4x4 4K30 HDMI Seamless Matrix Switcher With LED/LCD Videowall And Multiview

AMVW-0404K3G

ANGUSTOS

User Manual

v.I25

CONTENTS

1. OVERVIEW

AMVW mini series is a multi-purpose HDMI matrix switch, which can distribute any 4 HDMI inputs to any 4 HDMI output displays. It integrates seamless matrix switching feature, support LED/LCD videowall and multi-view. The matrix switch supports audio de-embedding, enabling built in audio extract from each HDMI output.

In addition, there are 8 presets and these presets can be easily accessed and recalled by user. It can be controlled by front panel buttons, IR remote, TCP/IP WebUI and RS232 command (3rd parties central control).

2. FEATURES

① 4xHDMI inputs and 4xHDMI outputs
② Input and output video resolution up to 4K@30Hz
③ Seamless switching between all inputs
④ Support LED/LCD video wall (Multiple layers is available)
⑤ Multiview display(Move windows position and size freely)
⑥ Customized output resolution
⑦ 8 presets save and recall
⑧ Inputs and outputs status monitoring
⑨ Audio de-embedding with 4x3.5mm earphone output
⑩ Freely change the image on front panel LCD display
⑪ 3 modes: Matrix switcher+Video Wall controller+Multiviewer

3. PACKAGE CONTENTS

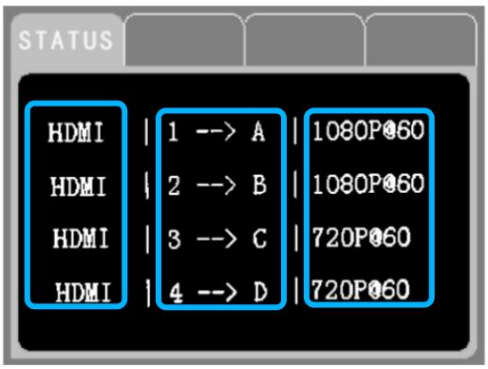
① 1 x 4x4 4K30 HDMI Seamless Matrix Switcher(MP-HD44M Mini Series)
② 1 x 12V/1A Power Adapter
③ 1 x IR Remote

4. HARDWARE
4.1 FRONT PANEL

Power button: Press the [POWER] BUTTON to turn on or turn off the matrix switch.

After power on, the LCD screen shows Boot Logo If no operation within 15 seconds, it will back to LOGO. Press any push button to enter the main menu to operate it.

The LCD screen menu is shown below.
The left column indicates the input audio format (HDMI is embedding audio)
The middle part indicates the input and output corresponding status.
The right column indicates the output resolution.



Lock/Unlock the matrix

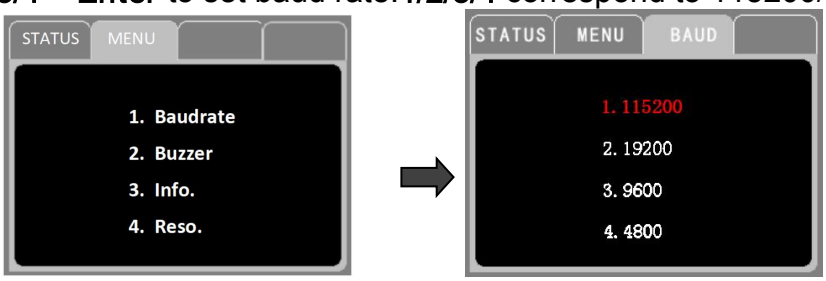
Press and hold the **MENU** button to lock the matrix and press and hold it again to unlock the matrix. The MENU button indicator will light up when the matrix is locked.

Matrix Switching

Press **IN(1/2/3/4)** + **OUT(A/B/C/D)** + **Enter**
Eg. Switch input 1 to output 1, **IN 1+OUT A+ENTER**
Eg. Switch input 2 to output 1, 2, 3, 4, **IN 2 + OUT A + OUT B + OUT C + OUT D + ENTER**

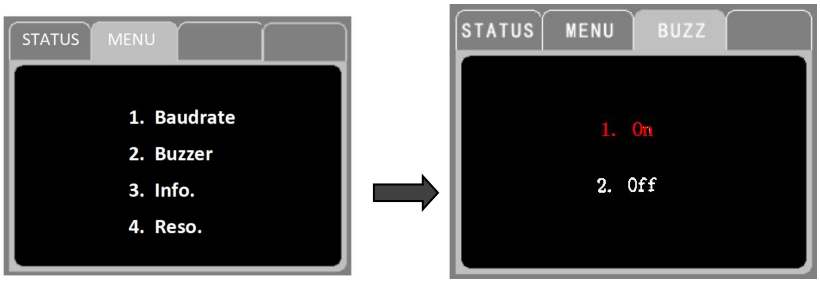
Select Baudrate

Press **MENU+ 1+ 1/2/3/4 + Enter** to set baud rate.**1/2/3/4** correspond to 115200/19200/9600/4800.



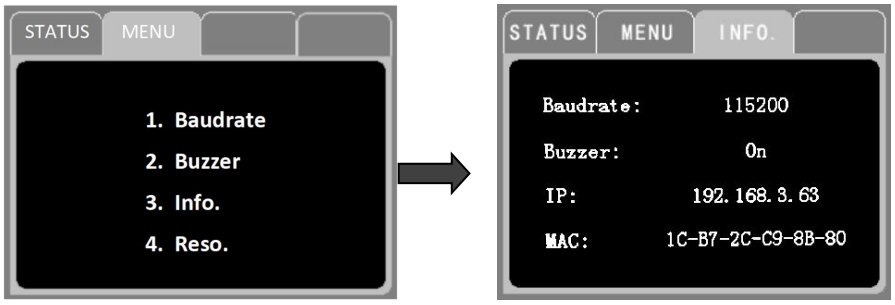
Buzzer On/Off

Press **MENU + 2 + 1/2 + Enter** to turn on/off the buzzer. **1** is **On** and **2** is **Off.**



