iWall M4

Modular Video Wall Controllers

User Manual V1.0

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1. INTRODUCTION

The **iWall M4** series video wall controller is a high-performance seamless switching video processing equipment for LCD and LED wall. Adopting pure-hardware FPGA architecture, it delivers high quality signal images and real-time videos. At the same time, it supports windows arbitrary layout, stretching, scaling, roaming and picture in picture. Furthermore, it employs modular design for personalized combination and future expansion, which is a reliable and flexible product for a video wall up to 76X72 (inputs x outputs) in meeting room, show room, command center and data center etc.

2. FEATURES

- 4 windows (layers) on each display
- 4K60Hz signal input
- Multiple video wall groups (up to 4x video walls)
- Signal preview and monitoring
- High resolution background image
- Scrolling text function
- Text overlay on the input source
- With touch screen on the front panel
- Supports redundant PSU (Power Supply Unit)
- Supports RS232, IP and Web GUI controls
- Supports input signals renaming, cropping, text overlay.
- Support Full HD, 4K UHD inputs and Full HD outputs
- Supports multiple formats inputs and outputs such as HDMI, DisplayPort, DVI, IP streaming
- Supports max. 76X72 inputs x outputs
- Supports both LCD and LED video wall
- Supports windows arbitrary layout, stretching, scaling, roaming and picture in picture
- Supports presets save, recall and auto-cycle
- Supports user’s role management
- Supports IP camera decoding and streaming
- Supports videowall ON/OFF control
- Supports Bezel Compensation
- Supports drag-and-drop video layers operation
- Supports firmware upgrade
- Pure-hardware design, without Windows OS vulnerability, virus risks, bluescreen errors

- Supports seamless switching input signals
- Supports adaptive input/output slots

3. PACKAGE LIST

1x iWall M4 Modular videowall controller

1x AC Power Cord

1x USB TO RS232 Cable

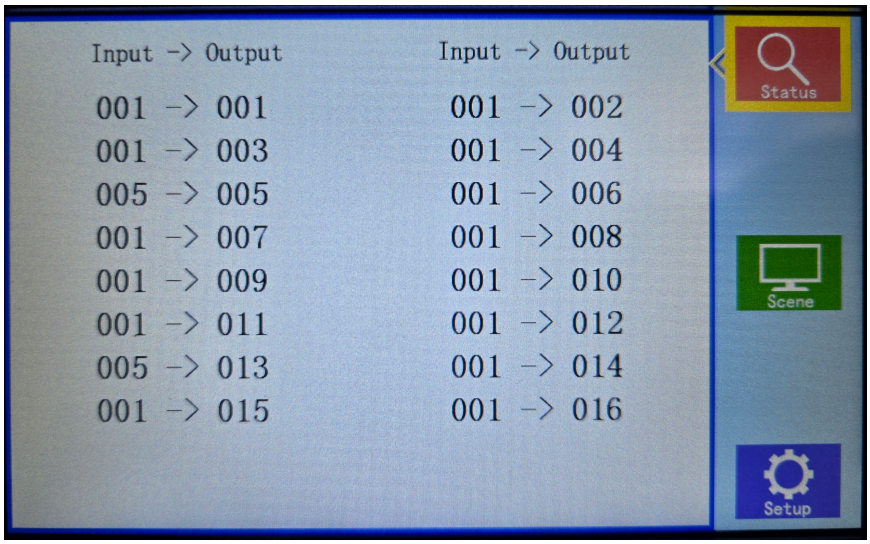
4. HARDWARE

4.1 FRONT PANEL

Example: ***iWall M4-C1609***

There is one touch screen on each model front panel. When the user power on the **iWall M4** or the screen is not be touched for 12 or more seconds, the screen then displays the following splash image.

Touch the screen, and the following interface pops up.



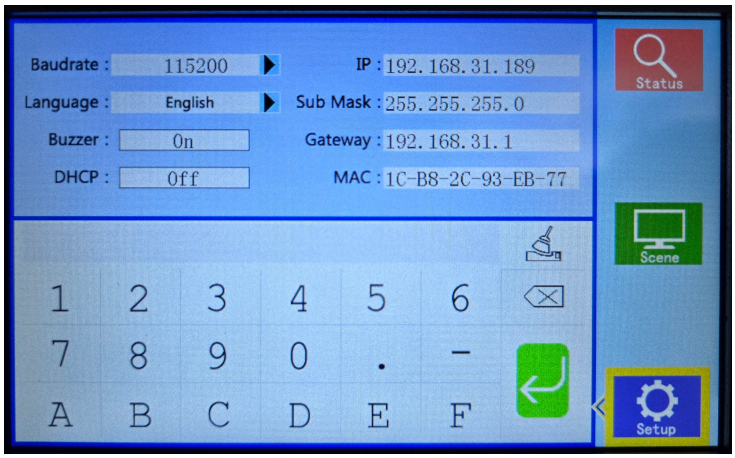
Status

The user can see the correspondence between inputs and outputs.

Scene

Touch the number and then **‘Recall’** menu to recall the saved scene.

e.g. Click the number **‘3’** and then **‘Recall’** to enable the scene 3.



Setup

[Baud rate]: There are 4 baud rate options, **4800, 9600,19200 and 115200**.

[Language]: There are two language options, **Chinese and English.**

[Buzzer]: Turn on or off the buzzer sound when operating the device.

[DHCP]: Turn on or off the IP automatic search of the device control port.

