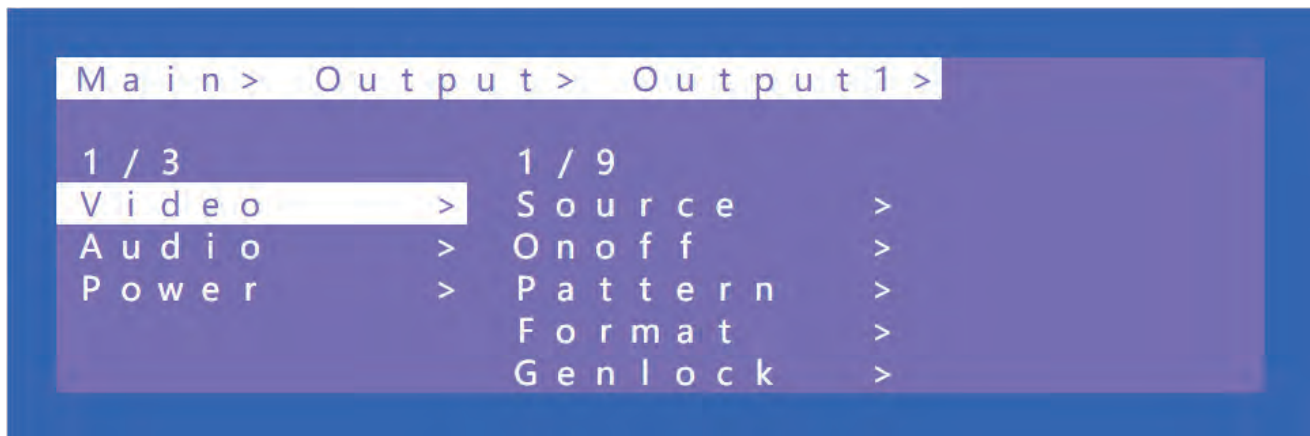
There are 5 sub-menus in Output interface: output1~4 + all, which are used for individual or all output settings. Each channel contains 3 function items, which are video, audio and power.



Choose a desired output before setting each video or audio.

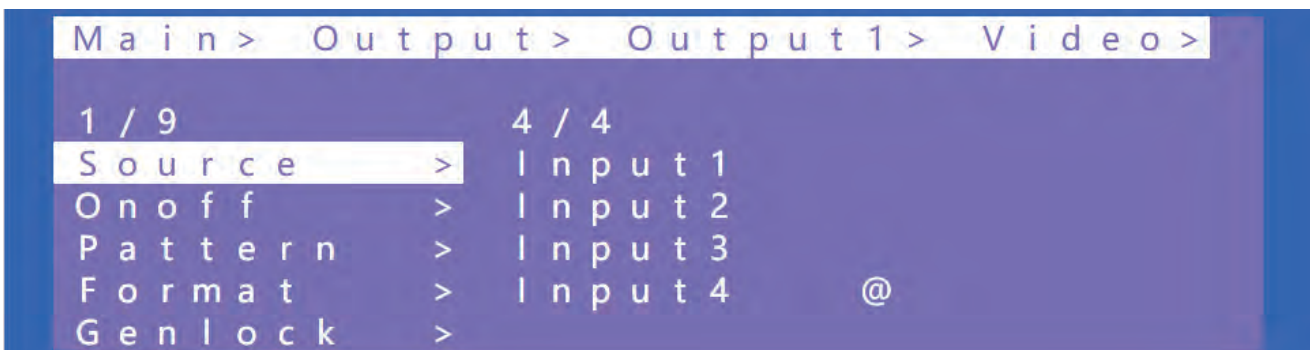
There are 9 options in video: Source, Onoff, Pattern, Format, Genlock, Mirror, Coord, PIP, Image

There are 4 options in Audio: HDMI onoff, HDMI SRC, DEC onoff, DEC SRC.



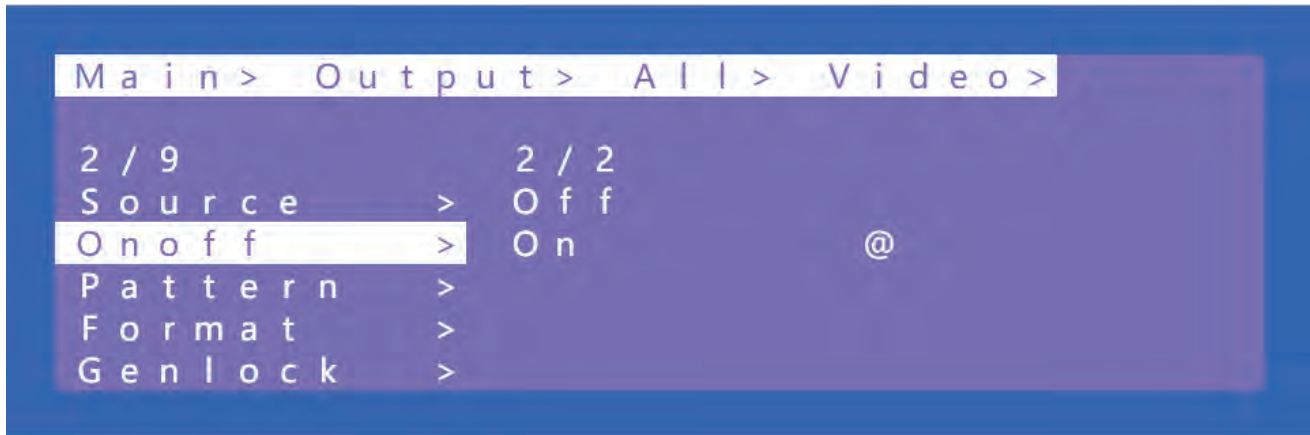
### 1) Source

Any output can be switched to any one input, or all outputs can be switched to the same input; Default setting is PTP (Point to Point).



## 2) Onoff

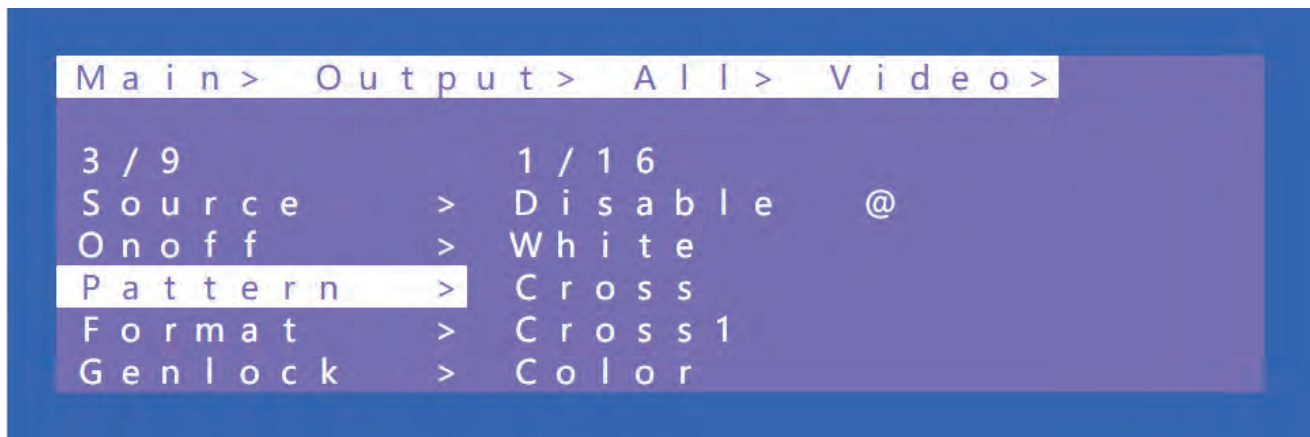
Turn on/off one pr all of the outputs, the video of outputs are turned on by default.



## 3) Pattern

Built-in image of a matrix can be showed onto the TV by Pattern, which is mainly used for testing in special occasions.

For example: Using Cross or Cross1 images in 4x4 Video Wall mode can test whether each TV frame fits.



## 4) Format

This function can set the output resolution format and force the output resolution format. But it does not provide upgraded image quality. Example:

The input is 1080P@60Hz and the output is set to 4K60Hz. Although the TV is displayed in 4K@60Hz format, it is actually in 1080P@60Hz.

Selecting input mode will enable following input resolution. Switching with matrix will not be seamless unless the resolution from the source is in the same format without HDR.

```
Main> Output> All> Video>
```

```
4 / 9          1 / 4
Source         > Resolut . . >
Onoff         > Color          >
Pattern       > Deep           >
Format        > Rang           >
Genlock       >
```

```
. . . >> All> Video> Format>
```

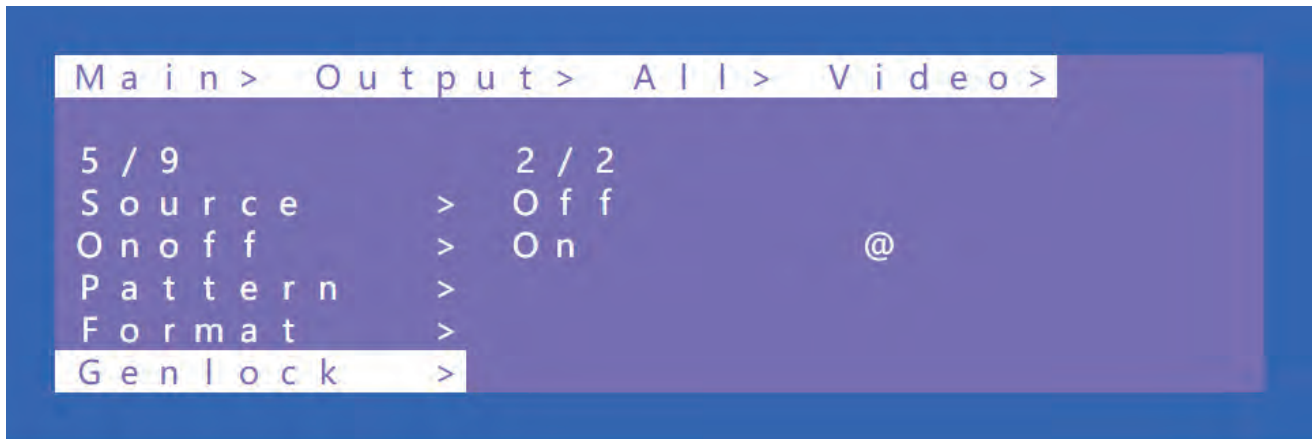
```
1 / 4          2 / 17
Resolutio>    Default 1
Color         > Default 2 @
Deep          > Default 3
Rang          > Default 4
              User 1
```

```
. . . >> Format> Resolution>
```

```
2 / 17
Default 1      Default 2 : 4K30
Default 2 @
Default 3
Default 4
User 1
```

## 5) Genlock

Genlock is used to follow an output. Default Off. Output 1 is gray and cannot be selected. Only Output 2, Output 3 and Output 4 can be enable. Switching the following output resolution will effect other output images. (The image will be black for a while, and the resolution will be subject to the following output and cannot be changed.)



Operation:

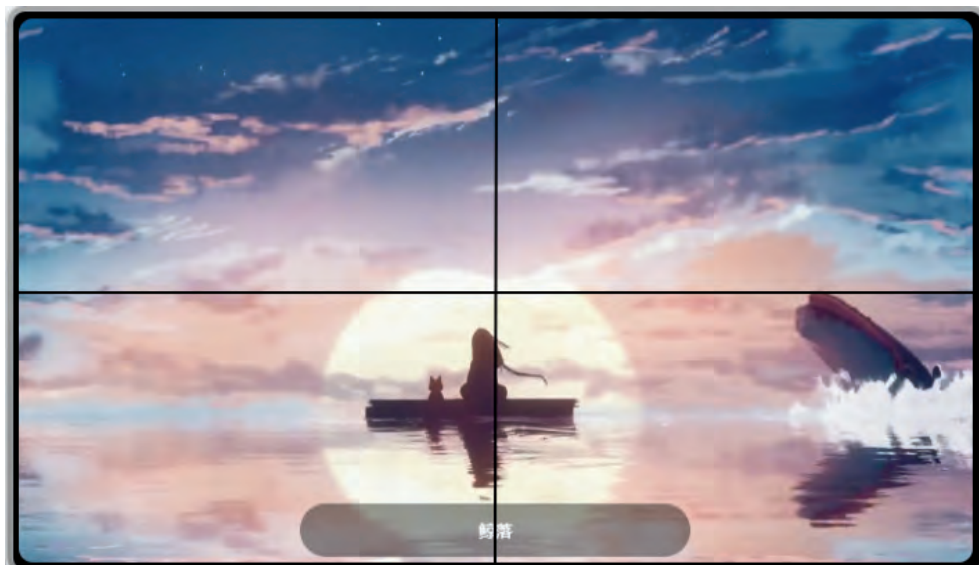
- ① Select “Output” in the main menu and press “ENTER”
- ② Press “UP” or “DOWN” to select “ Output 1~4, all”
- ③ Click “ENTER” to enter the next sub-menu
- ④ Press “UP” or “DOWN” to select “Video”
- ⑤ Press “UP” or “DOWN” to select “Genlock”
- ⑥ Click “ENTER” to enter the next sub-menu
- ⑦ Press “UP” or “DOWN” to select “ Off” or “On” to complete the operation.

