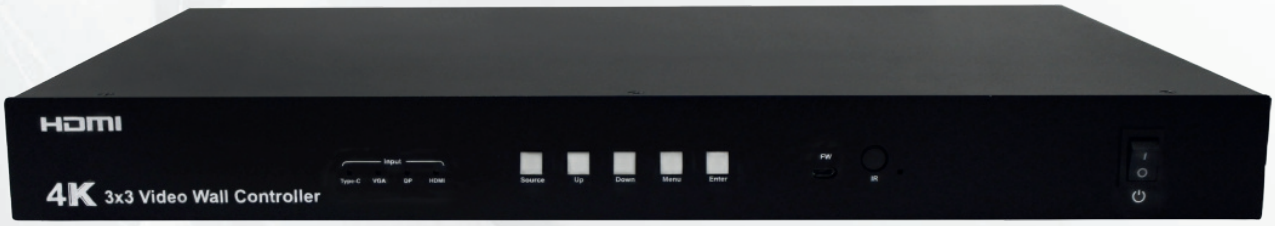
Zenty | Professional A/V Solution Provider

User Manual [V1.0]



4K 30Hz HDMI 3x3 Video Wall Controller

ZT-382 | ZT-VWC49

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1. Features

- Supports USB TYPE-C /VGA /DP / HDMI input.
- Supports 4K 3x3 video wall, cascading to create 3x4,4x5, 5X6,and max 10x10 video wall.
- Supports output image 180° rotation.
- Supports highest resolution up to 4K30HZ 4:4:4.
- Supports EDID management:Two default EDID: 4K30HZ, 1080P.
- Supports HDCP2.2/1.4.
- Supports panel button; IR remote; RS232 command and Web GUI to control.
- Supports SPDIF and Analog audio extraction
- Supports third-party platform control via RS232 port or LAN.
- 1U rack design ,easy installment.
- DC 24V 2A power supply.
- Unit size:L438x W274x H44 mm.

2. Notice

Our company reserve the right to make changes in the hardware, packaging and any accompanying documentation without prior written notice.

3. Specifications

Operating Temperature Range	0 to +40°C (32 to +104°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)
Video Format Supported	Ultra HD TV/FHDTV: 4K@30Hz/1080P
Audio Format Supported	LPCM 16 bit 24bit 44.1KHz,48KHz
Input ports	1xUSB TYPE-C, 1x DP, 1xVGA, 1xHDMI
Output ports	9xHDMI,1xHDMI Loop out
Splitter mode	1x9 HDMI Splitter
Video wall mode	1x1;1x3;1x4; 2x2; 2x3; 2x4; 3x1; 3x2; 3x3; 4x1; 4x2; 4x3-1; 4x3-2; 3x4-1; 3x4-2; 4x4-1; 4x4-2

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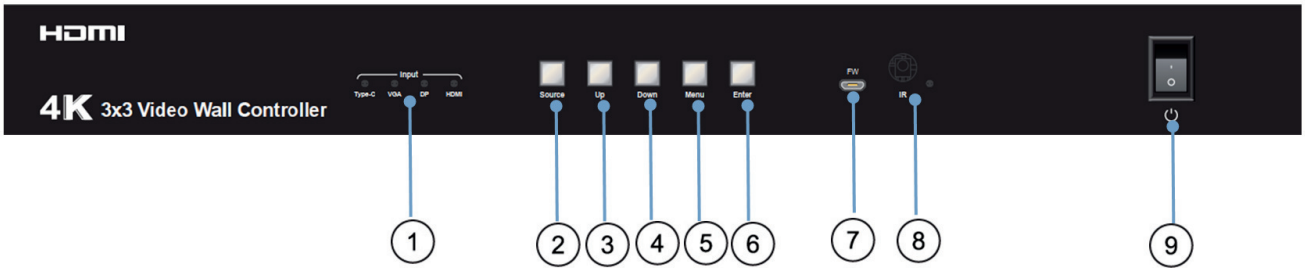
Cascade video wall mode	4x3; 4x4; 5x5; 6x6; etc. Max10x10
Control Way	Panel control; Web control; Remote control; RS232 control
Power consumption	33watts(Maximun)
Dimension (mm)	L438x W274x H44 mm

4. Package Contents

- Main Unit: HDMI 3X3 4K Video Wall Controller
- 1 x Power supply 24V2A
- 6 x Screws, 2x detachable mounting ears
- 1 x CD(Including User manual, RS232 command list)
- 1 x Remote controller
- 1 x USB cable (for firmware upgrade)

5. Panel Descriptions

Front Panel



① Input status light: the selected source has green light

② Source: Short press to select source from Type-C→VGA→DP→HDMI Input

③ Up: Long press to choose device setting in the OSD menu

④ Down: Long press to choose device setting in the OSD menu

⑤ Menu/Left: Long Press to return to the main menu, short press to back to previous menu

⑥ Enter/Right: Short press to enter the sub-menu, if there is no sub menu, short press it to confirm the setting selection

⑦ Firmware port: Use USB cable to upgrade firmware

⑧ IR: Receive the IR signal from the remote controller to control the device

⑨ Power: Turn on or turn off the power

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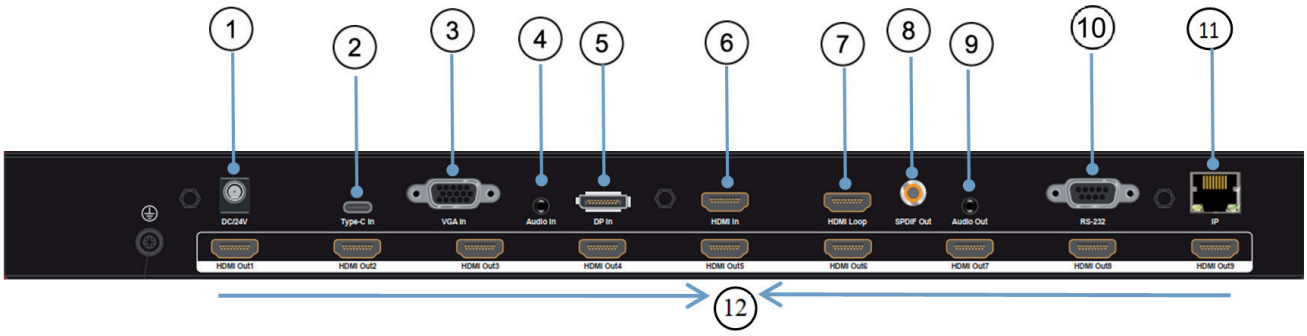
Note:

1. Long press "Up" and "Down" together for 5 seconds can modify the output format, The current input status indicator flashes at a frequency of 5Hz, and then cyclically switches at 1.5S intervals. The four indicators correspond to a resolution of 4k30-1080p-720p-auto.

2. Long press "Menu" and "Enter" together for 5 seconds, the input status lights starts to blinking. After the blinking is over, the device is reset successfully.

Rear Panel



① DC24V2A input
② Type-C input port
③ VGA input port
④ Audio input port for VGA source
⑤ DP input port
⑥ HDMI input port
⑦ HDMI loop output
⑧ S/PDIF output port
⑨ Analog Stereo output port
⑩ RS232 port
11 TCP/IP port
12 HDMI output1 to HDMI output9 ports

6. Connecting and Operating

1) Connect the sources into the video wall controller and Press the button on the remote, then choose the input Signal (USB TYPE-C; VGA; DP; HDMI).

2) Connect HDMI OUT to display equipment.

3) Power on the Video Wall Controller.

4) Control the Video Wall Controller by Panel button / Remote /RS232 Command.

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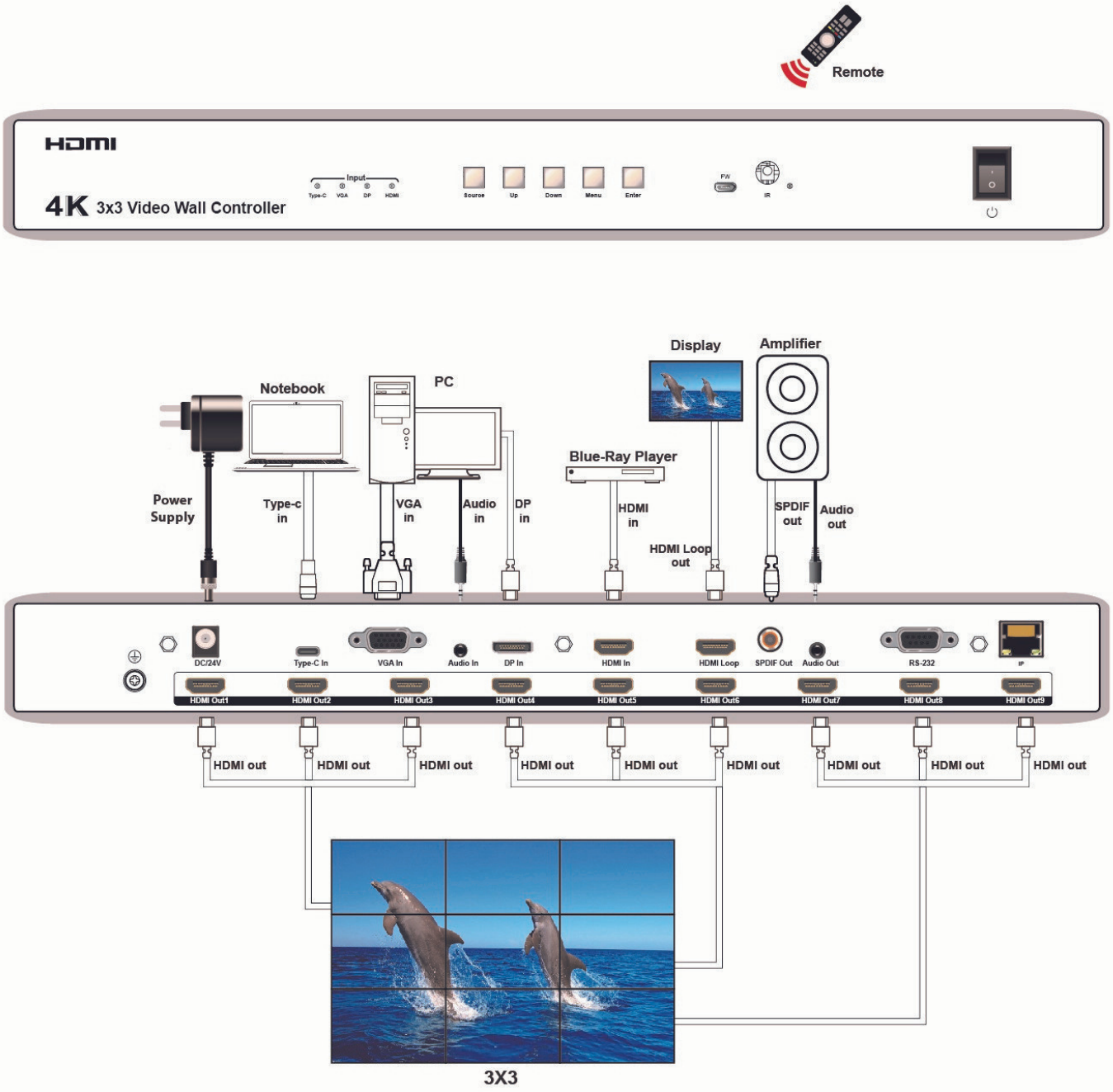
3x3 Video Wall Displaying



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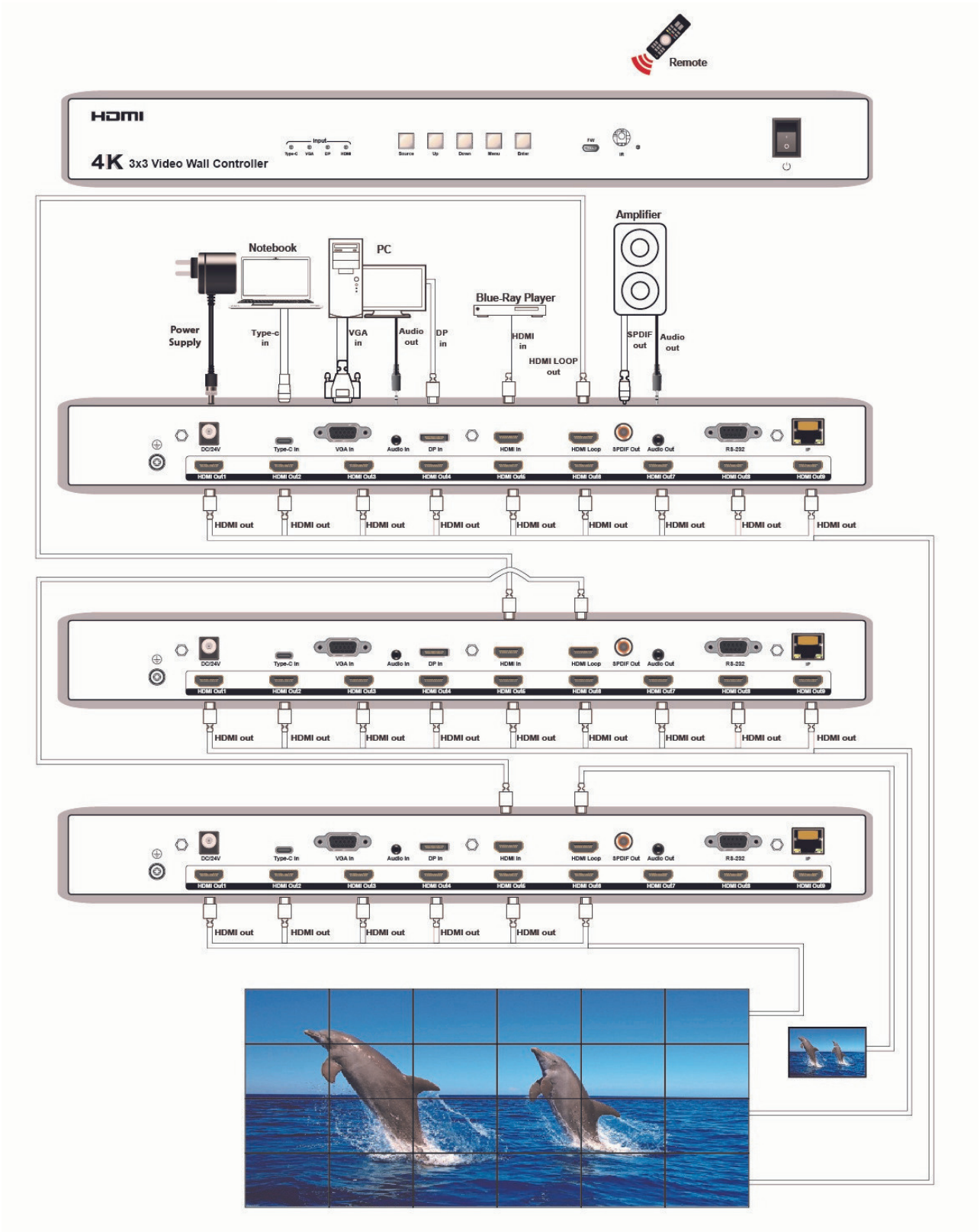
6x4 Video Wall Displaying