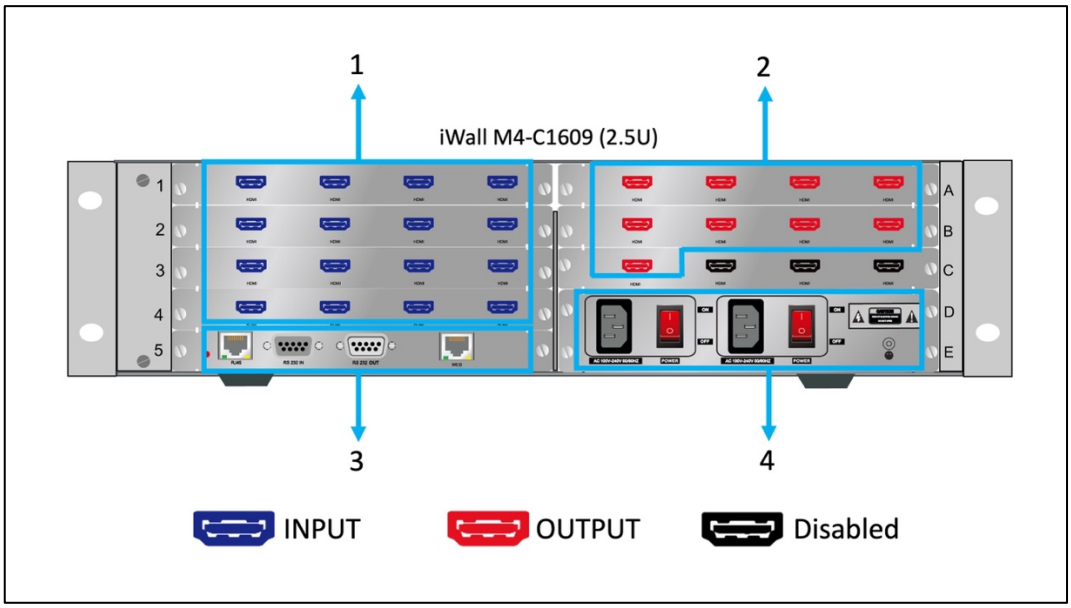
[IP]: Modify the fixed IP

[Subnet mask]: Modify the subnet mask

[Gateway]: Modify the gateway

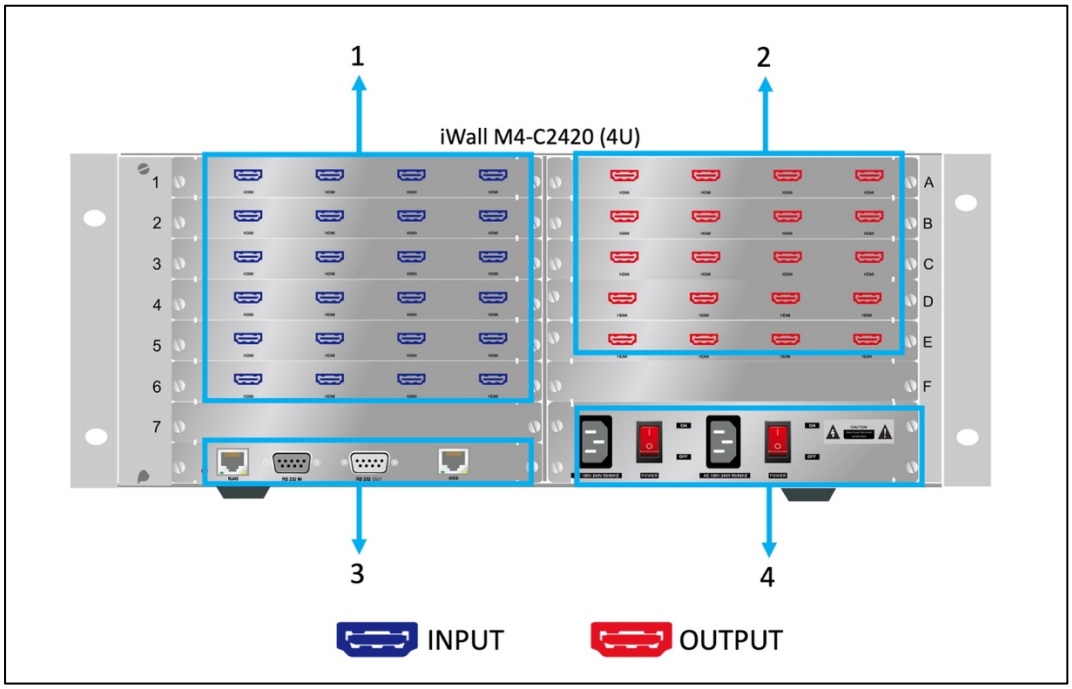
[MAC address]: View MAC address

4.2 REAR PANEL



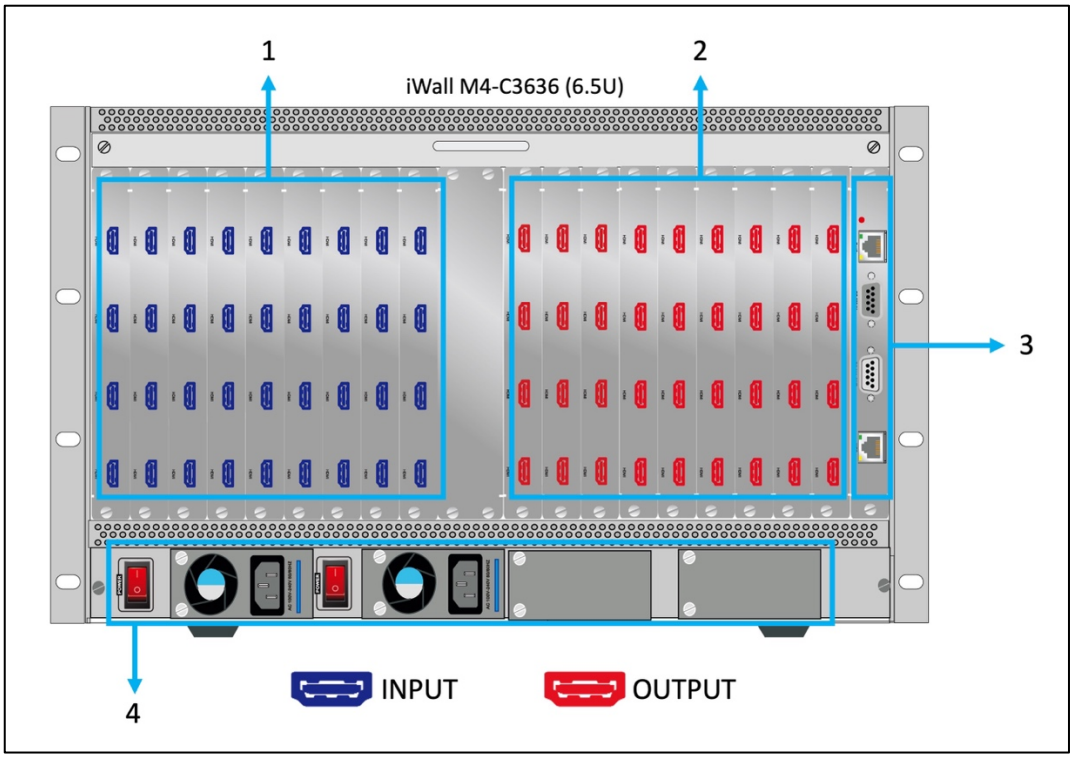
Model: iWall M4-C1609

1	INPUT Ports	Input interfaces to be connected with external signals.
2	OUTPUT Ports	Output interfaces to be connected with video wall displays.
3	Control Card	1x RJ45 Control, 1x RS232 IN, 1x RS232 OUT, 1x RJ45 WEB
4	Power Supply	AC100~240V 50/60Hz, Redundant power supply



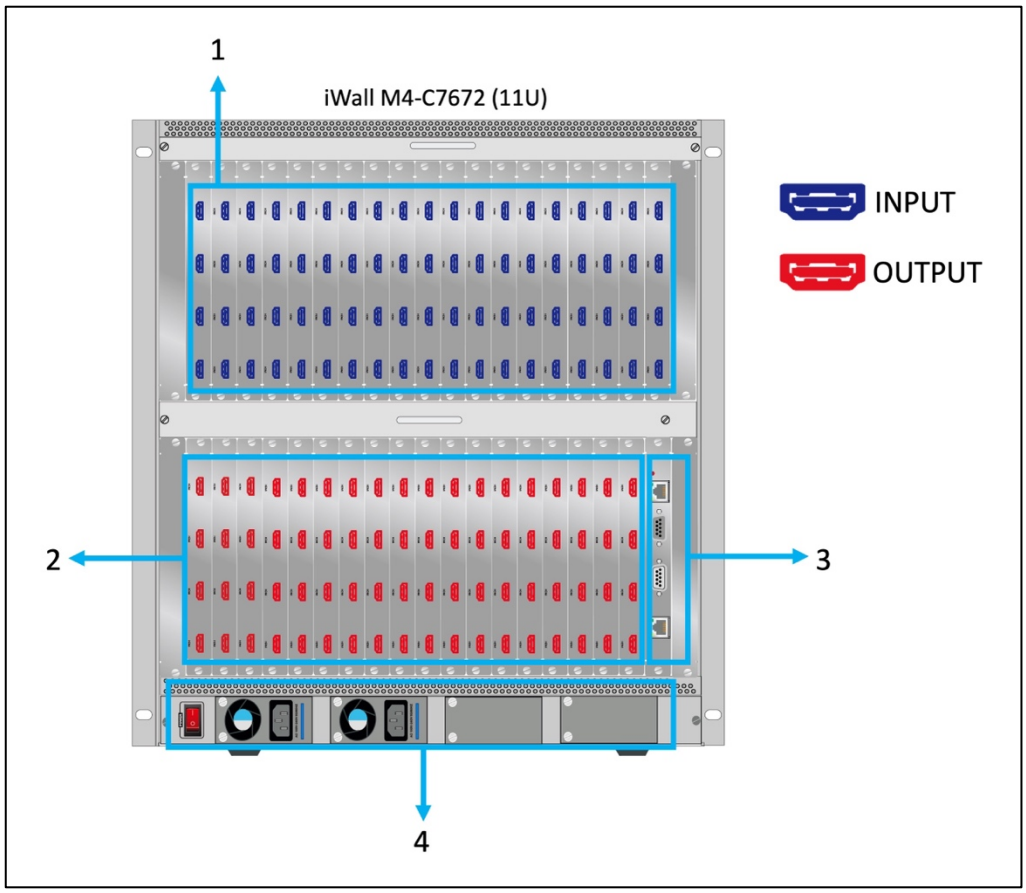
Model: iWall M4-C2420

1	INPUT Ports	Input interfaces to be connected with external signals.
2	OUTPUT Ports	Output interfaces to be connected with video wall displays.
3	Control Card	1x RJ45 Control, 1x RS232 IN, 1x RS232 OUT, 1x RJ45 WEB
4	Power Supply	AC100~240V 50/60Hz, Redundant power supply



Model: iWall M4-C3636

1	INPUT Ports	Input interfaces to be connected with external signals.
2	OUTPUT Ports	Output interfaces to be connected with video wall displays.
3	Control Card	1x RJ45 Control, 1x RS232 IN, 1x RS232 OUT, 1x RJ45 WEB
4	Power Supply	AC100~240V 50/60Hz, Redundant power supply



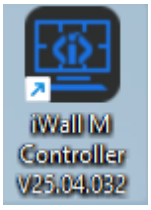
Model: iWall M4-C7672

1	INPUT Ports	Input interfaces to be connected with external signals.
2	OUTPUT Ports	Output interfaces to be connected with video wall displays.
3	Control Card	1x RJ45 Control, 1x RS232 IN, 1x RS232 OUT, 1x RJ45 WEB
4	Power Supply	AC100~240V 50/60Hz, Redundant power supply