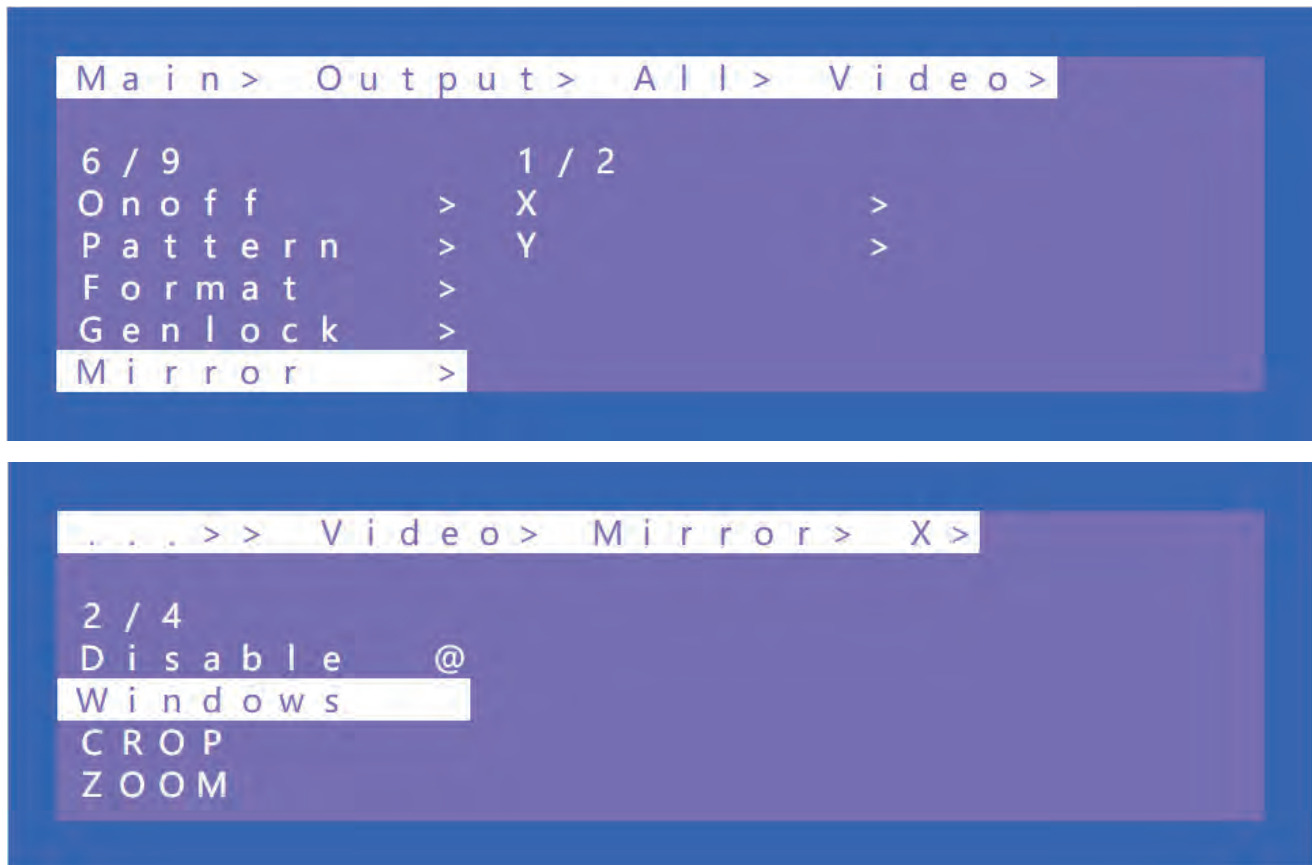
## 6) Mirror

This function can implement left and right mirror, up and down mirror. X indicates left and right mirror, Y indicates up and down mirror. The default is off.

There are 3 options including Crop, Zoom and Windows in the sub-menu, corresponding to crop and Zoom images respectively.

Windows represents the current window image





## 7) Coord

Coord is mainly used to set the coordinate parameters of the image. There are 3 types including Coord and Zoom and Gap, which are CROPX0, CROPY0, CROPX1, CROPY1, ZOOMX0, ZOOMY0, ZOOMX1, ZOOMY1, GapX, GapY and a total of 10 coordinate parameters.

The function can implement the parameter adjustment of multi-viewer and video wall.

The default start point of Coord : CROPX0 = 0, CROPY0 = 0.

The default end point of Coord: CROPX1 = 6000, CROPY1 = 6000.

The default start point of Zoom: ZoomX0 = 0, ZoomY0 = 0

The default end point of Zoom: ZoomX1 = 6000, ZoomY1 = 6000

The default start point of GapX=0, GapY=0

```
Main> Output> All> Video>
```

```
7 / 9          1 / 10
Pattern      > CROP   X0   >
Format       > CROP   Y0   >
Genlock      > CROP   X1   >
Mirror       > CROP   Y1   >
Coord        > ZOOM   X0   >
```

```
...>> All> Video> Coord>
```

```
1 / 10          1 / 6001
CROP   X0      > 0           @
CROP   Y0      > 1
CROP   X1      > 2
CROP   Y1      > 3
ZOOM   X0      > 4
```

```
...>> All> Video> Coord>
```

```
9 / 10          1 / 1001
ZOOM   Y0      > 0           @
ZOOM   X1      > 1
ZOOM   Y1      > 2
Gap    X        > 3
Gap    Y        > 4
```

## 8) PIP

PIP is mainly used for the layer priority. By default, each output has 4 layers. It can change the sequence of the layers in multi-viewer mode. Each layer can choose an output. You can turn on/off this function by Status.

Alpha can adjust the transparency between layers

Remarks: One layer can select only one output, cannot select it repeatedly, otherwise it does not take effect.

Main > Output > All > Video >

|         |   |         |   |
|---------|---|---------|---|
| 8 / 9   |   | 1 / 9   |   |
| Format  | > | Status  | > |
| Genlock | > | Layer 1 | > |
| Mirror  | > | Layer 2 | > |
| Coord   | > | Layer 3 | > |
| PIP     | > | Layer 4 | > |

Main > Output > All > Video > PIP >

|         |   |         |   |
|---------|---|---------|---|
| 1 / 9   |   | 1 / 2   |   |
| Status  | > | Disable | @ |
| Layer 1 | > | Enable  |   |
| Layer 2 | > |         |   |
| Layer 3 | > |         |   |
| Layer 4 | > |         |   |

Main > Output > All > Video > PIP >

|         |   |          |   |
|---------|---|----------|---|
| 2 / 9   |   | 1 / 4    |   |
| Status  | > | Output 1 | @ |
| Layer 1 | > | Output 2 |   |
| Layer 2 | > | Output 3 |   |
| Layer 3 | > | Output 4 |   |
| Layer 4 | > |          |   |

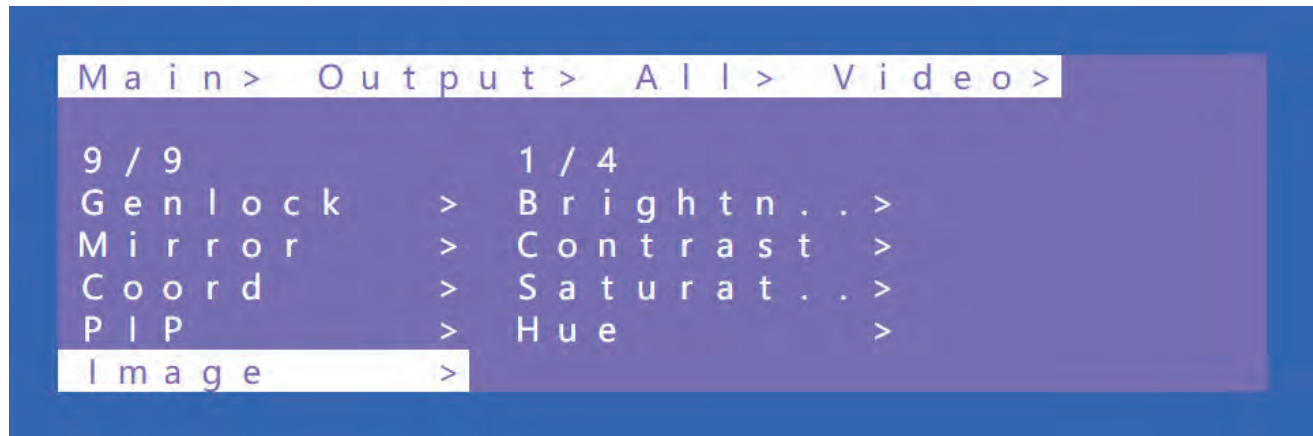
Main > Output > All > Video > PIP >

|         |   |        |   |
|---------|---|--------|---|
| 6 / 9   |   | 1 / 21 |   |
| Layer 4 | > | 0      | @ |
| Alpha 1 | > | 1      |   |
| Alpha 2 | > | 2      |   |
| Alpha 3 | > | 3      |   |
| Alpha 4 | > | 4      |   |

## 9) Image

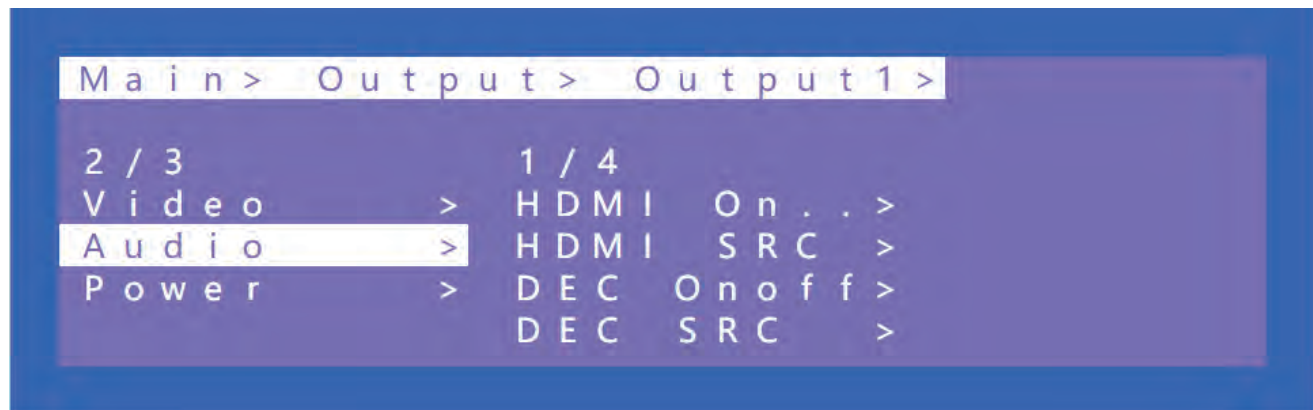
Image is used to set the parameters of output image. There are 4 parameters: Brightness, Contrast, Saturation, Hue

Parameter Ranges from 0 to 100 and it is 50 by default.



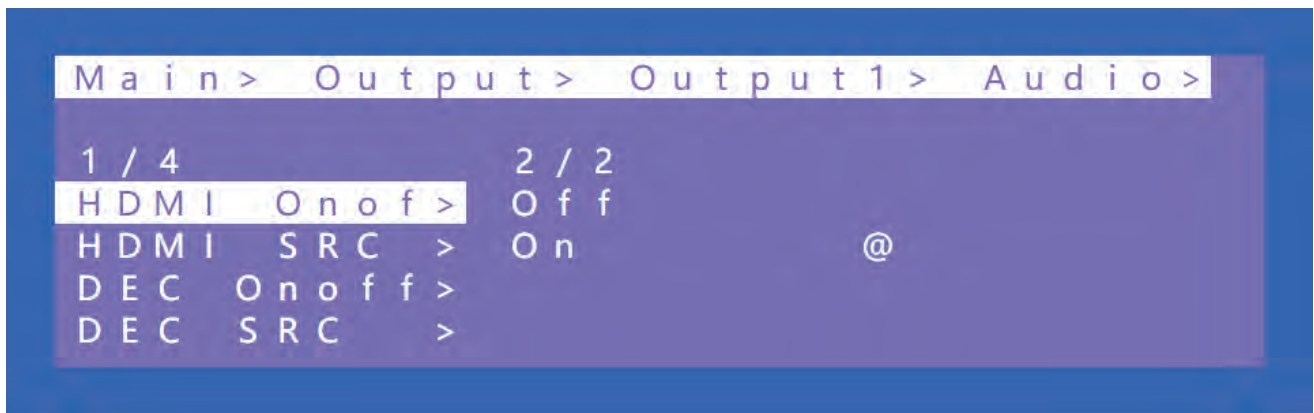
## 7.4 Audio

There are 4 function options in Audio: HDMI Onoff, HDMI SRC, DEC Onoff, DECSRC. It can implement audio switching independently, turn off HDMI audio output and audio De-embedding as well as Audio De-embedding switch to another source.



### 1) HDMI onoff

HDMI onoff can implement on-off of HDMI output audio. Video will be displayed on TV without audio when turn off the audio.



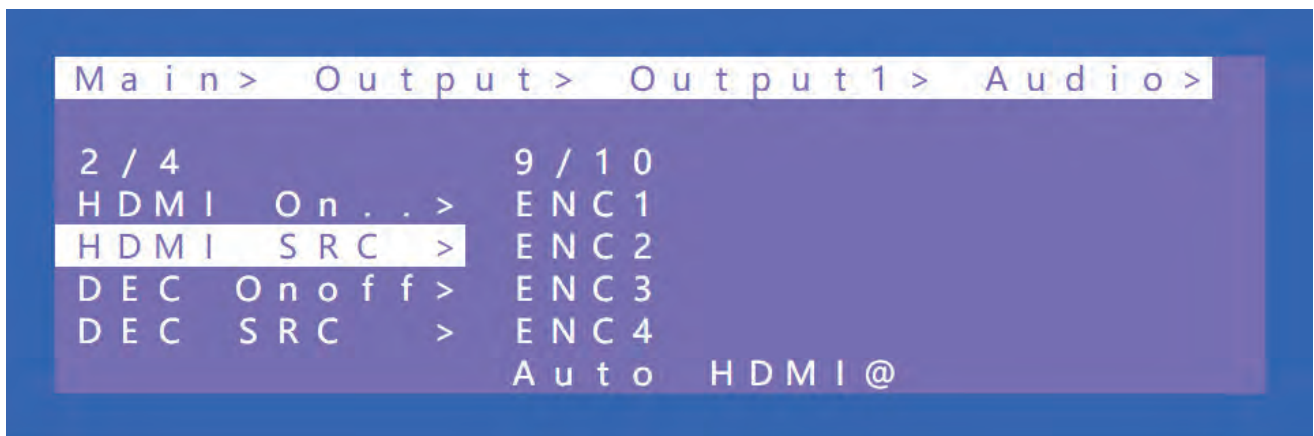
## 2) HDMI SRC

HDMI SRC enables switching to different input signal sources. It supports switching to analog audio in 1~4, HDMI input1~4.

Auto HDMI indicates following the corresponding input.

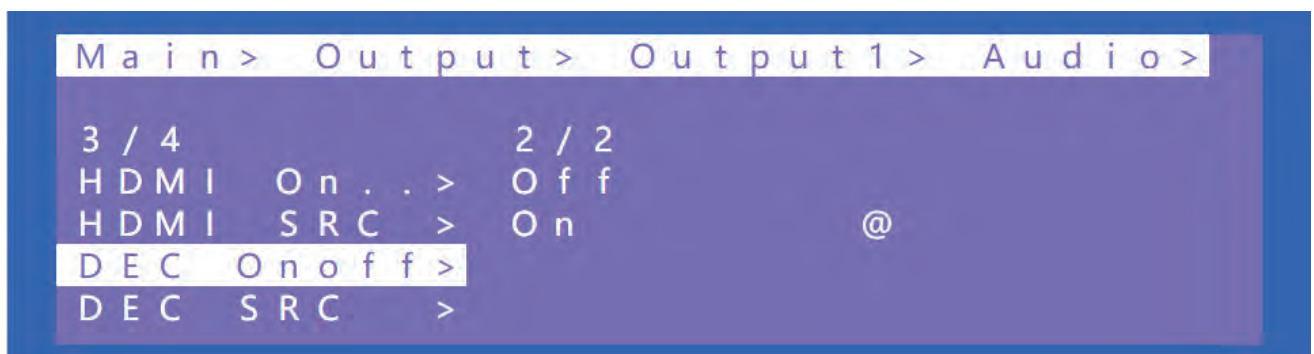
Auto ENC indicates the corresponding audio in, that is, audio follow the matrix input's switch, not switch other audio source.