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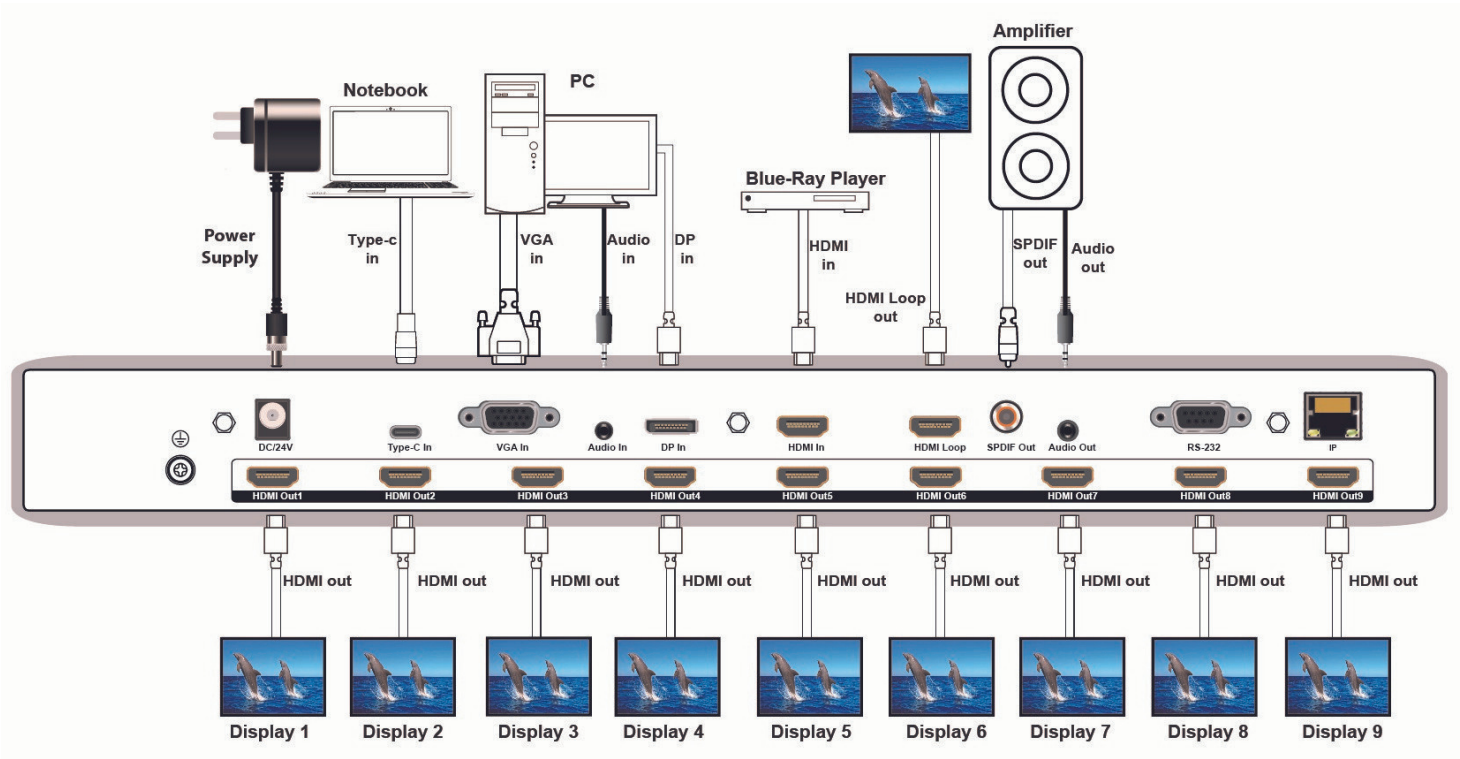
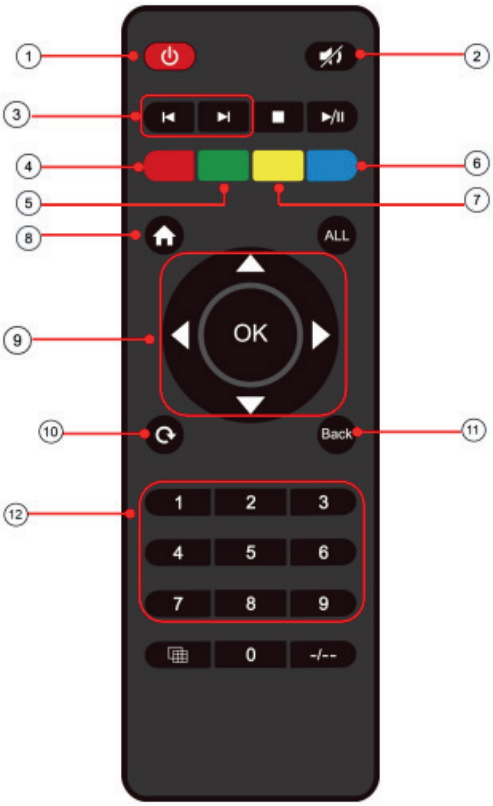


7. Control Instruction

7.1 Remote Control



1. Power on/off
2. Mute
3. Source switching
4. Switch signal source of IN1 (TYPE C)
5. Switch signal source of IN2 (VGA)
6. Switch signal source of IN4 (HDMI)
7. Switch signal source of IN3 (DP)
8. Menu
9. ▲:UP ▼:Down ◄:Left/Menu ►:Right/Enter OK:Right/Enter
10. Display and hide OSD menu
11. Return to menu interface
12. 1-4: select the input source IN1---IN4

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Note 1: ⑨ The function of Right/Enter in the remote controller is the same as the "Right/Enter" key on the panel.

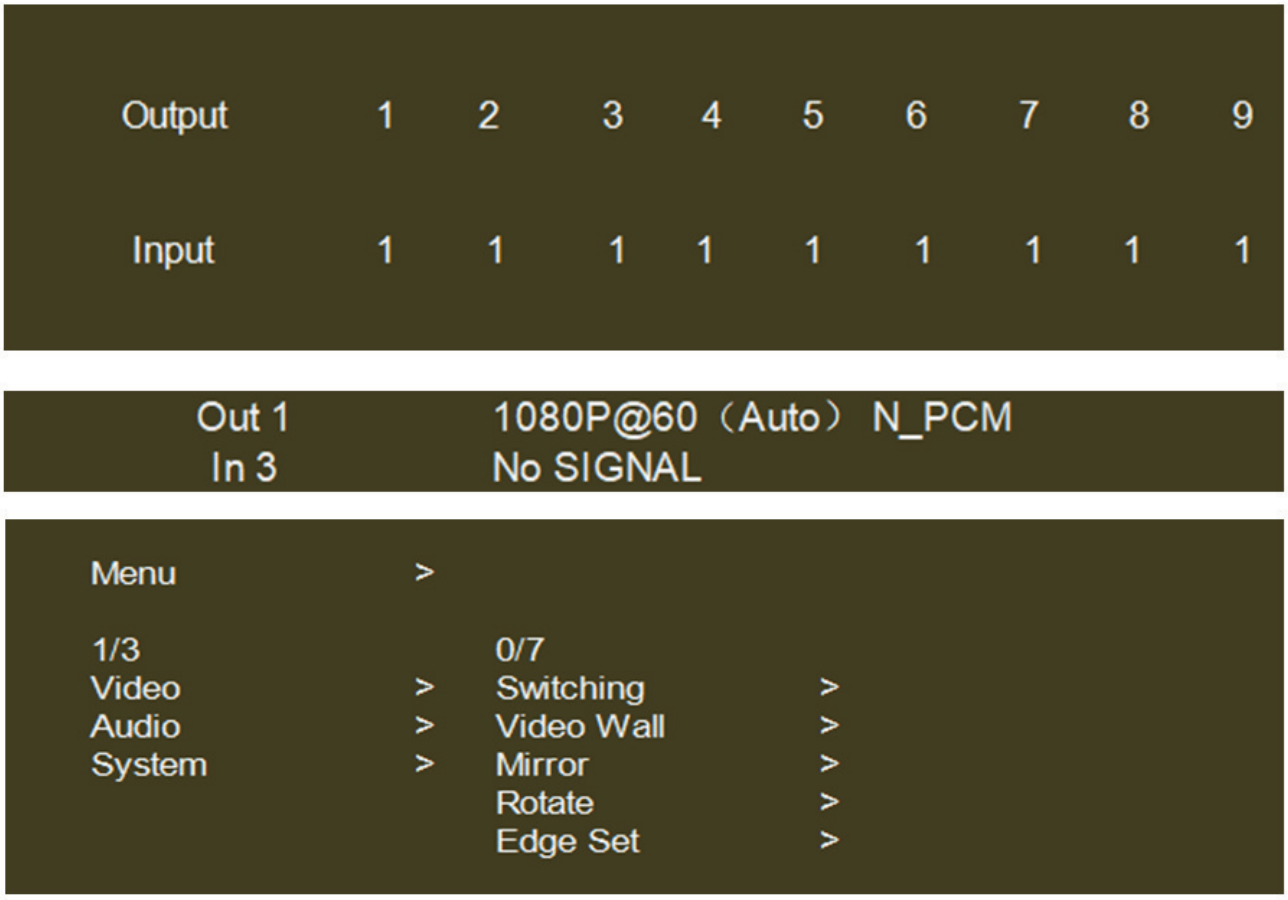
7.2 Video Setting By Panel Control

Press the "Source" button to select the input from Type-C→VGA→DP→HDMI.

Note:

1. The video switching OSD interface only shows nine output channels and the current input signal channels, and it can only switch one input source to all output channels when the input and output are both connected to the device.

2. No operation for 20S, the OSD interface turns off, press any button to wake it.



OSD video menu

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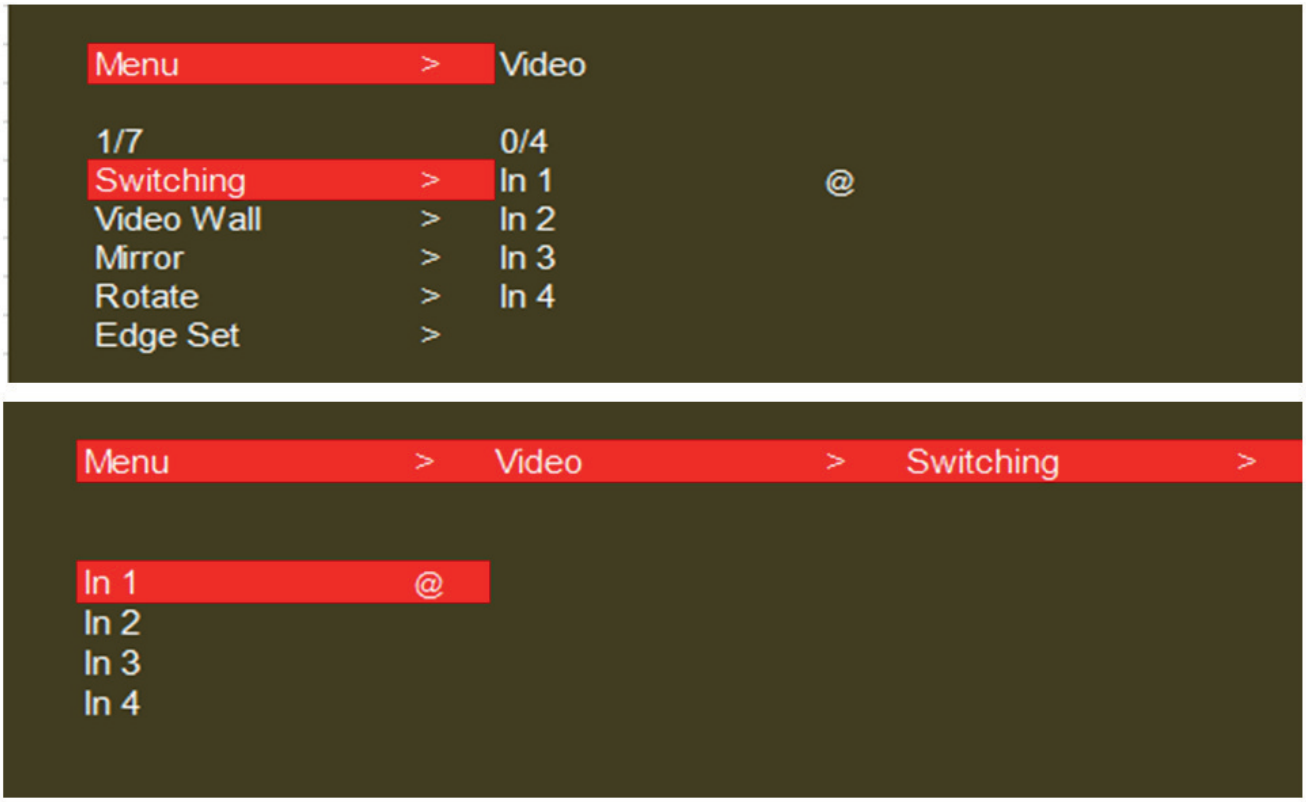
7.2.1 Video Switching

Press the "Left/Menu" on the panel to enter the "Switching" menu.

Press the "Up"; "Down"; "Enter" on the panel to select and confirm the input source. The selected one has a "@" to mark.

In1→Type-C input, In2→VGA input, In3→DP input, In4→HDMI, the default input is HDMI (In4).



Video switching interface

7.2.2 Video Wall Setting

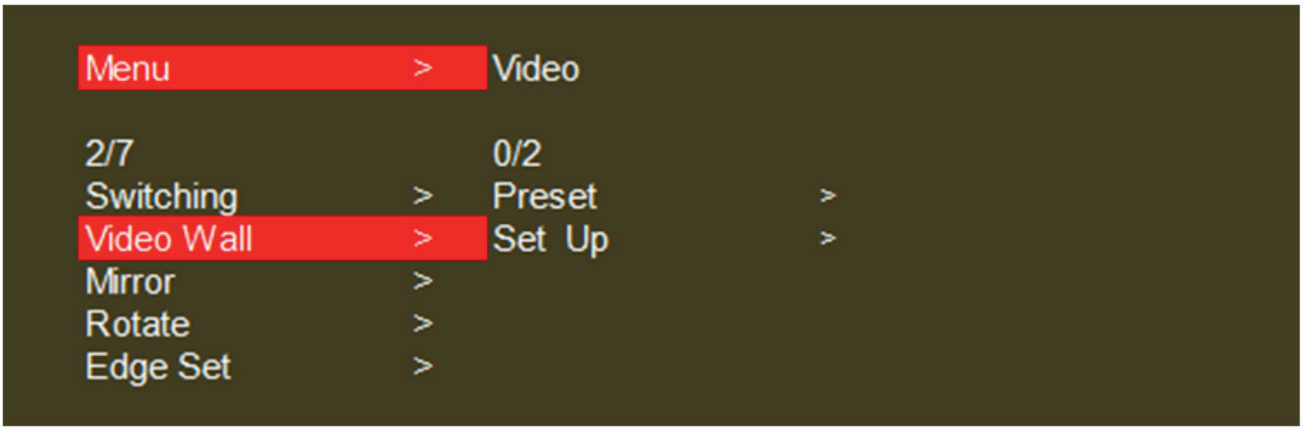
Press the "Left/Menu" on the panel to enter the "Video Wall" menu.

"Preset" : Including 17 kinds of common scenes such as 2x2, 1x4,4x1,4x2 and so on. The selected one has a "@" to mark.

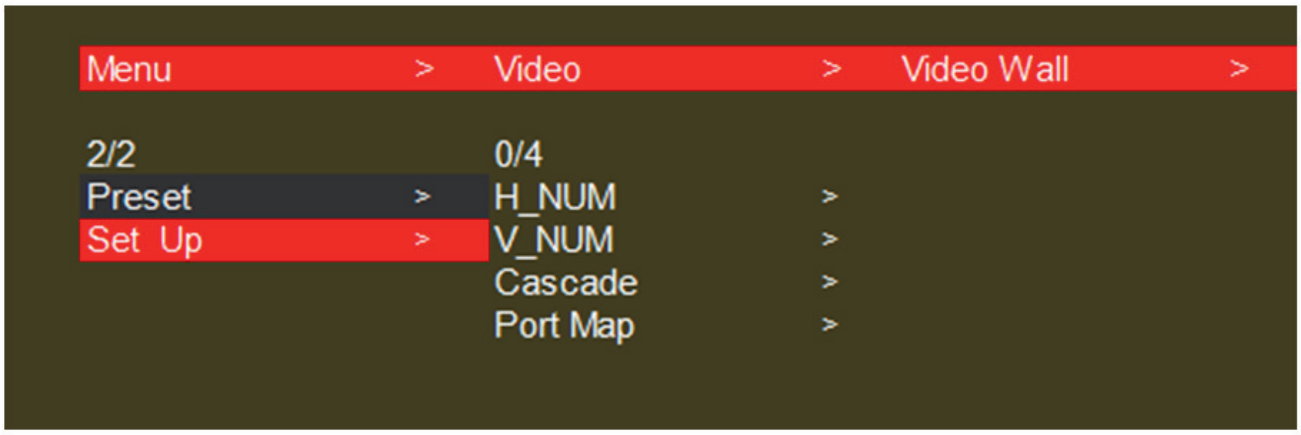
"Set Up": Press the "Right/Enter" on the panel to enter the "Set up" menu. Press the "Up" or "Down" on the panel to select, then press "Enter" to confirm. The selected one has a "@" to mark.