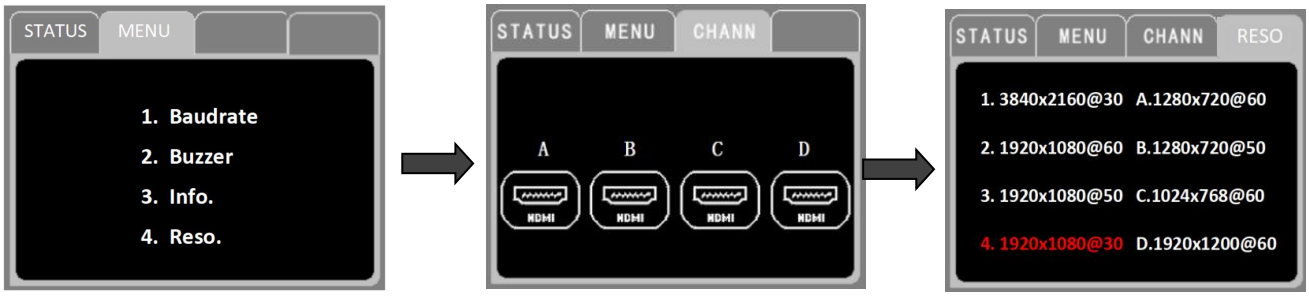
Device Information

Press **MENU + 3 + Enter** to view the device information of baud rate, buzzer, IP address etc..



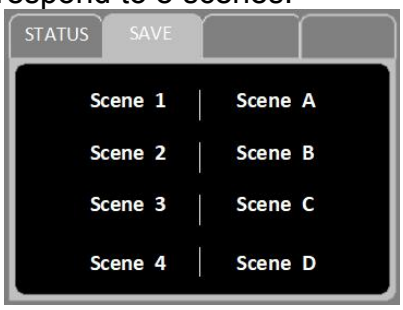
Select HDMI Output Resolution

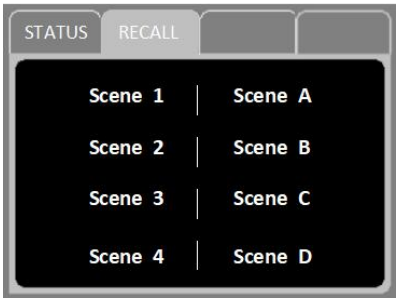
Press **MENU + 4 + A/B/C/D**(correspond to 4 outputs) **+ 1/2/3/4/A/B/C/D**(correspond to 8 resolutions) **+ Enter.**



Save Scenes

Press **SAVE + 1/2/3/4/A/B/C/D +Enter** to save current display scene.
1/2/3/4/A/B/C/D correspond to 8 scenes.



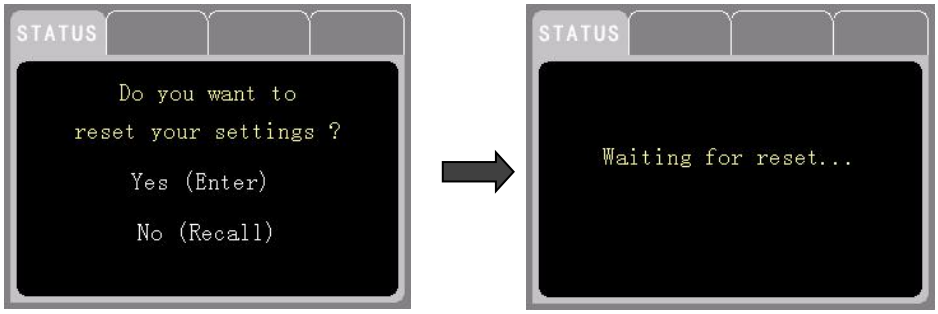


Recall Scenes

Press **RECALL+ 1/2/3/4/A/B/C/D + Enter** in sequence to recall a saved scene.
1/2/3/4/A/B/C/D correspond to 8 preset scenes.

Reset Setting

Press and hold **ENTER** button for 5 seconds to select whether to restore it to factory settings.

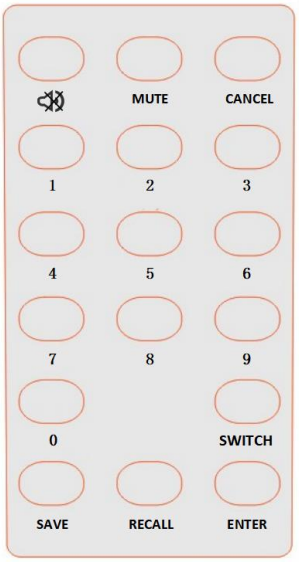


4.2 REAR PANEL

No.	Menu	Function
1	**Input 1- Input 4**	HDMI input interface 1, 2, 3, 4, resolution up to 4K30hz
2	**Output 1- Output 4**	HDMI output interface 1, 2, 3, 4, resolution up to 4K30hz
3	**Output Audio 1-4**	4 Audio output interfaces, 4 x 3.5mm earphone output
4	**Input USB 1- 4**	4 USB input interfaces for KVM control
5	**RJ45**	WebUI control via this RJ45 interface.
6	**Power port**	6W, 12V（DC)

Notes: The analogue audio output ports are tied to corresponding HDMI ports.