Auto HDMI is default.



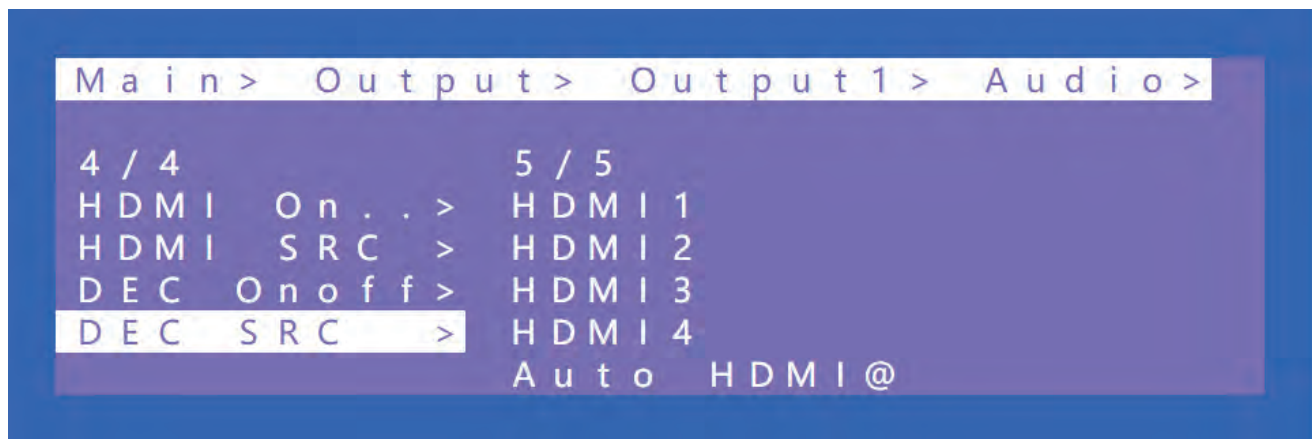
## 3) DEC onoff

DEC on/off can implement the audio on/off. Click “On” to turn on the audio, click “Off” to turn off the audio. It is ON by default



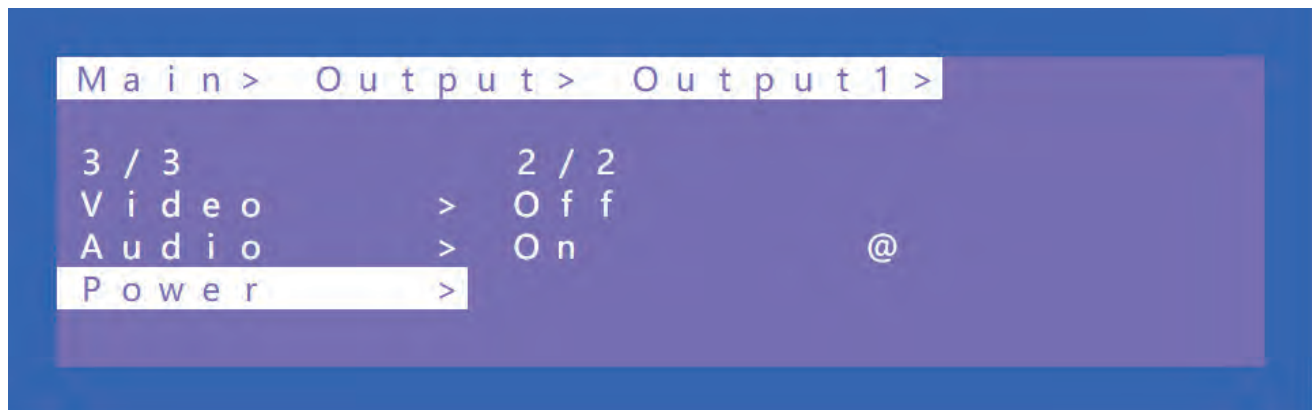
#### 4) DEC SRC

DEC SRC enables that the audio extracts to different input source, which can switch to HDMI input 1~4. Auto HDMI indicates that it follows the corresponding input. The default is Auto HDMI.



#### 7.5 Power

Power is used to turn off HDMI output of 5V. It is different from “Onoff” as there is a blue screen displayed on TV while selecting “off” in “Onoff”. Image will completely turn off after selecting “Off” in “Power”. It is on by default.



#### 7.6 Input

There are there functions options in Input interface, which are Video, Audio and EDID.

Video is used to provide the switch channel, built-in Pattern switch. Audio is used to set the delay.

EDID supports built-in, copy, user and temp.

Main >

2 / 5

Output >

Input >

Preset >

Config >

Info >

1 / 5

Input 1 >

Input 2 >

Input 3 >

Input 4 >

All >

Main > Input >

1 / 5

Input 1 >

Input 2 >

Input 3 >

Input 4 >

All >

1 / 3

Video >

Audio >

EDID >

## 1) Video

Video can implement the on-off of input channel. All the outputs correspond to the input will have no image and audio when this input is set to “Off”. Pattern provides built-in pattern, the selected built-in pattern will replace the input source image.

Main > Input > Input 1 >

1 / 3

Video >

Audio >

EDID >

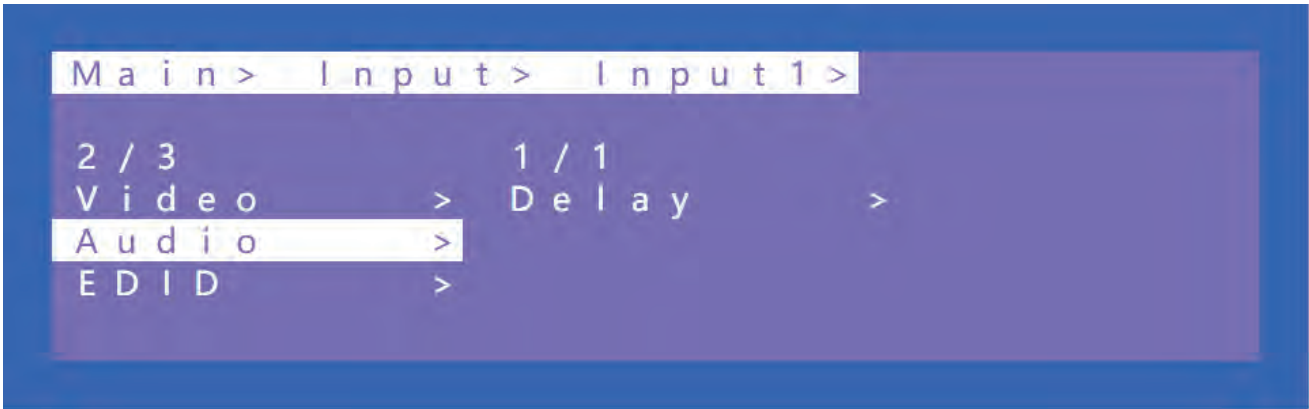
1 / 2

On off >

Pattern >

## 2) Audio

Audio delay setting range (0~50, auto, the default is auto).

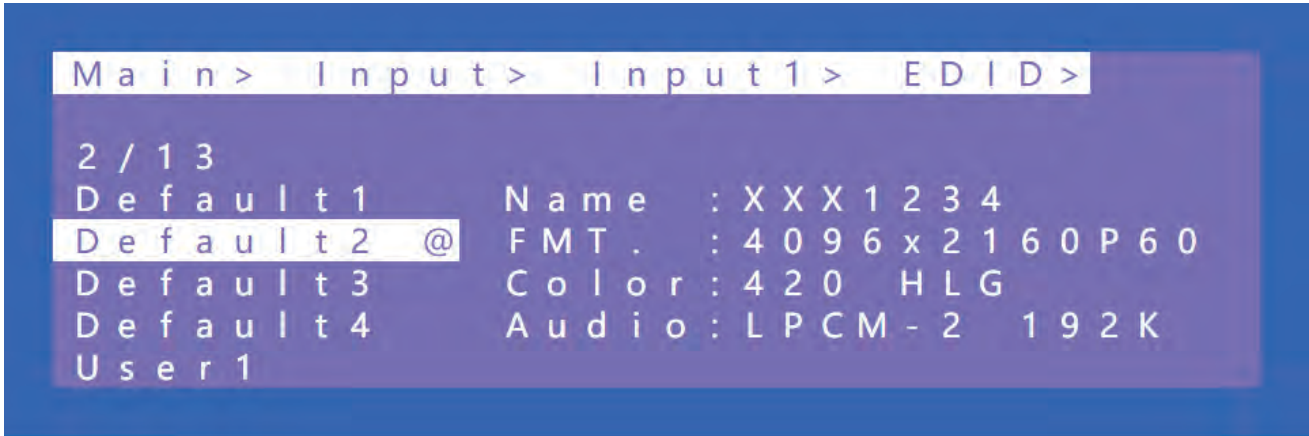
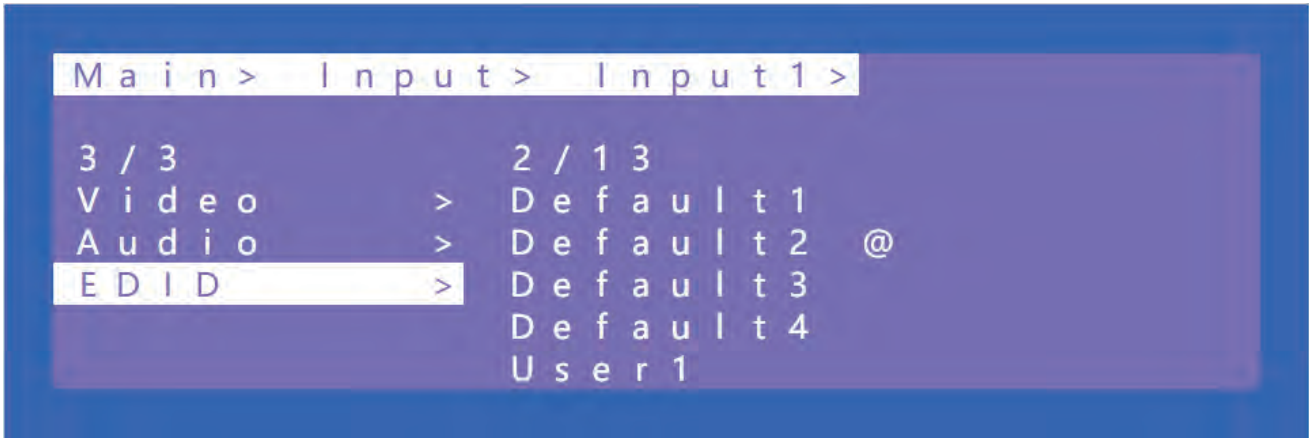


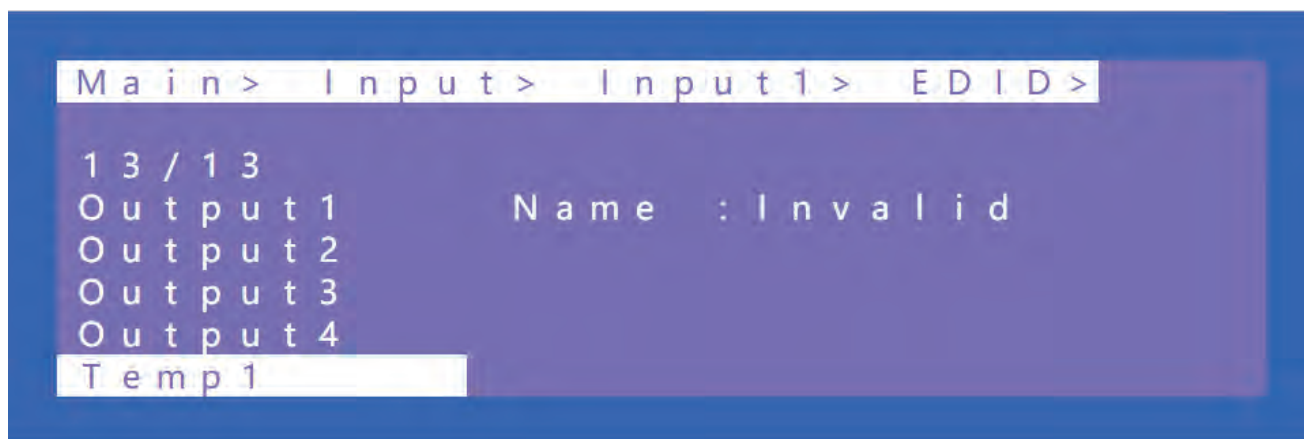
**3) EDID**

There are 4 options including built-in EDID, User EDID, Copy HDMI EDID, temp, each input EDID can be set. The default setting is default1

After copying the TV EDID, the audio parameter is automatically changed to LPCM2.0.

|          |                           |          |                               |
|----------|---------------------------|----------|-------------------------------|
| Default1 | 4K60 444-LPCM: 2.0-192Khz | Default2 | 4K60 420-LPCM: 2.0-192Khz     |
| Default3 | 4K30 444-LPCM: 2.0-192Khz | Default4 | 1080P120 444-LPCM: 2.0-192Khz |





Switching the Default1 to input1 as shown in the following example:

Operations:

- ① Select “EDID” in the main menu and press “ENTER”
- ② Press “UP” or “DOWN” to select “ Input 1”( the fifth option indicates that select all input)
- ③ Click “ENTER” to enter the next sub-menu
- ④ Press “Default1” to complete the operation
- ⑤ The selected EDID will show some of its information (resolution, audio format and audio channel)

## 7.7 Preset

Preset can save the current video, audio, EDID and system settings, supports 8 different scenes.

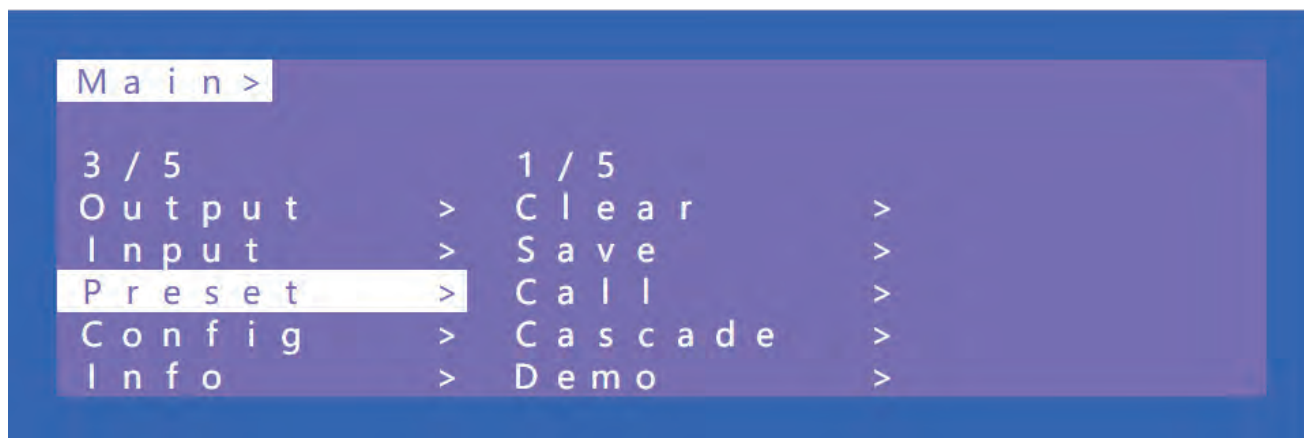
Preset can be modified and called using WEB, commands and panel. The default preset is consistent with its factory settings. There are 4 options as follow:

Clear: Remove the selected preset.