"H_NUM " represents the total amount of display on the horizontal axis. "V_NUM" represents the total amount of display on the vertical axis.

"Cascade" represents which cascading level the device is, supports 12 layers in total. Under the cascade mode, the input port of the second device should connected to the HDMI loop out of the first device. "Port Map" represents each display corresponding to which HDMI output port.



Preset video wall mode



Video wall set up

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7.2.3 Mirror

Press the "Left/Menu" on the panel to enter the "Mirror" menu.

Press the "Up" or "Down" on the panel to select, then press "Enter" to confirm. The selected one has a "@" to mark.

"Normal" represents default mode (without mirror function).

"Only X" represents horizontal mirror.

"Only Y" represents vertical mirror.

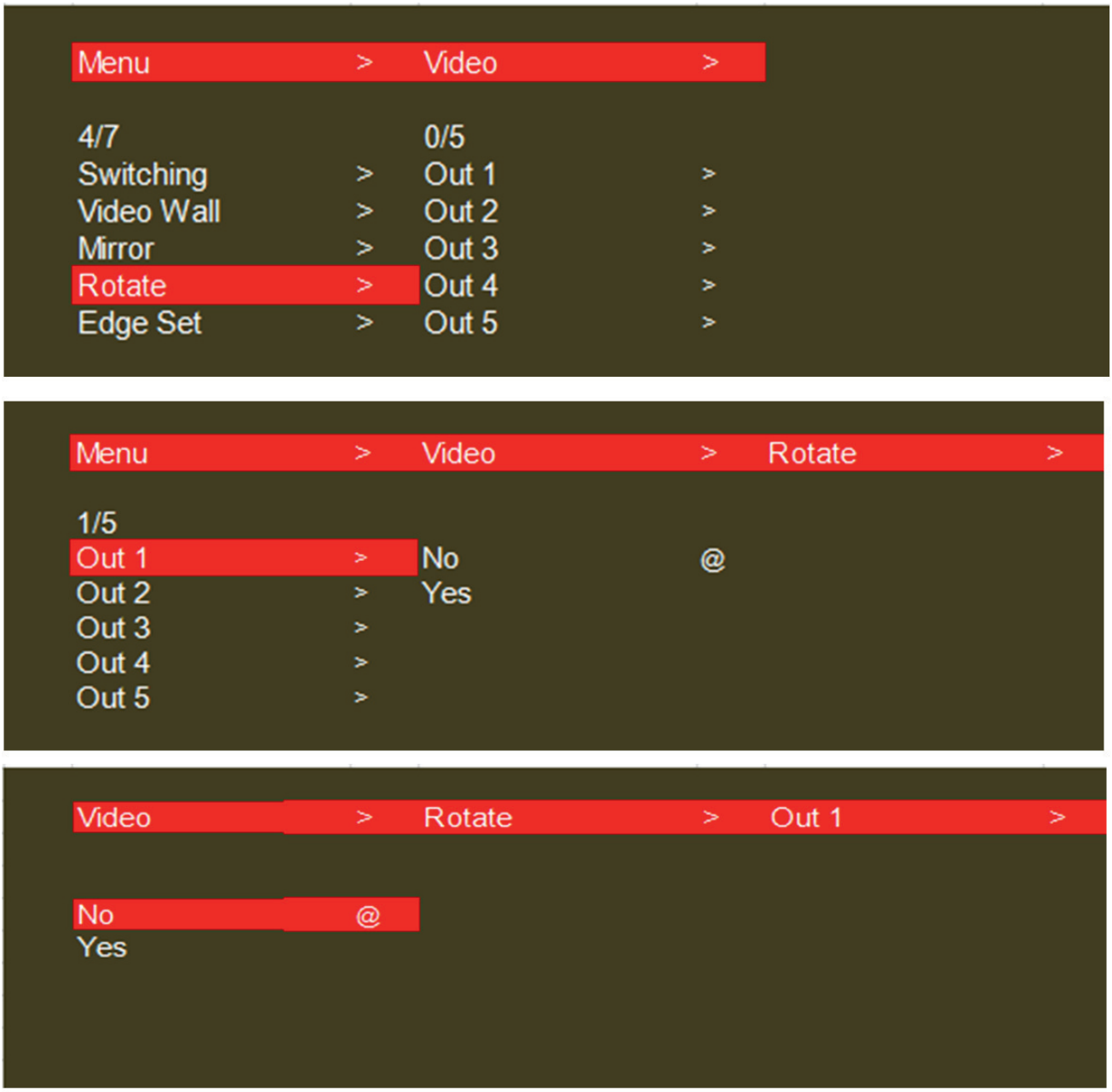
"X and Y" equals to 180 degree rotation.

Mirror interface

7.2.4 Rotate

Press the "Left/Menu" on the panel to enter the "Rotate" menu. The selected one has a "@" to mark.

Each output image support 180 degree rotation. Select "Yes" or "No" to set up



Rotate interface

7.2.5 Edge

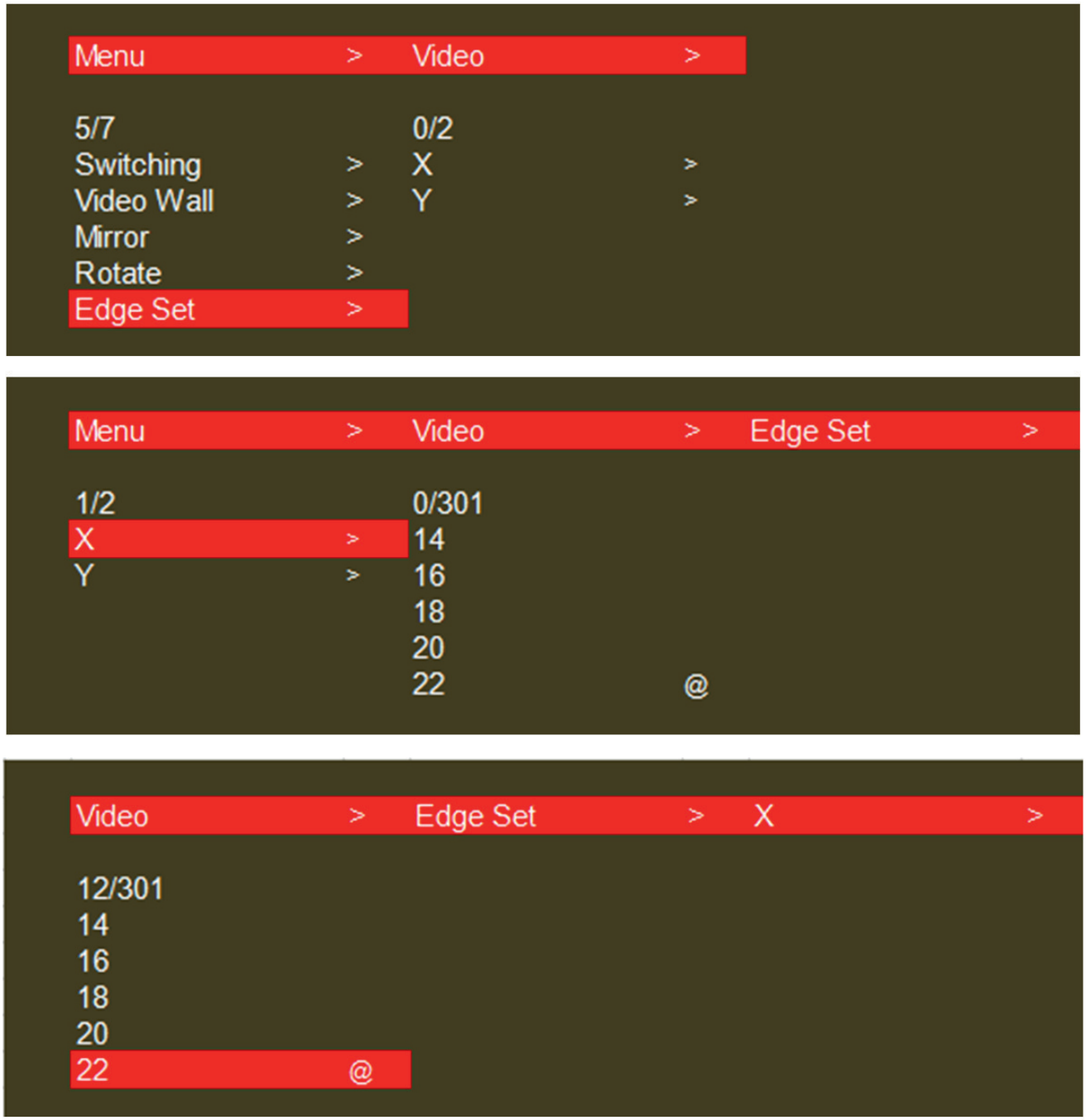
Press the "Left/Menu" on the panel to enter the "Edge Set" menu.

Press the "Up" or "Down" on the panel to select, then press "Enter" to confirm. The selected one has a "@" to mark.

"X" represents the margin setting between the horizontal displays, each image is divided into 302 units.

"Y" represents the margin setting between the vertical displays, each image is divided into 302 units.

The default margin of booth horizontal and vertical display screen is 3.5mm frame size.



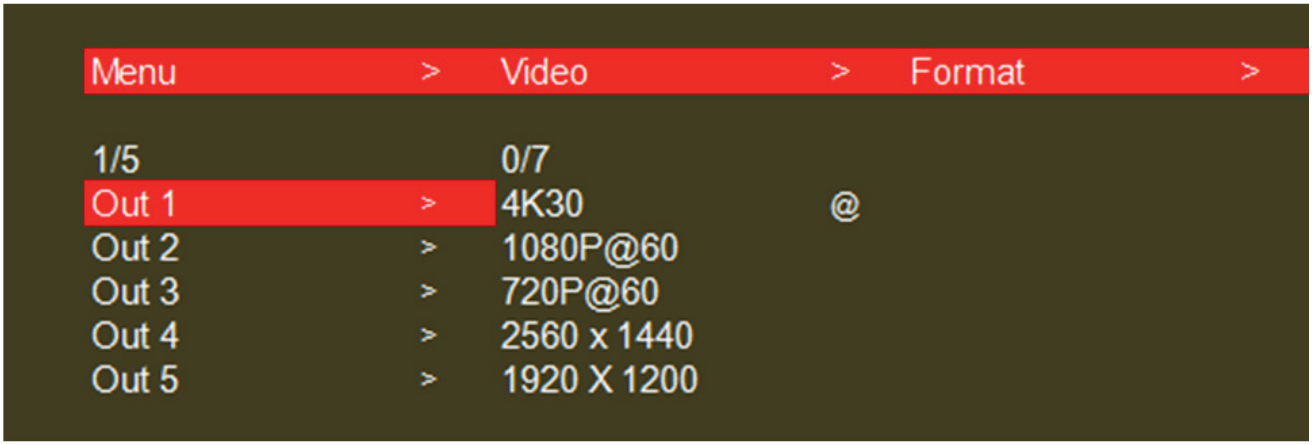
Edge set interface

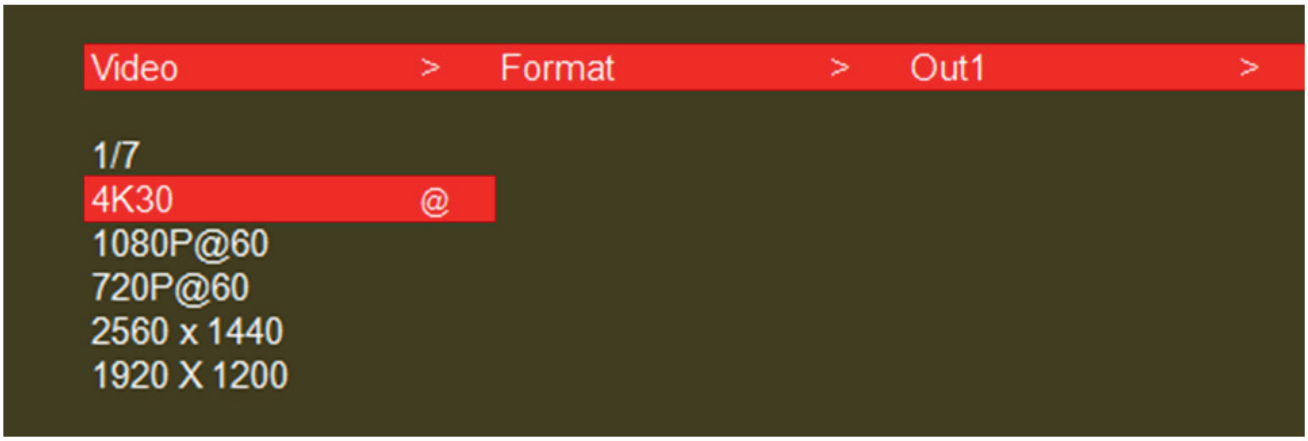
7.2.6 Format

Press the "Left/Menu" on the panel to enter the "Format" menu.

Format includes 4K30；1080P@60；720P@60；2560x1440；1920x1200；1366x768 and Auto for each output or all outputs to choose by pressing the "Up" or "Down" button. Press "Enter" to confirm the selection,

Default is Auto format, The selected one has a "@" to mark.





Format interface

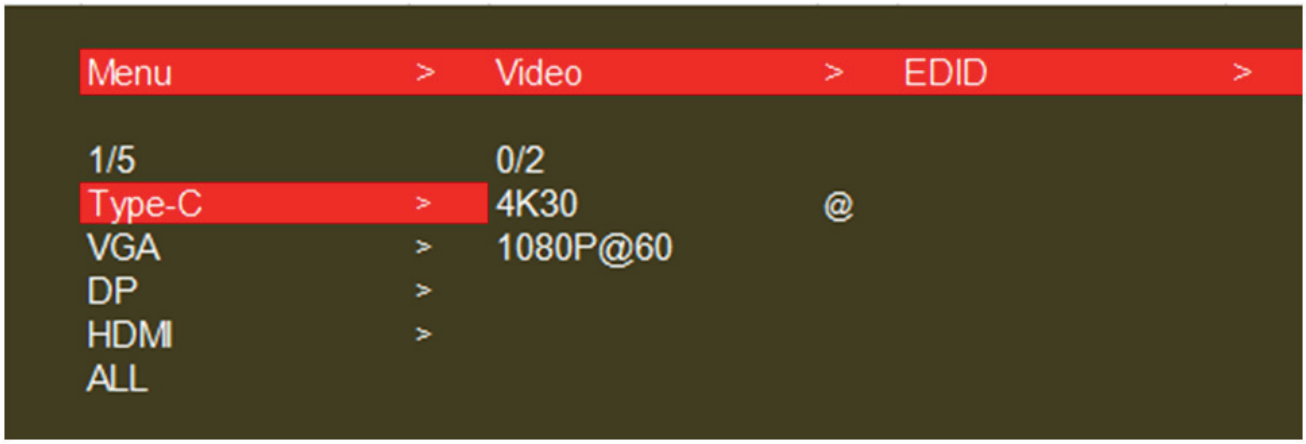
7.2.7 EDID

Press the "Left/Menu" on the panel to enter the "EDID" menu.

Press the "Up" or "Down" on the panel to select, press the "Enter" to confirm the selection. The selected one has a "@" to mark.

EDID includes "4k30hz" and "1080p@60" for each input or all inputs to choose.

Default is 4K30Hz.