5. SOFTWARE

5.1 SOFTWARE INSTALLATION

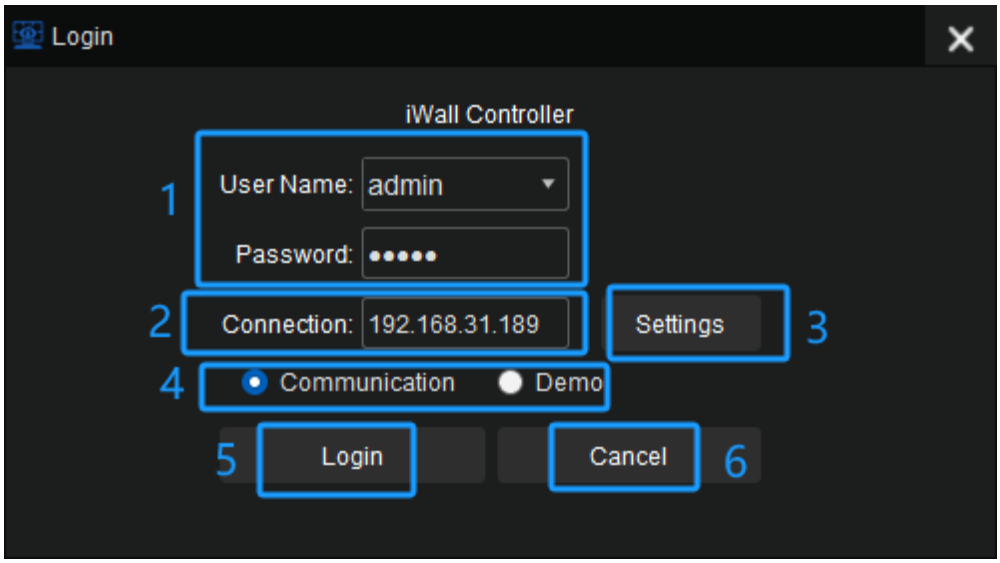
Please visit www.infobitav.com/iwall-m4 to download the controller software and install. The **iWall M Controller Software** is Microsoft Windows based.



After installation, double-click the shortcut to run the software.

5.2 LOG IN AND SETTINGS

5.2.1 LOG IN



Run the control software **“iWall M4 Video Wall Controller Software V25.3.18 or latest version”.**

1: Log in using the default account settings. Username: **‘admin’**, password: **‘admin’.** Or select **User** and input **User’s password** which is setup in the software by the Admin.

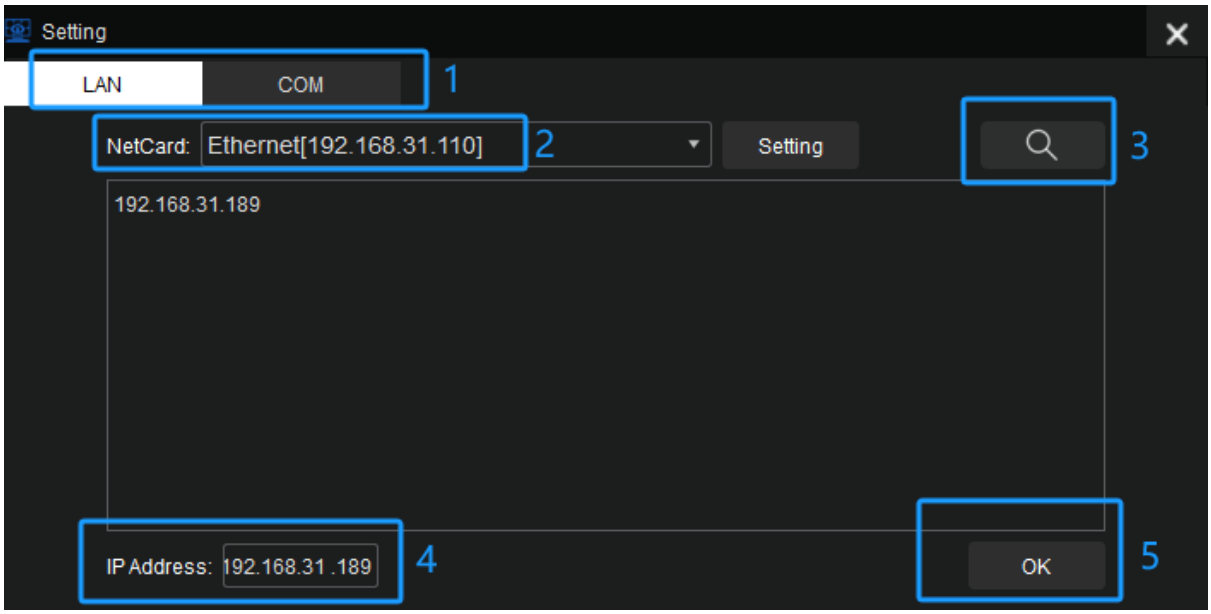
2: Here list the **iWall M4 IP address**.

3: Click the button **‘Settings’** to set the connection.

4: Check **Communication** to control the **iWall M4** or check the **Demo** to try the software offline if you need to make brief training or demo.

5: Click **Login** to enter the software

6: Click **Cancel** to quit your operation.



1: Select connection methods via **LAN** or **COM**.