Save: Stores the current preset (can be covered).

Call: Activates the currently selected preset.

Demo: Plays the demo according to the scenes sequence.



## Operations:

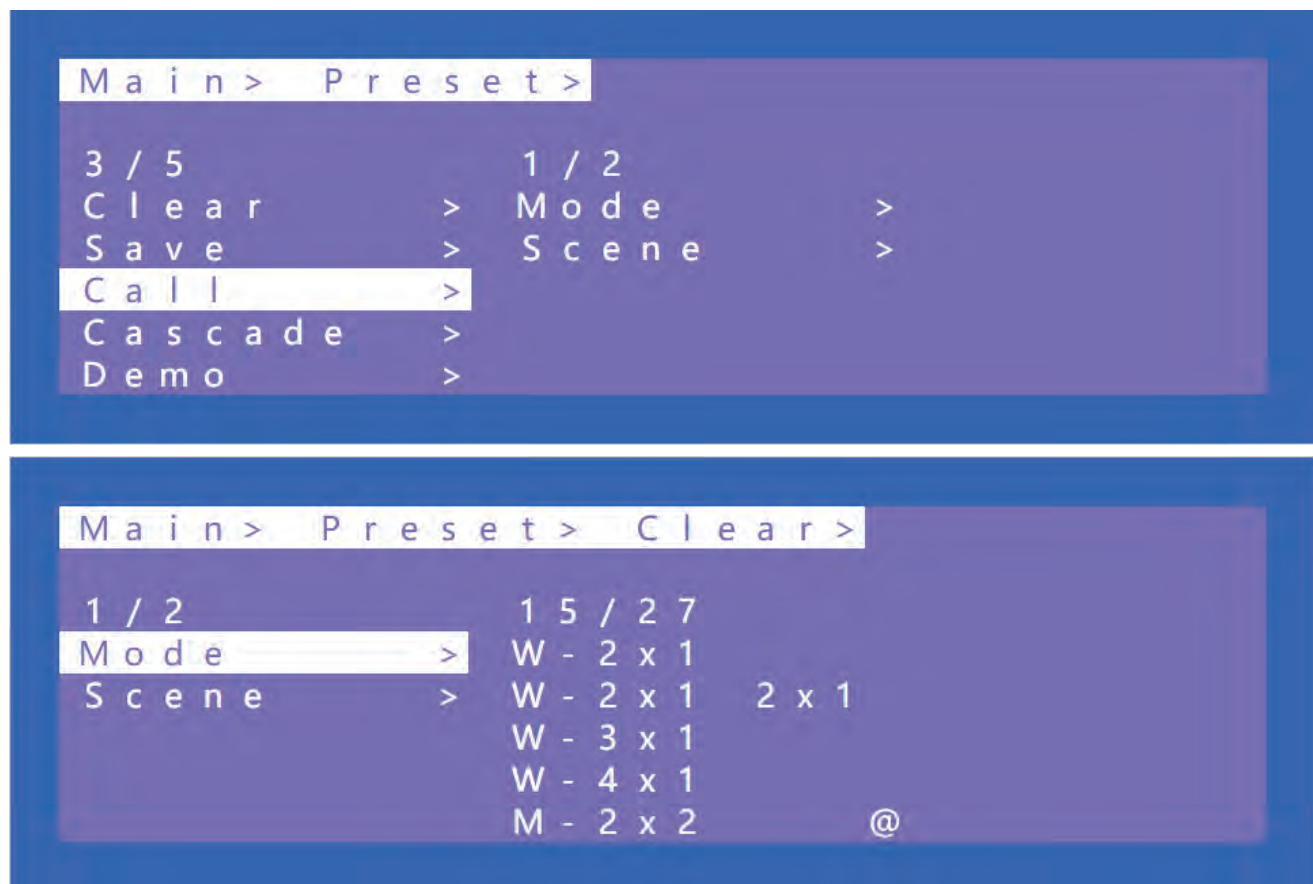
- ① Select “Preset” in the main menu and short press “ENTER” to enter the preset interface. Call indicates calling preset, Save indicates saving preset, Clean indicates cleaning preset.
- ② Save preset: select “Save” in Preset and select “Mode” or “Scene” to save in “Scene” or “P2P”
- ③ Call preset: Select “Call” in Preset, then select a saved preset to complete the operation. Current scene is the saved preset scene
- ④ Clear preset: Select “Clear” in Preset, select a saved scene to complete the operation. The saved preset scenes are restored to their default values.

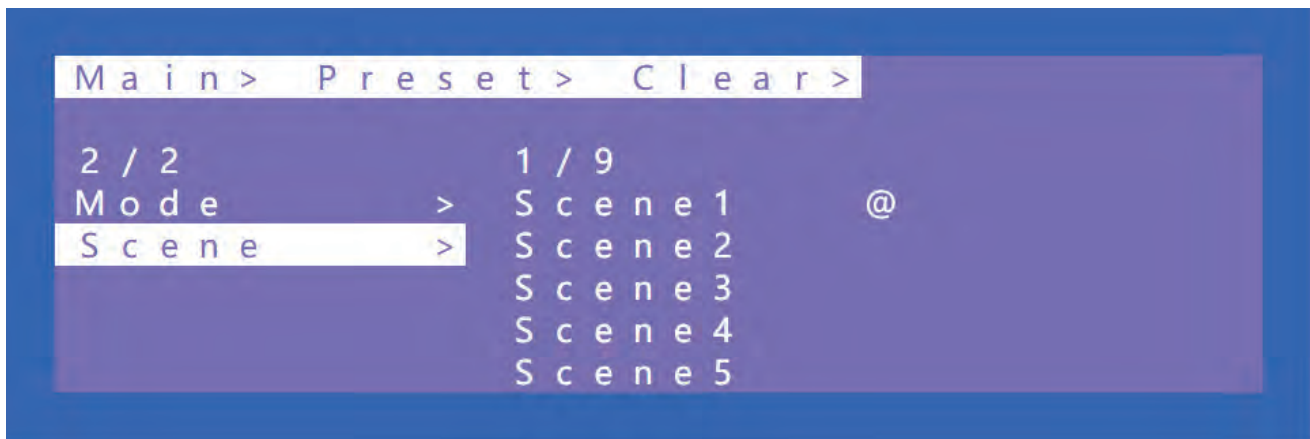
For example:

Save: Preset+Save+Scene+Scene1

Call: Preset+Call+Scene+Preset1

Clear: Preset+Clear+Scene+Preset 1





#### Cascade Video Wall:

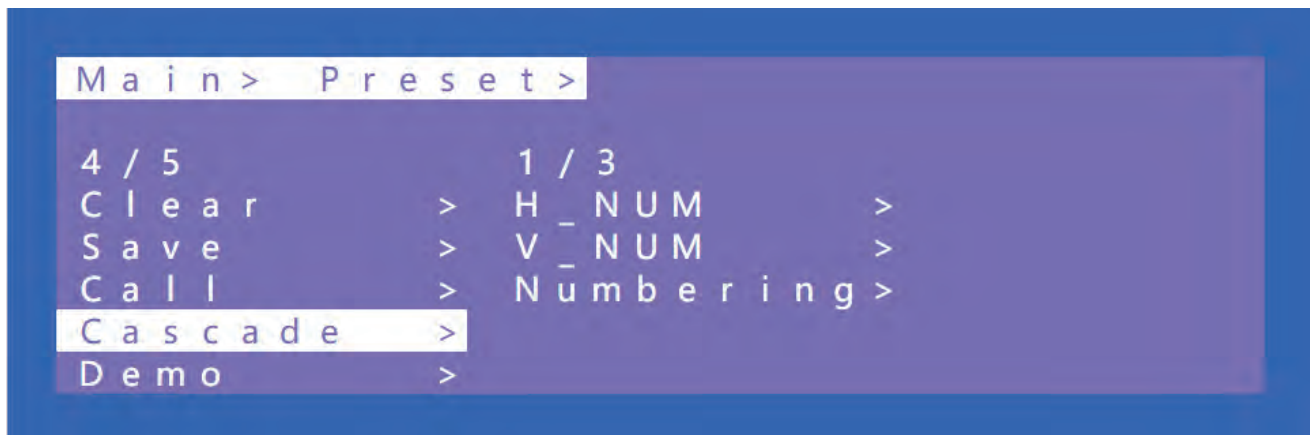
It is used to set the position of the video wall in accordance with the silkscreen marking order of the matrix. You can determine the actual TV location based on the OSD on the TV.

H\_NUM indicates the horizontal number of paring walls.

V\_NUM indicates the vertical number of paring walls.

Numbering: it indicates that the matrix is currently in the cascading position.

(Up to 5 matrix cascades are supported)



#### Instructions for operation:

Each matrix is set to the same number of horizontal and vertical concatenations. Then set the Numbering of the Matrix (numbering can't be repeatable). Then connect to the corresponding TV wall according to the output order (the output order must be corresponding).

Such as:

Splicing a horizontal 2, vertical 3 video wall,

Matrix 1's output 1~4 connected to TV 1~4, the loop out of matrix 1 connected to matrix 2's input;

Matrix 2's outputs 1~2 connected to TV 5~6.

A 2x3 video wall is generated

### Demo operation:

Timer can set the rotation time, the default is “Endless”, the minimum time is 3 seconds.

Select indicates if need to perform the scenario in rotation. If this parameter set to yes, the scenario will be played. If this parameter is not set to yes, the scenario will be skipped.

```
Main > Preset > Demo >
1 / 2          1 0 / 1 0
Timer          > 1 M
Select         > 1 M 3 0 S
                2 M
                3 M
                E n d l e s s @
```

```
Main > Preset > Demo >
2 / 2          1 / 2 7
Timer          > S - P 2 P >
Select         > S - I n p u t 1 >
                S - I n p u t 2 >
                S - I n p u t 3 >
                S - I n p u t 4 >
```

## 7.8 Config

Config can set network, RS232, LCD, OSD, MENU, user EDID, system.

Gray sections cannot be selected.

```
Main >
4 / 5          1 / 7
Output         > Network >
Input          > RS - 2 3 2 >
Preset         > LCD >
Config         > OSD >
Info           > Menu >
```

## 1) Network Setting

Network can set DHCP, IP, Mask, Gateway, Port and Mac. The Mac address cannot be changed.

The default IP address is 192.168.1.168

TCP/UDP protocol, default port: TCP5000, UDP 5001

Baud Rate: 115200

Telnet: 23

```
Main> Config> Network>
```

```
1 / 6      1 / 2
DHCP      > No @
IP        > Yes
MASK      >
Gateway   >
Port      >
```

```
Main> Config> Network> DHCP>
```

```
1 / 2
No @      DHCP : Off
Yes       IP    : 192 . 168 .    1 . 169
          MASK  : 255 . 255 . 255 .    0
          GW    : 192 . 168 .    1 .    1
          MAC   : 4658 - 4E95 - 1A64
```

```
Main> Config> Network>
```

```
2 / 6      1 / 4
DHCP      > Part 1      >
IP        > Part 2      >
MASK      > Part 3      >
Gateway   > Part 4      >
Port      >
```

Main > Config > Network > IP >

1 / 4                      1 9 3 / 2 5 6

Part 1                      >    1 8 8

Part 2                      >    1 8 9

Part 3                      >    1 9 0

Part 4                      >    1 9 1

1 9 2                      @

Main > Config > Network > Port >

1 / 2                      5 0 0 0 / 6 5 5 3 4

T C P                      >    5 0 0 0                      @

U D P                      >    5 0 0 1

5 0 0 2

5 0 0 3

5 0 0 4

... > > Network > Port > T C P >

5 0 0 0 / 6 5 5 3 4

5 0 0 0                      @

D H C P : O f f

5 0 0 1                      I P        : 1 9 2 . 1 6 8 .        0 .        5 7

5 0 0 2                      M A S K : 2 5 5 . 2 5 5 . 2 5 5 .        0

5 0 0 3                      G W        : 1 9 2 . 1 6 8 .        0 .        1

5 0 0 4                      M A C        : 4 6 5 8 - 4 E 9 E - 0 A 6 B

#### Operation of TCP/UDP port number change

- ① Select “Config” in the main menu and press “ENTER”
- ② Press “UP” or “DOWN” to select “ network ”
- ③ Click “ENTER” to enter the next sub-menu
- ④ Press “UP” or “DOWN” to select baud rate “Port” to enter the next sub-menu
- ⑤ Select “UDP” or “TCP”
- ⑥ Press “UP” or “DOWN” to select “1~65534” to complete the operation

## 2) RS-232

Data, Stop, and Parity parameters cannot be changed by default.

```
Main> Config>
```

```
2 / 7      1 / 4
Network    > Baud      >
RS - 232   > Data      >
LCD        > Stop      >
OSD        > Parity    >
Menu       >
```

```
Main> Config> RS - 232>
```

```
1 / 4      1 / 6
Baud       > 115200 @
Data       > 57600
Stop       > 38400
Parity     > 19200
           9600
```

## 3) LCD

Bright can adjust the brightness of the LCD screen, and Timer can set the backlight time. The default backlight level is 8 and the time is 30 seconds.

Bright 0 to 8 indicates the backlight level, and 0 indicates off.

Timer can be set to 3 seconds ~ Endless.

```
Main> Config>
```

```
3 / 7      1 / 2
Network    > Bright    >
RS - 232   > Timer     >
LCD        >
OSD        >
Menu       >
```

```
Main> Config> LCD>
```

```
2 / 2          6 / 11
Bright >      30 S      @
Timer >       1 M
              1 M      30 S
              2 M
              3 M
```

```
Main> Config> LCD>
```

```
1 / 2          9 / 9
Bright >       4
Timer >        5
              6
              7
              8      @
```

#### 4) OSD Setting

There are 4 options in OSD: User, Time, Menu, Info.

User indicates the output coordinate time of OSD.

Time indicates the running time after the device is powered on.