EDID interface

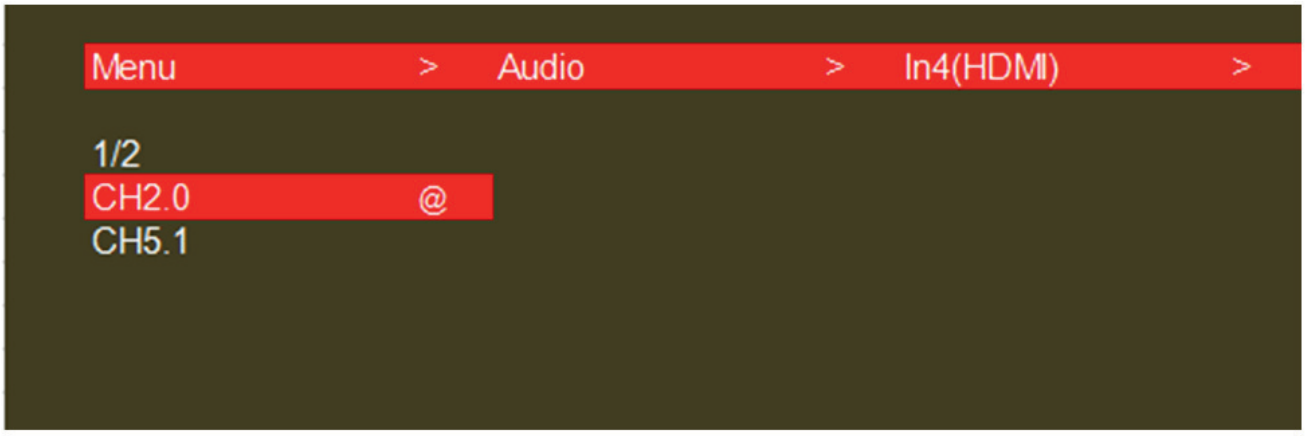
7.3 Audio Setting By Panel Control

7.3.1 Audio input setting

Press the "Left/Menu" on the panel to enter the "Audio" menu.

Press the "Up" or "Down" on the panel to select. Press the "Enter" to confirm the selection. The selected one has a "@" to mark.

For HDMI input, there is "CH2.0" and "CH5.1" to choose, Default is PCM2.0.



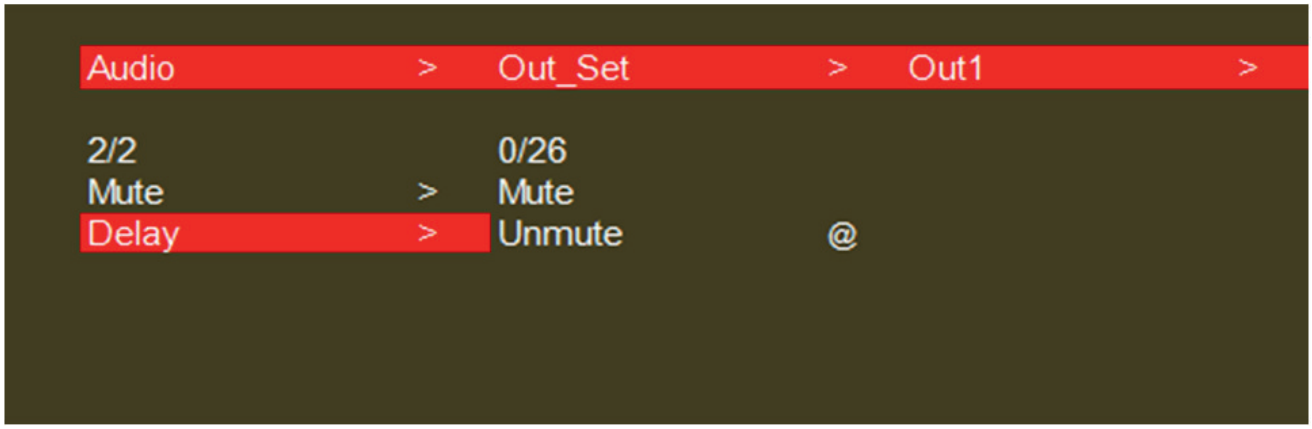
Audio input setting interface

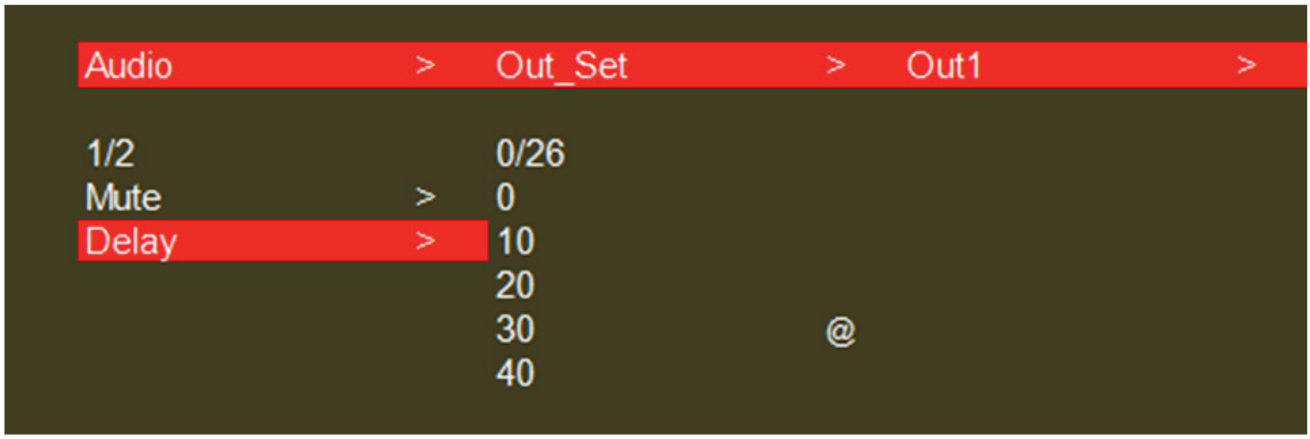
7.3.2 Audio output setting

Press the "Left/Menu" on the panel to enter the "Audio" menu.

Press the "Up" or "Down" on the panel to select. Press the "Enter" to confirm the selection. The selected one has a "@" to mark.

For each output or all outputs, there are "Mute" and "Delay" to choose. The default settings is “Unmute” and “Delay” 30ms.





Audio output setting interface

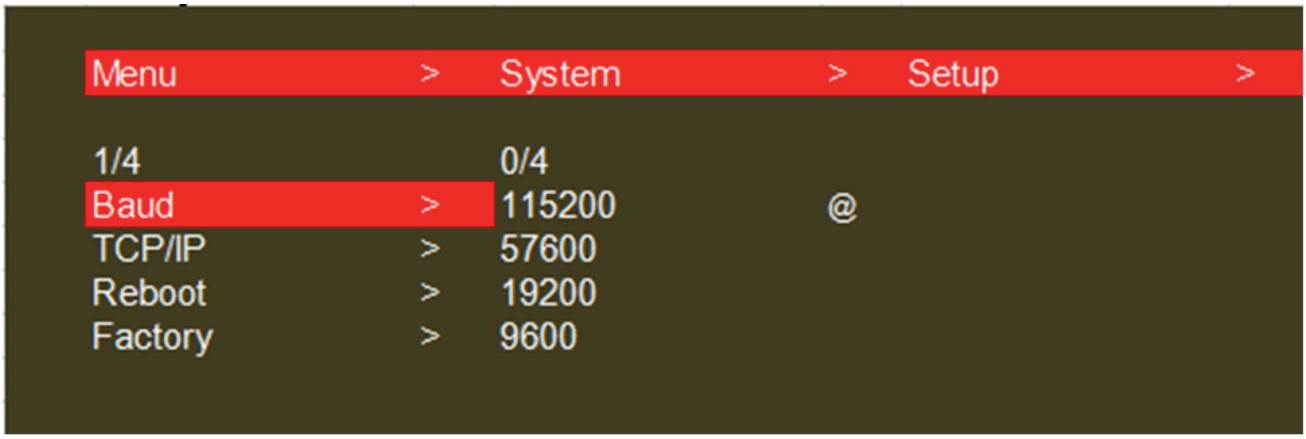
7.4 System Setting By Panel Control

7.4.1 Baud rate

Press the "Left/Menu" on the panel to enter the "Setup" menu then the "Baud" menu.

Press the "Up" or "Down" on the panel to select, then press the "Enter " to confirm. The selected one has a "@" to mark.

It contains 4 kinds of Baud rate including "115200/57600/19200/9600 " to choose.



Baud rate interface

7.4.2 TCP/IP setting

Press the "Left/Menu" on the panel to enter the "TCP/IP" menu.

Press the "Up" or "Down" on the panel to select, then press the "Enter " to confirm. The selected one has a "@" to mark.

It contains set up for " DHCP ON/OFF "; "IP Address"; Mask"; "GW"; "DNS". Eg: IP address setting:

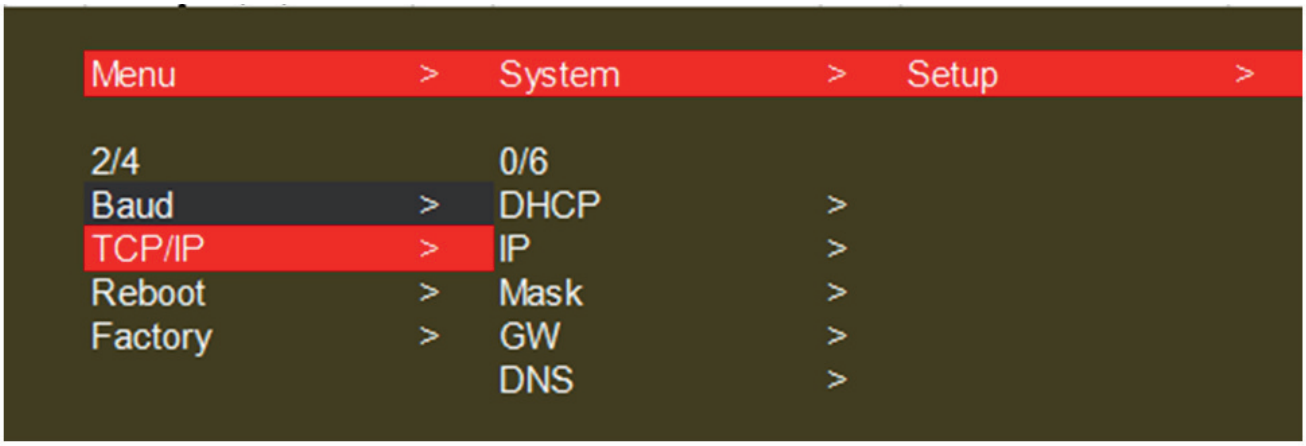
1. Modify the IP to 192.168.1.110, press the "up" and "down" to select IP [0], IP [1], IP [2], and IP [3] to enter the next sub-item (each sub-item can be set from 0 to 255), Press the the "up" and "down" again to select "192", "168", "1", and "110" respectively, and click "ENTER" to confirm.
2. After confirming the IP address, press the "up" and "down" keys to select "Apply", and press the "ENTER" to enter and select "YES" to check whether the modification is successful.

Note:

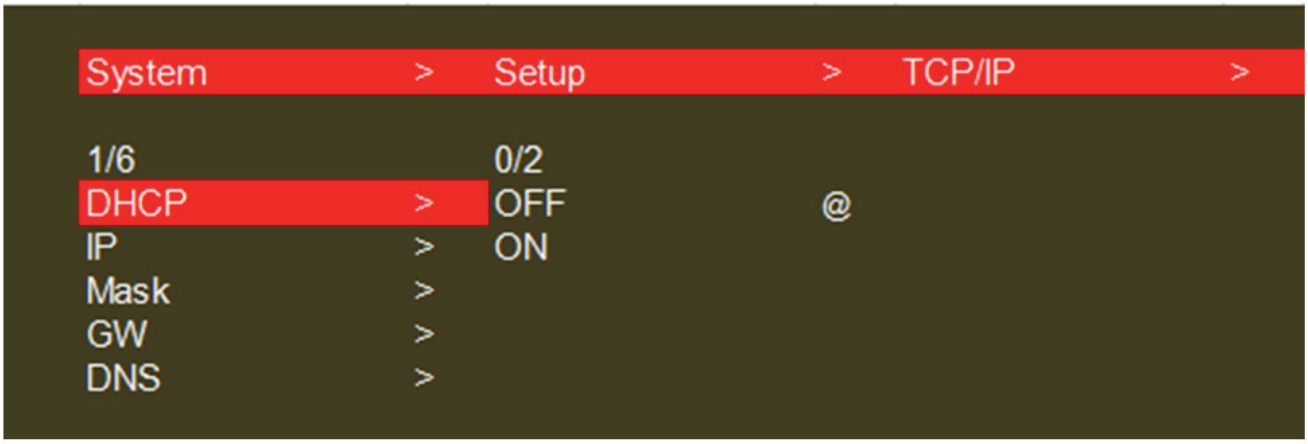
1. The operation steps of IP / MASK / GW / DNS setting are basically the same.

2. The above parameters can be modified manually under static DHCP, otherwise it cannot be modified.

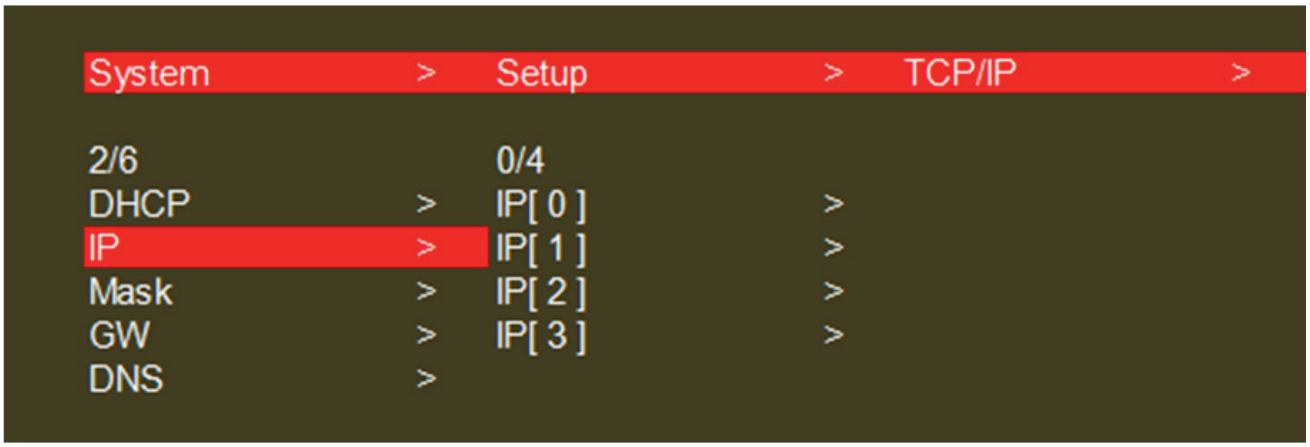
3. The modified parameters need to conform to the network protocol, otherwise it cannot be modified and it will only display "Setting IP error" in the interface.