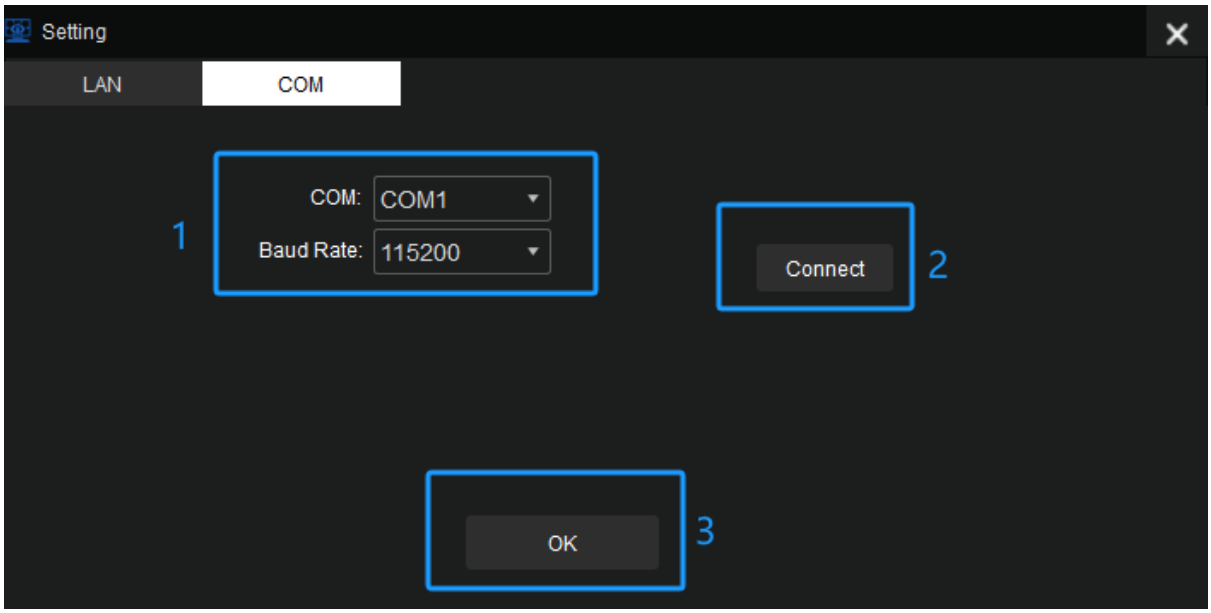
2: Select your control PC IP address, please make sure select the right IP address which is in the same Sub Network with the **iWall M4** IP. For example, the iWall M4 IP address is **192.168.31.189**, then the control PC IP should be **192.168.31.xx.**

The IP address can be checked or changed via the hardware touch panel on the front panel.

3: Click the **Search** button to automatically detect the **iWall M4** address and select.

4: Here will list the right IP address of **iWall M4** you selected.

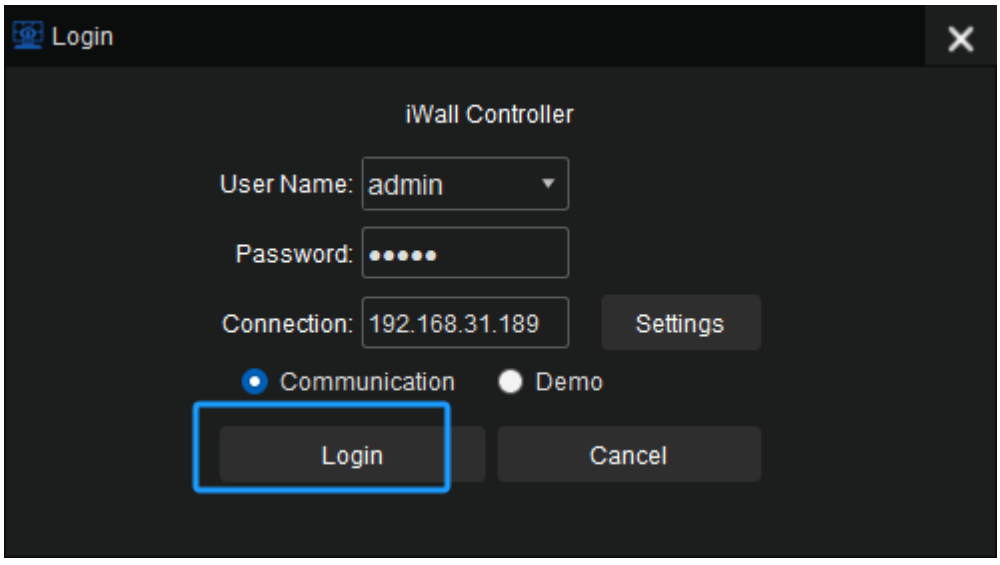
5: Click **OK** to connect.



1: Select the **COM** port. Select the right **Baud Rate** which can be checked or changed via the touch panel on the **iWall M4** front panel.

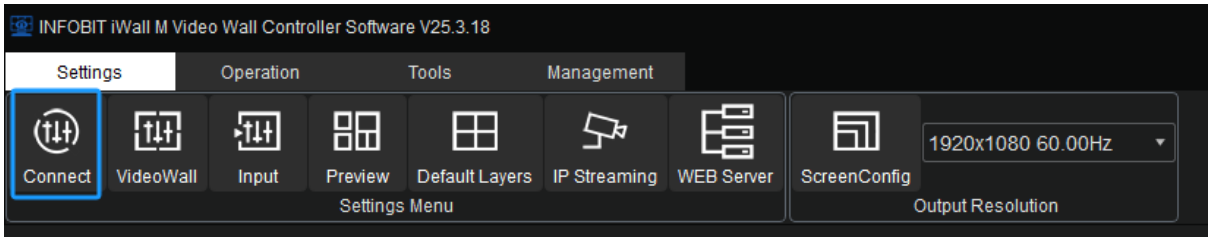
2: Click **Connect** to start connection.

3: Click **OK** to confirm.