Menu indicates that the LCD is mapped to the TV.

INFO indicates the displayed time of audio and video information.

When the parameter is set to 0 seconds, OSD display is turned off. By default, User and time are endless, menu and INFO are 30 seconds

```
Main> Config>
```

```
4 / 7          1 / 4
Network >      User      >
RS - 232 >     Time      >
LCD >         Menu      >
OSD >         Info      >
Menu >
```

## 5) Menu

Timer indicates the time of menu returns to the channel. Default 30s.

Select Run indicates whether the confirm button of the last sub-menu is enabled.

If it is set to disable, you need to press “ENTER”. If it is set to enable, you do not need to press “ENTER”

```
Main> Config>
```

```
5 / 7          1 / 2
Network      > Timer      >
RS - 232     > SelectRun>
LCD          >
OSD          >
Menu         >
```

```
Main> Config> Menu>
```

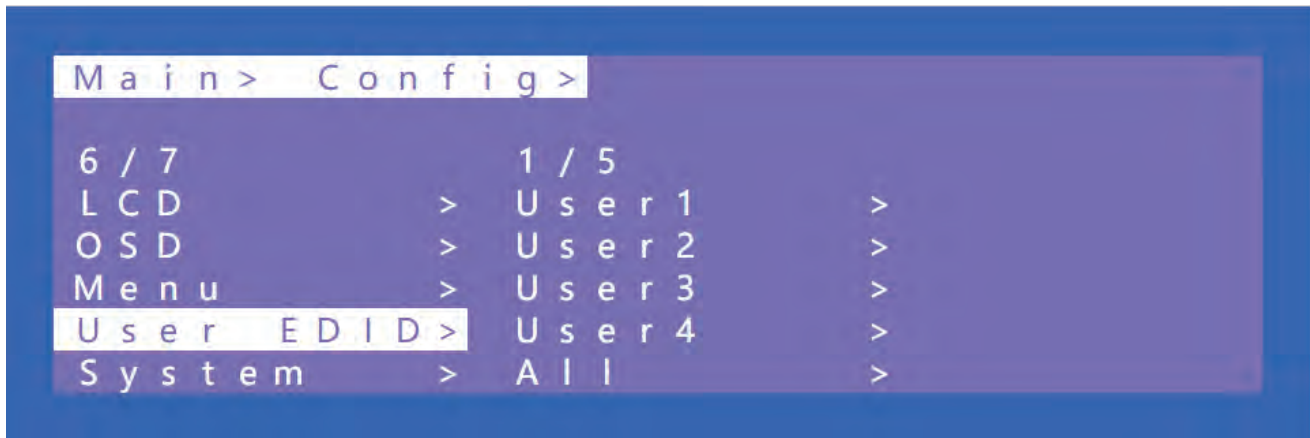
```
1 / 2          10 / 10
Timer         > 1 M
SelectRun>    1 M 30S
              2 M
              3 M
              Endless @
```

```
Main> Config> Menu>
```

```
2 / 2          2 / 2
Timer         > Disable
SelectRun>    Enable @
```

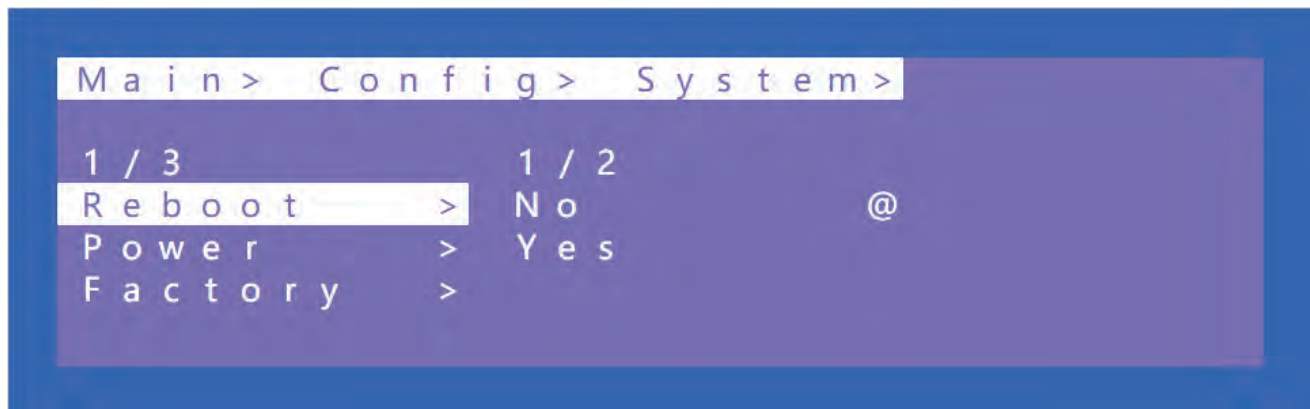
## 6) User EDID

User EDID can store the EDID of the output display device of the connection matrix to user1~4, which can be stored in default, output, and temp1, and then used in the EDID list.



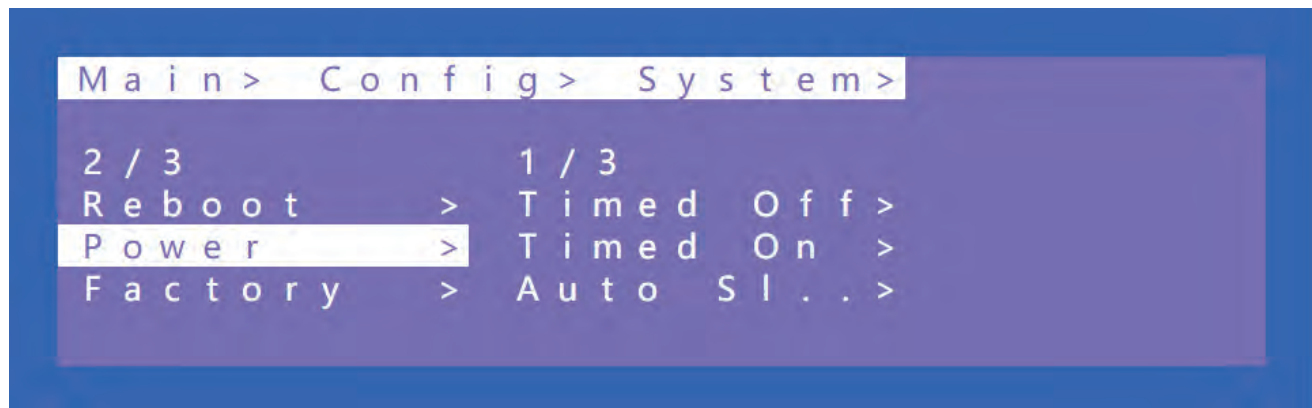
## 7) System

System Setting includes reboot, Power, and Factory. Reboot indicates device restart, power indicates device sleep, and factory indicates factory data reset.



## Timed Off

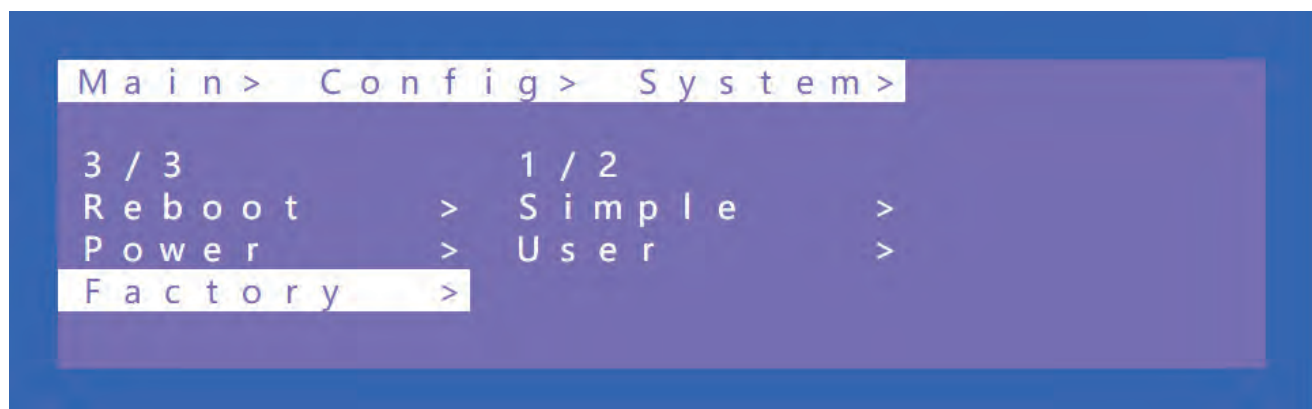
Timed Off indicates timed standby, Timed On indicates timed wake up, and Auto Sleep



## Factory

Simple: Partially restores factory settings

User: Restores all factory settings



## 7.9 Info

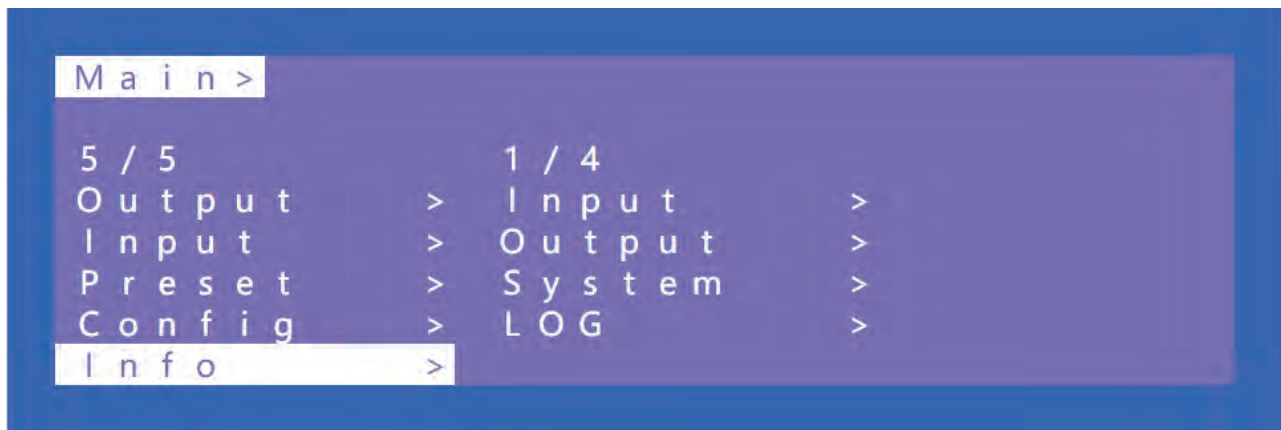
Query device information, including input, output, system, and log. The information can only be queried and cannot be set or changed.

Input: resolution information of the signal sources input

Output: EDID information of the TV of outputs.

System: System information includes Web, version and company info.

Log: Matrix log



## 8. Remote Control

-  : Standby or power on
-  : Mute button
-  : Return to upper level
-  : Move to next level
-  : Picture off
-  : Page turn by 100 of the last sub-menu
-  : Page turn by 10 of the last sub-menu
-  : Menu
-  : All output
-  : Up
-  : Menu
-  : OK
-  : Enter
-  : Down
-  : Return or exit
-  : Menu
-  : When selecting Output, means Out1--out4
-  : When selecting Input, means In1--In4
-  : Preset
-  : (N/A)
-  : Point to Point 1-1, 2-2, 3-3, 4-4



## 9. Audio Extraction

### 9.1 HDMI audio

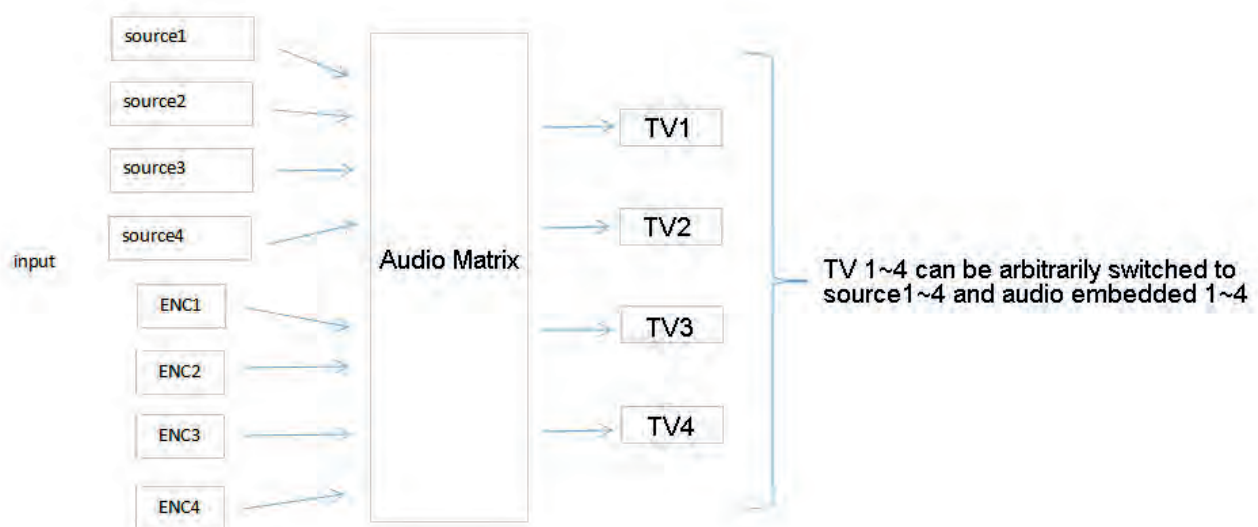
Default HDMI audio output support uncompressed audio PCM, LPCM2.0.

The maximum sampling rate support 192KHZ

COPY EDID audio format are forced into LPCM2.0.