5. IR REMOTE CONTROL

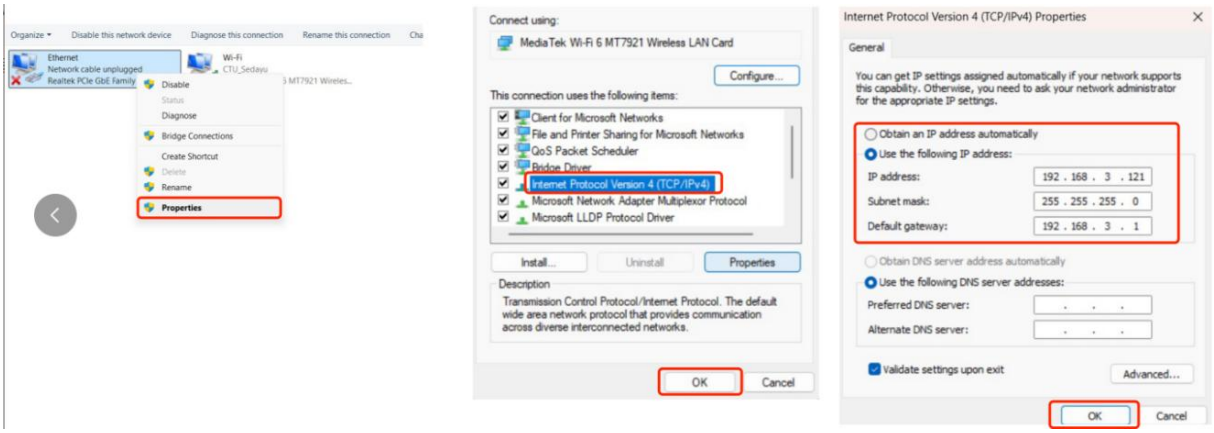


Button	Function
1/2/3/4/5/6/7/8/9/0	Select input or output source.
SWITCH	Matrix Switching Switch input 4 to output 7: 4+SWITCH+7+ENTER
SAVE	Save Scene. Save scene 1: SAVE+1+RNTER
RECALL	Recall Scene. Recall scene 1: Recall+1+RNTER
ENTER	Confirm button
CANCEL	Operation cancellation button.
MUTE and	These 2 buttons are reserved for future use.

6. WEB GUI GUIDE

6.1 CONNECTION

1st Step: Connect the matrix with control computer via the **RJ45** port ethernet communication.
2nd Step: Get the matrix IP address (Press front panel button “MENU” and then number button **‘4’** to check the current IP address. (The factory default IP is 192.168.3.XXX (the last digit is not fixed)
3rd Step: Manually set the computer IP address, which needs to be in the same network segment as the matrix.



4th Step: Input the IP address into your browser on the PC. Input the password **‘admin’** and click **‘Login’** to enter Web GUI page.

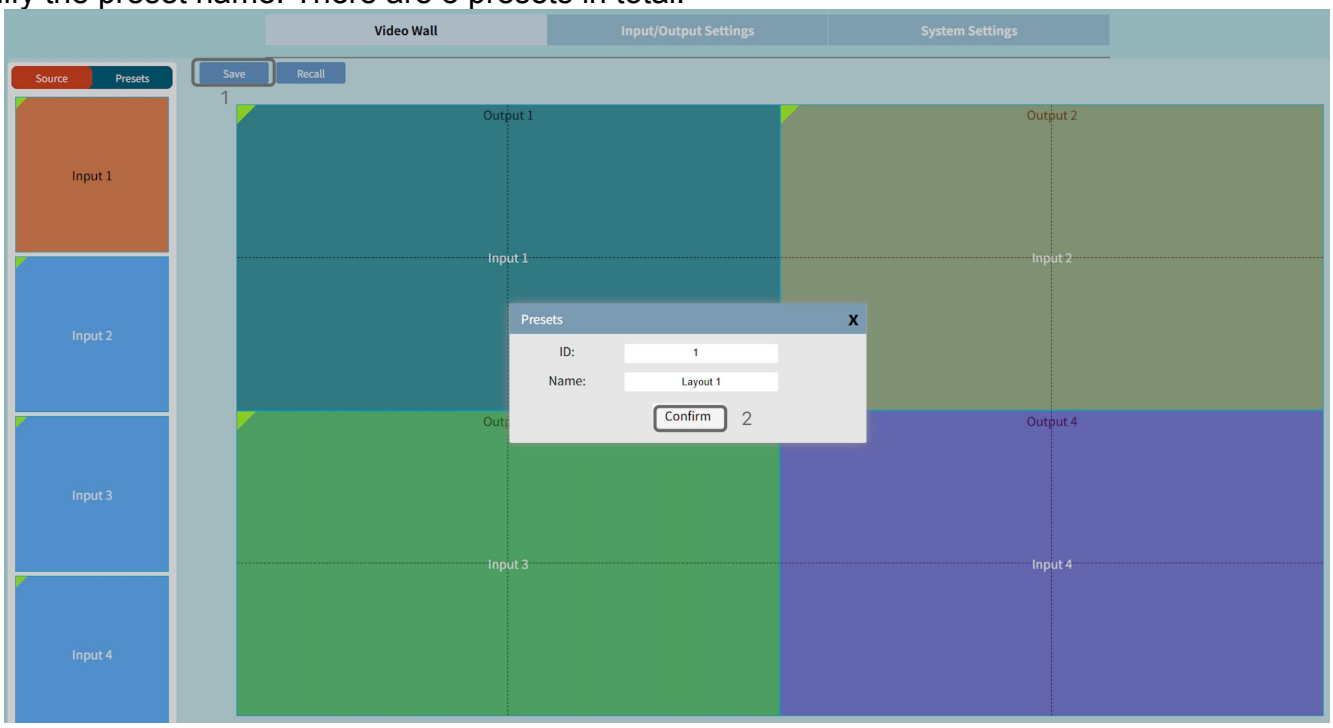
6.2 MATRIX SWITCHING

The left side is the input signal list (if a valid input signal is detected, the upper left corner will light up the green mark) . First select the input signal, then drag it to one or more outputs in the right area, finally release the mouse to complete the switching.

For example, switch input 1 to output 1 as shown below.

