

BG-4K-VP44

**4x4 4K UHD Seamless HDMI Matrix Switcher/Video Wall Processor/
MultiViewer with Scaler/IR/Audio/IP and RS-232**

User Manual







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Statement

Please read these instructions carefully before connecting, operating, or configuring this product. Please save this manual for future reference.

Safety Precaution

- To prevent damaging this product, avoid heavy pressure, strong vibration, or immersion during transportation, storage, and installation.
- The housing of this product is made of organic materials. Do not expose to any liquid, gas, or solids which may corrode the shell.
- Do not expose the product to rain or moisture.
- To prevent the risk of electric shock, do not open the case. Installation and maintenance should only be carried out by qualified technicians.
- Do not use the product beyond the specified temperature, humidity, or power supply specifications.
- This product does not contain parts that can be maintained or repaired by users. Damage caused by dismantling the product without authorization from BZBGear is not covered under the warranty policy.
- Installation and use of this product must strictly comply with local electrical safety standards.



Introduction

The BG-4K-VP44 is a compact and versatile unit bursting with features that encompasses several units in one! This multifaceted unit is capable of seamless matrixing switching, producing video walls, and possesses the ability to act as a multi-viewer.

The BG-4K-VP44 has 4 HDMI 2.0 inputs and outputs as well as being HDCP 2.2 compliant. This unit features 7 different modes for video walls and is able to support resolutions up to 4K@60 4:4:4. It also possesses the ability to display its 4 sources on 1 display in several different layouts.

With the ability to embed audio to the HDMI outs through 3.5mm stereo mini cables the BG-4K-VP44 further enhances the user experience. This unit also provides audio extraction capabilities for each input via 3.5mm stereo mini as well as digital coaxial S/PDIF jacks. It supports audio formats such as Dolby 5.1, DTS 5.1, and the audio from the sources can be switched independently.

The unit can be controlled via the front panel buttons, IR remote control, RS232, and TCP/IP. The BG-4K-VP44 also has EDID management to ensure your devices always get the right signal. All of these features in one small package allow you to distribute audio and video from 4 sources to 4 displays easily, reliably, and would be a great fit for mobile video production, events, restaurants, advertising, and more!

Features

- 4 HDMI inputs which can be independently routed to the 4 HDMI outputs.
- Seamless switching which means no delay or picture loss during transitions.
- Resolution up to 4K@60HZ 4:4:4.
- Video Wall capabilities with up to 7 different modes on each display.
- Multiview 4 inputs on the same screen in multiple display modes.
- Supports HDMI audio formats including Dolby-5.1, DTS-5.1
- Analog audio embedding, extraction, and independent audio switching.
- HDCP 2.2 compliant with EDID management.
- Control via panel button, Remote Control, RS232 Control, TCP/IP Control



Packing List

- 1x BG-4K-VP44
- 1x DC 12V/3A power adapter
- 1x Remote control
- 1x Wide-Band IR Receiver cable
- 1x User Manual
- 1x 3 Pin Phoenix terminal plug

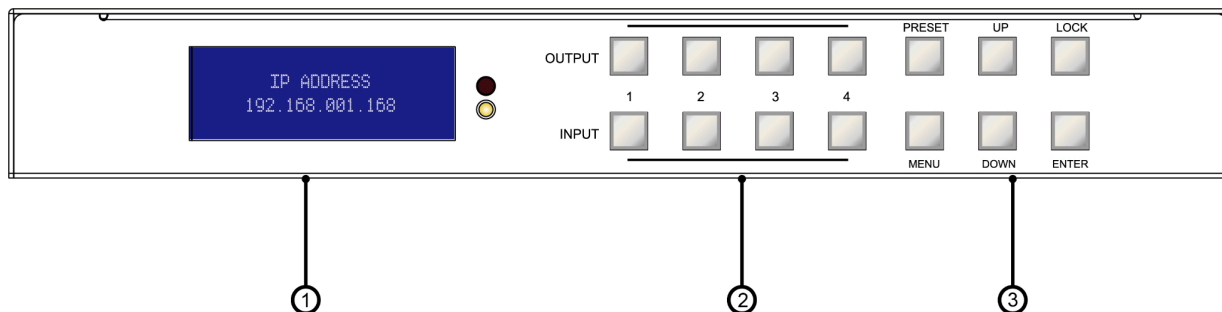
Specifications

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)
Input Video Signal	0.5-1.0 volts p-p
Input DDC Signal	5 volts p-p (TTL)
Bandwidth	18 Gbit/s
Video Format Supported	4K@60Hz, YUV 4:4:4 8 bit 4k@30Hz/1080P/1080i/720P
Audio Formats Supported	HDMI digital audio DTS-5.1/Dolby-5.1
HDCP Compliant	HDCP 2.2 and HDCP 1.4
Input ports	4x HDMI
Output ports	4x HDMI
Matrix mode	4x4 seamless switching
Video wall mode	Multiple video wall modes
Multi-viewer mode	Multiple multi-viewer modes
Power Consumption	23 watts (Max.)
Dimensions	Matrix: L262 x W163 x H36 mm
Mass (Main Unit)	2710g



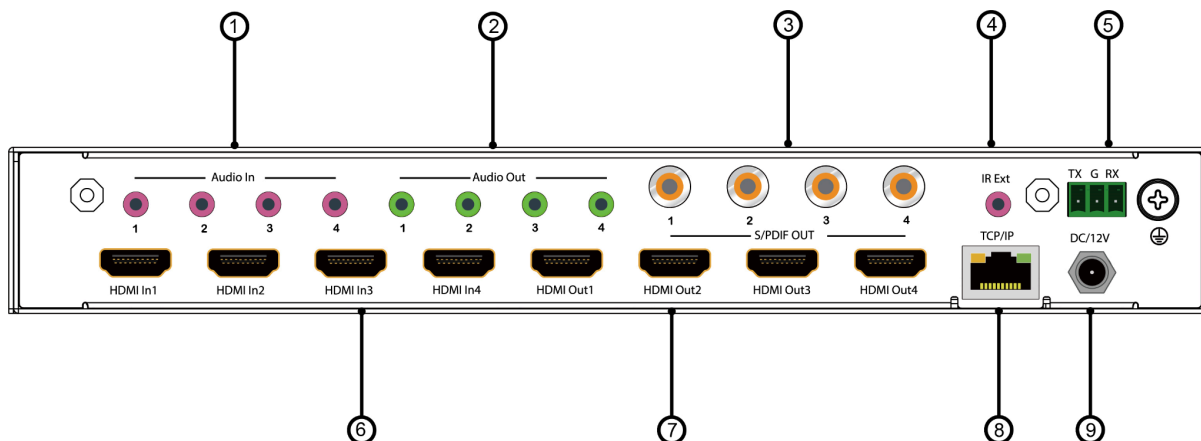
Operation Controls and Functions

Front Panel



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

Rear Panel

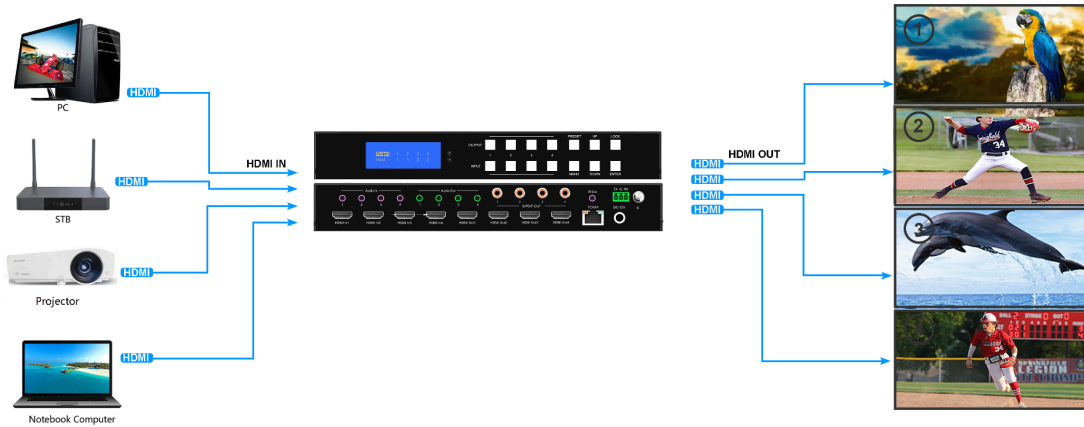


1. Audio In: 3.5mm stereo mini
2. Audio Out: 3.5mm stereo mini
3. S/PDIF Out: Digital Coaxial RCA
4. IR Ext: 3.5mm stereo mini IR extension
5. RS232 port: 3-pin phoenix
6. HDMI IN x4: HDMI 2.0
7. HDMI OUT x4: HDMI 2.0
8. Ethernet port: RJ45
9. Power input: 12V/3A

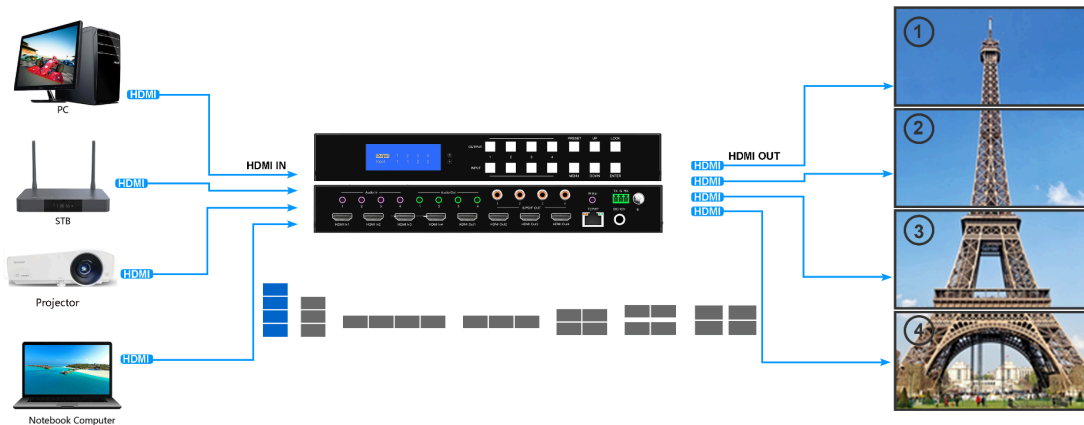


Application Diagrams

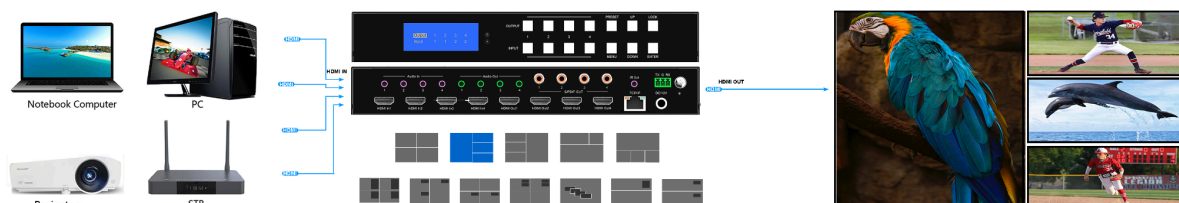
Seamless Matrix Mode



Video Wall Mode



Multi-Viewer Mode





Input / Output Channel Key Operation

Channel	Button Methodology
OUT1-4	<ol style="list-style-type: none"> 1. Press the OUTPUT# button for the display you wish to change and the # will be highlighted on the display screen. Multiple outputs can be selected and highlighted at once. 2. Long press any OUTPUT button to highlight/select all outputs at once. 3. Press the INPUT # button you would like to display and the highlighted/selected output(s) will change to the selected input #. 4. Press the OUTPUT # button again to cancel the selection of a highlighted output on the display screen.
IN1-4	Press and hold an INPUT # button to change all inputs to the selected input.
MENU	Press the MENU button to enter the on screen display (OSD) menu or back to the previous option.
ENTER	Press the ENTER button to confirm a selected option or advance to the next menu screen.
UP	Press the UP button to navigate the OSD Menu.
DOWN	Press the DOWN button to navigate the OSD Menu.
PRESET	<ol style="list-style-type: none"> 1. Press the PRESET button to enter the preset call menu. 2. Use the UP and DOWN buttons to highlight one of the 26 preset modes 3. Press the ENTER key to enable the highlighted preset mode.
LOCK	Long press the LOCK button to lock the touch panel buttons. Long press the LOCK button again to unlock.



Panel Control

Video

Video from any of the 4 inputs can be configured/transmitted to any of the 4 outputs to form a matrix in various configurations from 1×4~4×4. The matrix is capable of sending a single signal to one point or many.

Operation format: Select the output channel then select the input channel.

O u t p u t	1	2	3	4
I n p u t	2	2	2	2

For example:

1. Switch output 1 to the input 4 source.
Operation: press OUTPUT 1 and then press INPUT 4 to complete the switch.
2. Output 1, 2, and 3 switch to the input 2 source.
Operation: press OUTPUT 1, 2, and 3 to highlight the outputs on the OSD and then press INPUT 2 to complete the switch.
3. Switch all outputs to the input 4 source.
Operation: Press and hold INPUT 4 and all inputs will switch to source 4.