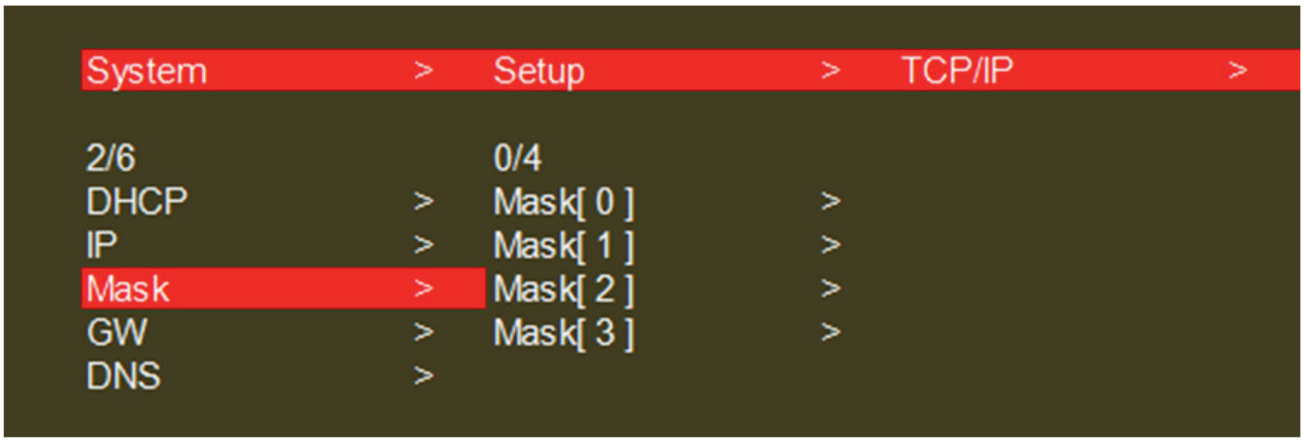
TCP/IP main interface



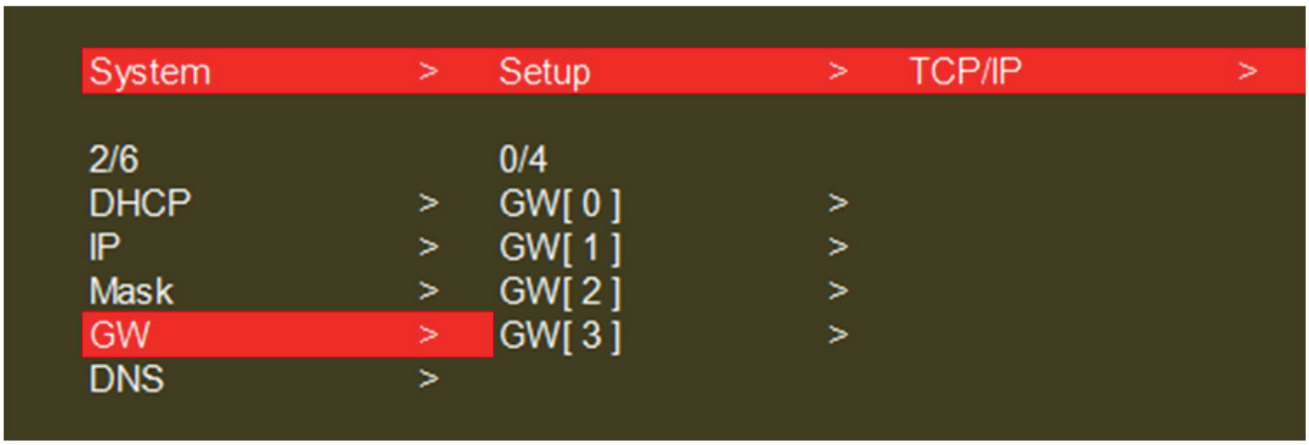
DHCP ON/OFF



IP address



Mask address



Gateway address

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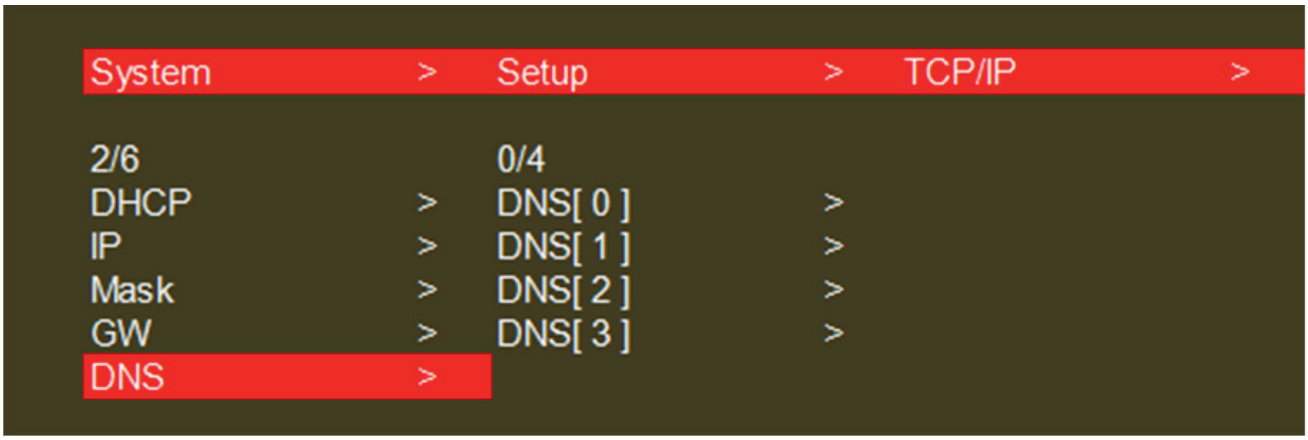
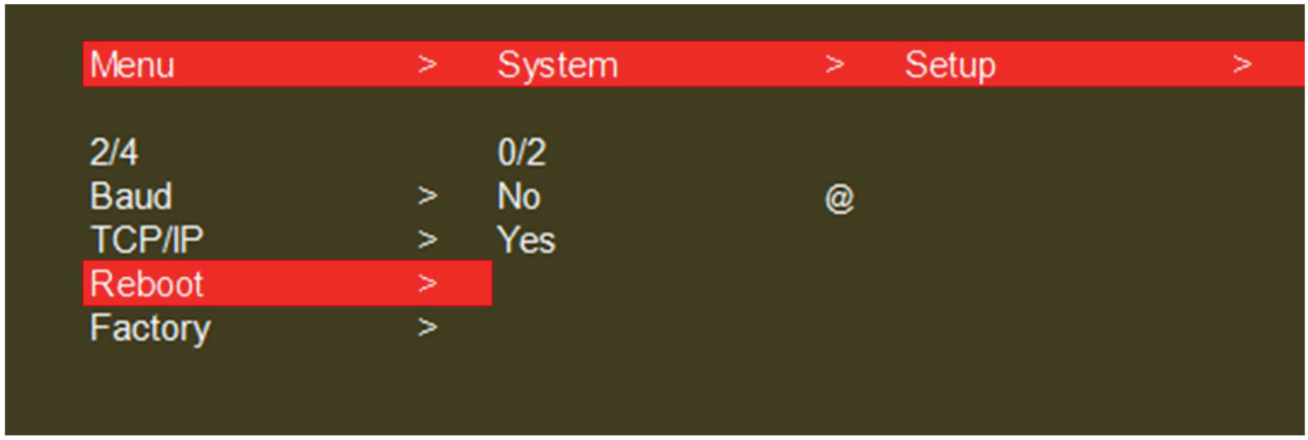


DNS Interface

7.4.3 Reboot

Press the "Left/Menu" on the panel to enter the "Reboot" menu.

Press the "Up" or "Down" on the panel to select "Yes" or "No" , then press the "Enter " to confirm. The selected one has a "@" to mark.



Reboot interface

7.4.4 Factory reset

Press the "Left/Menu" on the panel to enter the "Factory" menu.

Press the "Up" or "Down" on the panel to select "Yes" or "No" , then press the "Enter " to confirm. The selected one has a "@" to mark.

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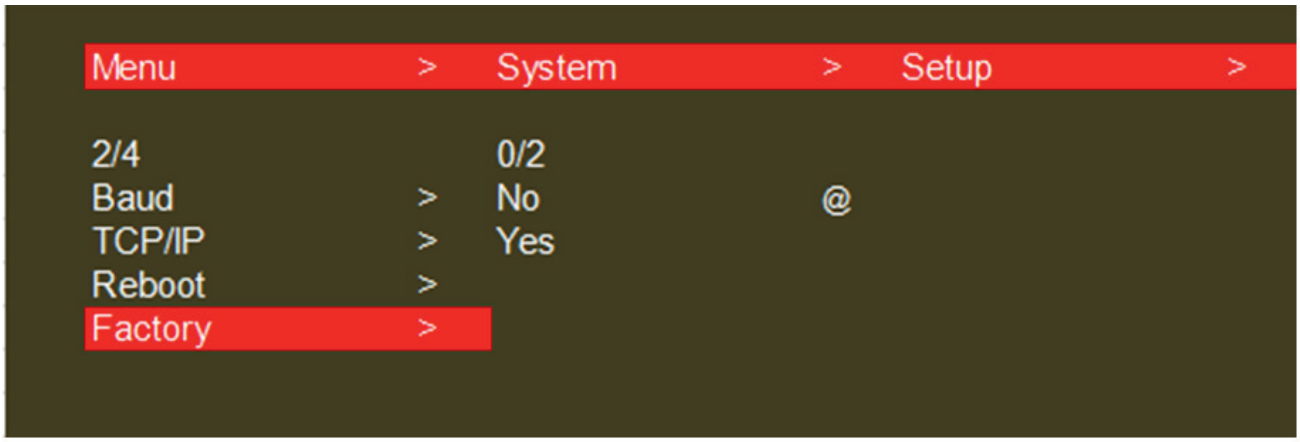
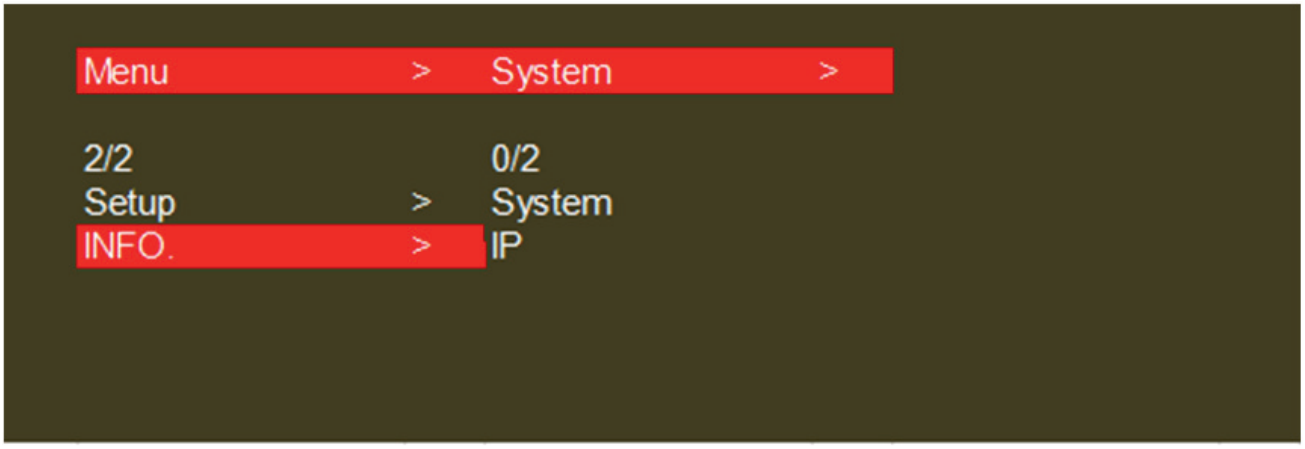


Factory reset interface

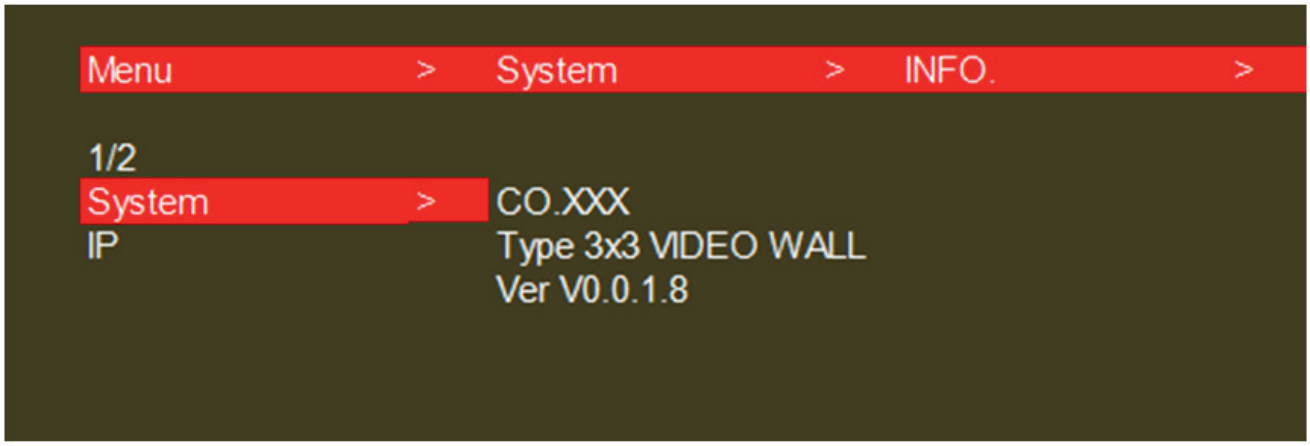
7.4.5 System information

Press the "Left/Menu" on the panel to enter the "INFO" menu.

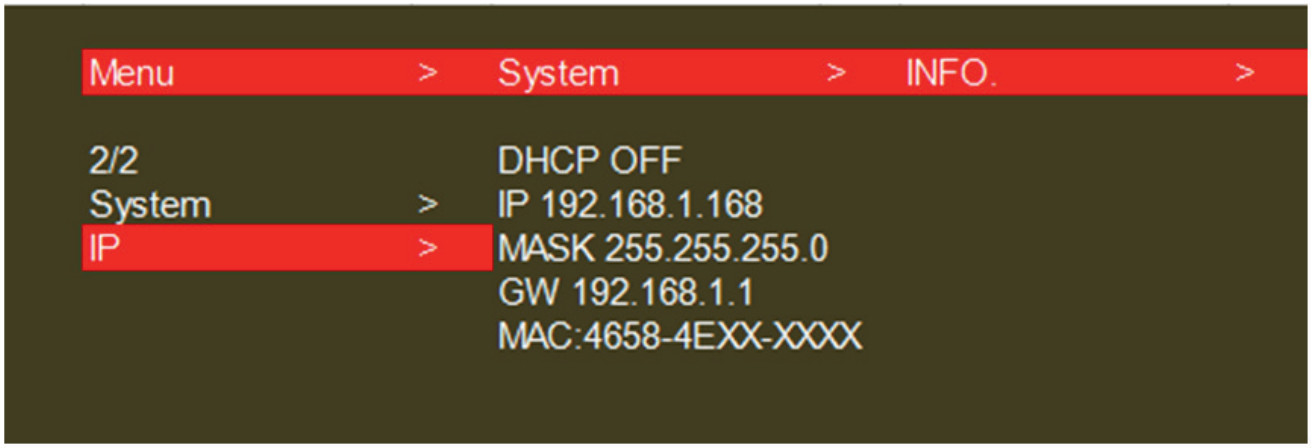
Press the "Enter " to check the current setting of the device. It Contains "System" and "IP" specific information.



Info interface



System information



IP information

7.5. Web Control

The host computer such as PC is connected to the control device through the TCP/IP network port. The control mode is divided into two types: connect with a computer without network for single device control or connected to the LAN to realize multi-machine control simultaneously.

Control without network:

When the host computer is connected to a computer without network through the TCP/IP port, the host computer is consistent with the control computer network segment. It can be controlled by direct connection; when the network segment is inconsistent, the network segment should be same for the control computer as the host computer.

Default IP address: 192.168.1.168
Default MASK: 255.255.255.0
Default GW: 192.168.1.1
MAC: 4658-4Exx-xxxx

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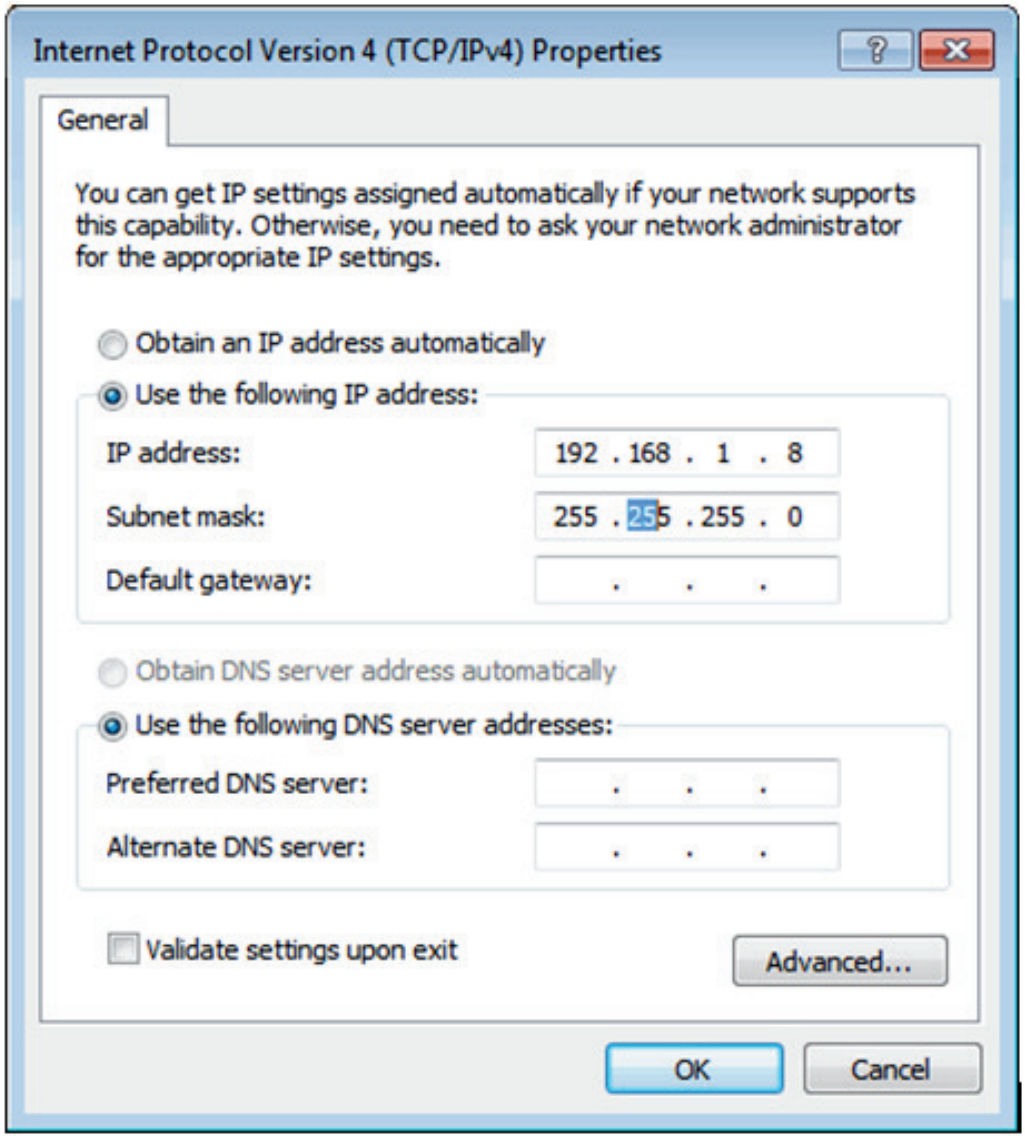

Connecting to LAN to realize multi-user remote control devices (such as mobile phone, other PC) in Ethernet environment, it is necessary to ensure that the IP segment of the host is consistent with that of the connected LAN. It also needs to open the DHCP and enter the related IP address to control.