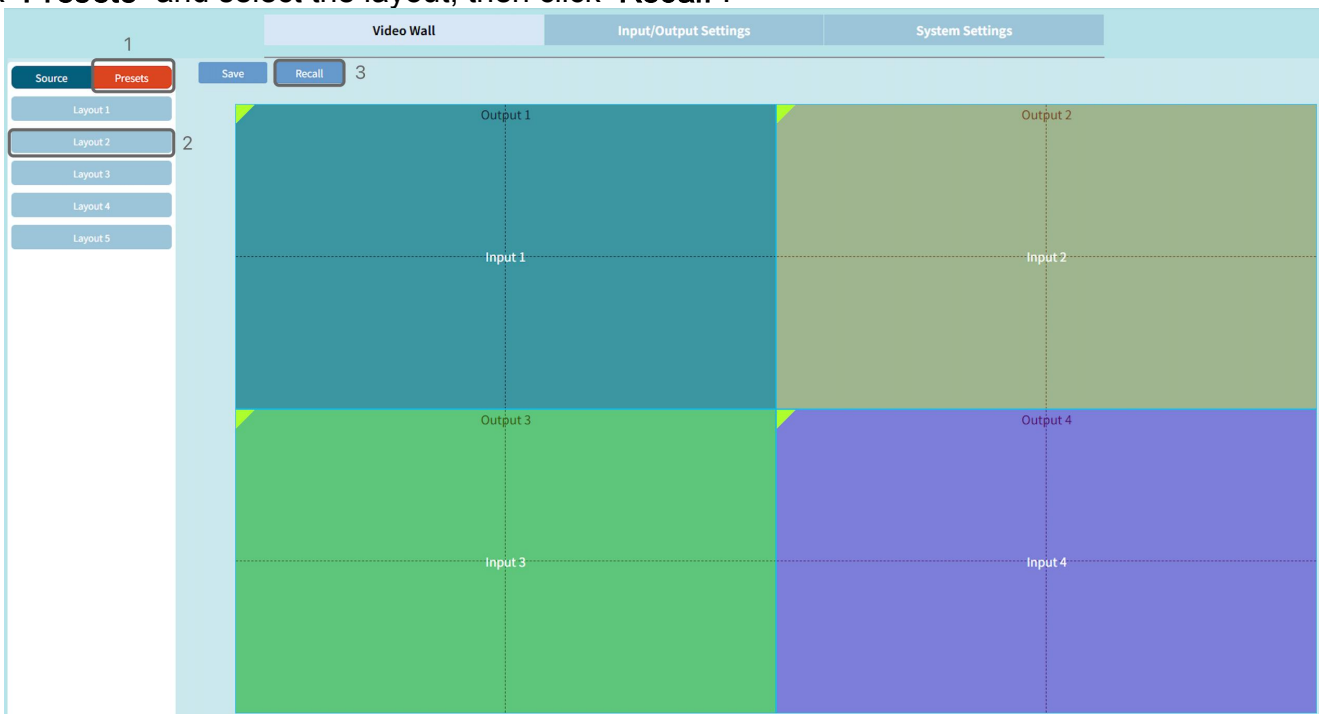
Preset Save

Click **'Save'** and then **'Confirm'** in the pop up menu to save current display layout. And the user can modify the preset name. There are 8 presets in total.

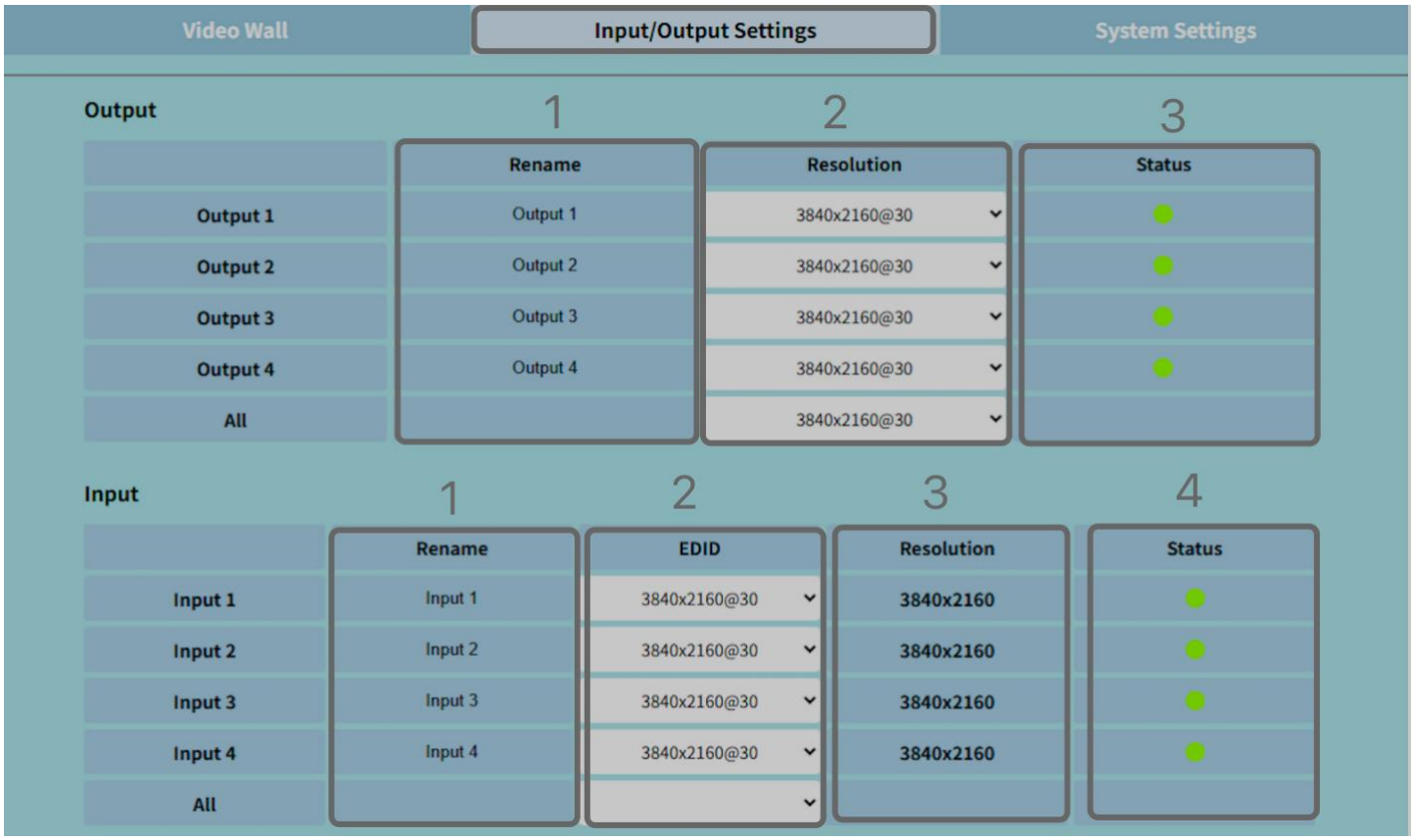


Preset Recall

Click **'Presets'** and select the layout, then click **'Recall'**.