Main Menu

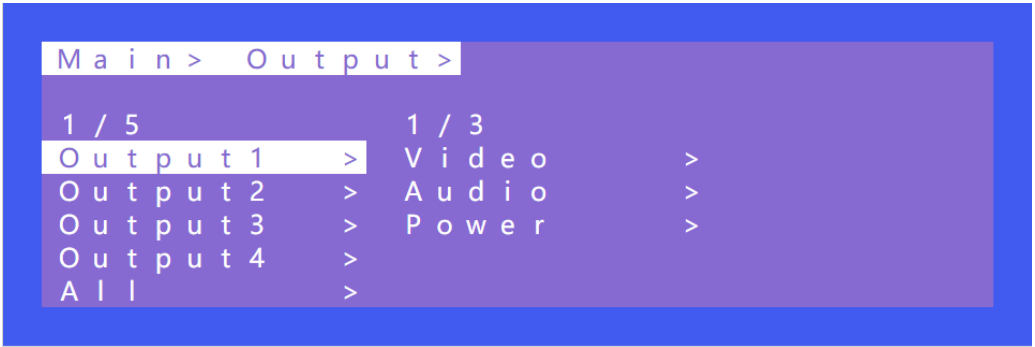
The main menu is divided into 5 modules: Output, Input, Preset, Config, and Info. Each module has multiple sub-menus that can be modified depending on display needs.

M a i n >			
1 / 5		1 / 5	
O u t p u t	>	O u t p u t 1	>
I n p u t	>	O u t p u t 2	>
P r e s e t	>	O u t p u t 3	>
C o n f i g	>	O u t p u t 4	>
I n f o	>	A l l	>

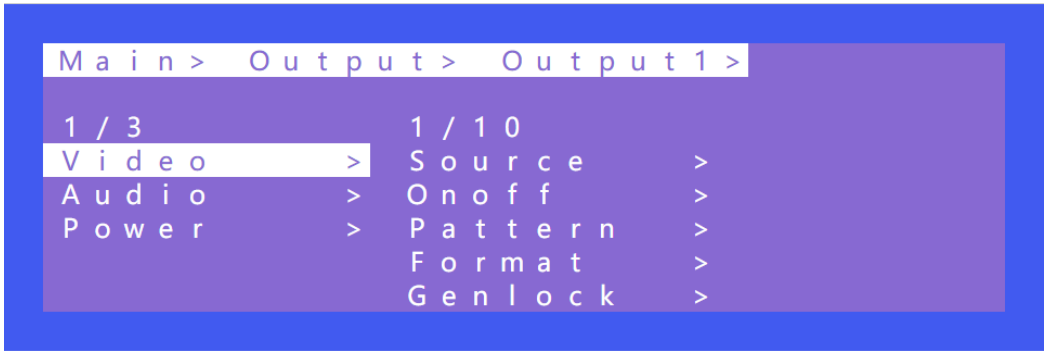


Output

There are 5 sub-menus in the Output menu interface: output 1~4 and All which are used for individual or all output settings. Each output channel contains 3 functions: video, audio, and power.



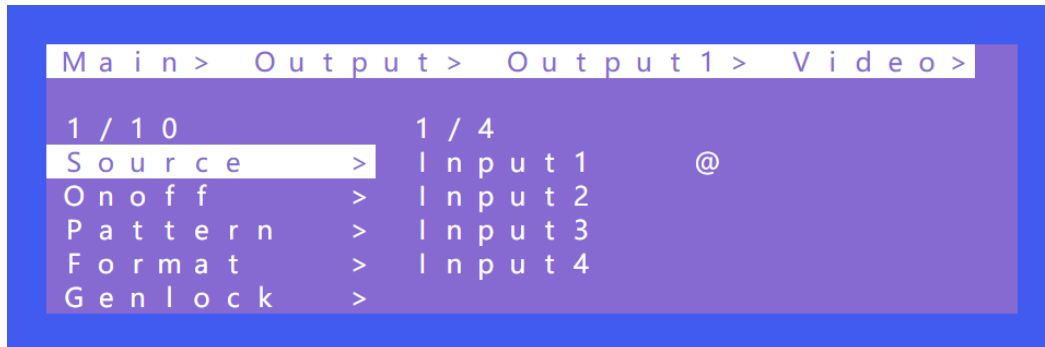
Choose a desired output before setting each video or audio setting.
There are 11 options in Video: Source, Onoff, Pattern, Format, Genlock, Rotate, Mirror, Coord, PIP, Wall, Image.





1. Source

Any output can be switched to any one input, or all outputs can be switched to the same input; The default 4x4 matrix is 4-way input and 4-way output (one to one).



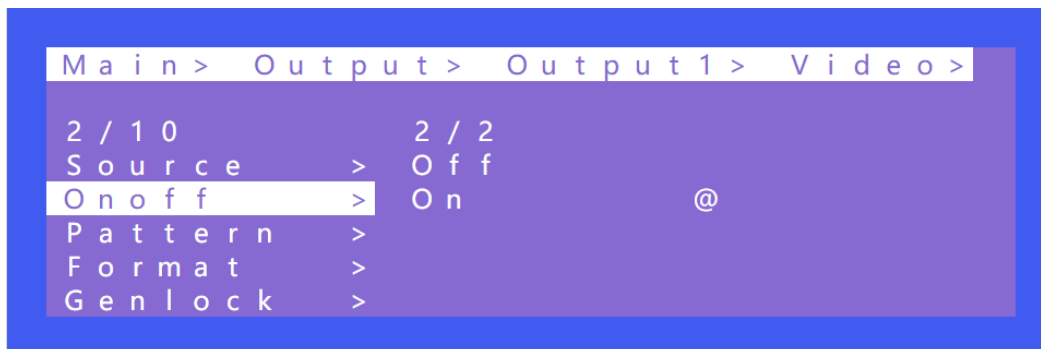
Operation:

1. Select "Output" in the main menu and press "ENTER"
2. Press "UP" and "DOWN" to select "Output 1~4 or all"
3. Click "ENTER" to enter the next sub-menu.
4. Press "UP" and "DOWN" to choose "Video"
5. Click "ENTER" to enter the next sub-menu
6. Press "UP" and "DOWN" to select "Source"
7. Click "ENTER" to enter the next sub-menu
8. Choose Input 1~4 to complete switching



2. Onoff

Turn on/off any output , or turn on/off all outputs. The video outputs are enabled by default.



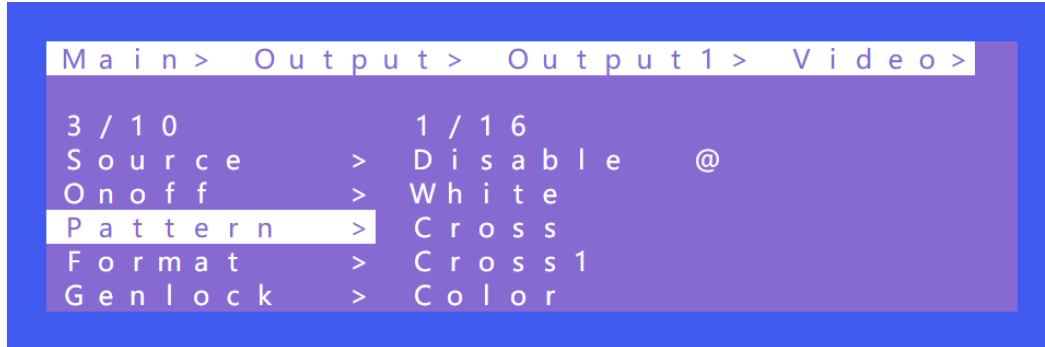
Operation:

1. Select "Output" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select "Output 1~4 or 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 "Onoff"
6. Click "ENTER" to enter the next sub-menu
7. Select "On" or "Off" and press "ENTER" to complete the operation. The blue screen will be displayed after turning off the output.



3. Pattern

There are 15 built in images that can be used for display testing purposes by selecting the Pattern option. For example: Using Cross or Cross1 images in 4x4 Video Wall mode can test whether each display is aligned correctly.



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 "Pattern"
6. Click "ENTER" to enter the next sub-menu
7. Press "UP" or "DOWN" to select "Disable" or enable other patterns



4. Format

The Format function can set and force the output resolution format but it does not provide an upscale image quality.

Example:

The input is 1080P@60Hz and the output is set to 4K60Hz. Although the TV is displayed in 4K@60Hz the image will still be in 1080P@60Hz.

NOTE: Selecting the input mode will enable the following input resolution but switching with the matrix will not be seamless unless the resolution from the source is in the same format and without HDR.



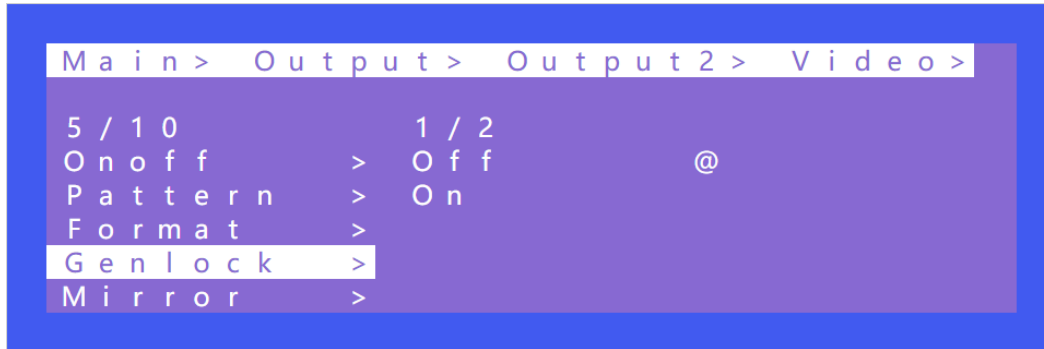
Operation:

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 "Format"
 6. Click "ENTER" to enter the next sub-menu
 7. Press "UP" or "DOWN" to select the corresponding resolution and press "ENTER."
- There will be a check time for 15 seconds. The setting will return to the original resolution if the display does not support the selected resolution.
8. Press "ENTER" again during the check time if the output works to complete the switch.



5. Genlock

Genlock is a common technique where the video output of one source is used to synchronize other picture sources together. Default is to Off. Output 1 cannot be selected as it is the reference. Only Output 2, Output 3, and Output 4 can be enabled. Switching the output resolution will affect other output images. (The image may be black for a while and the resolution will not be able to be changed.)



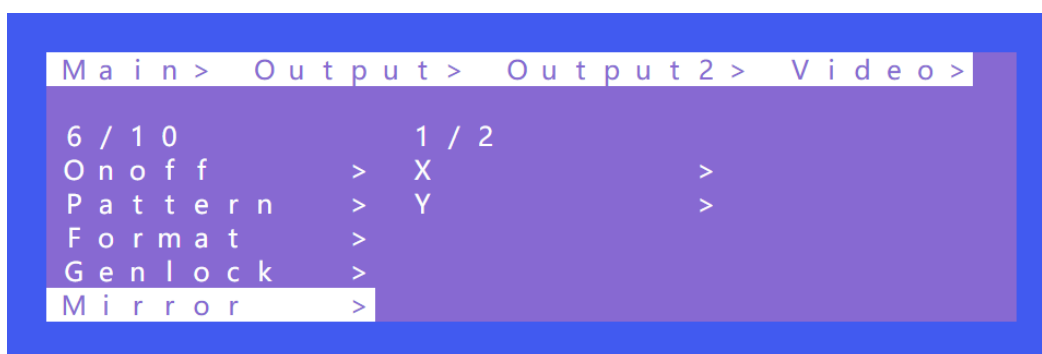
Operation:

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 a left, right, up, or 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



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 "X" or "Y"
6. Click "ENTER" to enter the next sub-menu
7. Press "UP" or "DOWN" to confirm the operation.



7. Coord

Coord is used to fine tune the parameters of an image in multi-view and video wall modes. There are 3 types of parameters including Crop, Zoom, Gap. The parameters are broken down into 10 settings and are adjustable CROP X0, CROP Y0, CROP X1, CROP Y1, ZOOM X0, ZOOM Y0, ZOOM X1, CROP Y1, Gap X, Gap Y.

The function can be used for bezel adjustment of multi-viewer and video walls.

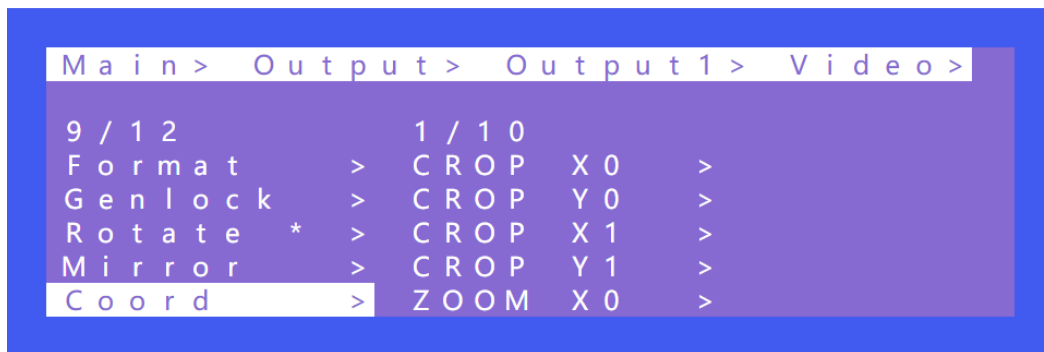
The default start point of Coord : CROP X0 = 0, CROP Y0 = 0.

The default end point of Coord: CROP X1 = 6000, CROP Y1 = 6000.