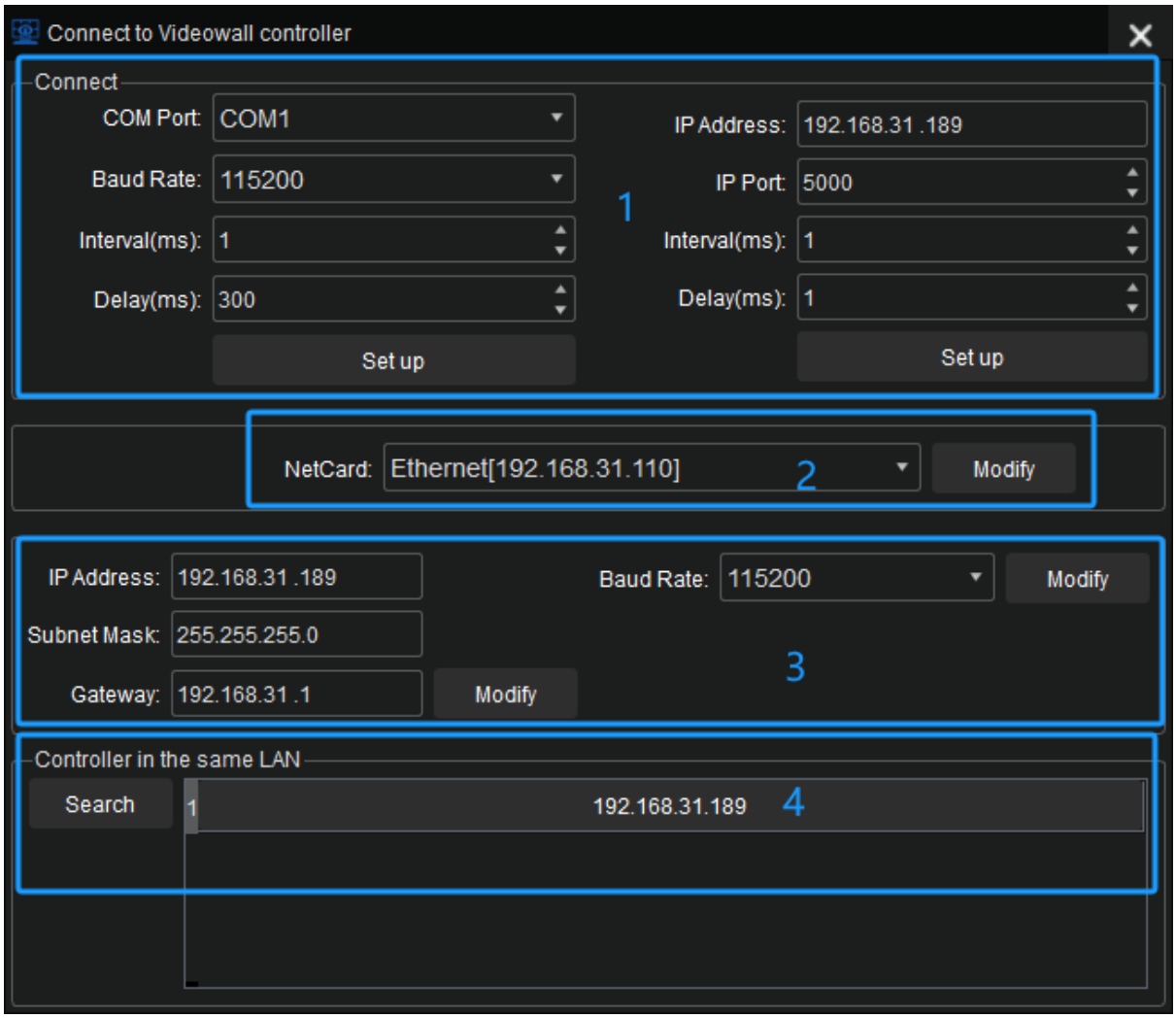


Then click **Login** button to enter the software. Shown as above.

5.2.2 Connect settings



To configure the connection settings. Click the **'Connect'** icon in the top navigation bar.



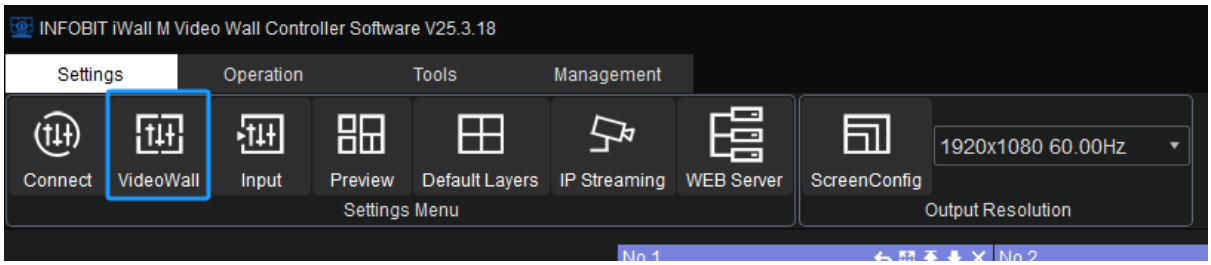
1: Choose to connect by **network** or **serial port**, enter relevant information, then click **'Set up'.** Then restart the software.

2: Setup the local IP address of the control PC.