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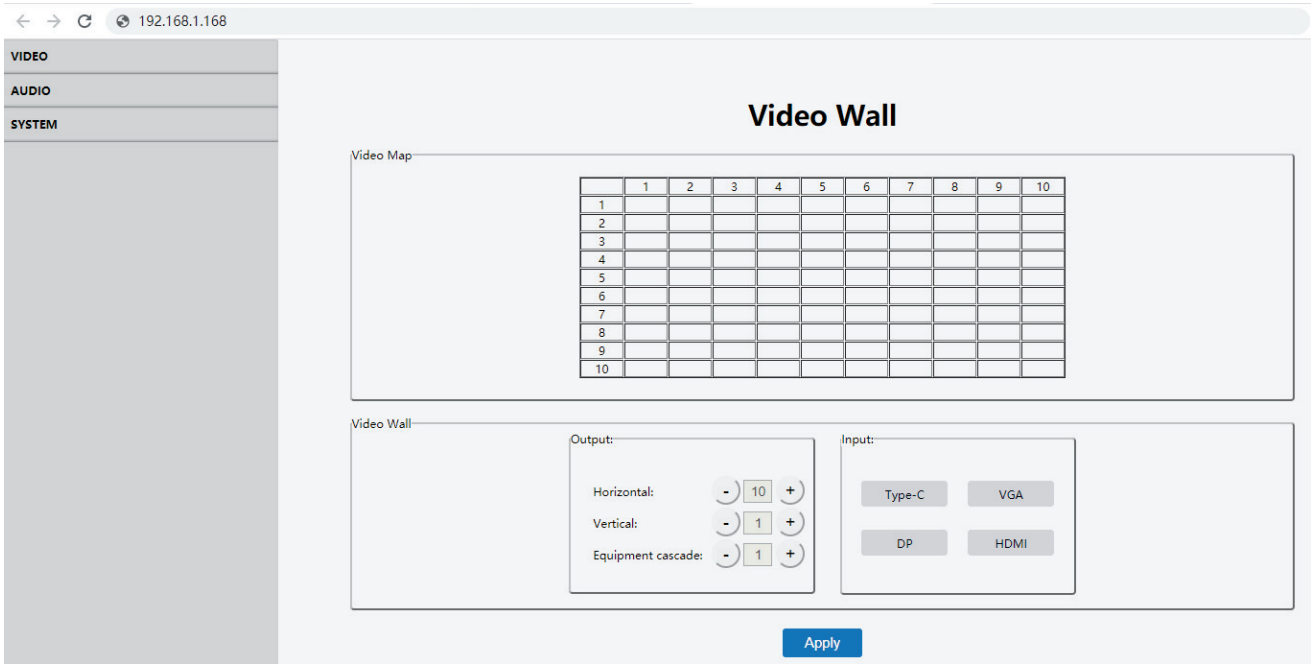
7.5.1 Interface introduction



Status display instructions:

(1) Click the navigation bar above, then enter the corresponding operation interface.

(2) Do not click continuously; Click again after the setting is successful. If the setting is invalid, please click the button again.

Browser compatibility:

(1) Use the browser such as Google, Firefox, apple with the latest browser version for better compatibility, The other browsers may result in incompatible problems.

(2) If you use the Internet explorer browser, please make use the version number is higher than IE10.

(3) The display effect is different in each browsers.

(4) If the settings is invalid or error, refresh the page and get latest data again.

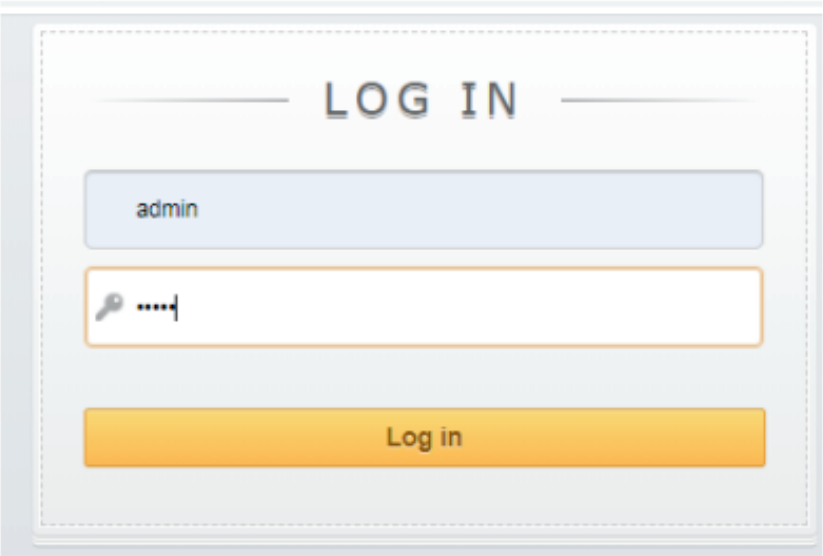
Login in method:

Default IP login in: use the correct account and password to enter the interface

Note:

a. This web has cookies, when the password and account are correct while the browser is not closed. If the user refresh the page again, it will log in automatically.

b. After changing the IP account or password, when you log in again, please use the new IP, account and password to log in again.



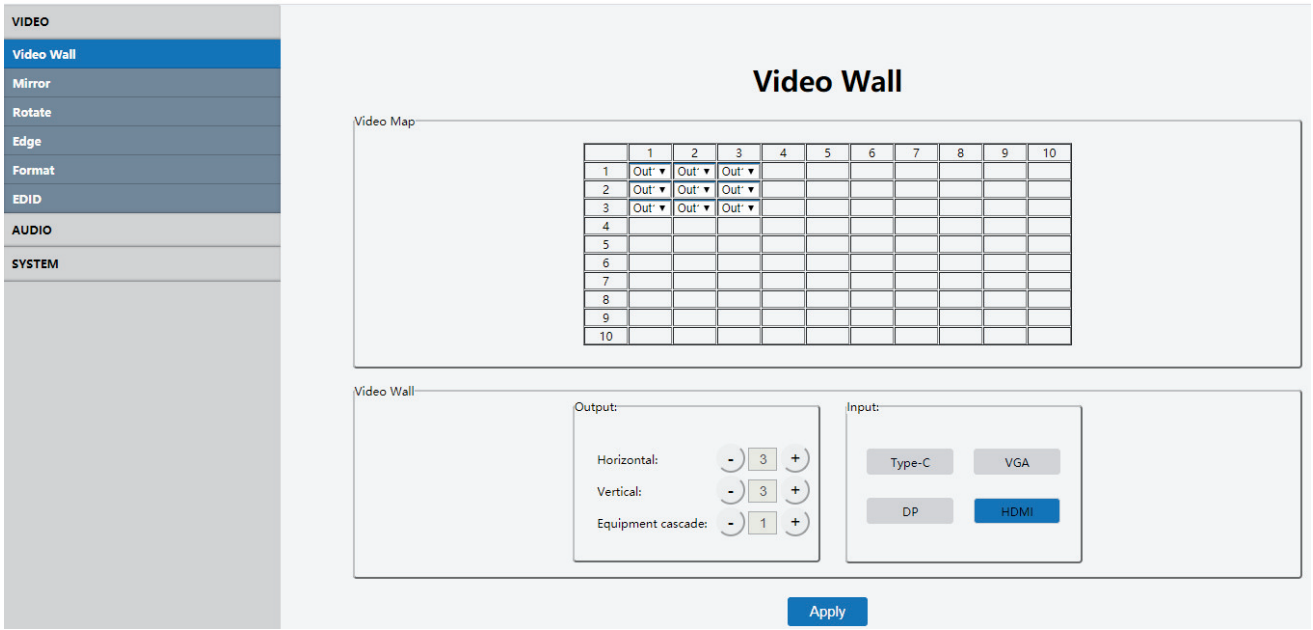
Operating instructions:

Take the default IP address login as an example:

(1) IP configuration: IP configuration is required, whether using single device control or LAN multi-device control.

(2) After configuration, please enter the default IP address into the browser, enter the web end login interface, enter account number: **admin**, password: **admin,** click on the "Log in" of the yellow bar below the account, as shown in the figure.

7.5.2 Video wall setting



Note:

This interface is used to set up video walls or cascade.

Interface introduction:

(1) Video Map column: to identify the location of the output port mapping, you can change the output port position through the drop-down menu.The position of Map1 to Map9 in the same cascading layer is stable no matter how the output ports arrayed, the rule for "Port Map" is from left to right, from top to bottom as showed in the below picture.

(2) Output column: screens in horizontal and vertical directions, plus the parameters of the equipment cascade layers.

(3) Input column: source selection for the video wall. (Type-C, VGA, DP, HDMI).

(4) Default 3x3 video wall, the device can also realize 4x3 5x4 5x5 6x6 7x7 8x8 and max 10x10 video walls through cascade.

(5) The max screen amount in the horizontal direction is 10pcs.

(6) The max screen amount in the vertical direction is 10pcs.

(7) The max cascade layer amount is 12 layers.

(8) Note: The parameters can be set up by clicking the "+ " or "-" button in the Output column The Input column.When one of the Input key is blue, it indicates that the related input signal is successfully connected.

Operating instructions:

Eg1：Select DP port as input source to make a 3x3 video wall by 1pcs device.

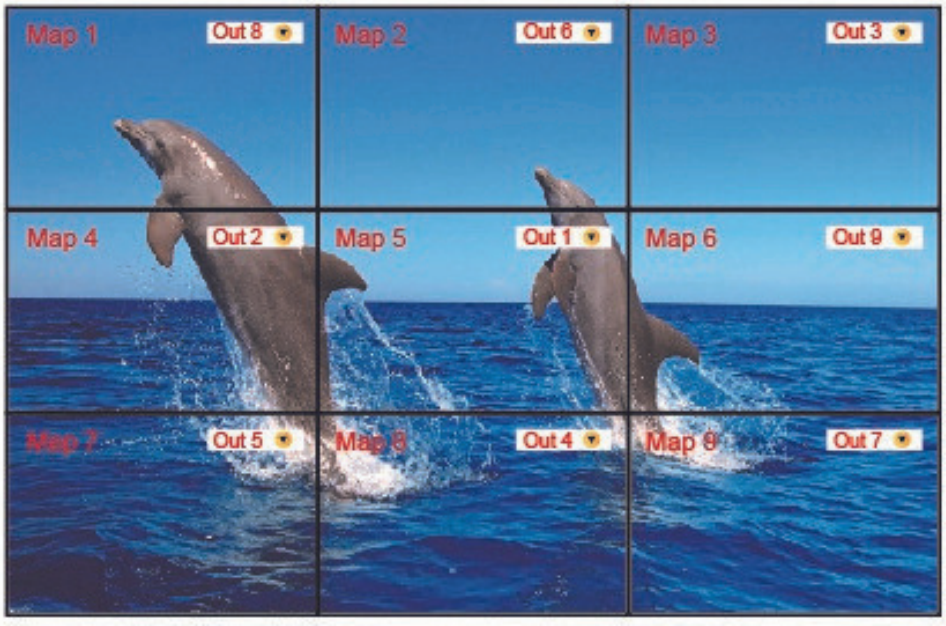
(1) In the Output section, select both the "Horizon" and "Vertical" as number 3, and the "Equipment Cascade " as number 1(There is only one device. The cascade position must be 1, otherwise the setting is invalid).

(2) Then click "DP" in the Input section and click "apply".

(3)Click the Video Map column and set the output ports according to TV 1 ~ 9. For example: In the Video Map column, select the output ports as following picture: Out-1:Map5; Out-2:Map4, Out-3:Map3; Out-4:Map8, Out-5: Map7; Out-6: Map2; Out-7: Map9; Out-8 Map1; Out-9: Map6, Click "apply" to finish the mapping setting.

Note: 1. Screens under the same cascade layer can be connected to any output port in this layer.

2. The position of Map1 to Map9 is fixed as the example, while there is no limitations for the HDMI output ports order, the corresponding output port can be seen in the OSD.



Video map in the video wall mode

Eg2：Select HDMI port as input source to make a 4x3 video wall by 2 devices.

Operation Steps of device1:

(1) In the Output section of the first device, click the "Horizon" as number 4, "Vertical" as number 3, and the "Equipment Cascade " as number 1, which stands for the device is in the first cascading layer.

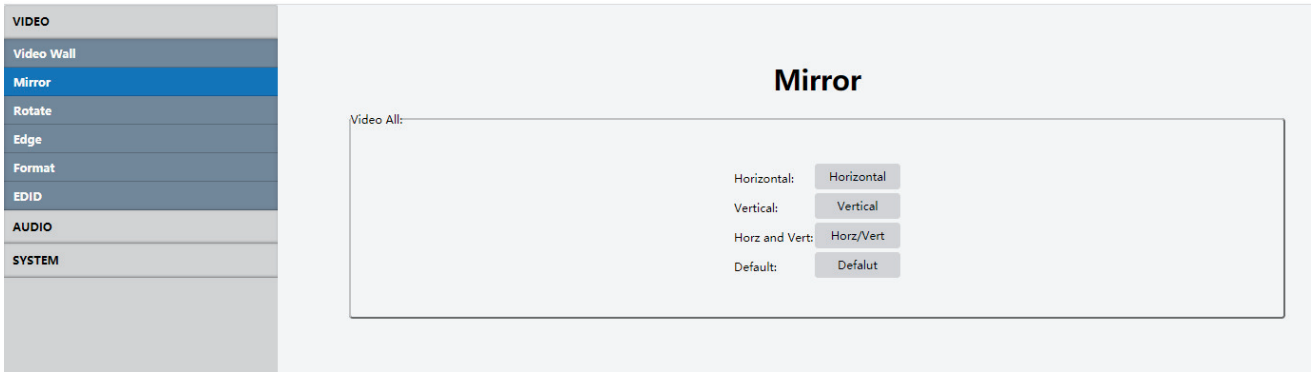
(2) Then click "HDMI" in the Input section and click "apply".

Operation Steps of device2:

(3) In the Output section of the second device, click the "Horizon" as number 4, "Vertical" as number 3, and the "Equipment Cascade " as number 2,which stands for the device is in the second cascading layer.

(4) Click the input port as the HDMI Loop out of the device1, then click "apply".