The default start point of Zoom: Zoom X0 = 0, Zoom Y0 = 0

The default end point of Zoom: Zoom X1 = 6000, Zoom Y1 = 6000

The default start point of Gap X=0, Gap Y=0



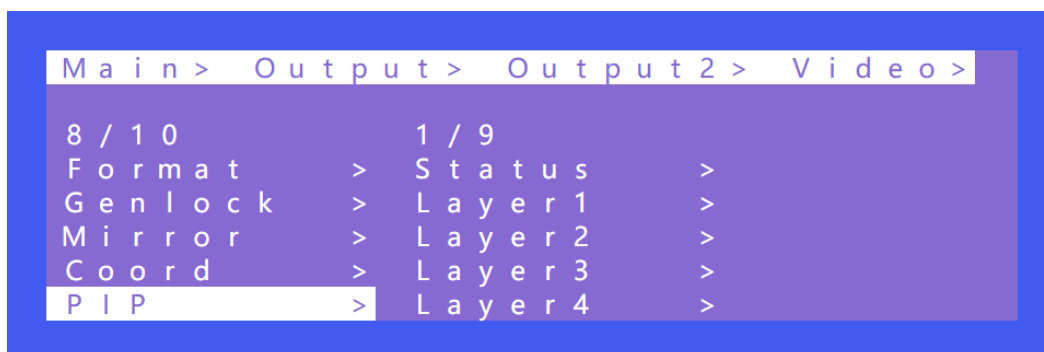
Operation:

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 "Coord"
6. Click "ENTER" to enter the next sub-menu
7. Press "UP" or "DOWN" to select the desired coordinate of Coord, Zoom and Gap.
8. The corresponding changes will affect the appearance of the connected display.



8. PIP

PIP is used to switch the sources for the 4 windows referred to as a layer in the various multiview modes. By default, each of the 4 layers has access to the 4 sources. By changing the output of the selected layer, the content will change to that source. Each layer can choose an output. You can turn on/off this function in Status.



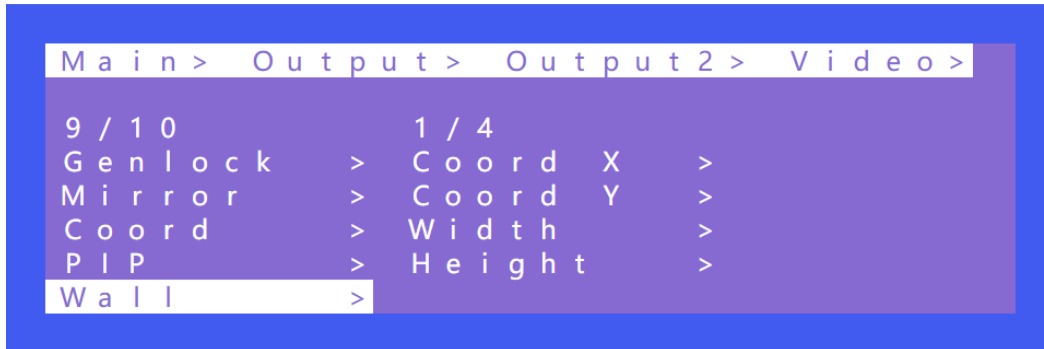
Operation:

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 "PIP"
6. Click "ENTER" to enter the next sub-menu
7. Press "UP" or "DOWN" to select Status on-off. The layer takes effect after it is enabled.
8. Layer 1~4 can choose the corresponding output 1~4
9. Note: A layer can select only one output and it cannot be selected repeatedly.



9. Wall

Wall is used to set the position of the TV in the video wall. By default, it is set to follow the matrix presets. Set the parameter of Coord X & Coord Y + Width & Height after determining the actual position of the TV according to the OSD on the TV. The position of the TV in the Video Wall can also be changed by using Coord. Width and Height indicate the number of video wall tiling (2x2, 2x1, etc).



Operation:

1. Select "Output" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select "Output 1~4, all cannot be selected"
3. Click "ENTER" to enter the next sub-menu
4. Press "UP" or "DOWN" to select "Video"
5. Press "UP" or "DOWN" to select "Wall"
6. Click "ENTER" to enter the next sub-menu
7. Press "UP" or "DOWN" to select the coordinate of Coord X or Coord Y. The default coordinate for 2x2 video wall:
 Out1(X:0, Y:0)
 Out2(X:1, Y:0)
 Out3(X:0, Y:1)
 Out4(X:1, Y:1)
8. Set the number of horizontal and vertical splices. Setting the number of horizontal and vertical splices for the first output will automatically generate for the rest of the video wall based on its coordinate. For example:
 The default sequence of the video wall of output 1 and output 2 is reversed.
 Set the coordinate of output 2 to X0Y0, horizontal 2 and vertical1.
 Set the coordinate of output 1 to X1Y0, horizontal auto, vertical auto.
 Set the coordinate of output 3 to X0Y1, horizontal auto, vertical auto.
 Set the coordinate of output 4 to X1Y1, horizontal auto, vertical auto.



10. Image

Image is used to set the parameters of the output image. There are 4 parameters: Brightness, Contrast, Saturation, and Hue. Each parameter ranges from 0 to 100 and they are set to 50 by default.

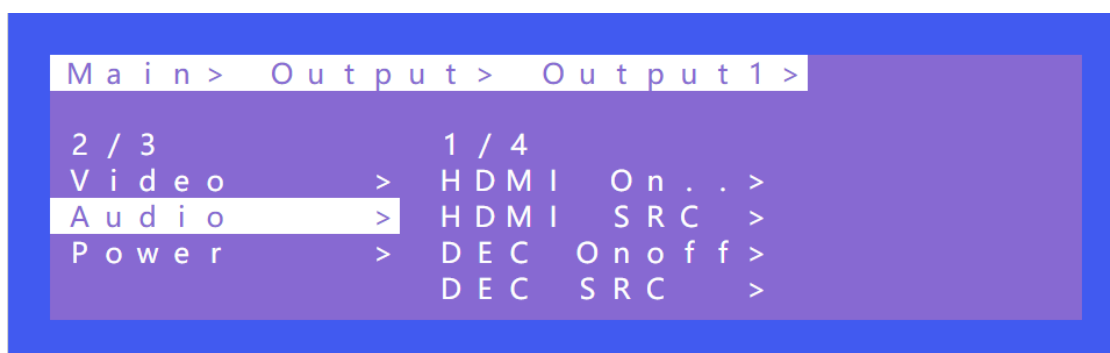


Operation:

1. Select "Output" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select " Output 1~4", do not select "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 "Image"
6. Click "ENTER" to enter the next sub-menu
7. Press "UP" or "DOWN" to select "Brightness" or other selections + "ENTER" to enter the next sub-menu.
8. Do the adjustment according to the visual effect of the output image.

Audio

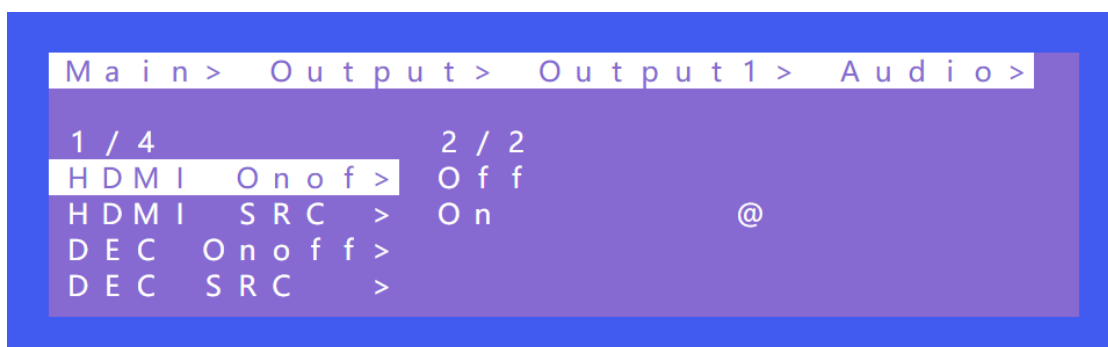
There are 4 options in Output Audio: HDMI Onoff, HDMI SRC, DEC Onoff, DECSRC. The unit can perform audio switching independently on each output. It can turn off HDMI audio output and extract audio. It can also extract audio from another connected source and output that instead.





1. HDMI onoff

HDMI Onoff can turn the HDMI output audio on or off (default on). The TV will display “Mute” on the bottom of the screen when the audio output is turned off.



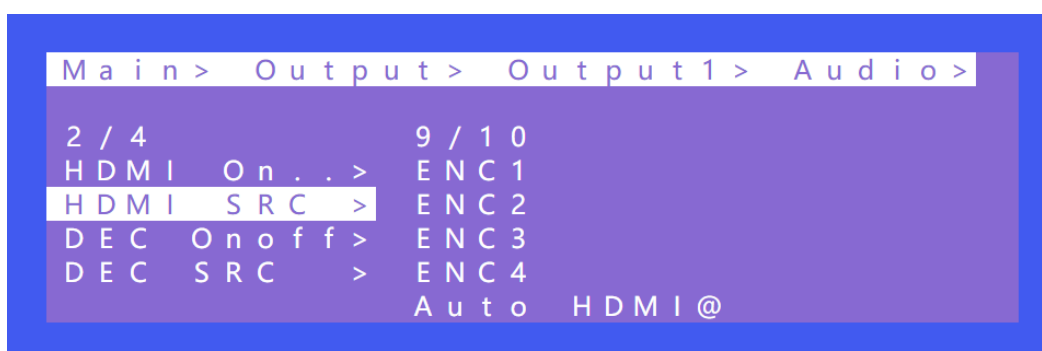
Operations:

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 “HDMI Onoff”
6. Click “ENTER” to enter the next sub-menu
7. Press “UP” or “DOWN” to select “ON” or “Off” to complete the operation.

2. HDMI SRC

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

Auto HDMI follows the corresponding input. ENC indicates the corresponding audio in. That is, audio will follow the matrix switching of inputs, it will not switch the audio source when Auto HDMI is enabled.



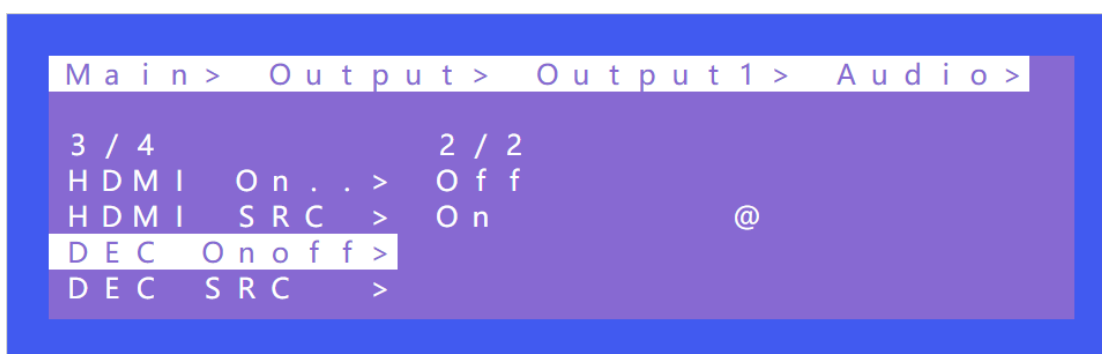


Operations:

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 "Audio" and enter the next sub-menu
5. Select HDMI1~4 or ENC 1~4 and press "ENTER" to complete the audio switching.

3. DEC onoff

DEC Onoff can also control the output of audio and switch it to on or off. It is on by default.

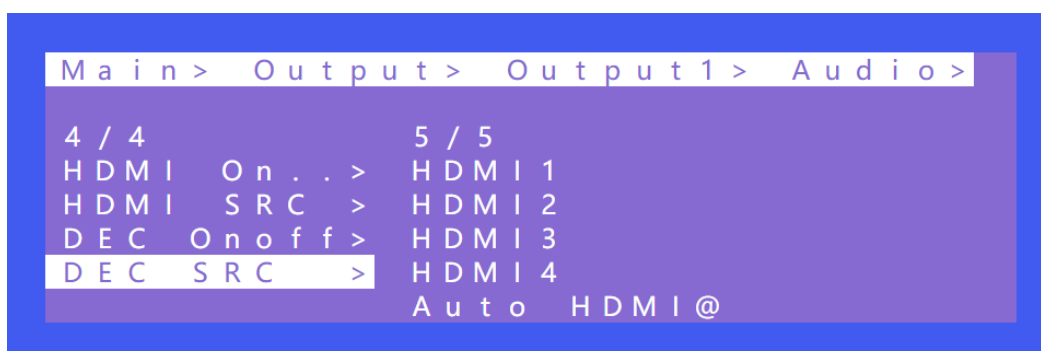


Operations:

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 "Audio" and enter the next sub-menu
5. Select "HDMI Onoff" to turn on/off the audio out

4. DEC SRC

DEC SRC enables audio extraction from different input sources. It can switch to HDMI input 1~4 while Auto HDMI indicates that audio follows the corresponding input. The default is auto HDMI.