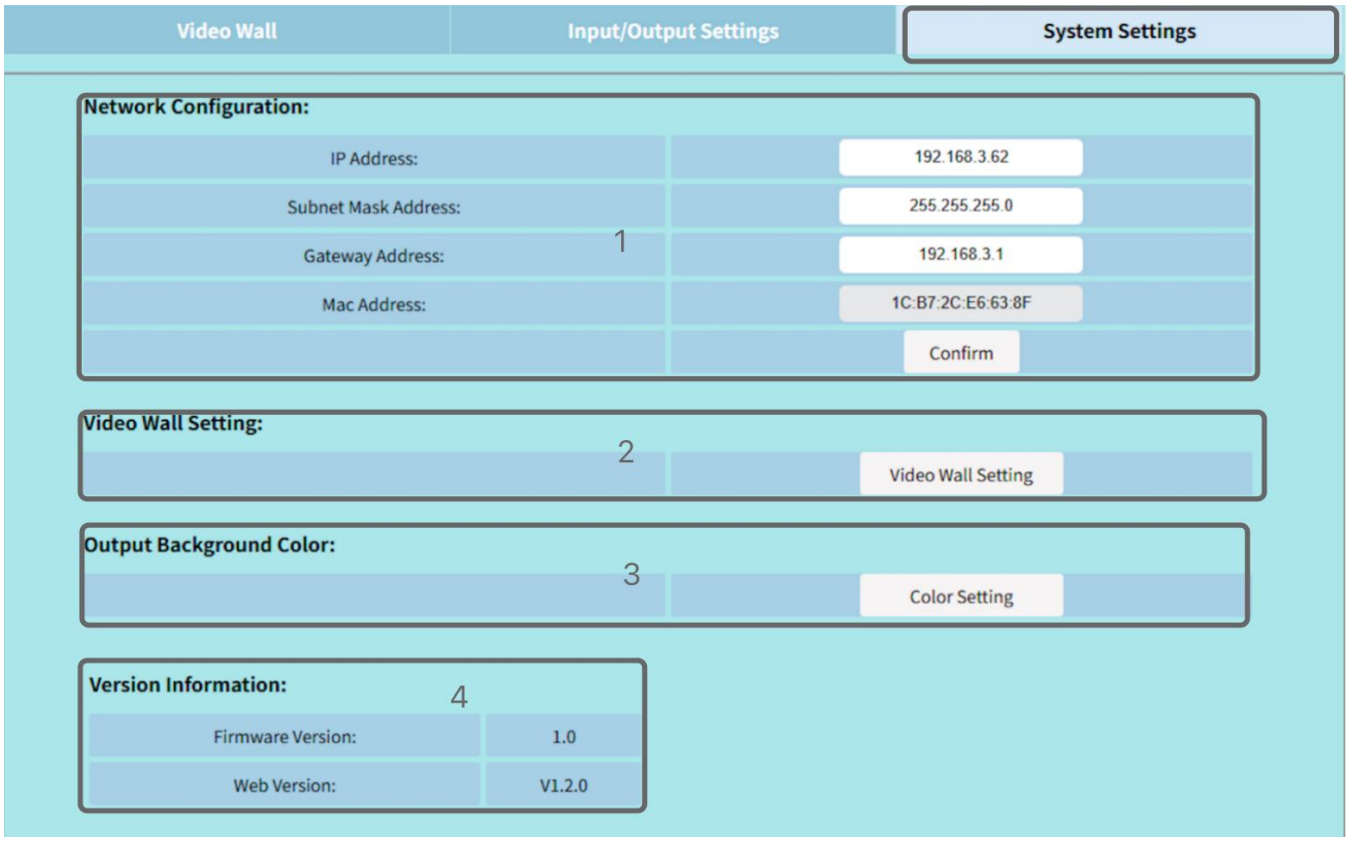
6.3 INPUTS AND OUTPUTS SETTINGS



1. Rename	Output channel name can be modified by this setting.
2. Resolution	Select the output resolution from the drop-down menu, which up to 4K30Hz. For the custom resolution setting details, please refer to **7.2**
3. Status	If a valid output signal is detected, the dot will be in green.

1. Rename	Input channel name can be modified by the setting.
2. EDID	Select EDID resolution from the drop-down menu.
3. Resolution	Automatically recognize the input source resolutions
4. Status	If a valid input signal is detected, the dot will be in green.

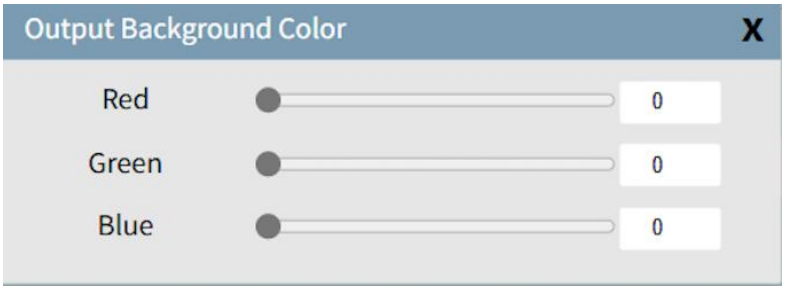
7.4 SYSTEM SETTINGS



1. **Network Configuration:** Set the IP address, gateway address and Mac address etc..

2. **Videowall Settings:** Pls refer to 7.3 for more video wall setting details.

3. **Output Background color:** The user can set the output background color when there is no source. Default background is black and the user can set any RGB combination colour value.



4. **Version information:** Show the Firmware version and Web Version.