7.5.3 Mirror



Interface introduction:

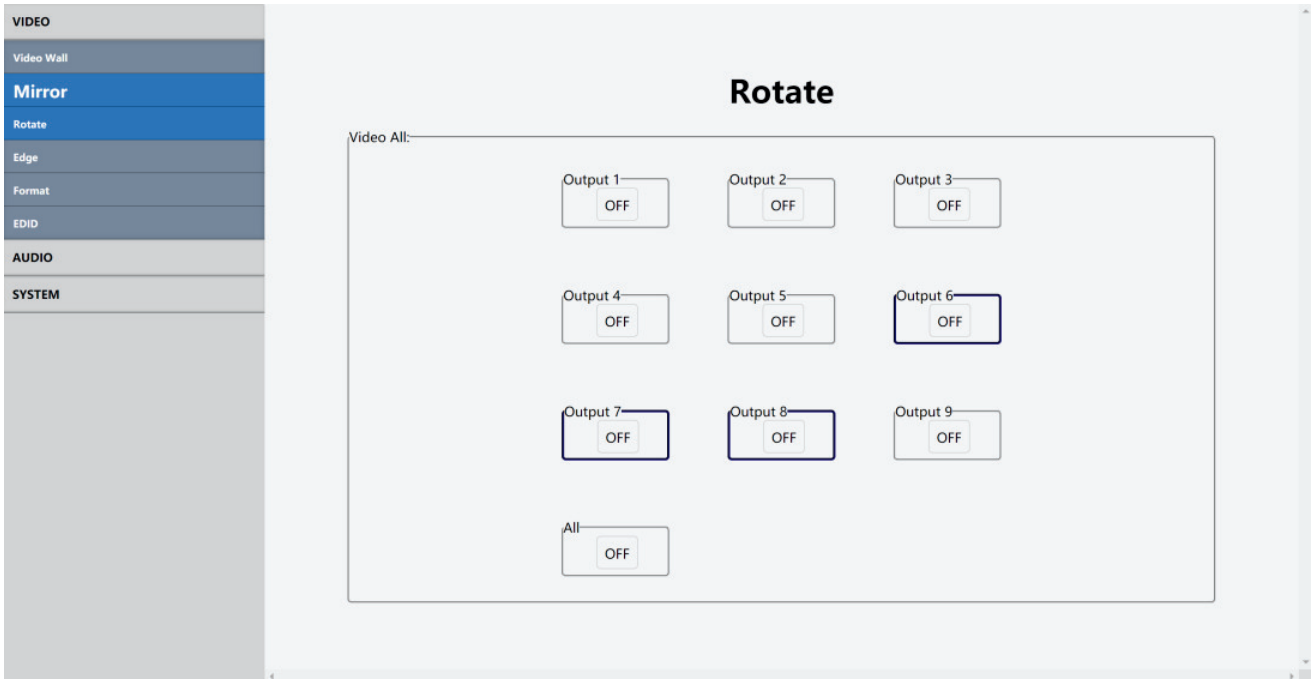
Click the "Mirror" in the navigation bar on the left. The interface has only one section to adjust the Horizontal /Vertical/Both Horizontal and Vertical/ Default.

Note: You can only choose one option at each time.

Operating instructions:

Click on the corresponding button to send instructions.

7.5.4 Rotate



Interface introduction:

The interface support each output image 180 degree rotation, support rotate a single image at a time or rotate all output images at once.

The output port blue bold border indicates that there is TV connected with the device.

Operating instructions:

Click on the "ON/OFF" button to adjust.

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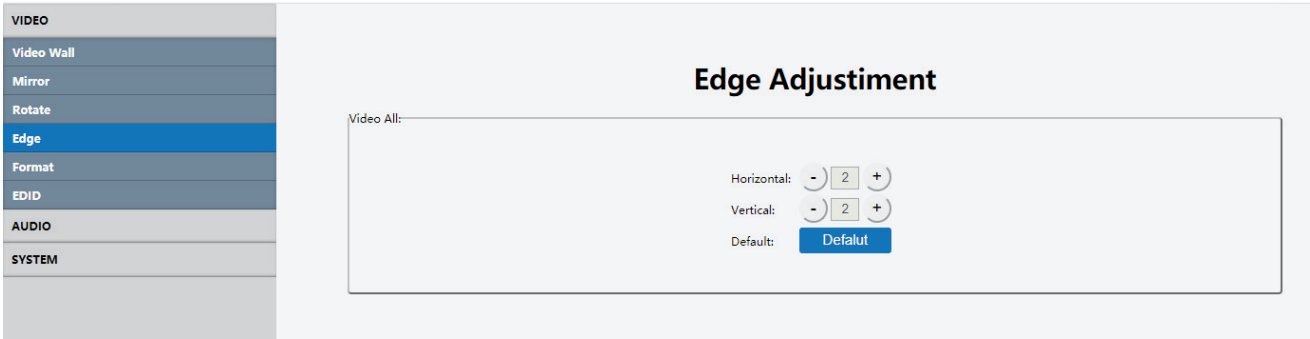
7.5.5 Edge



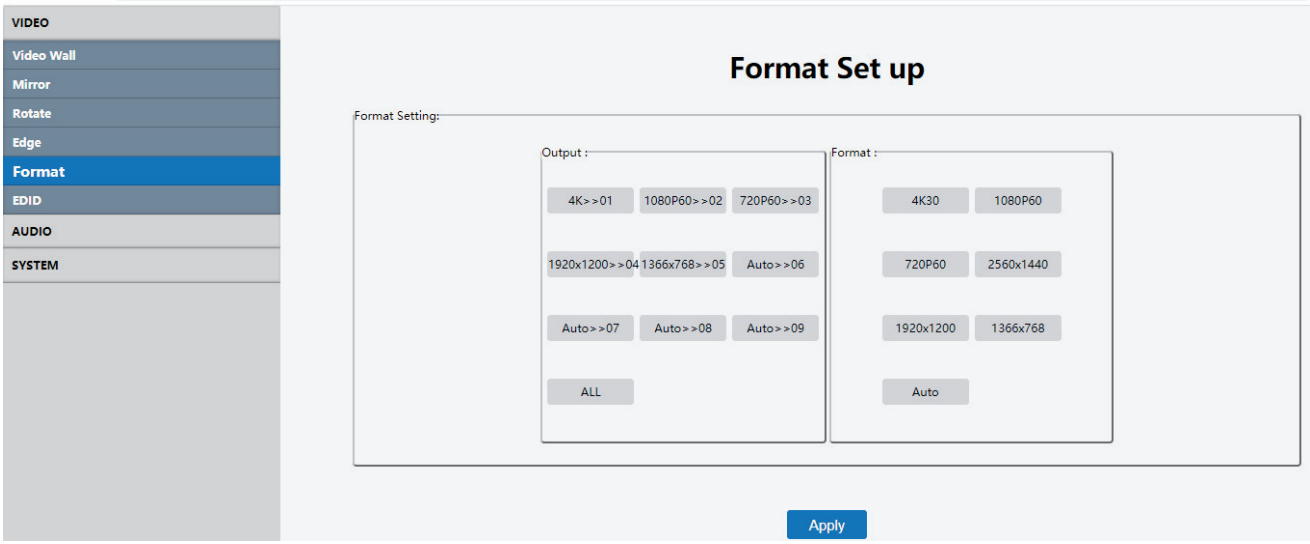
Interface introduction:

The default edge of booth horizontal and vertical display screen is 3.5mm frame size, each image is divided into 302 units.

Operating instructions:

Click on the "+/-" button on both Horizontal and Vertical to adjust.

7.5.6 Format



Interface introduction:

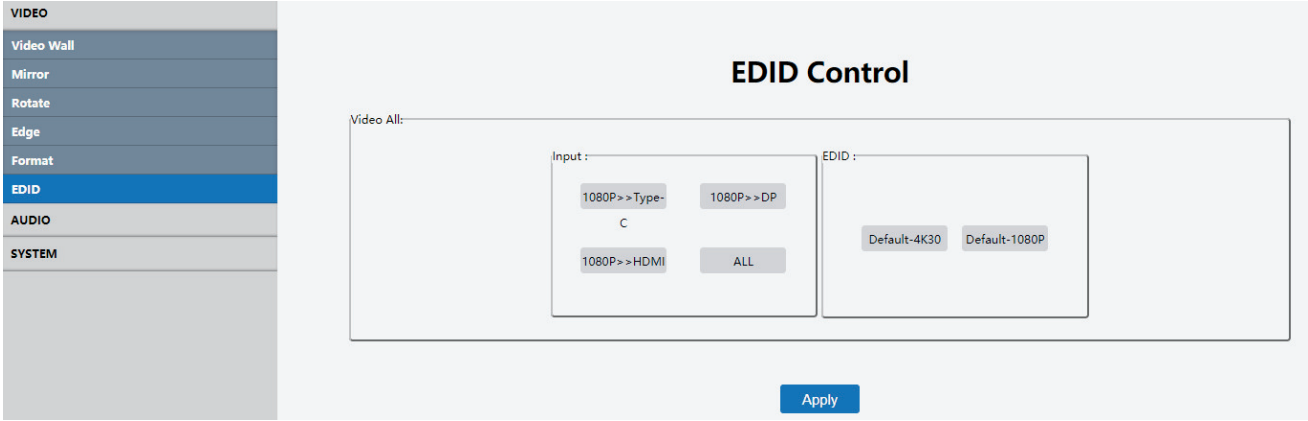
The interface is used to adjust the output format, the left output section including HDMI Output1 to HDMI Output9 and ALL (stands for all HDMI outputs), the right format section including 4K@30Hz, 1080P@60Hz, 720P@60hz, 2560x1440, 1920x1200, 1366x768 and AUTO.

Operating instructions:

Eg: Select all output format as 4k@30HZ

Click on the "ALL" button in the output section first, then select the "4K30" button in the format section, click "Apply" to confirm.

7.5.7 EDID



Interface introduction:

The interface is to set up the EDID for each input port or all the input at once.

INPUT Section: the back content of the ">>" indicates the input source, and the front content of the ">>" indicates the current EDID information. It supports setting up the EDID separately for each input or select all input as the same EDID .

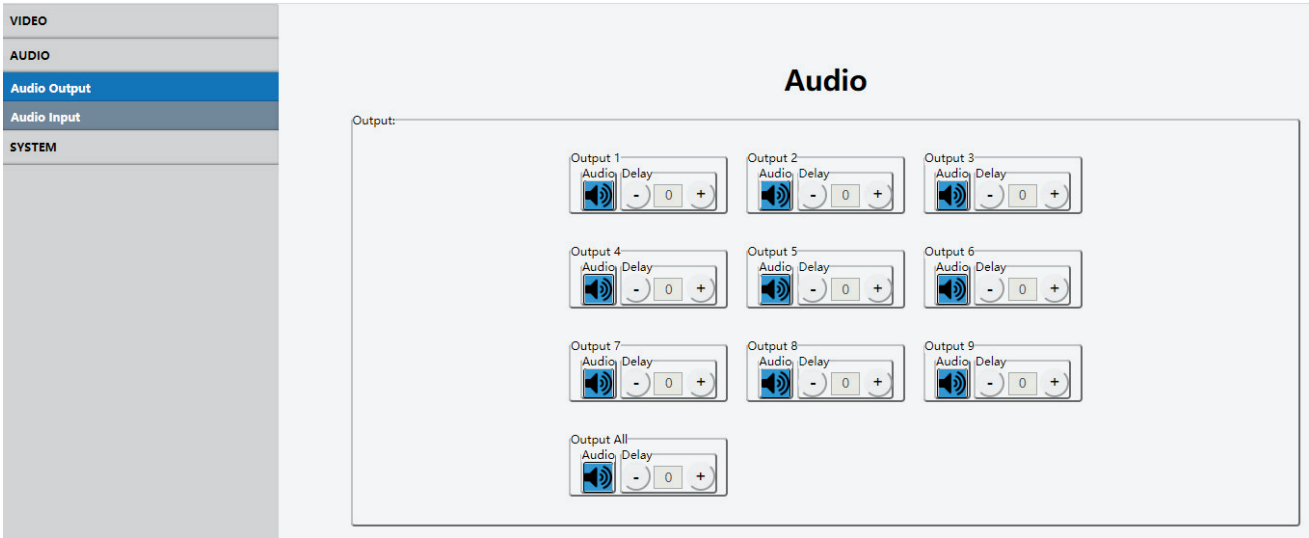
EDID Section: There are two built-in EDID including 4K@30hz and 1080P.

Operating instructions:

Select the input source that needs to change the EDID in the INPUT section ("ALL" means select all input sources), the bottom of the input source is blue;

Select the EDID need to be used in the EDID section, and click "Apply" to complete the setting.

7.5.8 Audio Output Setting



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Interface introduction:

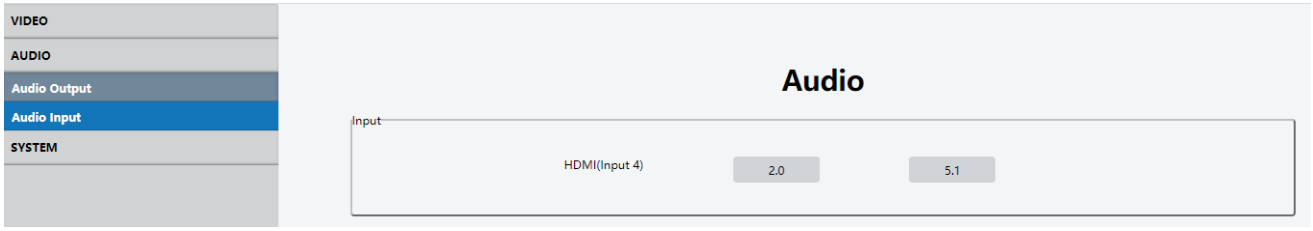
The interface is used to switch and delay the audio of one output or all outputs.

means the audio is turned off, means the audio is turned on. The default audio is turned on, and the delay is 30ms.

Operating instructions:

Click on the "-/+" button to adjust delay time; options from 0 to 250, per unit is 10ms; Click on the or button to choose mute or unmute.

7.5.9 Audio Input Setting



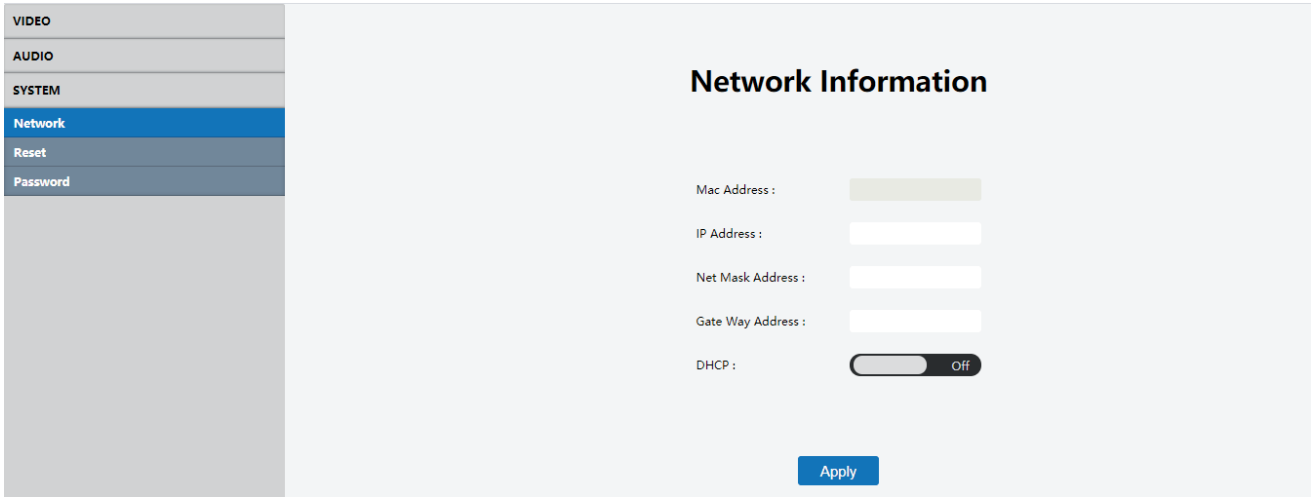
Interface introduction:

It shows PCM2.0 and 5.1 to choose for HDMI Input, Default is PCM2.0 setting.

Operating instructions:

Click on the "2.0/5.1" button separately to select the audio format for HDMI input.

7.5.10 Network interface



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Interface description:

It used to set up and display the basic information including IP/ MAC address, Net mask address, gate way address and DHCP.