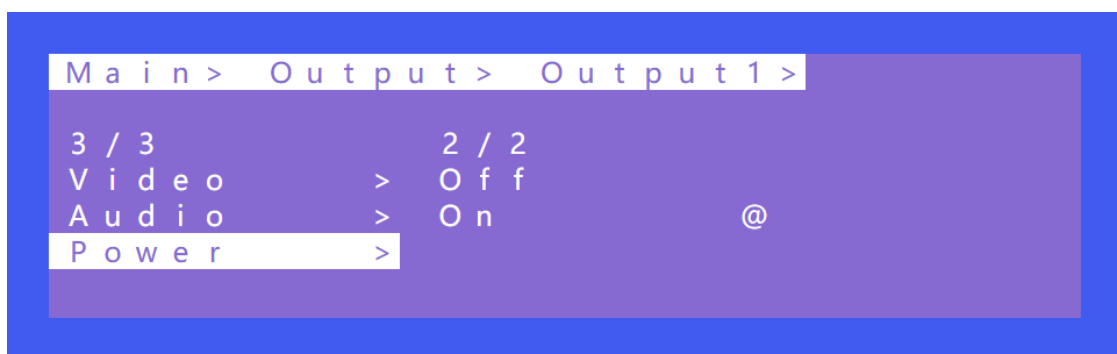


**Operation:**

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 "Audio" and enter the next sub-menu
5. Select "DEC SRC" to select the desired audio input

Power

Power is used to turn off the HDMI output of 5V. Setting power to off on an output will turn the image completely off (Black). It is on by default and outputs with no source will display a blue screen.

**Operation:**

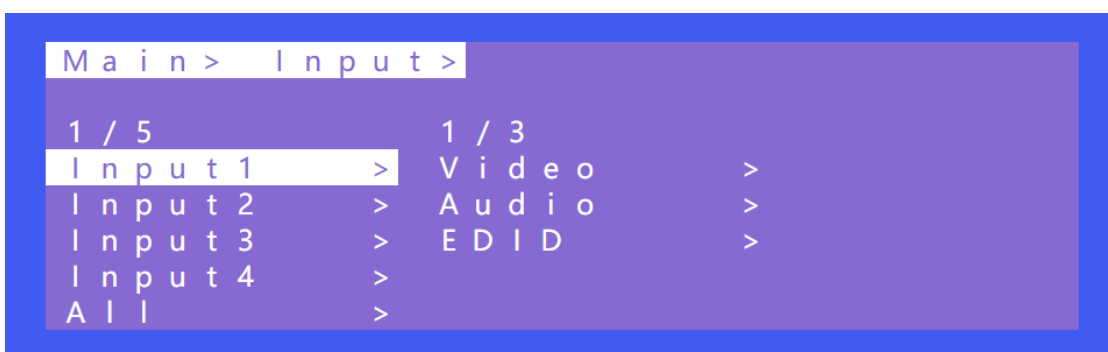
1. Select "Output" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select " Output 1~4, all"
3. Click "ENTER" to enter the next sub-menu
4. Press "UP" or "DOWN" to select "Power" and enter the next sub-menu
5. Select "On" or "Off" to complete the operation.



Input

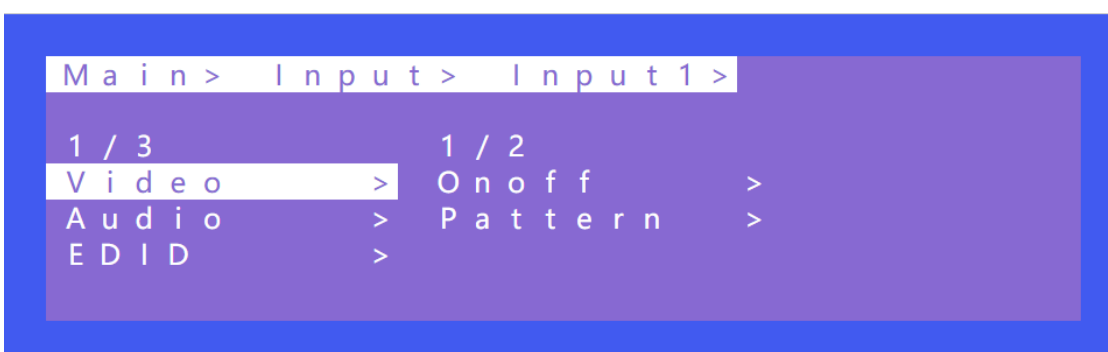
There are three options for the Input interface: Video, Audio, and EDID.

Video is used to switch the input channel, built-in pattern, and turn the input on/off. Audio is used to set a delay. EDID supports built-in, copy, user, and temp.



1. Video

Video can turn the input channel on or off. All the outputs corresponding to the input will have no image and audio when the input is set to “Off”. Pattern provides a built-in test pattern, the selected built-in pattern will replace the input source image.



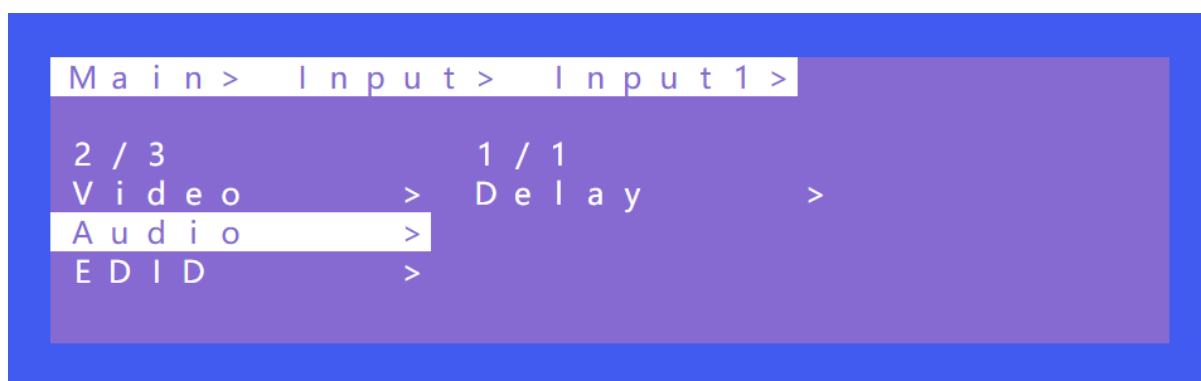


Operation:

1. Select "Input" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select "Input 1~4, all"
3. Click "ENTER" to enter the next sub-menu
4. Press "UP" or "DOWN" to select "Video" and enter the next sub-menu
5. Select "On" or "Off" to turn on/off the input video

2. Audio

Audio delay setting range is 0~50. The default is set to auto.



Operation:

1. Select "Input" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select "Input 1~4, all"
3. Click "ENTER" to enter the next sub-menu
4. Press "UP" or "DOWN" to select "Audio" and enter the next sub-menu
5. Select "0~50" in "Delay" to complete the operation

3. EDID

There are 4 options each input can have its built-in EDID set to: User EDID, Copy HDMI EDID, and temp. The default is set to default1. When the EDID is copied, the EDID of the last TV will be temporarily stored in the case of a power outage. Connecting a new TV will update the EDID.

By default Modify is set to on. After copying the TV EDID, the audio parameter is automatically changed to LPCM 2.0. If closed; The copied EDID does not modify the audio parameters.

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 Default1 on input 1 is 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."
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)

```

Main > Input > Input 1 >
3 / 3          1 / 2
Video          > Copy          >
Audio          > Modify      . . >
EDID          >
  
```

```

Main > Input > Input 1 > EDID >
1 / 2          11 / 13
Copy          > User 3
Modify      . . > User 4
               Output 1
               Output 2
               Output 3 @
  
```

```

Main > Input > Input 1 > EDID >
2 / 2          2 / 2
Copy          > Off
Modify au >   On @
  
```



Preset

Preset can save the current video, audio, EDID, system settings and it supports up to 8 different scenes. Preset can be modified and called using WEB, commands and panel.

There are 4 options as follow:

Clear: Remove the selected preset.

Save: Stores the current preset (can be saved over).

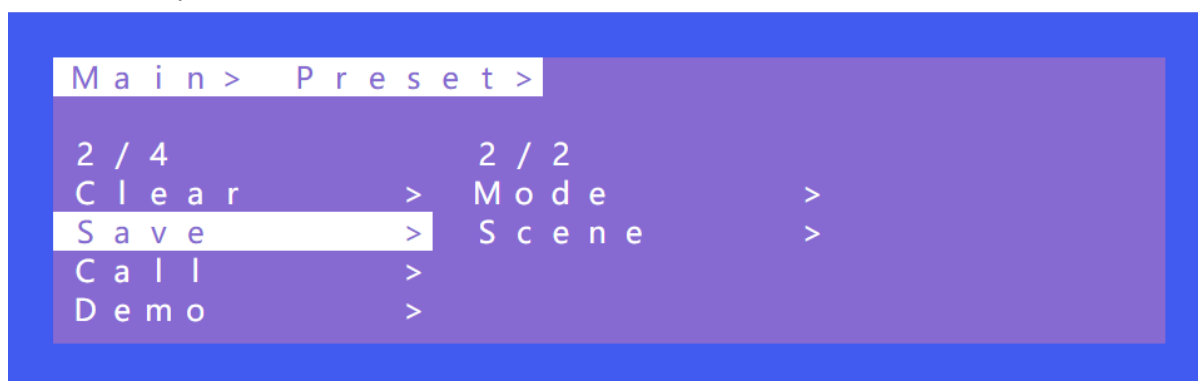
Call: Activates the currently selected preset.

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 to recall a preset, Save to save the current matrix scene as a preset, Clear to delete a preset scene.
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 and select a saved preset to complete the operation. The scene will change to the saved preset scene.
4. Clear preset: Select "Clear" a Preset to restore a scene to their default values.





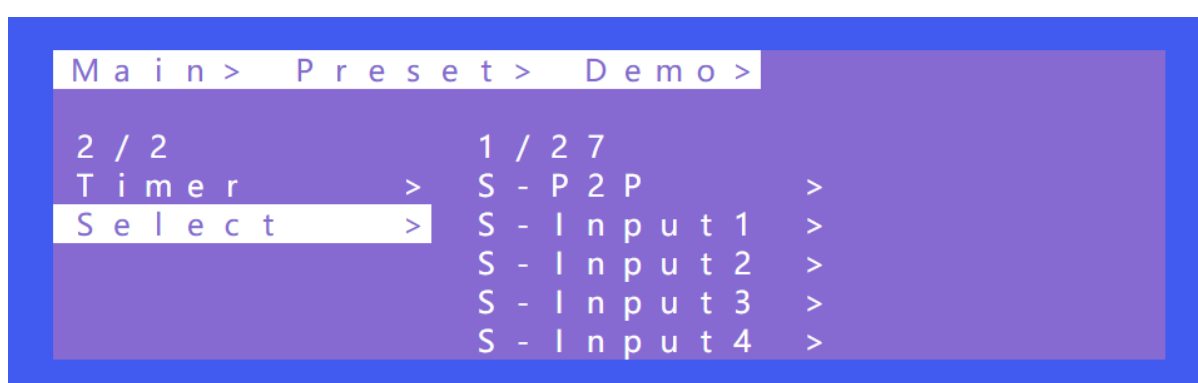
Demo

Timer will set the rotation time between scenes in the demo loop. By default it is set to “Endless” while selectable times range from 3 seconds to 3 minutes.

Select allows you to control which preset matrix, multi-view, and video wall configurations are shown in the demo loop. When set to Yes the preset will be shown in the demo loop and when set to no it will be skipped.



Demo





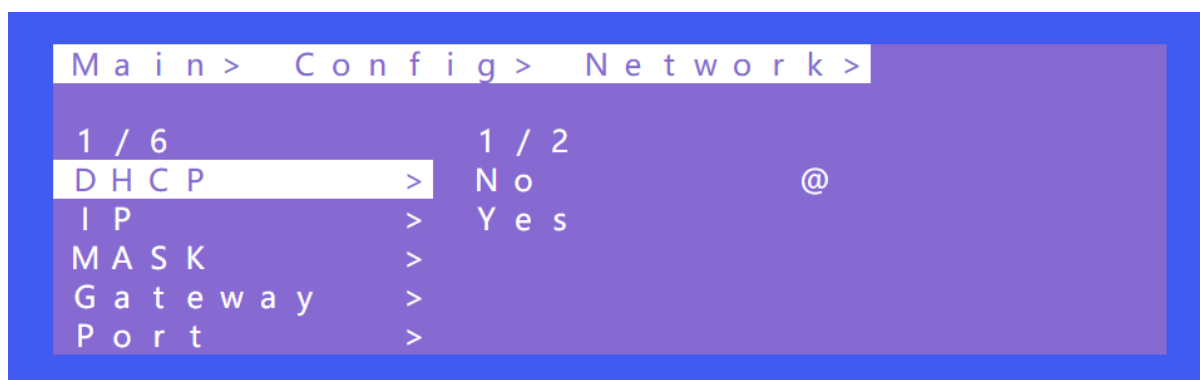
Config

Config can set network, RS232, LCD, OSD, MENU, user EDID, and system settings. Gray sections cannot be selected and are read-only.