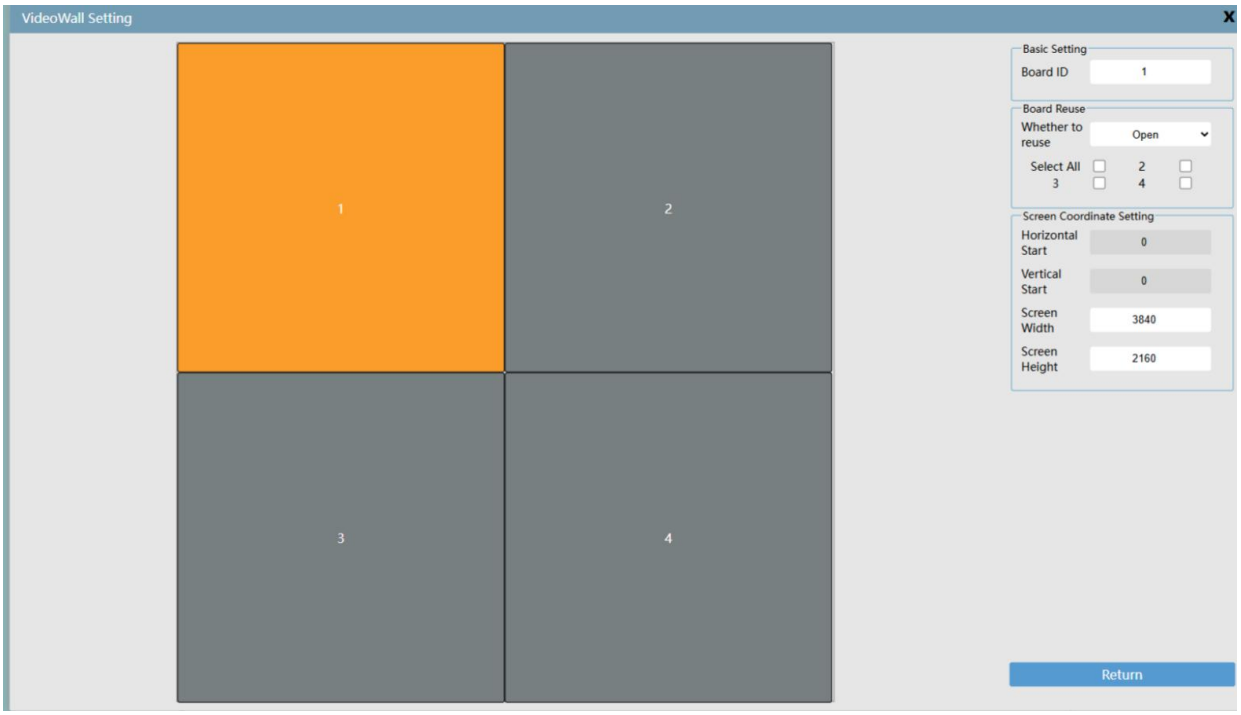
7. ADVANCED FUNCTIONS

7.1 MULTIVIEW SETTINGS

The user also can custom multi-view display layout by WebUI control.

Click **'System Settings'-'Videowall Setting'-'Board Setting,** then set the multi-view configuration.
Board ID: The board ID refers to the output ID. Select **'Board ID'** with '**1'** in this demo operation.
Whether to Reuse: Whether to copy output 1 multi-view layout to output 2/3/4.

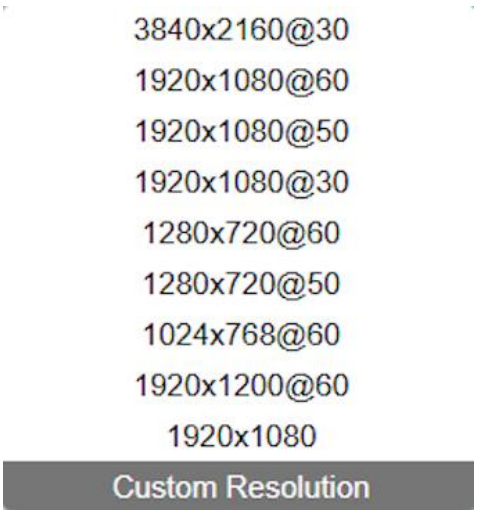
The user can modify width and height of the LED screen carried by each output port, as show below.
Click **'Return'** to start to use the multiview function.



Using the mouse to draw 1/2/3/4 boxes on output 1 to realize full /dual/ triple/quad-view
It supports up 4 video windows on a display at any size and any position.

7.2 CUSTOM OUTPUT RESOLUTION

The user can custom each output resolution under 3840x2160@30. Click menu '**Input/Output Settings**'- '**Custom Resolution**' from the output resolution drop-down menu and enter the settings as shown in the figure below right.



For example, custom an output resolution 3072x1536. Fill in the active pixels& total pixel.

Horizontal Active Pixel is **3072,** Vertical Active Pixel is **1536**

Horizontal Total Pixels**(3472)** = Horizontal Active Pixels(3072) + **400**

Vertical Total Pixels**(1600)** =Vertical Active Pixels(1536) + **64**

Note:

Horizontal Total Pixels ≈ Horizontal Active Pixels + any number from 400~560

Vertical Total Pixels ≈ Vertical Active Pixels + any number from 50~100

The user can modify other parameters according to the needs of the project.

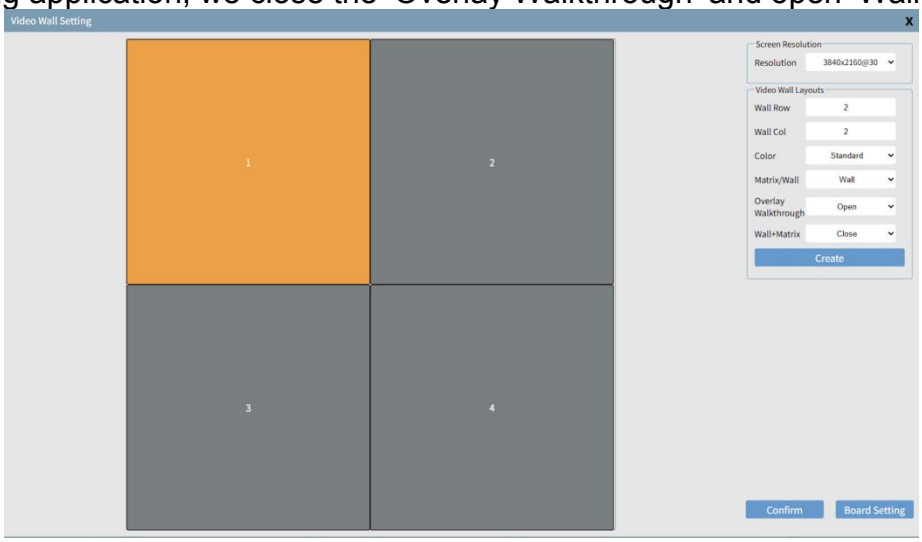
Click '**Confirm**' to save the customized resolution. Then the user can select this customized resolution in the output resolution drop-down box.