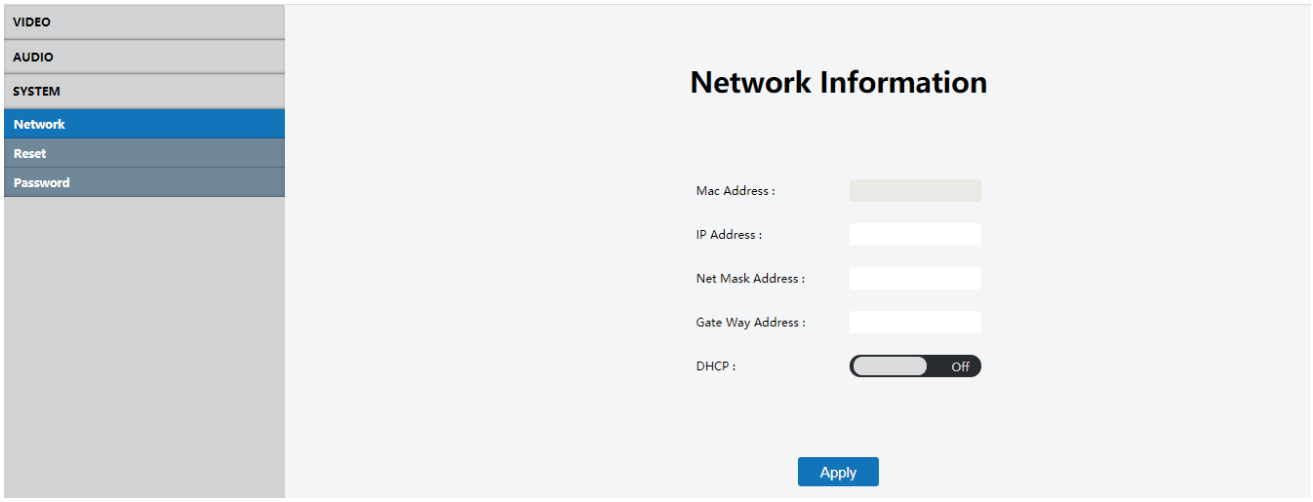
Operating instructions:

MAC address: can only be displayed, cannot be modified.

Static IP: Default DHCP OFF.

Dynamic IP: click the "DHCP" button to open the DHCP. The following IP address and other information can not be modified, but current IP address information can be displayed.

7.5.10 Network interface



Interface description:

It used to set up and display the basic information including IP/ MAC address, Net mask address, gate way address and DHCP.

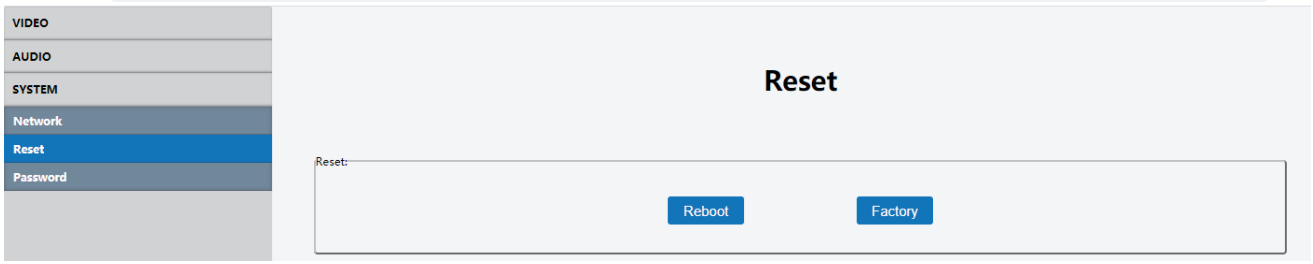
Operating instructions:

MAC address: can only be displayed, cannot be modified.

Static IP: Default DHCP OFF.

Dynamic IP: click the "DHCP" button to open the DHCP. The following IP address and other information can not be modified, but current IP address information can be displayed.

7.5.11 Reset



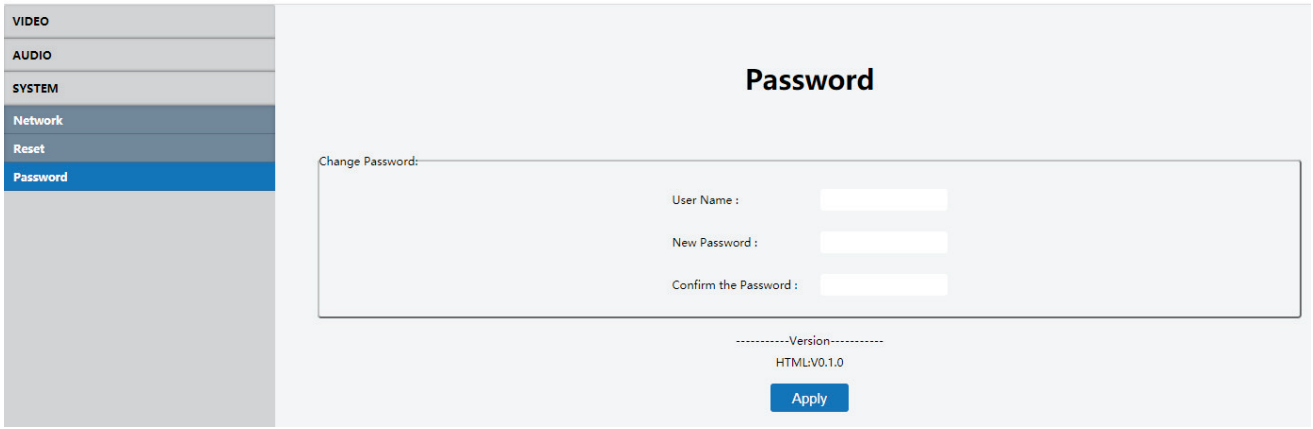
Interface introduction:

The interface is used to restart the device and restore factory settings.

Operating instructions:

Click on each function button to achieve its function (as shown in the figure above), the bottom of the selection is blue.

7.5.12 Password



Interface description:

Its used to change the login password. You can only change the current login account password.

Default account passwords: **admin**

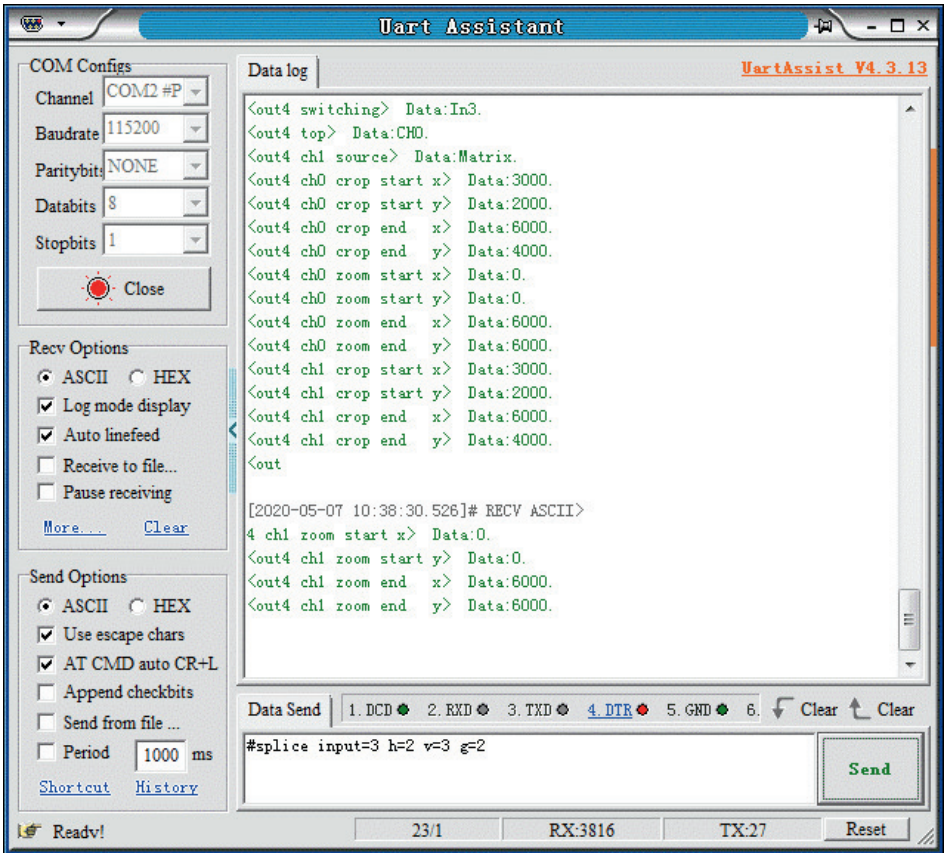
Operating instructions:

When you change your account and password, it can support only 5-15 digits, alphanumeric and underlined.

(It only supports changing the account name and password of the currently logged in account, which will take effect next time).

8. RS232 CONTROL

Function description: plug in the USB port to RS232 tool, double-click to open the software, and then enter the main interface of the software, as shown below:



Instructions:

1. All instructions begin with "#".

Instruction header c% : d---operation parameter, I---operation lock,

2. "_" means underline, indispensable.

Primary parameter d% : 0---all outputs, 1-x---indicatesoutputs (1-9), secondary parameters are the same as the first.

3. A space should be added between the instruction header, first-level parameters and attribute parameters. Please check the instruction sheet for property parameters.

Note: "/" indicates that this parameter is not used.

For RS232 command details, please refer to the document in CD.

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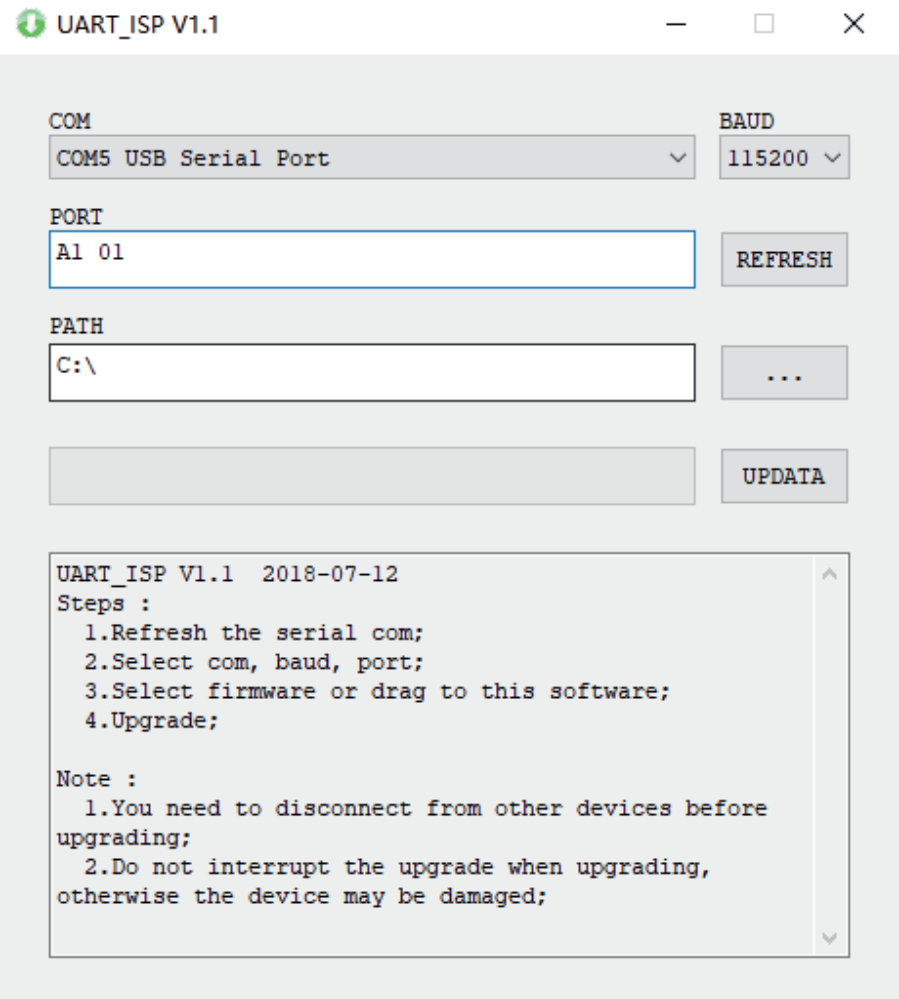
9. Firmware Update

9.1 MCU Update

Open the software UART_ISP.exe on the PC, select the correct port and baud rate 115200, enter A1_01 (_ represents space) in the port, then select the program (xxx.bin) in the path, and click update to complete the upgrade.



9.2 GUI Update

Open the software UART_ISP.exe on PC, select the correct port and baud rate 115200, enter F0_01 (_ represents space) in the port, then select the program (xxxx.bin) in the path, and click update to complete the upgrade.

Note: please reboot the device after GUI Update

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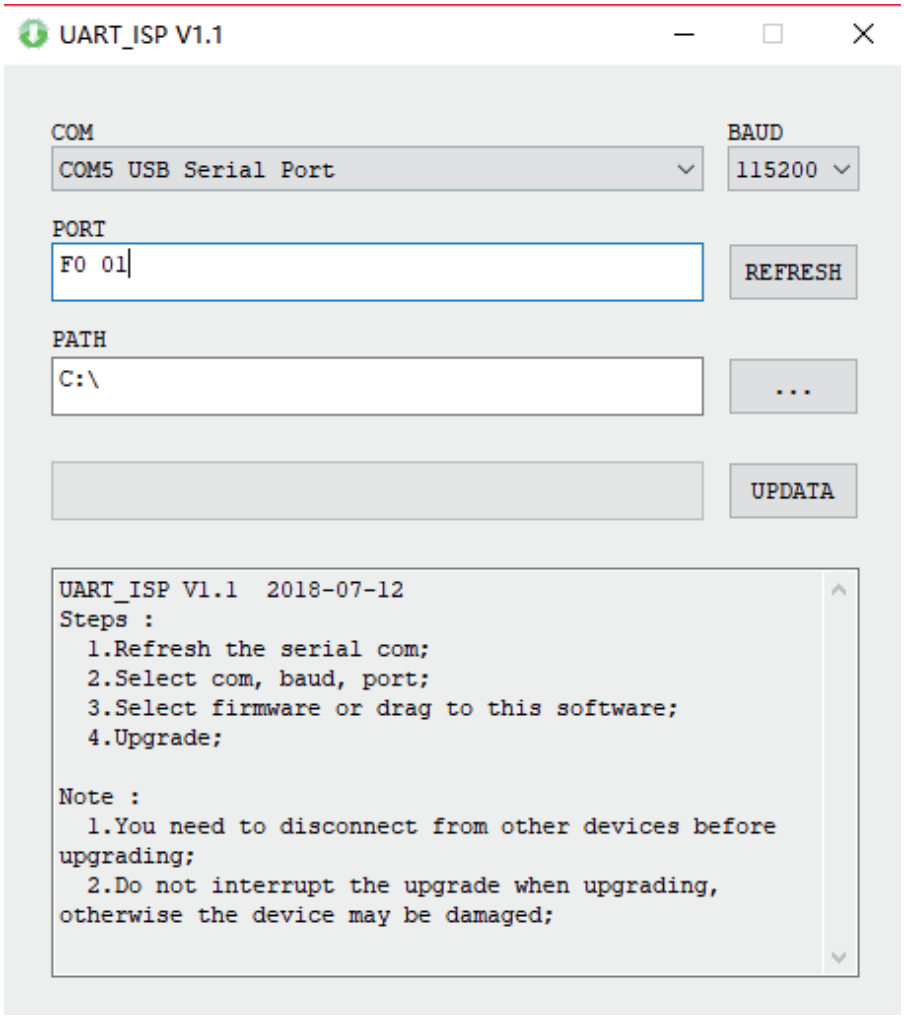

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10. Maintenance

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

11. Warranty

If your product does not work properly because of a defect in materials of workmanship, our company (referred to as "the warrantor") will, for the length of the period indicated as below, "Parts and Labor (5) Years", which starts with the date of original purchase ("Limited Warranty period"), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

During the "Labor" limited warranty period, there will be no charge for labor. During the "Parts" warranty period, there will be no charge for parts. You must mail-in your product during the warranty period. This Limited Warranty is extended only to the original purchaser and only covers products purchased as new. A purchase receipt or other proof of original purchase date is required for Limited Warranty service.

12. 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.

13. 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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