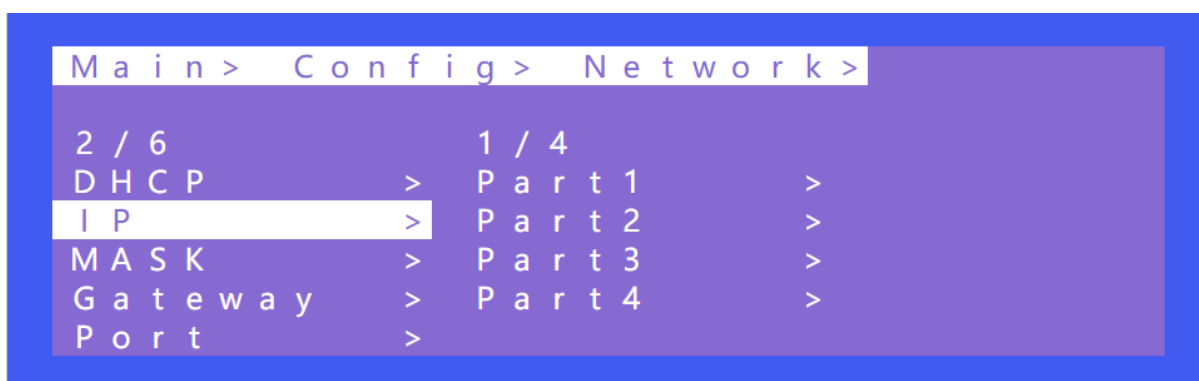
1. Network

Network can set DHCP, IP, Mask, Gateway, and Port. The Mac address cannot be changed. The default IP address is 192.168.1.200



DHCP operation:

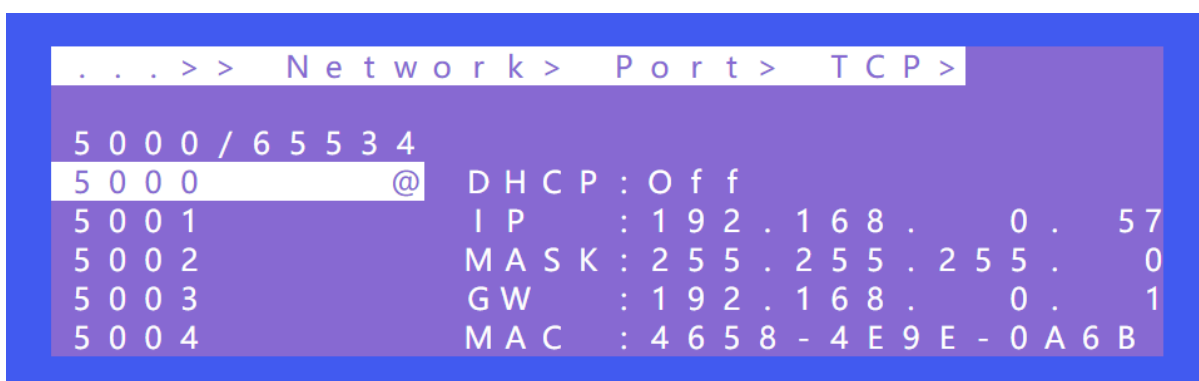
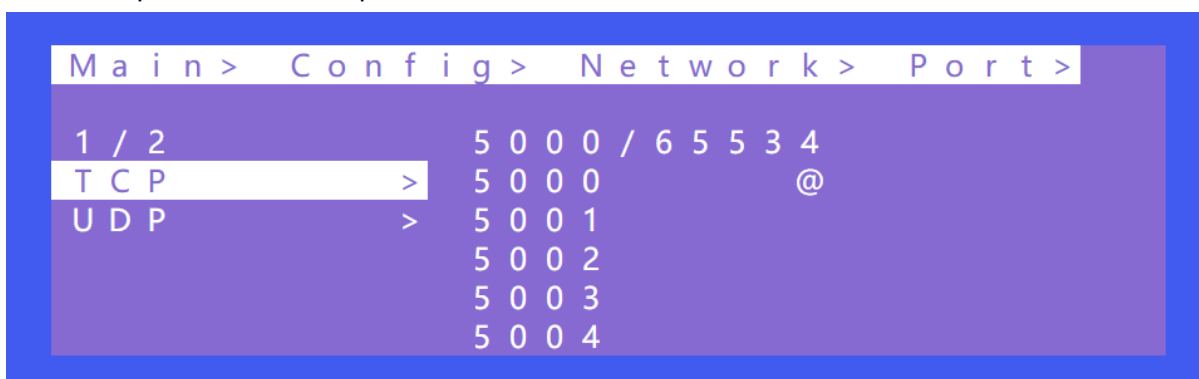
1. Select "Config" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select " network "
3. Click "ENTER" to enter the next sub-menu
4. Press "UP" or "DOWN" to select baud rate "DHCP"
5. Press "UP" or "DOWN" to select "No" or "Yes" to complete the operation.



IP/MASK/gateway Operation:

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 "IP/MASK/gateway"
5. Press "UP" or "DOWN" to select "0~255" to complete the operation.

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



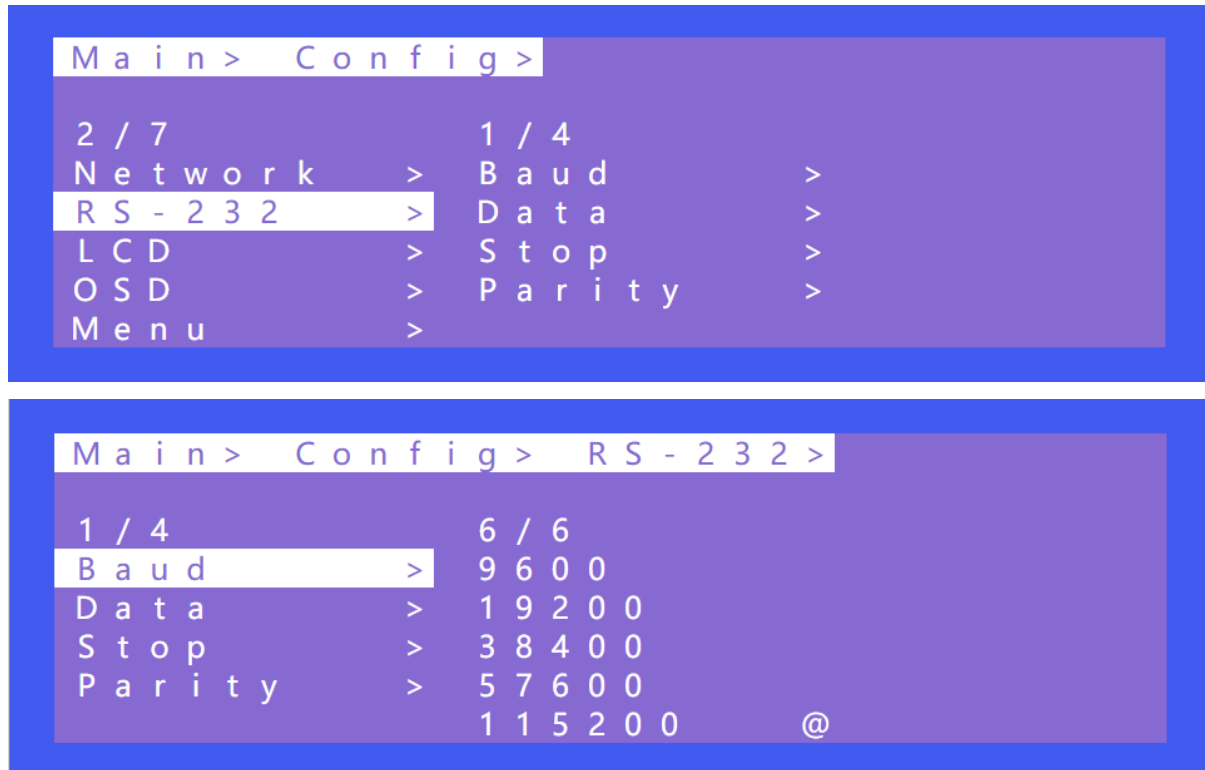
Operation of TCP/UDP port number change

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. Only baud rate can be changed. The other parameters can be changed only when the read/write permission is enabled which is not enabled by default.



Operation:

1. Select "Config" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select "RS232 "
3. Click "ENTER" to enter the next sub-menu
4. Press "UP" or "DOWN" to select baud rate "Baud" to enter the next sub-menu
5. Select "4800~115200" and press"ENTER" to complete the operation