7.3 MULTIPLE LAYERS LED/LCD VIDEOWALL SETTINGS

2X2 LED/LCD Video Wall Setting

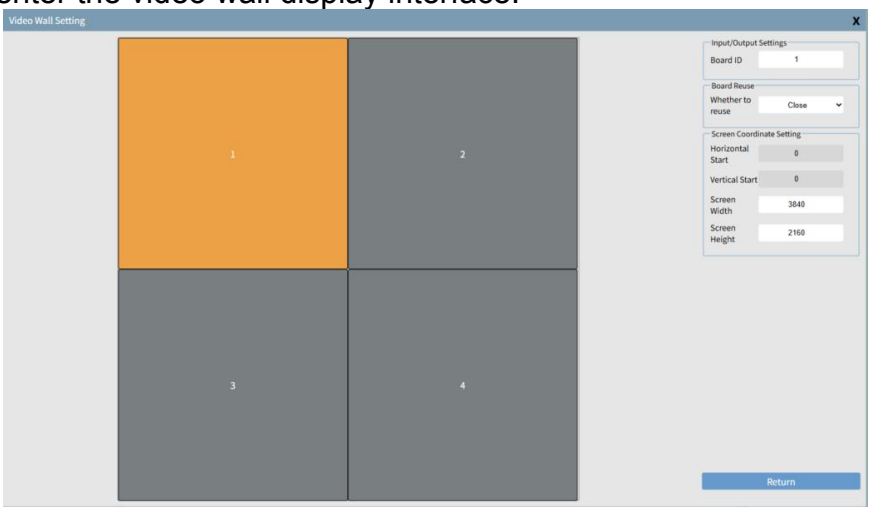
1. Click **'System Setting'**-**'Videowall Setting'** and select the **'Matrix/Wall'** type as **'Wall'.**
2. Fill in the Video Wall **Row** with **2 and Column** with **2**
3. Click **'Create'** and then **'Confirm'.**

Overlay Walkthrough: Multiple layers video wall and roaming operation.
Wall+Matrix: Matrix switching and 1 layer video wall operation.
For LED/LCD videowall application, we open the 'Overlay Walkthrough' and close 'Wall+Matrix'.
For matrix switching application, we close the 'Overlay Walkthrough' and open 'Wall+Matrix'.

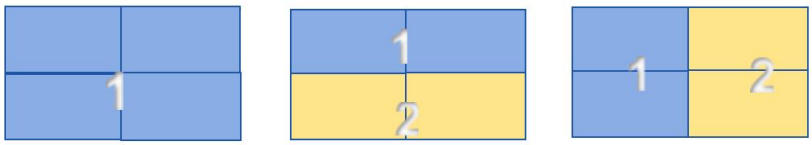


Click **'Board Setting'** to enter the setting interface as below.

1. The board ID refers to the output ID. The output ID 1,2,3,4 correspond to the output ports 1, 2, 3, 4 on the back of the unit.
2. **Whether to reuse:** It is a menu for Multiview setting. So we close it here.
3. For the LED Video wall, the user can set each output width, height, horizontal start and vertical start according to the display pixels.
4. Click **'Return'** to enter the video wall display interface.



Then the user can use it as a 1 layer window 2X2 video wall controller.
It supports a full image on a 2X2 video wall, or 2 groups 1X2 video wall or 2 groups 2X1.



1X3 LED/LCD Video Wall Setting

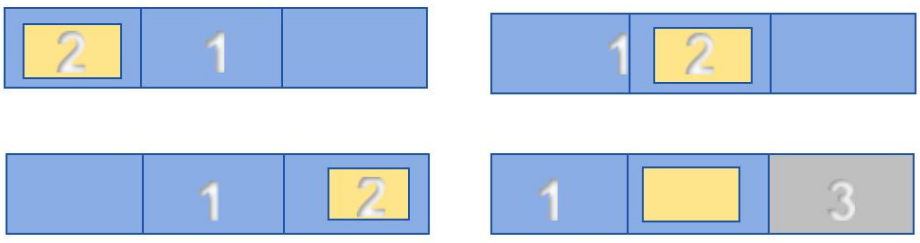
1. Click **'System Setting'-'Videowall Setting'** and select the **'Matrix/Wall'** type as **'Wall'.**
2. Fill in the Video Wall **Row** with 1 **and Column** with 3
3. Click **'Create'** and then **'Confirm'.**

Overlay Walkthrough: Multiple layers video wall and roaming operation.
Wall+Matrix: Matrix switching and 1 layer video wall operation.
For LED/LCD videowall application, we open the 'Overlay Walkthrough' and close 'Wall+Matrix'.
For matrix switching application, we close the 'Overlay Walkthrough' and open 'Wall+Matrix'.

Click **'Board Setting'** to enter the setting interface as below.

1. The board ID refers to the output ID. The output ID 1,2,3,4 correspond to the output ports 1, 2, 3, 4 on the back of the unit.
2. **Whether to reuse:** It is a menu for Multiview setting. So we close it here.
3. For the LED Video wall, the user can set each output width, height, horizontal start and vertical start according to the display pixels.
4. Click **'Return'** to enter the video wall display interface.

Then the user can use it as a 1X3 video wall controller. It can open 1 more window on output 1- 3.



1X2 LED/LCD Video Wall Setting

1. Click **'System Setting'-'Videowall Setting'** and select the **'Matrix/Wall'** type as **'Wall'.**
2. Fill in the Video Wall **Row** with 1 **and Column** with 2.
3. Click **'Create'** and then **'Confirm'.**

Overlay Walkthrough: Multiple layers video wall and roaming operation.
Wall+Matrix: Matrix switching and 1 layer video wall operation.
For LED/LCD videowall application, we open the 'Overlay Walkthrough' and close 'Wall+Matrix'.
For matrix switching application, we close the 'Overlay Walkthrough' and open 'Wall+Matrix'.

Click **'Board Setting'** to enter the setting interface as below.

1. The board ID refers to the output ID. The output ID 1,2,3,4 correspond to the output ports 1, 2, 3, 4 on the back of the unit.
2. **Whether to reuse:** It is a menu for Multiview setting. So we close it here.
3. For the LED Video wall, the user can set each output width, height, horizontal start and vertical start according to the display pixels.
4. Click **'Return'** to enter the video wall display interface.