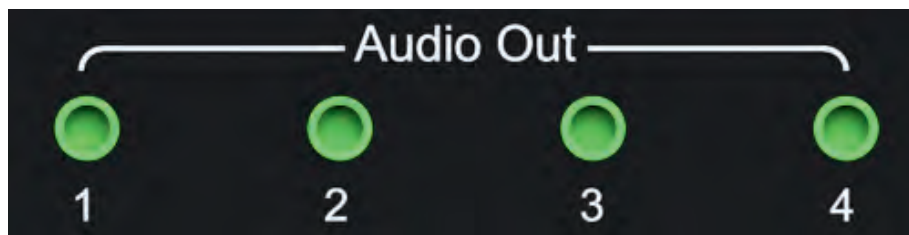
HDMI Source:

- ① ENC1~4 indicates that HDMI outputs select the embedding audio
- ② HDMI1~4 indicates that HDMI outputs select other audio source
- ③ Auto HDMI indicates that the input signal source is switched with the matrix, but the audio state is not switched
- ④ Auto ENC indicates the HDMI sound will be overwritten and replaced with the corresponding embedded audio



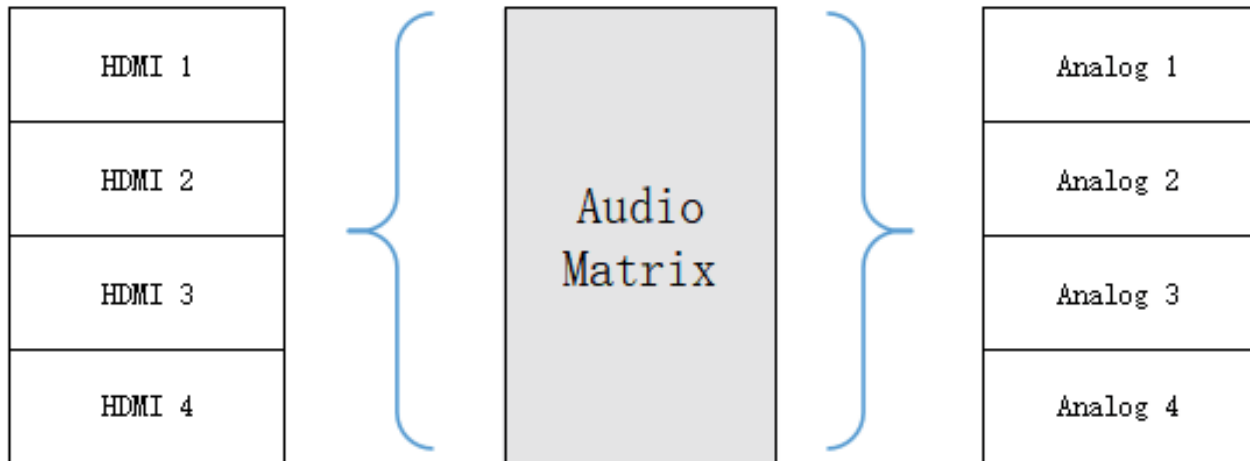
### 9.2 Audio Extraction

\*Corresponding to the front end, the current channel can only select one audio each time



### 1) Analog Audio

- ① HDMI 1~4 indicates that HDMI output audio select audio from other input signal sources
- ② Auto HDMI indicates that follow with the HDMI Matrix Switching.



## 10. RS232 Control

### 10.1 Open CommUart Assistant:

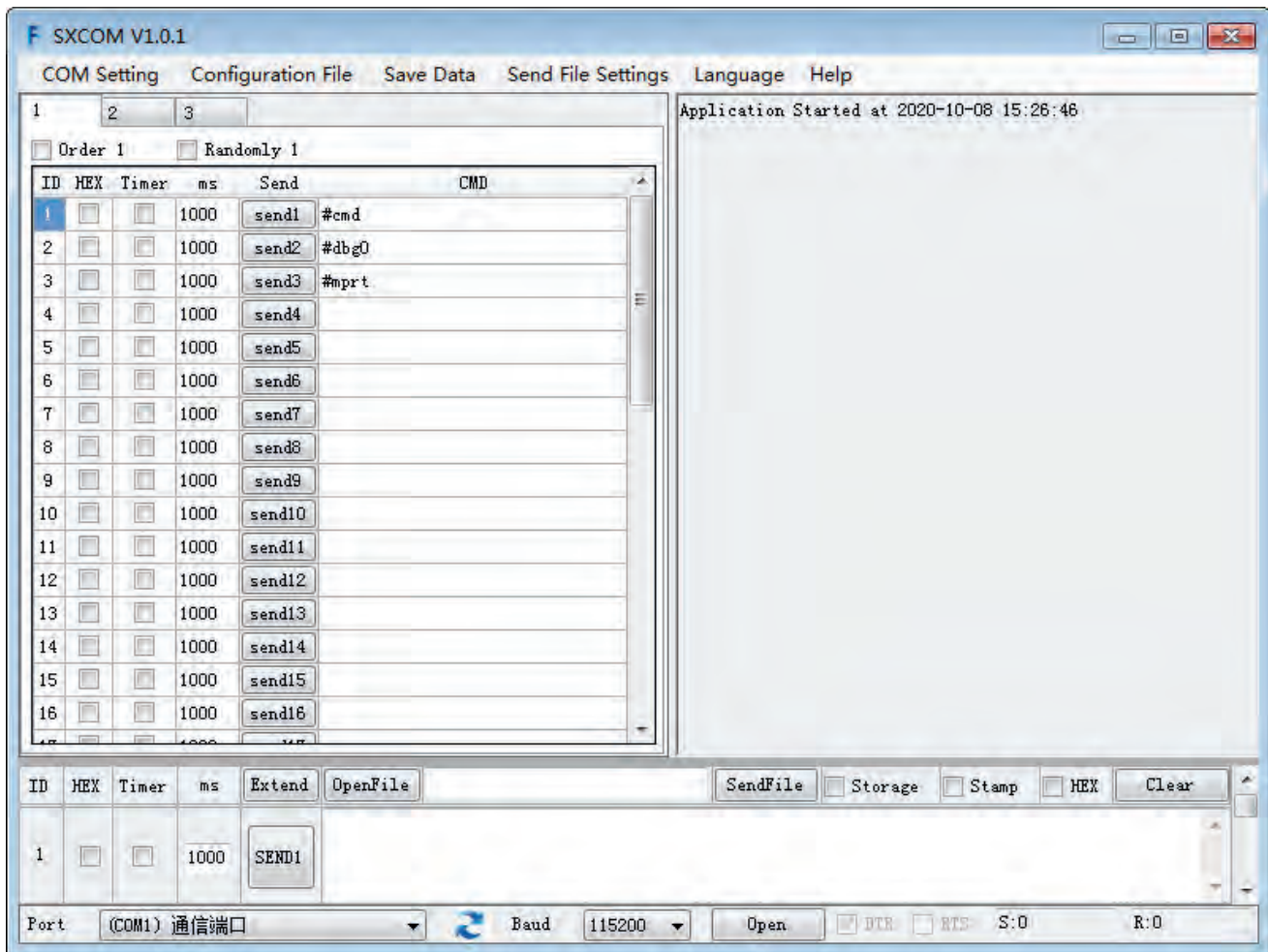


### 10.2 Comport setting:

Choose correct COM port that connect to PC in parameter configuration area.

| Serial Port Default Settings |                      |
|------------------------------|----------------------|
| Baud Rate                    | 115200 bps (Default) |
| Parity Bits                  | None                 |
| Data Bits                    | 8                    |
| Stop Bits                    | 1                    |

## 10.3 Enter Port Command in Send Options



## 10.4 Command List

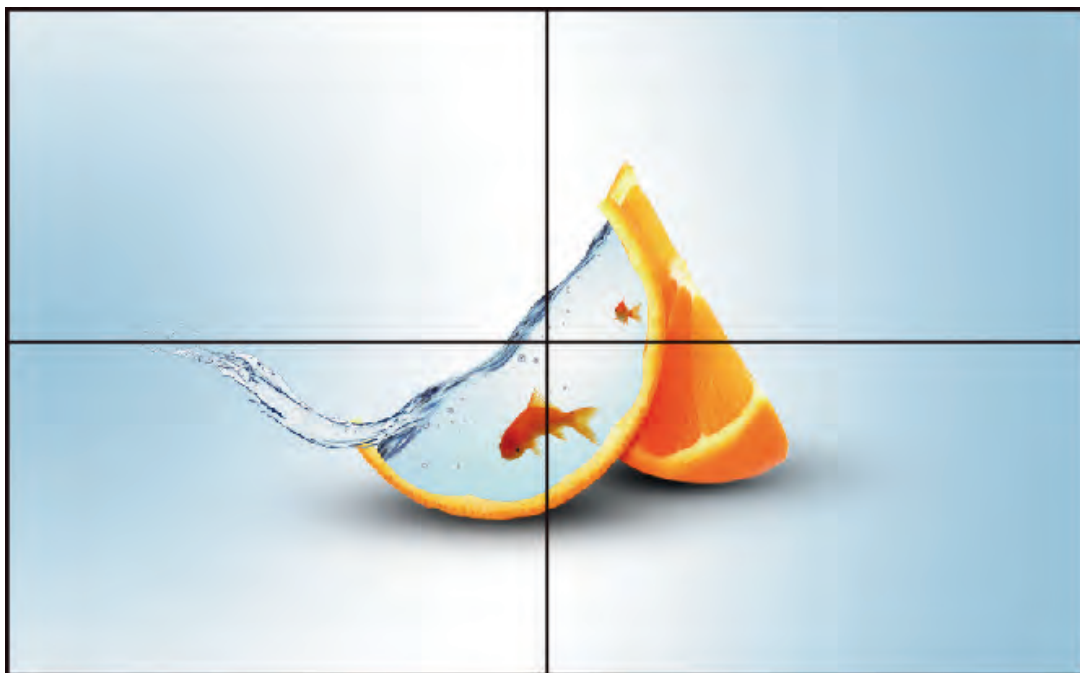
- 1).All commands start with “#”
- 2).“\_” the underline cannot omit.
- 3) Command head, Parameter and target need to add one “SPACE”.
- 4) Out can be followed by multiple digits, separated by commas (.). For example, "#video\_d out3,2,1 source=3"

The following table is only an example.Please refer to the list of instructions.

| Type         | Format                                                                                                          | Value   | Regulation |
|--------------|-----------------------------------------------------------------------------------------------------------------|---------|------------|
| Command head | #cmd                                                                                                            | without |            |
| Explain      | Can be used to search command. After receiving command, the system will feedback all open command format fields |         |            |
| Example1     | #cmd                                                                                                            |         |            |
|              | Search all open command                                                                                         |         |            |