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          @

```

Operation:

1. Select "Config" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select "Bright"
3. Click "ENTER" to enter the next sub-menu
4. Press "UP" or "DOWN" to select "0~8"
5. Click "ENTER" to complete the backlight brightness



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 power 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



Operation:

1. Select "Config" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select " OSD "
3. Click "ENTER" to enter the next sub-menu
4. Press "UP" or "DOWN" to select "User" and press "ENTER"
5. Press "UP" or "DOWN" to select "Time" and check the OSD display in the upper left corner of the TV

5. Menu

Timer indicates the time the menu remains active before it returns to the selected output.

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" to enable settings. If it is set to enable, you do not need to press "ENTER" to confirm a change.





Operation:

1. Select "Config" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select " Menu "
3. Click "ENTER" to enter the next sub-menu
4. Press "UP" or "DOWN" to select "Timer" and press "ENTER"
5. Press "UP" or "DOWN" to select the return time.



Operation:

1. Select "Config" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select " Menu "
3. Click "ENTER" to enter the next sub-menu
4. Press "UP" or "DOWN" to select "Select Run" and press "ENTER"
5. Press "UP" or "DOWN" to select "Disable" or "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.

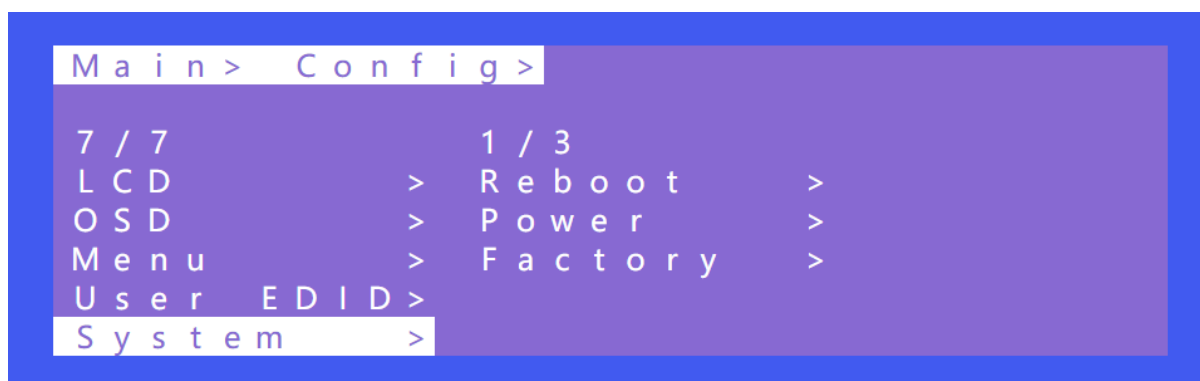


Operation:

1. Select "Config" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select " User EDID "
3. Click "ENTER" to enter the next sub-menu
4. Press "UP" or "DOWN" to select "User1" and press "ENTER"
5. Select "Output1" and press "ENTER" to complete the operation

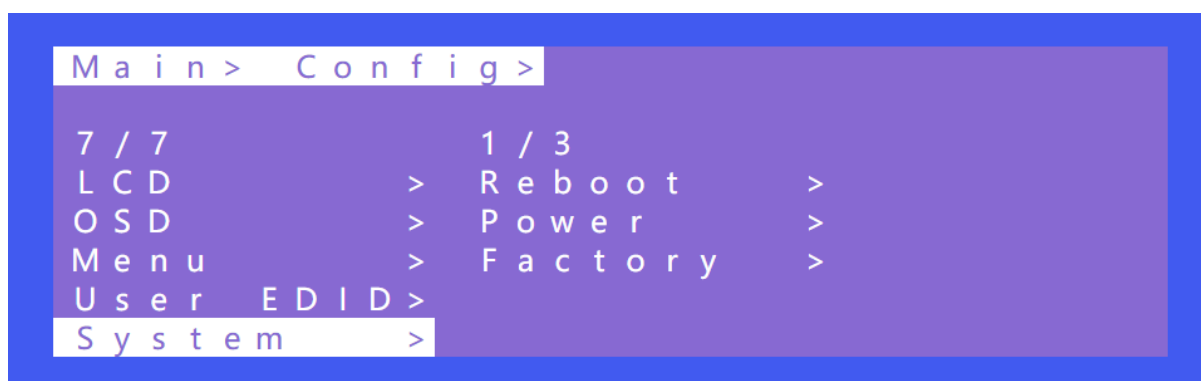
7. System

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





Reboot

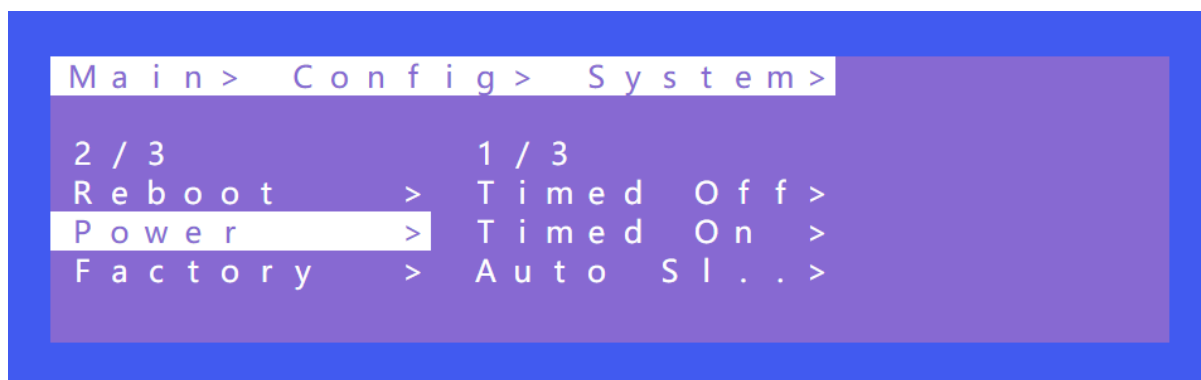


Operation:

1. Select "Config" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select " System "
3. Click "ENTER" to enter the next sub-menu
4. Press "UP" or "DOWN" to select "Reboot" and press "ENTER"
5. Select "Yes" to complete the reboot.

Timed Off

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



Operation:

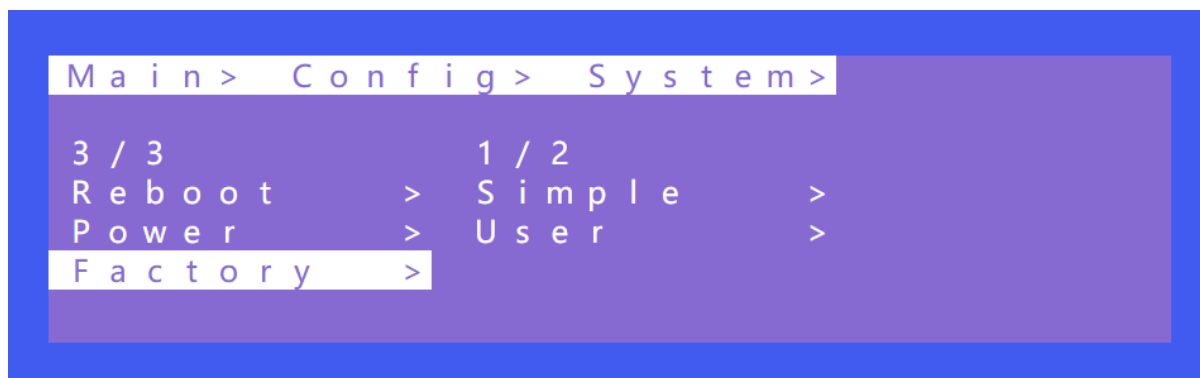
1. Select "Config" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select " System "
3. Click "ENTER" to enter the next sub-menu
4. Press "UP" or "DOWN" to select "Power" and press "ENTER"
5. Select "Timed off" and press "ENTER" to enter the next sub-menu
6. Press "UP" or "DOWN" to set the scheduled standby time



Factory

Simple: partially restores factory settings

User: restores all factory settings



Operation:

1. Select "Config" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select " System "
3. Click "ENTER" to enter the next sub-menu
4. Press "UP" or "DOWN" to select "Factory" and press "ENTER"
5. Select "Simple" and press "ENTER" to enter the next sub-menu
6. Press "UP" or "DOWN" to select "Yes" to restore the factory setting.

Info

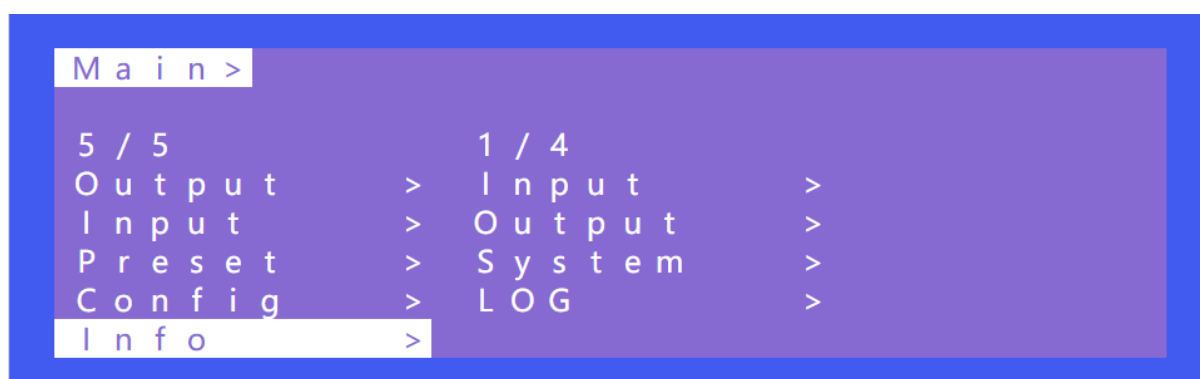
Query device information, including input, output, system, and log. The information can only be queried and cannot be set or changed.

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



Operation:

1. Select "INFO" in the main menu and press "ENTER"
2. Press "UP" or "DOWN" to select " System "
3. Click "ENTER" to enter the next sub-menu to query the relevant device information.



Remote Control



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

Audio Extraction

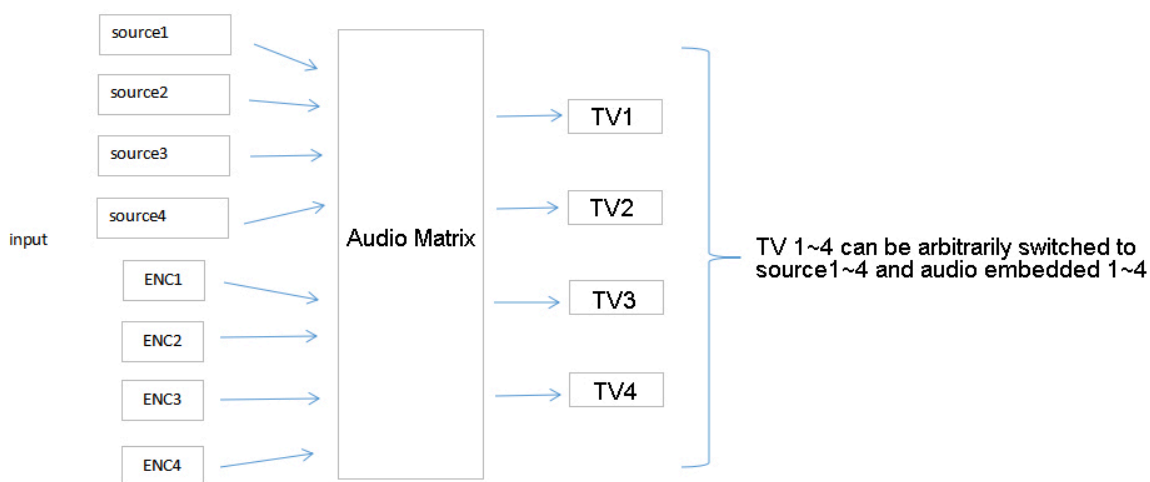
HDMI audio

Default HDMI audio output supports uncompressed audio PCM, LPCM 2.0 digital audio DTS/Dolby 5.1 channel. The maximum sampling rate supports 192KHZ while its supported audio formats and channels are forced into LPCM 2.0.

Note: To support digital audio, enable modify to off. Otherwise Copy EDID will be forced to 2.0 audio.

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



Audio Extraction

Audio extraction has analog audio extraction and coaxial digital audio extraction (as shown in the figure below).

*1: Each channel can only have one audio source.

*2: The EDID sampling rate is forced to be 48Khz by default. Other audio sampling rates can be supported only when the forced modification function is disabled.

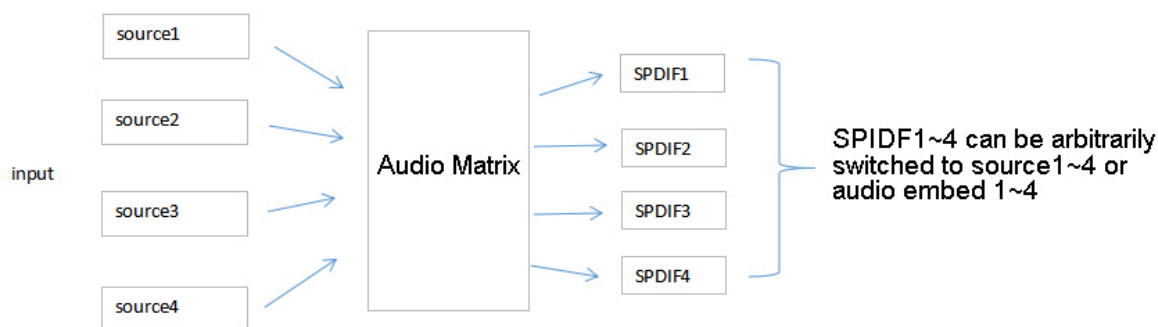


Analog Audio

1. HDMI 1~4 indicates that HDMI output audio is selected from another input signal.
2. Auto HDMI indicates that the input signal is switched with the matrix, but the audio is not switched

Coaxial audio

1. HDMI 1~4 indicates that HDMI output audio select audio from other input signal sources
2. Auto HDMI indicates that the input signal source is switched with the matrix, but the audio state is not switched
3. Coaxial audio sampling rate up to 96Khz.



RS232 Control

Open a RS232 program such as Docklight, Access Port, or CommUart Assistant (show below for example purposes).

COM port setting

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

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

Command List

1. All commands start with “#”
2. “_” the underline cannot omit.
3. Command head,Parameter and target need to add one “SPACE”.

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

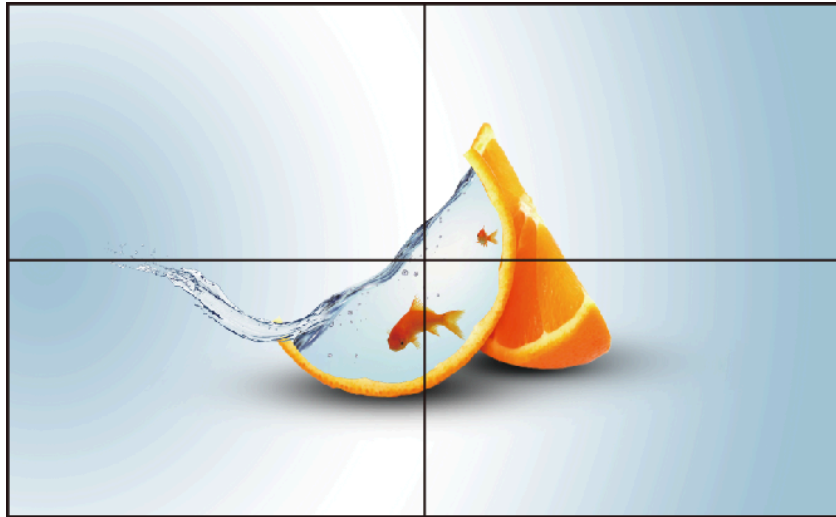
Type	Format	Value	Regulation
Command head	#cmd	without	
Explain	Can be used to search command,after receiving command, the system will feedback all open command format fields		
Example1	#cmd		
	Search all open command		



Scene Instructions

Video Wall Mode

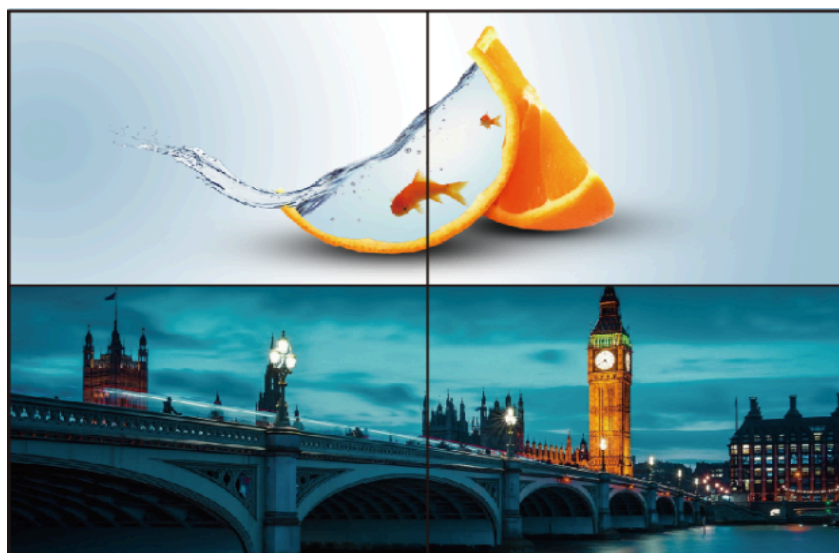