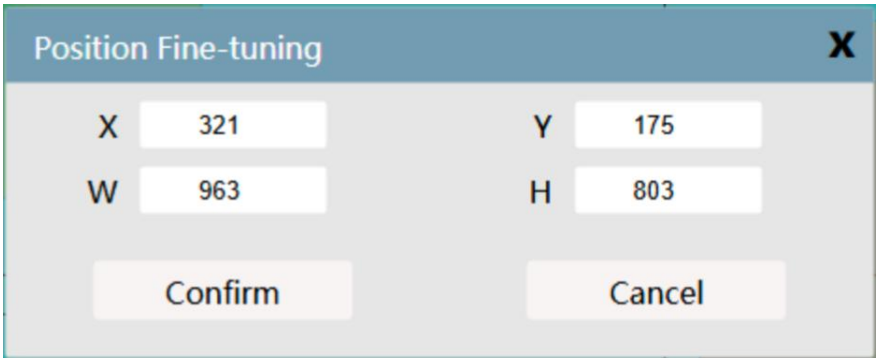
It can open 1 more window on both output 1 and output 2. Or open 2 more windows on output 1 or 2.

Notes: Please contact our sales representatives if you want to know more Video wall setting details.

Video Wall Display Interface

1. Clear	Clear all input video windows
2. Lock Inputs	Lock a video window and then the user can open another windows on it.
3. New 2x2	Quickly set a single output with Quad-view display. When the user set the output 1 as '**New 2x2**', it will be a quad-view display layout and the output 2, output 3 and output 4 will have no images.

Click ☐ in the upper right corner of the window to maximize the window.
Click X in the upper right corner of the window to close the window.
Click 📍 in the upper right corner of the window for position fine-tuning.



X: Horizontal start (pixel)
Y: Vertical start (pixel)
W: Window width (pixel)
H: Window height (pixel)

8. RS232 CONTROL PROTOCOLS

Please contact our sales representatives if you need the full protocols list.

COM port protocols
Baud rate: 115200 preset
Data bit: 8bits
Stop bit: 1bit
Check Digit: None

Switching Protocols			
Single Channel Switching			
PC to Matrix	Function	Matrix to PC	Example
[X1]V[Y1].	Single input [X1] to output [Y1]	V:[X1]->[Y1]!	1V1.
Multiple Channels Switching			
PC to Matrix	Function	Matrix to PC	Example
[X1]V[Y1],[Y2].	Input [X1] to [Y1],[Y2]	V:[X1]->[Y1],[Y2] !	1V1,2,3.
[X1]All.	Input [X1] to All	[X1]A/V TO All!	1All.
All#.	All inputs to corresponding outputs	All A/V Through!	All#.
Close Single Output			
PC to Matrix	Function	Matrix to PC	Example
0V[Y1].	Close output [Y1]	V:OFF->[Y1]!	0V1.
Close Multiple Outputs			
PC to Matrix	Function	Matrix to PC	Example
[Y1], [Y2]V$.	Close outputs [Y1] and [Y2]	V:OFF->[X1],[X2]!	1,2,3V$.
All$.	Close all outputs	All A/V Closed!	All$.
Scene Protocols			
PC to Matrix	Function	Matrix to PC	Example
Save[N].	Save the Scene N	Save To F[N]!	Save1.
Recall[N].	Recall the Scene N	Recall From F[N]!	Recall1.
Clear[N].	Delete the Scene N	Clear F[N]!	Clear1.
		A:[X1]->[X2]!	
		……	
Setting Protocols			
PC to Matrix	Function	Matrix to PC	Example
/:BellOff;	Turn off the buzzer	Bell Off!	/:BellOff;
/:BellOn;	Turn on the buzzer	Bell On!	/:BellOn;
/:BR[X4];	Set the baud rate	Baudrate: 9600!	/:BR9600;

Switching protocols in hexadecimal:
0 to 9 corresponding 30 to 39
A: 41 V: 56 I: 6C .: 2E
For example:
1V1. hexadecimal : 31 56 31 2E
2V5. hexadecimal: 32 56 35 2E
6V12. hexadecimal: 36 56 31 32 2E
15VAll. hexadecimal : 31 35 56 41 6C 6C 2E

9. SPECIFICATION

Product Name	**4x4 4K30Hz Multipurpose Seamless HDMI Matrix Switcher**
Model	**AMVW-0404K3G**
Video In	4 x HDMI TypeA Female
Video Out	4 x HDMI TypeA Female
Audio Output	4 x 3.5mm Earphone Output
HDMI Version	HDMI1.4, HDCP1.4
Band Width	10.2Gbps
Input video resolution	800x600@60Hz,1024x768@60Hz, 1280x768@60Hz,1280x800@60Hz, 1280x1024@60Hz,1360x768@60Hz,1366x768@60Hz,1400x1050@60Hz, 1440x900@60Hz,1600x1200@60Hz,1680x1050@60Hz, 1920x1200@60Hz. 480p,576p,720p,1920x1080i,1920x1080p,3840x2160@24Hz/25Hz/30Hz
Output video resolution	3840x2160@30Hz, 1280x720@60Hz, 1920x1080@60Hz, 1280x720@50Hz, 1920x1080@50Hz, 1024x768@60Hz, 1920X1080@30Hz, 1920x1200@60Hz **Support custom resolution under 3840X2160@30Hz.**
Video Wall	LED and LCD video wall
Multiple layers Video Wall	Multiple layers video wall is available for 3/2 outputs setting.
HDMI Amplitude	T.M.D.S +/- 0.4Vpp
Differential Impedance	100±15ohm
Control Method	Front panel buttons, IR remote, WebUI and RS232 command.
Baud rate and protocol	Baud rate: 115200, Data bits: 8, Stop bit: 1, no parity bit
Browser	IE10.0+,HTML5
Consumption/Voltage	6W(Max.) / 12V,1A
Dimension(mm)	440(L)X160(W)X45(H), 1U
Net Weight	1.5Kg
Operating temperature	-20 to 50°C
Storage Temperature	-20 to 70°C
Humidity	10%-70%

10. SYSTEM DIAGRAM