## 11. Scene Instructions

### 11.1 Video Wall Mode



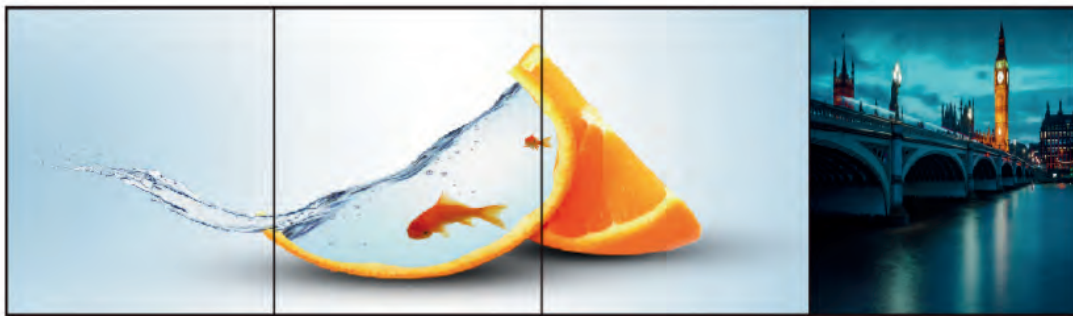
W-2x2: 2 Vertical x 2 Horizontal



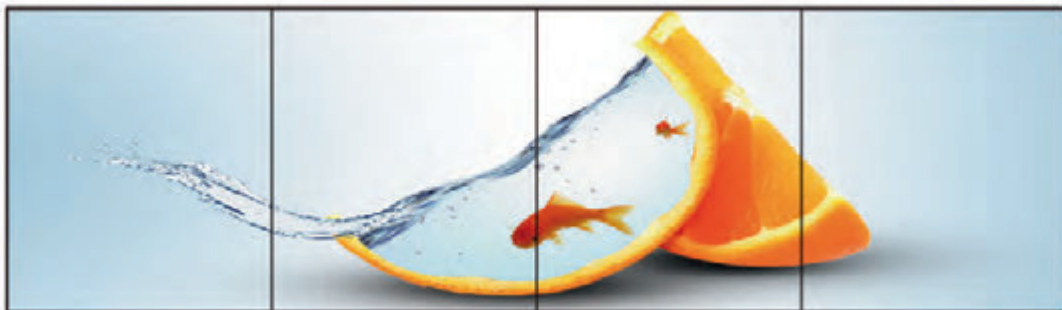
W-1x2: 1 Vertical x 2 Horizontal



W-1x2 1x2: 1 Vertical x 2 Horizontal



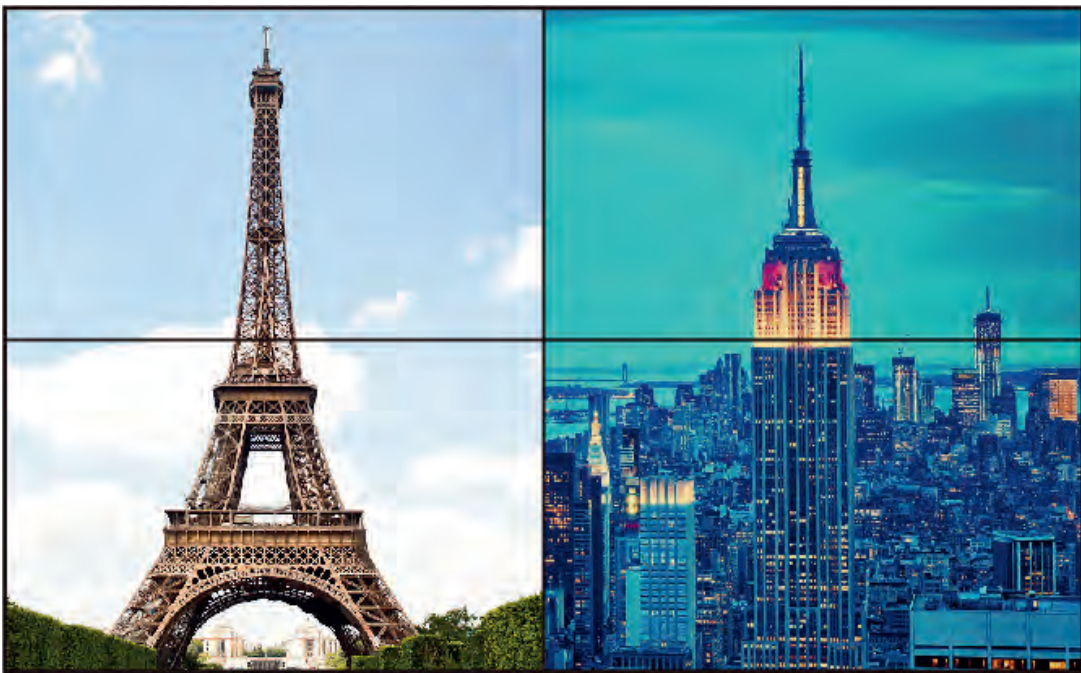
W-1x3: 1 Vertical x 3 Horizontal



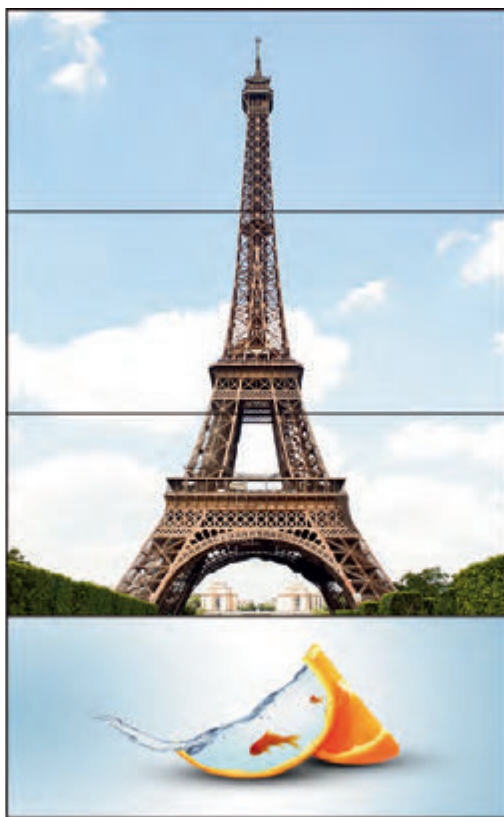
W-1x4: 1 Vertical x 4 Horizontal



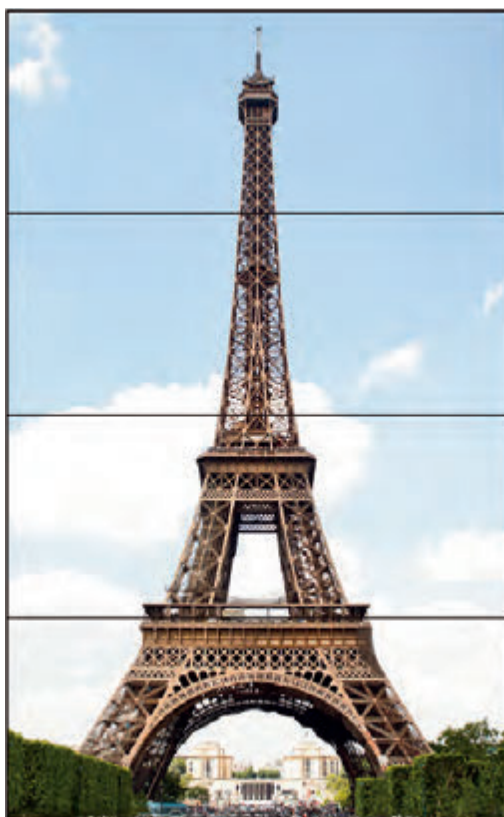
W-2x1: 2 Vertical x 1 Horizontal



W-2x1 W-2x1: 2 Vertical x 1 Horizontal



W-3x1: 3 Vertical x 1 Horizontal



W-4x1: 4 Vertical x 1 Horizontal

## 11.2 Multi-Viewer Mode



M-2x2



M-3x1-R



M-3x1-L



M-3x1-U



M-3x1-D



M-1+234 A



M-1+2 1+3 1+4 A



M-1+2 3+4 A



M-1+34 2+34 A



M-POP A



M-2x1+34 A



M-2x1+3 2x1+4A

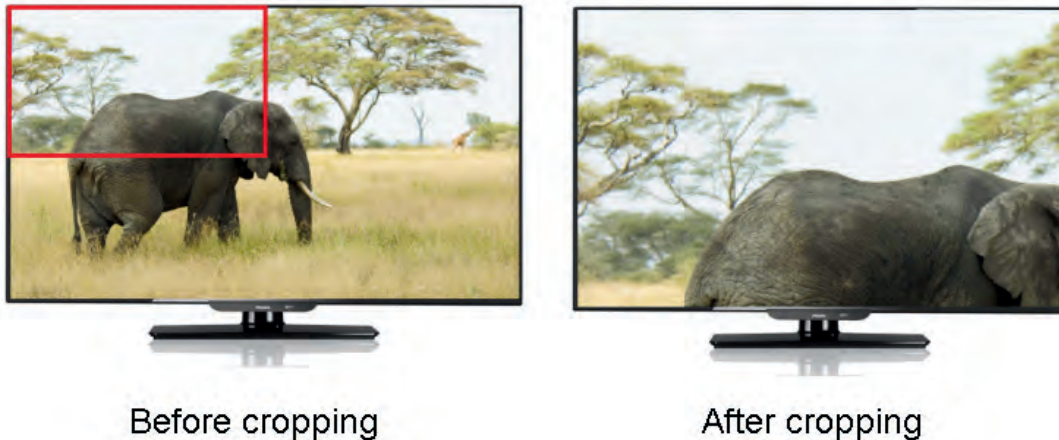
### 11.3 Image cropping and TV coordinate change

Input starting point: CROP X0(0), CROP Y (0),

Input ending point: CROP X1(3000), CROP Y0(3000)

Input scaling starting point: ZOOM X0(0), ZOOM Y0(0),

Input scaling ending point: ZOOM X1(6000), ZOOM Y0(6000)

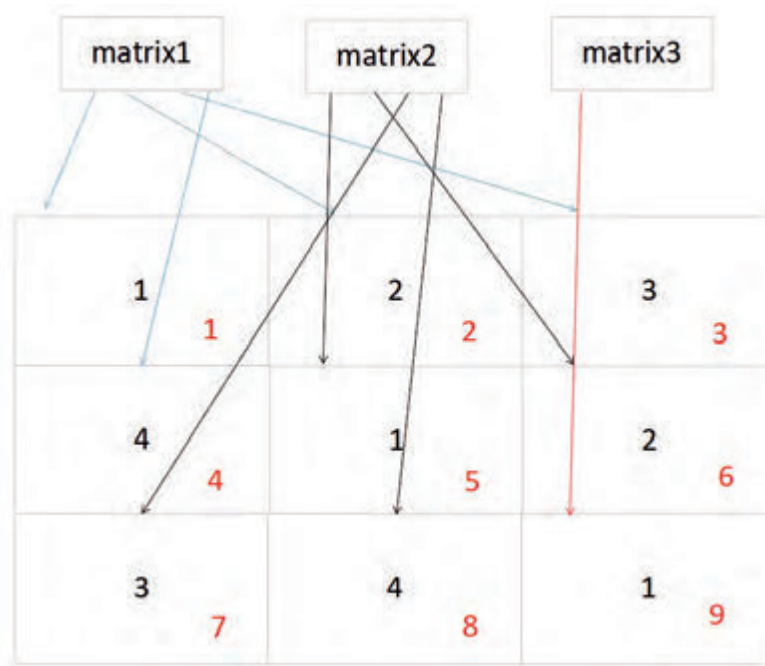


### 11.4 Cascading

Cascading Video Wall: need to use multiple matrices, all the matrices needs set to the same number of video wall; Then the matrix follows 1~2~3 respectively connected to the TV wall

See below picture:

Such as a 3x3 video wall; Matrix1 connects to TV 1 to 4, Matrix2 connects to TV 5 to 8, Matrix3 connects to TV 9, the front matrix loops out to connect to the next matrix's input 1



\*\*\*The black number is the output order of the matrix, and the red is the position of the TV wall

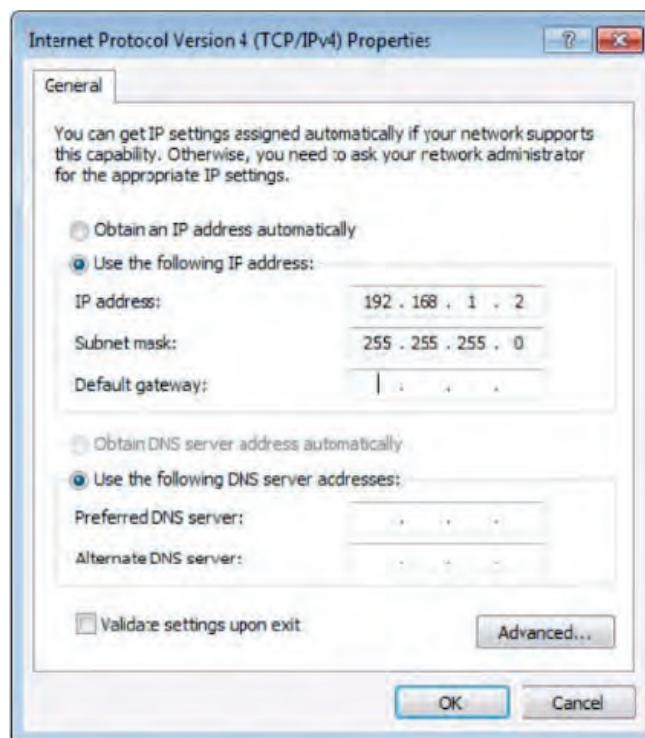
## 12. Web Control

### 12.1 Change IP address of PC

Before configuring the device through the website, it is necessary to configure the IP address of the computer configured with the device

(mainly to ensure that the computer and the device are set in the same network segment).

- 1). Open the network control center and set the computer's IP address:
- 2). Choose to use Static IP, with the IP address set to 196.168.1.x (x ranges from 0 to 254, but cannot be consistent with the device's IP address),
- 3). Subnet mask set to 255.255.255.0
- 4). Gateway set to 192.168.1.1

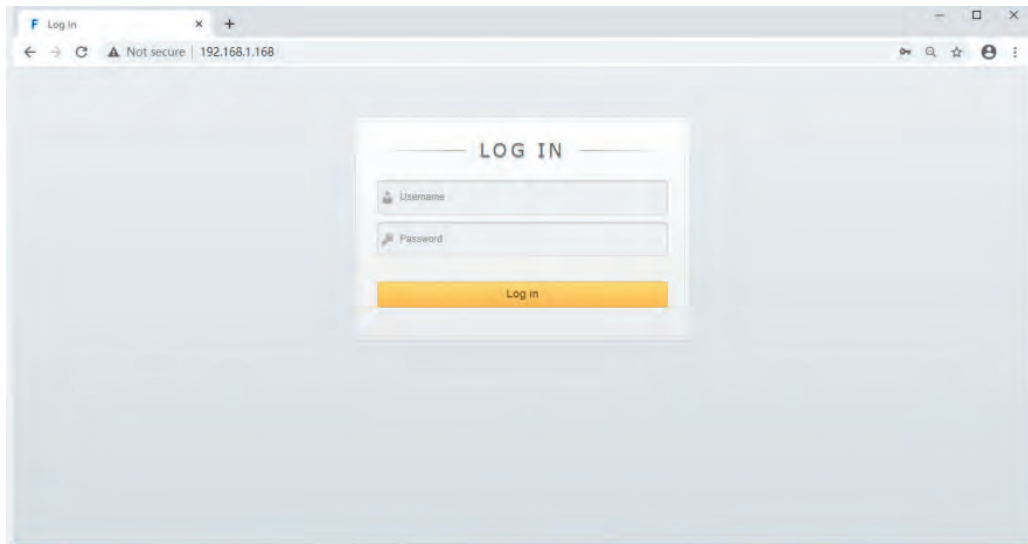


### 12.2 Log in by browser

Default IP address for log-in: 192.168.1.168

Type in user name and password (default user and default password: admin)

**Note:** Suggested to use newer version of Google, Firefox, IE11 browser for better compatibility.



## 13. WEB

### 13.1 Status

- 1) In the Status interface, you can view the matrix information
- 2) Input INFO displays the resolution, audio and HDCP information of the input signal source
- 3) Output EDID Info interface will display partial EDID information of TV
- 4) Device Info displays MCU version and web version

|          |                  |           |               |          |            |         |
|----------|------------------|-----------|---------------|----------|------------|---------|
| Status   | Input Info       |           |               |          |            |         |
|          |                  | Connected | Resolution    | Color    | Audio      | HDCP    |
|          | In1              | x         | x             | x        | x          | x       |
|          | In2              | x         | x             | x        | x          | x       |
|          | In3              | x         | x             | x        | x          | x       |
| Input    | In4              | x         | x             | x        | x          | x       |
|          | Output EDID Info |           |               |          |            |         |
|          |                  | Connected | Resolution    | Color    | Audio      | Product |
|          | Out1             | √         | 1920×1080P 60 | 444 None | ERR-1 None | SAM0D1A |
|          | Out2             | x         | x             | x        | x          | x       |
| Output   | Out3             | x         | x             | x        | x          | x       |
|          | Out4             | x         | x             | x        | x          | x       |
|          | Device Info      |           |               |          |            |         |
|          | MCU Version:     |           |               |          | V0.2.6     |         |
|          | HTML Version:    |           |               |          | V0.0.8     |         |
| Matrix   |                  |           |               |          |            |         |
| Preset   |                  |           |               |          |            |         |
| Advanced |                  |           |               |          |            |         |
| System   |                  |           |               |          |            |         |

## 13.2 Input Menu

- 1) Rename: The input name can be changed by double-clicking input1~4.
- 2) Video: Click the green buttons to enable or disable the video inputs.
- 3) Audio delay: The default is Auto, click “-” or “+” to adjust.
- 4) Copy EDID: Default1 ~4, user1~4, output1~4, temp1 can be switched to the inputs

| Status | Input | Rename | Video                               | Audio Delay | Copy EDID From                       |
|--------|-------|--------|-------------------------------------|-------------|--------------------------------------|
|        | In1   | Input1 | <input checked="" type="checkbox"/> | - Auto +    | Default1:4096x2160P@60-444 HDR:HLG ▾ |
|        | In2   | Input2 | <input checked="" type="checkbox"/> | - Auto +    | Default1:4096x2160P@60-444 HDR:HLG ▾ |
|        | In3   | Input3 | <input checked="" type="checkbox"/> | - Auto +    | Default1:4096x2160P@60-444 HDR:HLG ▾ |
|        | In4   | Input4 | <input checked="" type="checkbox"/> | - Auto +    | Default1:4096x2160P@60-444 HDR:HLG ▾ |
|        | All   |        | <input checked="" type="checkbox"/> | - Auto +    | Default1:4096x2160P@60-444 HDR:HLG ▾ |

Copy EDID From:  to:

User EDID:   to:

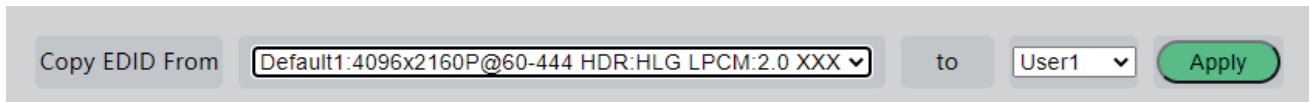
```

Default1:4096x2160P@60-444 HDR:HLG LPCM:2.0 XXX1234
Default2:4096x2160P@60-420 HDR:HLG LPCM:2.0 XXX1234
Default3:4096x2160P@30-444 HDR:HLG LPCM:2.0 XXX1234
Default4:1920x1080P@120-444 HDR:HLG LPCM:2.0 XXX1234
User1:1920x1080P@60-444 HDR:None ERR:ERR SAM0D1A
User2:4096x2160P@60-444 HDR:HLG LPCM:2.0 XXX1234
User3:4096x2160P@60-444 HDR:HLG LPCM:2.0 XXX1234
User4:4096x2160P@60-444 HDR:HLG LPCM:2.0 XXX1234
Output1:1920x1080P@60-444 HDR:None ERR:ERR SAM0D1A
Output2:Invalid
Output3:Invalid
Output4:Invalid
Temp1:Invalid
  
```

- 5) USER EDID can save the EDID as Bin document to User1~4. Click Browse to find the route of EDID, select User1~4 and click upload to save it.