Note: Some preset scenes require switching output ports. For Example: out2 and out3 need to be swapped when in mode W-2x1.



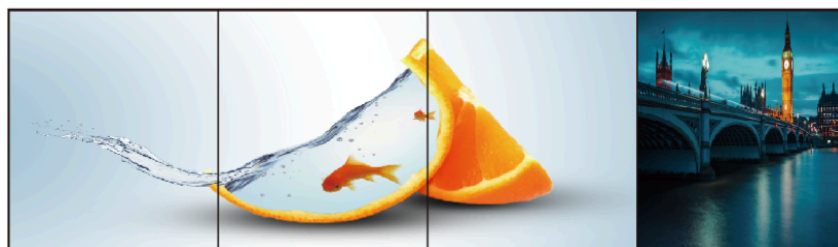
W-2x2 : 2 Vertical x 2 Horizontal



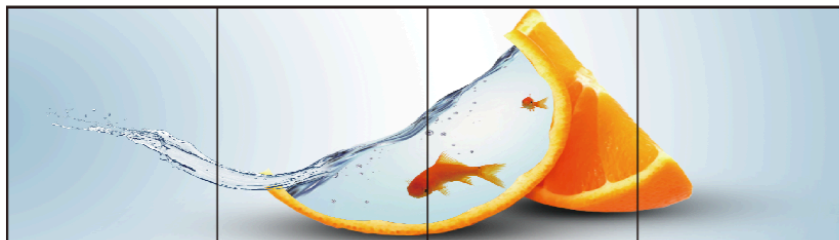
W-1x2 : 1 Vertical x 2 Horizontal



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



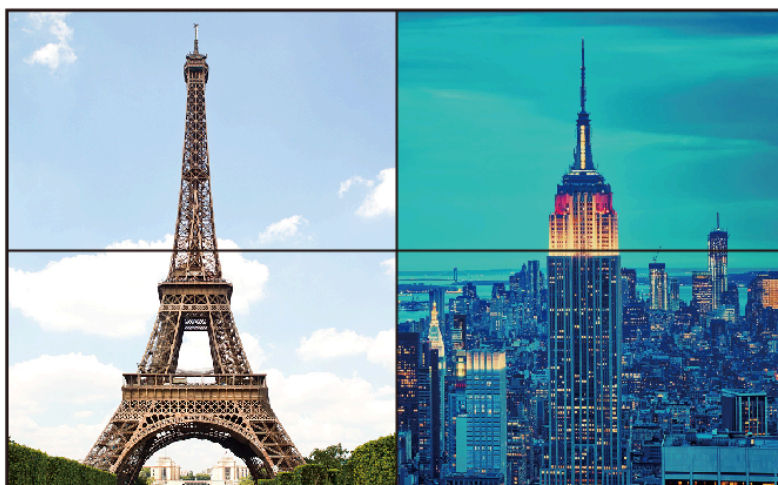
W-1x3: 1 Vertical x 3 Horizontal



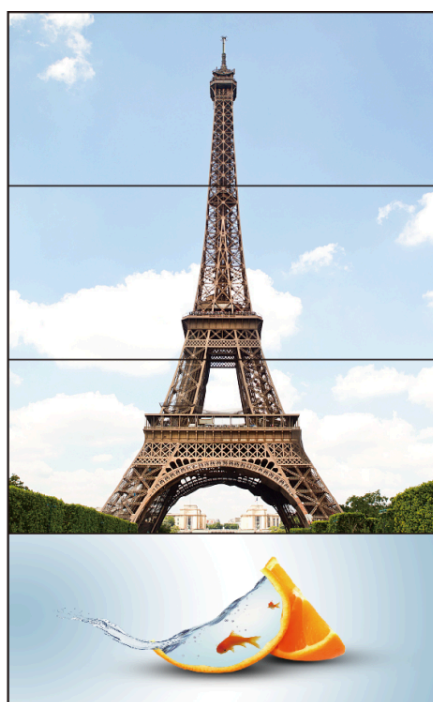
W-1x4: 1 Vertical x 4 Horizontal



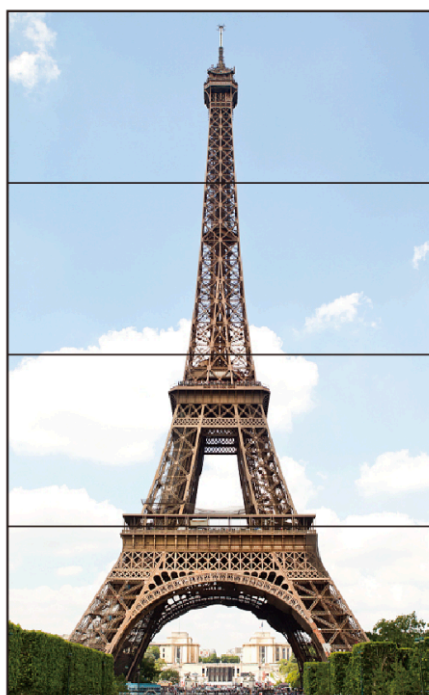
W-2x1 : 2 Vertical x 1 Horizontal



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



W-3x1: 3 Vertical x 1 Horizontal



W-4x1 : 4 Vertical x 1 horizontal

Multi-Viewer Mode



M-2x2



M-3x1-R



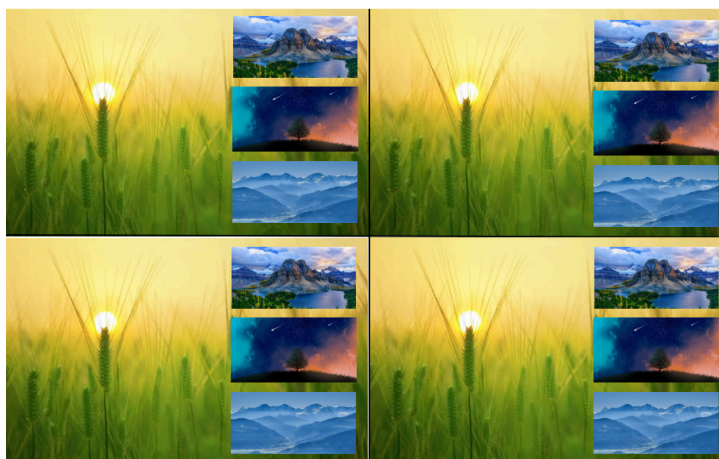
M-3x1-L



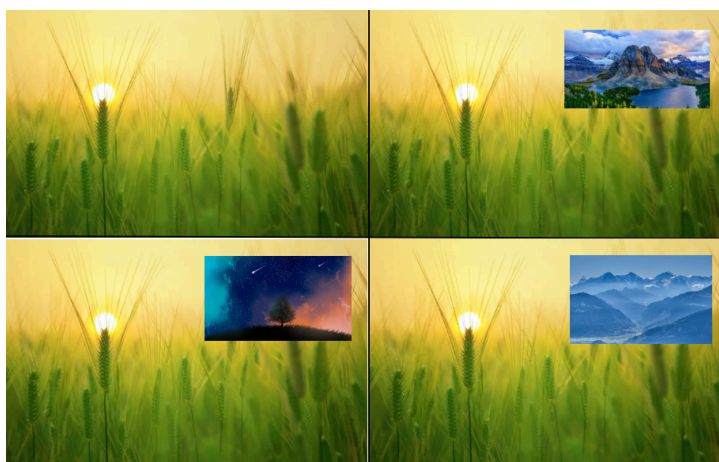
M-3x1-U



M-3x1-D



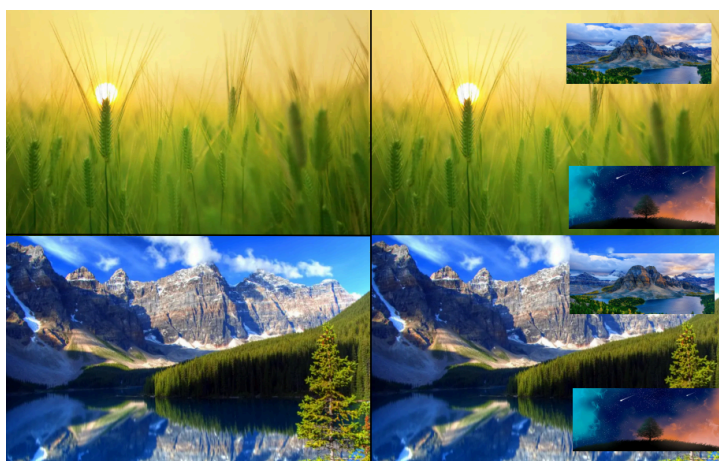
M-1+234 A



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



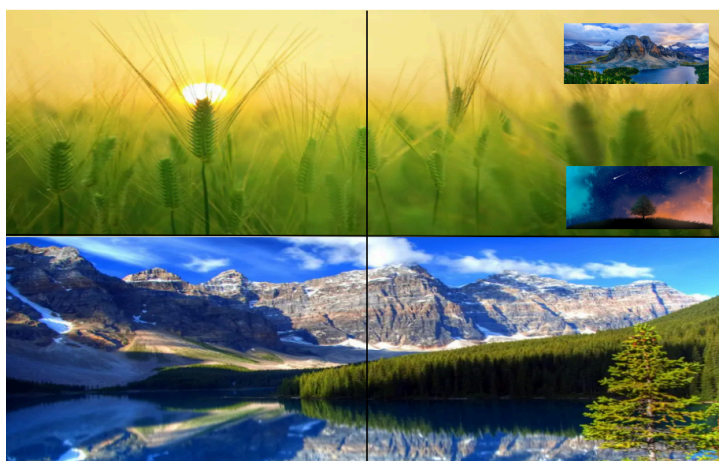
M-1+2 3+4 A



M-1+34 2+34 A



M-POP A



M-2x1+34 A



M-2x1+3 2x1+4 A

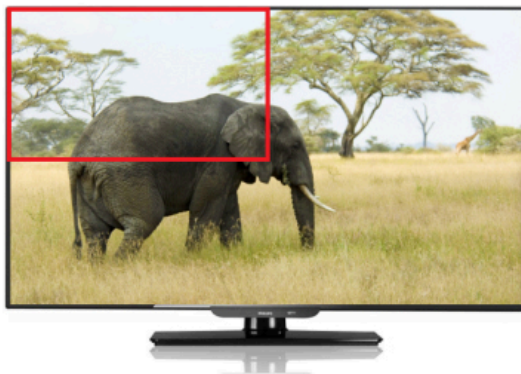
Image cropping and TV coordinate change

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)



Before cropping



After cropping

Changing coordinates is only supported in the on screen display menu;

Default wall coordinates output 1 (0,0) output 2 (1,0) output 3 (0,1) output 4 (1,1);

Output 1 wall width=2 and height=2. Other outputs must be to auto.

If output 1 and output 2 are flipped your coordinates would be as follows:

Output 1 (1,0) output 2 (0,0) output 3 (0,1) output 4 (1,1);

Output 2 wall width=2 and height=2. Other outputs must be set to auto.



Cascading



Default coordinates are on the right, changed coordinates are on the left

Cascading wall: Multiple matrices need to be used, and then fill in the coordinates according to the sequence of the wall. The height and width of the wall should be set for the first output, and all other outputs and matrix outputs should be set to Auto, for example:

<code>wall(x0, y0)</code> <code>height(3)</code> <code>wight(3)</code>	<code>wall(x1, y0)</code> <code>height(auto)</code> <code>wight(auto)</code>	<code>wall(x2, y0)</code> <code>height(auto)</code> <code>wight(auto)</code>
<code>wall(x0, y1)</code> <code>height(auto)</code> <code>wight(auto)</code>	<code>wall(x1, y1)</code> <code>height(auto)</code> <code>wight(auto)</code>	<code>wall(x2, y1)</code> <code>height(auto)</code> <code>wight(auto)</code>
<code>wall(x0, y2)</code> <code>height(auto)</code> <code>wight(auto)</code>	<code>wall(x1, y2)</code> <code>height(auto)</code> <code>wight(auto)</code>	<code>wall(x2, y2)</code> <code>height(auto)</code> <code>wight(auto)</code>

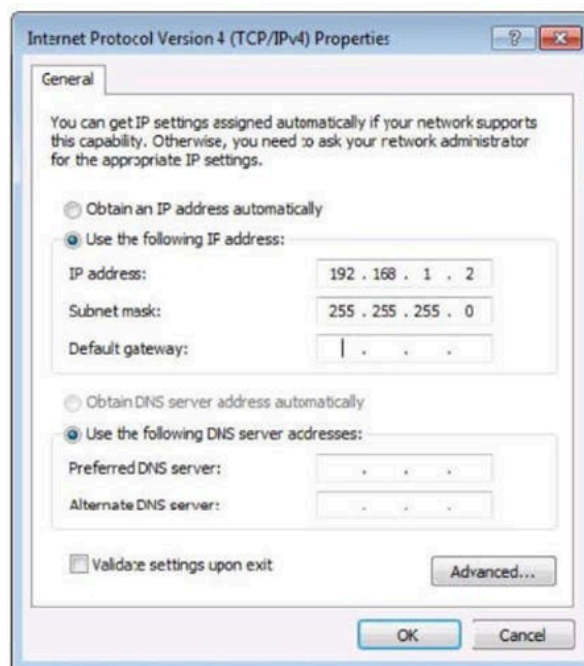


Web Control

Change IP Address of PC

Before configuring the device through the website, it is necessary to configure the IP address of the computer 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 u"Use the following IP address", and set the IP address to 196.168.1.x (where x ranges from 0 to 254, but cannot be with the device's default IP address **192.168.1.200**)
3. Subnet mask set to 255.255.255.0
4. Gateway set to 192.168.1.1
5. Click "OK"

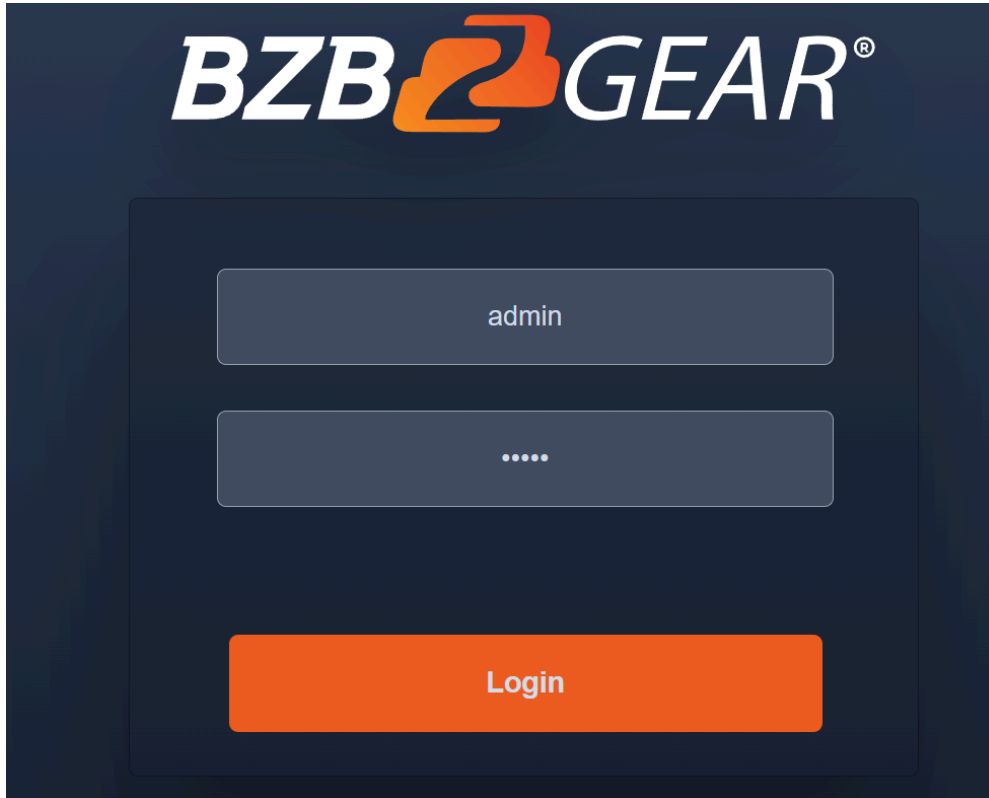




Log in by browser

Enter the Default IP address (192.168.1.200) to access the login screen in your preferred web browser.

Type in the username and password (default user and default password: admin)



The image shows the BZBGear login interface. At the top, the logo "BZBGear®" is displayed in white and orange on a dark blue background. Below the logo, there is a central white box containing two input fields. The first field is labeled "admin" and the second field contains five dots, indicating a password field. Below these fields is a large orange button labeled "Login".



Web Interface Control

Status

1. In the Status interface, you can view the matrix information
2. Input Status displays the connection status, resolution, color space, audio, and HDCP information from the input signal source
3. Output Status will display partial EDID information of the connected display such as connection status, resolution, color space, and audio.
4. Firmware version displays the current MCU and HTML versions for the matrix.

BZBGEAR Log Out

Status

Input

Output

Matrix

Preset

Advanced

System

Input Status

	Connected	Resolution	Color	Audio	HDCP
MK	✓	3840×2160P 59.94	4:2:2 8bit SMPTE	XXX-2 48K 24bit	HDCP2.2
Bluray	✓	4096×2160P 60	4:2:0 8bit SDR	XXX-2 44.1K 24bit	None
bzbgear	✓	4096×2160P 60	4:2:0 8bit SDR	XXX-2 44.1K 24bit	None
animals	✓	3840×2160P 59.94	4:2:2 8bit SMPTE	XXX-2 48K 24bit	HDCP2.2

Output Status

	Connected	Resolution	Color	Audio
TV 1	x	x	x	x
TV 2	x	x	x	x
TV 3	x	x	x	x
TV 4	x	x	x	x

Firmware Version

MCU Version: V0.0.8

HTML Version: V0.0.6

Need Help?
support@bzbgear.com
(888)499-9906



Input

Status

Input

Output

Matrix

Preset

Advanced

System

Input

Input	Edit Name	Video	Audio Delay(ms)	Copy EDID From
In 1	MK	On Off	- Auto +	Default 1:4096x2160P@60-444 HDR:None LPC
In 2	Bluray	On Off	- Auto +	Default 1:4096x2160P@60-444 HDR:None LPC
In 3	bzbgear	On Off	- Auto +	Default 1:4096x2160P@60-444 HDR:None LPC
In 4	animals	On Off	- Auto +	Default 1:4096x2160P@60-444 HDR:None LPC

Copy EDID From
Default 1:4096x2160P@60-444 HDR:None L
to
User 1
Set

Select Custom EDID File
Browse
to
User 1
Upload

1. Edit Name: The input name can be changed by clicking in the “In 1-4” fields.
2. Video: Click the buttons to enable or disable the video inputs.
3. Audio Delay(ms): The default is Auto, click “-” or “+” to adjust (range 0-50, Auto).
4. Copy EDID From: Default1-4, User-4, Output1-4, and Temp1 which can be switched on any of the inputs