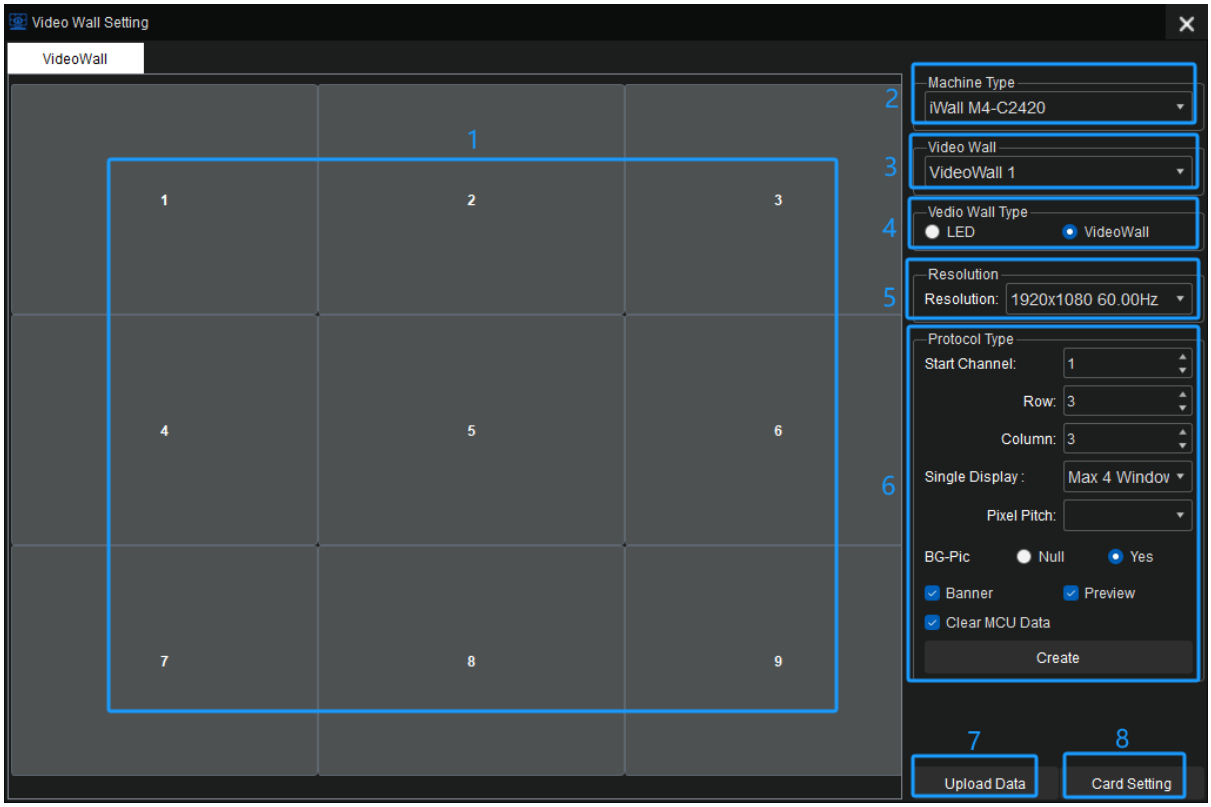
3: **Setup the iWall M4 IP Address:** The IP address of the unit can be set statically from the connection settings window as shown in figure below. Simply enter the desired IP address and then press **'Modify'.** This address also can be changed via the touch panel on the **iWall M4** front panel.

4: Click **Search** to automatically detect the IP address you have changed.

5.2.3 VideoWall



Click the **VideoWall** button to setup videowall layouts, resolution, and more.



1: Video Wall layouts canvas.

2: **Machine Type:** Select the right **iWall M4** models.

3: **Video Wall:** Setup the **videowall groups**, it supports max. 4 groups.

4: **Video Wall Type:** Supports either **LED** or **LCD** video walls.

5: **Resolution:** select the right video resolution of each display or LED receiving card.

6: **Protocol Type**

Start Channel: to select which layer channel starts for this video wall group. For example, if Videowall group #1 (2x2 four-display videowall, each display 4 windows layers, total will be 16x layers) take channel 1 to 16, then can setup group #2 start from channel 17. For only one videowall group, then select start channel 1 as default.

Row and Column: Setup the videowall layouts for this videowall group.

Single Display: select the video layers on each display.

Pixel Pitch: Set the pixel pitch of LED wall.

BG-Pic: Enable or Disable the **Blackground Picture**.

Banner: Enable the **scrolling text**.

Preview: Enable the input video signals previewing.

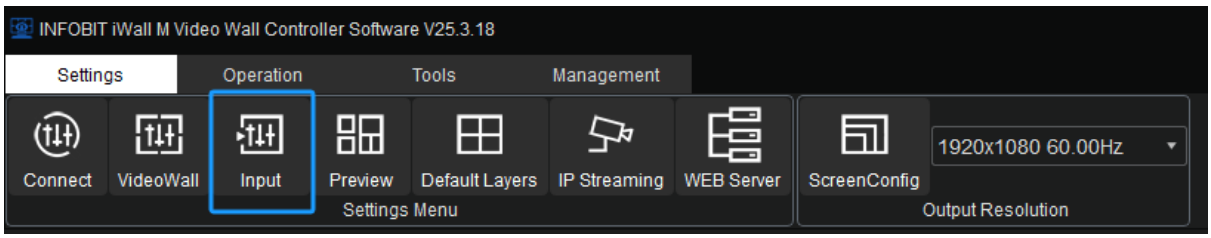
Clear MCU Data: To clear the MCU data.

Create: To create the desired videowall layouts temporarily.