User EDID:   to:

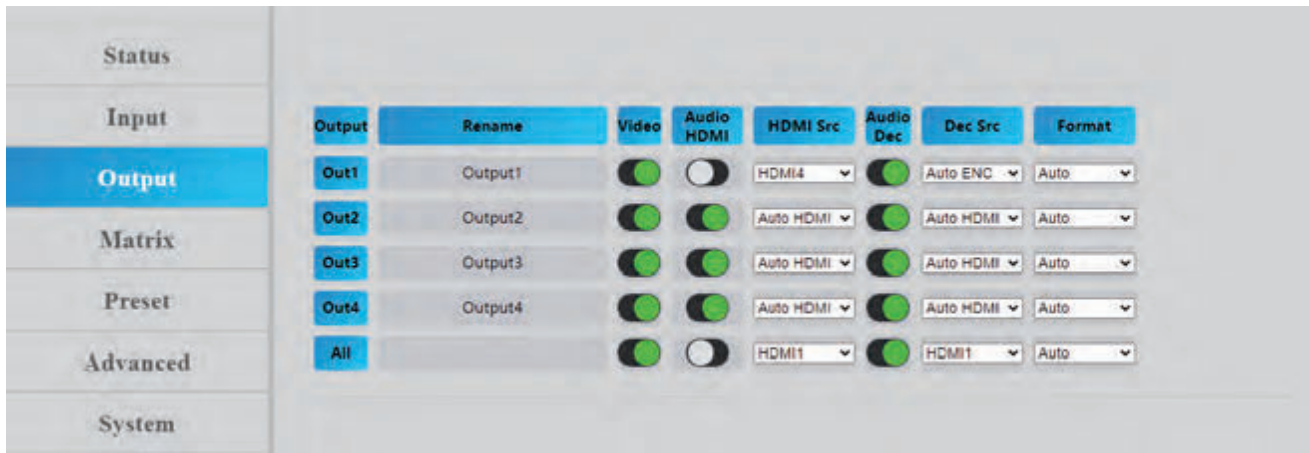
6) Copy EDID of sink to User1~4

A horizontal bar with a light gray background. On the left, the text "Copy EDID From" is followed by a dropdown menu showing "Default1:4096x2160P@60-444 HDR:HLG LPCM:2.0 XXX". To the right of this is the text "to" followed by another dropdown menu showing "User1". At the far right is a green button with the text "Apply".

Copy EDID From Default1:4096x2160P@60-444 HDR:HLG LPCM:2.0 XXX to User1 Apply

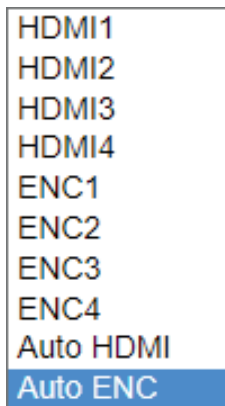
## 13.3 Output Menu

- 1) Rename: Output name can be changed, double click output1~4 to modify
- 2) Video: Click the green button to enable or disable the video outputs.
- 3) Audio HDMI: Click the green button to enable or disable the audio outputs.

A screenshot of the "Output" menu in a software interface. On the left is a vertical sidebar with buttons: "Status", "Input", "Output" (highlighted in blue), "Matrix", "Preset", "Advanced", and "System". The main area is a table with columns: "Output", "Rename", "Video", "Audio HDMI", "HDMI Src", "Audio Dec", "Dec Src", and "Format". There are five rows: "Out1", "Out2", "Out3", "Out4", and "All". Each row has a "Video" toggle (green circle with a dot) and an "Audio HDMI" toggle (green circle with a dot). The "HDMI Src" column has dropdown menus: "HDMI4" for Out1, "Auto HDMI" for Out2-4, and "HDMI1" for All. The "Audio Dec" column has green toggle buttons. The "Dec Src" column has dropdown menus: "Auto ENC" for Out1, "Auto HDMI" for Out2-4, and "HDMI1" for All. The "Format" column has dropdown menus: "Auto" for Out1-4 and "Auto" for All.

| Output | Rename  | Video | Audio HDMI | HDMI Src  | Audio Dec | Dec Src   | Format |
|--------|---------|-------|------------|-----------|-----------|-----------|--------|
| Out1   | Output1 |       |            | HDMI4     |           | Auto ENC  | Auto   |
| Out2   | Output2 |       |            | Auto HDMI |           | Auto HDMI | Auto   |
| Out3   | Output3 |       |            | Auto HDMI |           | Auto HDMI | Auto   |
| Out4   | Output4 |       |            | Auto HDMI |           | Auto HDMI | Auto   |
| All    |         |       |            | HDMI1     |           | HDMI1     | Auto   |

- 4) HDMI Src Switch HDMI output audio, click the drop-down box to select HDMI1-4, ENC1-4, Auto HDMI, Auto ENC 10 options, no need to confirm after the selection, automatic effect.

A vertical list of options for the HDMI Src dropdown menu. The options are: "HDMI1", "HDMI2", "HDMI3", "HDMI4", "ENC1", "ENC2", "ENC3", "ENC4", "Auto HDMI", and "Auto ENC". The "Auto ENC" option is highlighted with a blue background.

- HDMI1
- HDMI2
- HDMI3
- HDMI4
- ENC1
- ENC2
- ENC3
- ENC4
- Auto HDMI
- Auto ENC

- 5) Audio Dec: Turn on/off Audio Extraction
- 6) Dec Src: audio extraction switching, click the drop-down list box to select HDMI1-4 and AUTO HDMI options. The options take effect automatically without confirmation.
- 7) Format: Output video format, the default is auto. Following the output TV EDID specifications, you can manually select 4K60, 4K30, 1080P60, 720P60

4K60

4K60

4K30

1080P60

720P60

13.4 Matrix

- 1) Input1~4 corresponds to the input of matrix access 1~4, Output1~4 corresponds to the output of matrix 1~4, click the mouse button can directly realize the matrix switch.
- 2) Output all indicates that all outputs are switched to one input.
- 3) If the button turns blue, it indicates the input signal source corresponding to the current output TV.

Status

Input

Output

Matrix

Preset

Advanced

System

Input1

Input2

Input3

Input4

Output1 :

Input1

Input2

Input3

Input4

Output2 :

Input1

Input2

Input3

Input4

Output3 :

Input1

Input2

Input3

Input4

Output4 :

Input1

Input2

Input3

Input4

Output All :

Input1

Input2

Input3

Input4

13.5 Preset Menu

Preset can be used to call, save, clear and customize the scene name.

Status

Input

Output

Matrix

Preset

Advanced

System

Mode

Mode Num

Rename

Clear

Save

Call

Seamless Matrix

S-P2P

S-P2P

Clear

Save

Call

Video Wall

W-2x2

W-2x2

Clear

Save

Call

Multiview

M-2x2

M-2x2

Clear

Save

Call

Scene

Scene1

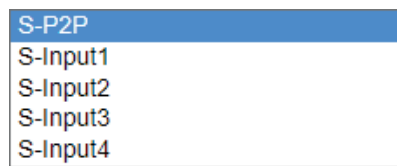
Scene1

Clear

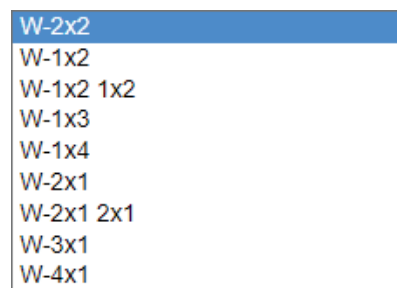
Save

Call

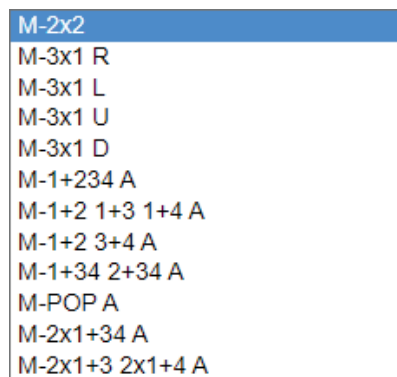
1) Seamless matrix can complete P2P, input1, input2, input3, input4. Click the drop-down box to select "Call", click "Save" to save the current scene, and click "Clear" to clear the scene to the default value.



2) Video wall can customize the new scene. The default mode is the built-in wall mode of the system. Click the drop-down box to select call, click Save to save the current scene, and click "Clear" to clear the scene to the default value.



3) Multi View can implement that display 4 pictures on the same screen and has multiple split display modes; The new scene mode can be customized. Click the drop-down box to select "Call" to call directly, click "Save" to save the current scene, and click "Clear" to clear the scene to default value.



4) Scene can save and customize scene. There are 8 scenes. The default scene is the same as factory setting.

5) Rename can change the scene name. Double click to modify the name.

## 13.6 Advance

- 1) PIP mode switch. Click the button to enable or disable the mode.
- 2) Crop-X0 (Image cropping starting point of horizontal coordinates, range 0~6000)  
Crop-Y0 (Image cropping starting point of vertical coordinates, range 0~6000)  
Crop-X1 (Image cropping ending point of horizontal coordinates, range 0~6000)  
Crop-Y1 (Image cropping ending point of vertical coordinates, range 0~6000)  
Zoom-X0 (Image scaling starting point of horizontal coordinates, range 0~6000)  
Zoom-Y0 (Image scaling starting point of vertical coordinates, range 0~6000)  
Zoom-X1 (Image scaling ending point of horizontal coordinates, range 0~6000)  
Zoom-Y1 (Image scaling ending point of vertical coordinates, range 0~6000)

**\*\*Press “Apply” after inputting the coordinates.**

| Output | PIP                      | Crop-X0              | Crop-Y0              | Crop-X1              | Crop-Y1              | Zoom-X0              | Zoom-Y0              | Zoom-X1              | Zoom-Y1              | Confirm |
|--------|--------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------|
| Out1   | <input type="checkbox"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | Apply   |
| Out2   | <input type="checkbox"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | Apply   |
| Out3   | <input type="checkbox"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | Apply   |
| Out4   | <input type="checkbox"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | Apply   |
| All    | <input type="checkbox"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | Apply   |

## 13.7 System

- 1) Network includes Mac address, IP, mask, gate, DHCP, TCP port. Mac address cannot be modified. IP address can be modified in condition that DHCP is off and a highest level account is required.
- 2) Account Management can revise account. A high level account cannot be modified by a low level account which can modify the current login account only.
- 3) Reboot
- 4) Factory Simple: restore partial factory settings.
- 5) Factory User: restore all factory settings.

|          |  |  |
|----------|--|--|
| Status   |  |  |
| Input    |  |  |
| Output   |  |  |
| Matrix   |  |  |
| Preset   |  |  |
| Advanced |  |  |
| System   |  |  |

### Network

Mac Address : 48:58:4E:9F:1A:6B

IP Address : 192.168.0.57

Net Mask Address : 255.255.255.0

Gate Way Address : 192.168.0.1

DHCP : ☒

TCP Port : 5000

### Account management

User Name :

New Password :

Confirm the Password :

Apply

Reboot :

Factory Simple :

Factory User :

## 14. Firmware Updating

### 14.1 MCU Application Layer Upgrade

Open the software UART\_ISP.exe in PC, select the correct port, the baud rate 115200, input the "A1" in port, and select the path (.bin format) of the program, and click "update" to complete the upgrade.

UART\_ISP V1.7

COM

COM26 Prolific USB-to-Serial Comm. Port

BAUD

115200

PORT

A1

REFRESH

PATH

C:\

...

UPDATE

UART\_ISP V1.7 2022-05-11

Steps :

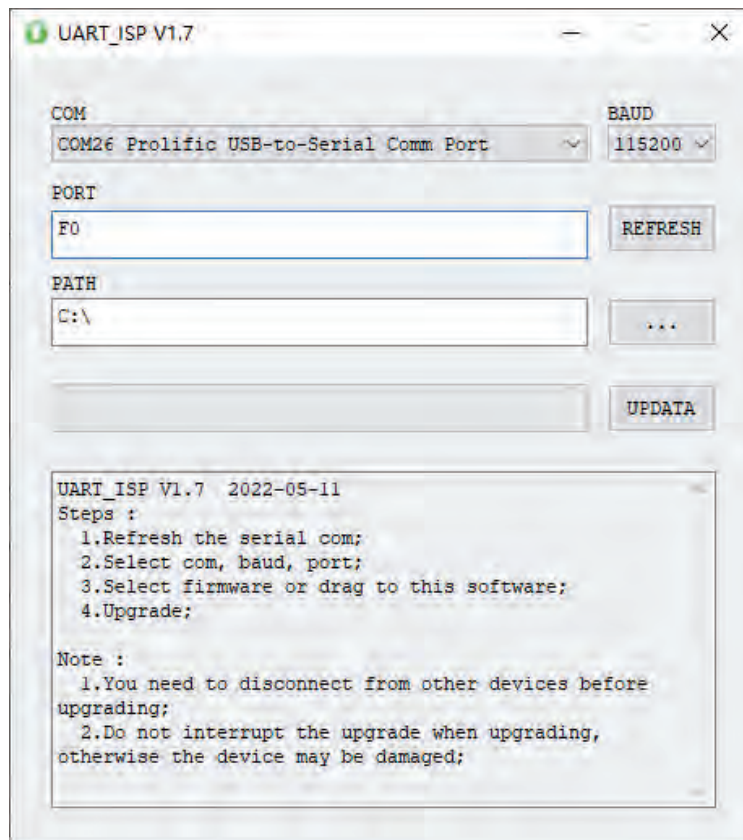
- 1.Refresh the serial com;
- 2.Select com, baud, port;
- 3.Select firmware or drag to this software;
- 4.Upgrade;

Note :

- 1.You need to disconnect from other devices before upgrading;
- 2.Do not interrupt the upgrade when upgrading, otherwise the device may be damaged;

## 14.2 GUI Web Page Upgrade

Open software UART\_ISP\_V1.7.exe in PC, select correct port, baud rate 115200, input F0 and select a program (xxx.HTML) in path, click update to complete upgrade.



## 15. Maintenance

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

## 16. Warranty

If your product does not work properly because of a defect in materials or 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.

## 17. 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.

## 18. 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 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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