```

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. Copy EDID of sink to User1~4

Copy EDID From
Default 1:4096x2160P@60-444 HDR:None L
to
User 1
Set

6. USER EDID can be saved as a Bin document for User1~4. Click Browse to find the route of the EDID, select User1~4 and click upload to save it.

Select Custom EDID File
Browse
to
User 1
Upload



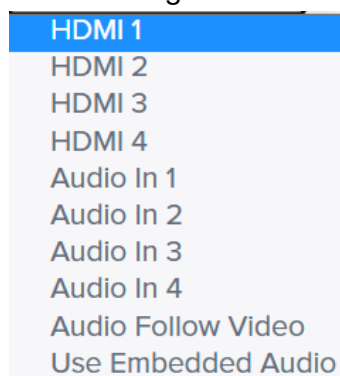
Output Menu

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

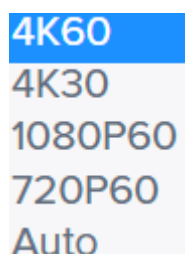
Output

Output	Edit Name	Video	HDMI Audio	Audio Source	Audio Extraction	Extraction Source	Resolution
Out 1	TV 1	On Off	On Off	Audio Follow ▼	On Off	Audio Follow ▼	4K60 ▼
Out 2	TV 2	On Off	On Off	Audio Follow ▼	On Off	Audio Follow ▼	4K60 ▼
Out 3	TV 3	On Off	On Off	Audio Follow ▼	On Off	Audio Follow ▼	4K60 ▼
Out 4	TV 4	On Off	On Off	Audio Follow ▼	On Off	Audio Follow ▼	4K60 ▼
All				Audio Follow ▼		Audio Follow ▼	4K60 ▼

1. Edit Name: 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. HDMI Audio: Click the button to enable or disable the audio outputs.
4. Audio Source: Switch HDMI output audio, click the drop-down box to select HDMI1-4, Audio In 1-4, Audio Follow Video, or Use Embedded Audio and the changes will take effect automatically.



5. Audio Extraction: Turn on/off Audio Extraction
6. Extraction Source: Audio extraction switching, click the drop-down list box to select HDMI 1-4 and Audio Follow Video options. The changes will take effect automatically.
7. Resolution: Output video format, the default is auto. Following the output TV EDID specifications, users can manually select 4K60, 4K30, 1080P60, and 720P60.





Matrix

1. The names of the inputs and outputs that can be customized in the previous two sections are displayed on the Matrix page with their new names. Change source and display pairings by simply clicking one of the buttons.
2. Selecting the “All” output will change all outputs to the same selected input source.
3. When the button is blue, it indicates the input signal source is selected for the corresponding output.

- Status
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Matrix

	MK	Bluray	bzbgear	animals
TV 1	MK	Bluray	bzbgear	animals
TV 2	MK	Bluray	bzbgear	animals
TV 3	MK	Bluray	bzbgear	animals
TV 4	MK	Bluray	bzbgear	animals
All	MK	Bluray	bzbgear	animals

Preset Menu

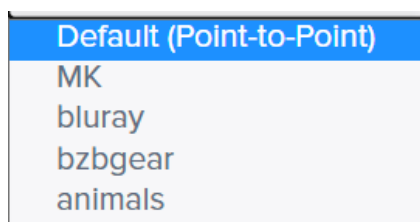
Preset can be used to call, save, clear, and customize the preset name.

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

Preset

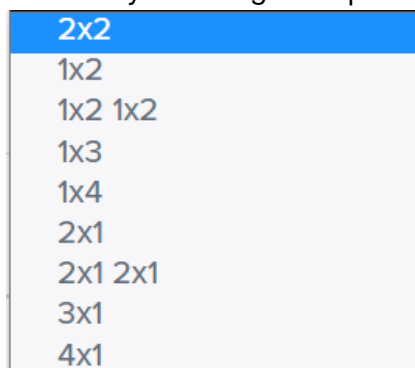
Mode	Preset Selection	Edit Name	Clear	Save	Call
Matrix	Default (Point-to-Pi) ▼	Default	Clear	Save	Call
Video Wall	2x2 ▼	2x2	Clear	Save	Call
Multiview	2x2 ▼	2x2	Clear	Save	Call
Scene	1 ▼	1	Clear	Save	Call

1. Matrix allows users to customize up to 5 presets. By default, selecting one of the inputs will change all outputs to the selected input source by default. Point-to-Point passes inputs to their corresponding outputs. Click the drop-down box to select a preset and then click "Call" to recall a preset. Click "Save" to save the current scene which can be customized using the “Matrix” page. Click "Clear" to clear the scene and return it to the default value.

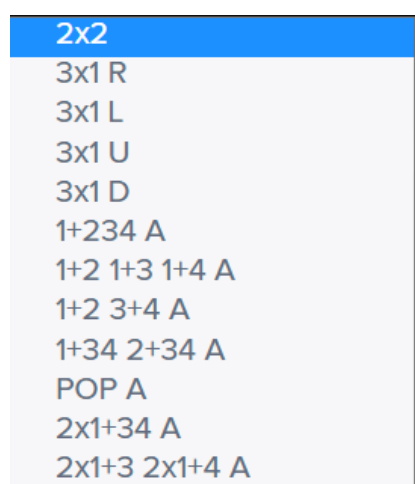




2. Video Wall allows users to pick a predefined video wall layout. Click the drop-down box to select a layout and then click "Call" to activate the selected video wall. Click "Save" to save the current scene, and click "Clear" to clear the scene to its default value. Change the wall source by selecting the input from the "Matrix" page.



3. Multiview can display up to 4 sources on a single display. There are multiple multiview layouts which are predefined. Sources for each scene can be customized by clicking the drop-down box to select a layout and then choosing sources for outputs on the "Matrix" page. Click "Call" to recall a saved scene, click "Save" to save the current scene, and click "Clear" to clear the scene to its default value.



4. Scene can save and customize an additional 8 presets.



Advance

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

Advanced

Output	PIP	Crop-X0	Crop-Y0	Crop-X1	Crop-Y1	Zoom-X0	Zoom-Y0	Zoom-X1	Zoom-Y1	Confirm
TV 1	On Off	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	50.00%	50.00%	Apply
TV 2	On Off	0.00%	0.00%	100.00%	100.00%	50.00%	0.00%	100.00%	50.00%	Apply
TV 3	On Off	0.00%	0.00%	100.00%	100.00%	0.00%	50.00%	50.00%	100.00%	Apply
TV 4	On Off	0.00%	0.00%	100.00%	100.00%	50.00%	50.00%	100.00%	100.00%	Apply
All	On Off	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	100.00%	100.00%	Apply

Gap

	Out 1	Out 2	Out 3	Out 4	ALL
Gap X	0.00%	0.00%	0.00%	0.00%	0.00%
Gap Y	0.00%	0.00%	0.00%	0.00%	0.00%

1. PIP On/Off can turn picture in picture on or off on the selected display.
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)
3. Gap adjusts the bezel alignment for the selected display. X adjusts the image on the horizontal axis and Y on the vertical.

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



System

Status

Input

Output

Matrix

Preset

Advanced

System

Network Settings

Mac Address

46:58:4E:95:72:66

IP Address

192.168.30.237

Subnet Mask

255.255.255.0

Gateway

192.168.30.1

DHCP

On

Off

TCP Port

5000

Apply

Account Management

Username

New Password

Confirm Password

Apply

System Management

Reboot

Reboot

Reset User Settings

Reset User Settings

Factory Restore

Factory Restore

1. Network displays relevant information such as Mac Address, IP Address, Subnet Mask, and Gateway. Fields will become editable and can be customized when the DHCP option is set to “Off.”
2. Account Management allows users to change the login information of a user.
3. Reboot: Power cycle the device.
4. Reset User Settings: Partial factory reset settings such as presets and matrix layouts but it will exclude network settings.
5. Factory Restore: Restore all settings to factory defaults.



Tech Support

Have technical questions? We may have answered them already!

Please visit BZBGear's support page (bzbgear.com/support) for helpful information and tips regarding our products. Here you will find our Knowledge Base (bzbgear.com/knowledge-base) with detailed tutorials, quick start guides, and step-by-step troubleshooting instructions. Or explore our YouTube channel, BZB TV (youtube.com/c/BZBTVchannel), for help setting up, configuring, and other helpful how-to videos about our gear.

Need more in-depth support? Connect with one of our technical specialists directly:

Phone	Email	Live Chat
1.888.499.9906	support@bzbgear.com	bzbgear.com

Limited Product Warranty Terms

Pro Line: 5-year warranty from the date of purchase for AV/Broadcasting products bought on or after August 1, 2024.

Essential Line: 3-year warranty from the date of purchase for AV/Broadcasting products bought on or after August 1, 2024.

Cables: Lifetime Limited Product Warranty.

For complete warranty information, please visit bzbgear.com/warranty.

For questions, please call 1.888.499.9906 or email support@bzbgear.com.

Mission Statement

BZBGear is a breakthrough manufacturer of high-quality, innovative audiovisual equipment ranging from AVoIP, professional broadcasting, conferencing, home theater, to live streaming solutions. We pride ourselves on unparalleled customer support and services. Our team offers system design consultation, and highly reviewed technical support for all the products in our catalog. BZBGear delivers quality products designed with users in mind.

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