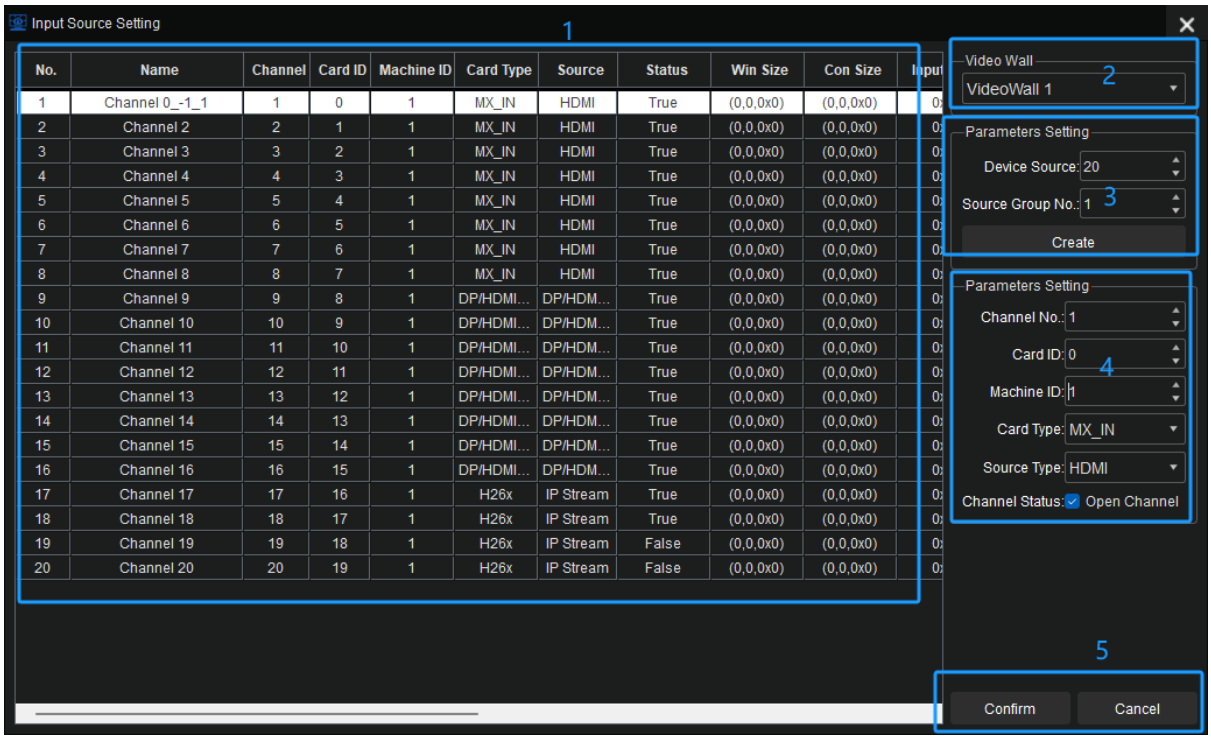
7: **Upload Data:** Click to upload your settings to the hardware to enable all settings. Note: This button must be clicked after creating the layouts, otherwise the setup will not take effect.

8: **Card setting:** to setup output cabling mapping or LED receiving card parameters.

5.2.4 Input



The user can set each card specification as shown below.



1: Check card input parameters.

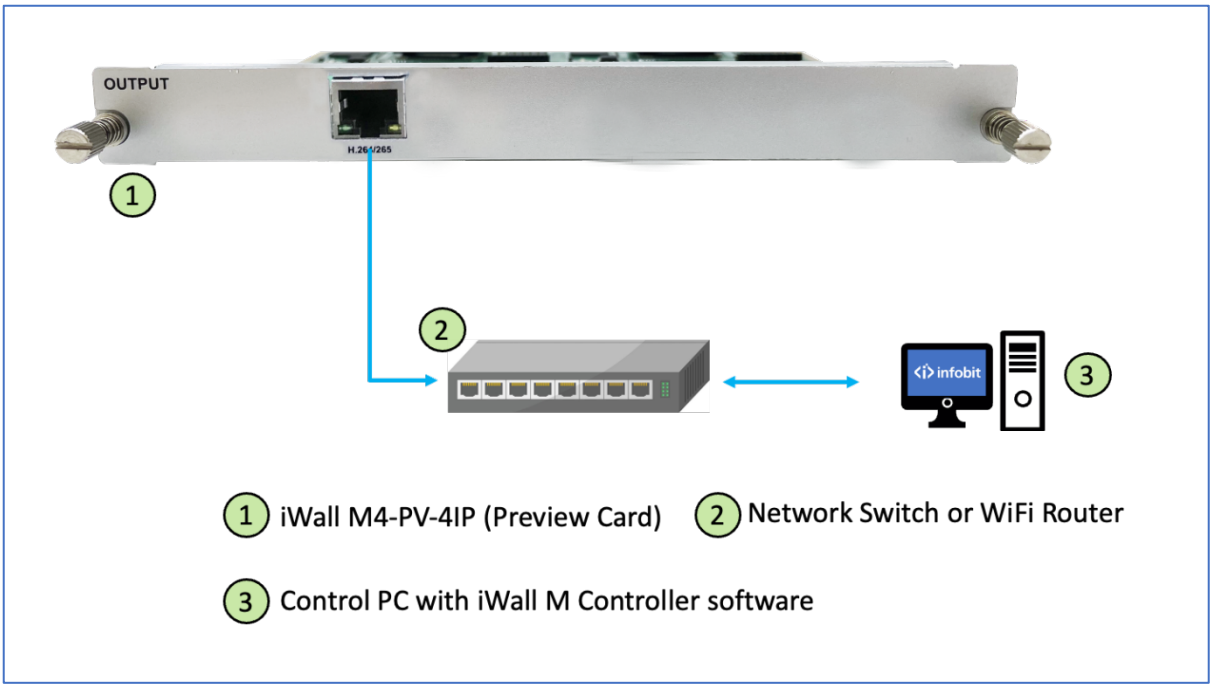
2: Select Video Wall group to setup.

3: Setup source group range and ID.

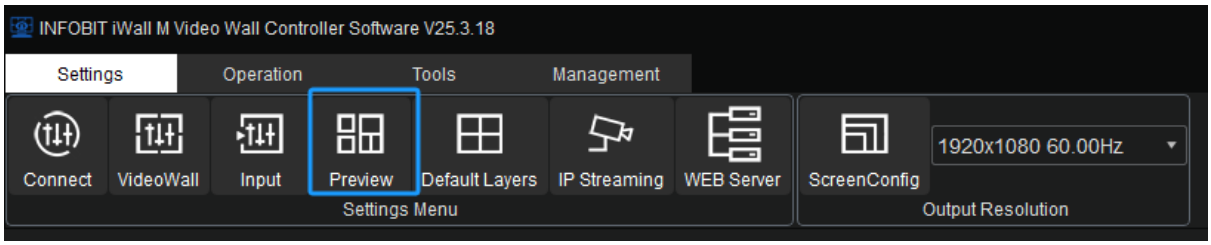
4: Setup Input channel ID, Open Channel means the selected input channel is enabled, uncheck this option means the selected input channel is disabled. This feature is used for the case of some port is failure and can be skipped by disabled.

5: Confirm or cancel the settings.

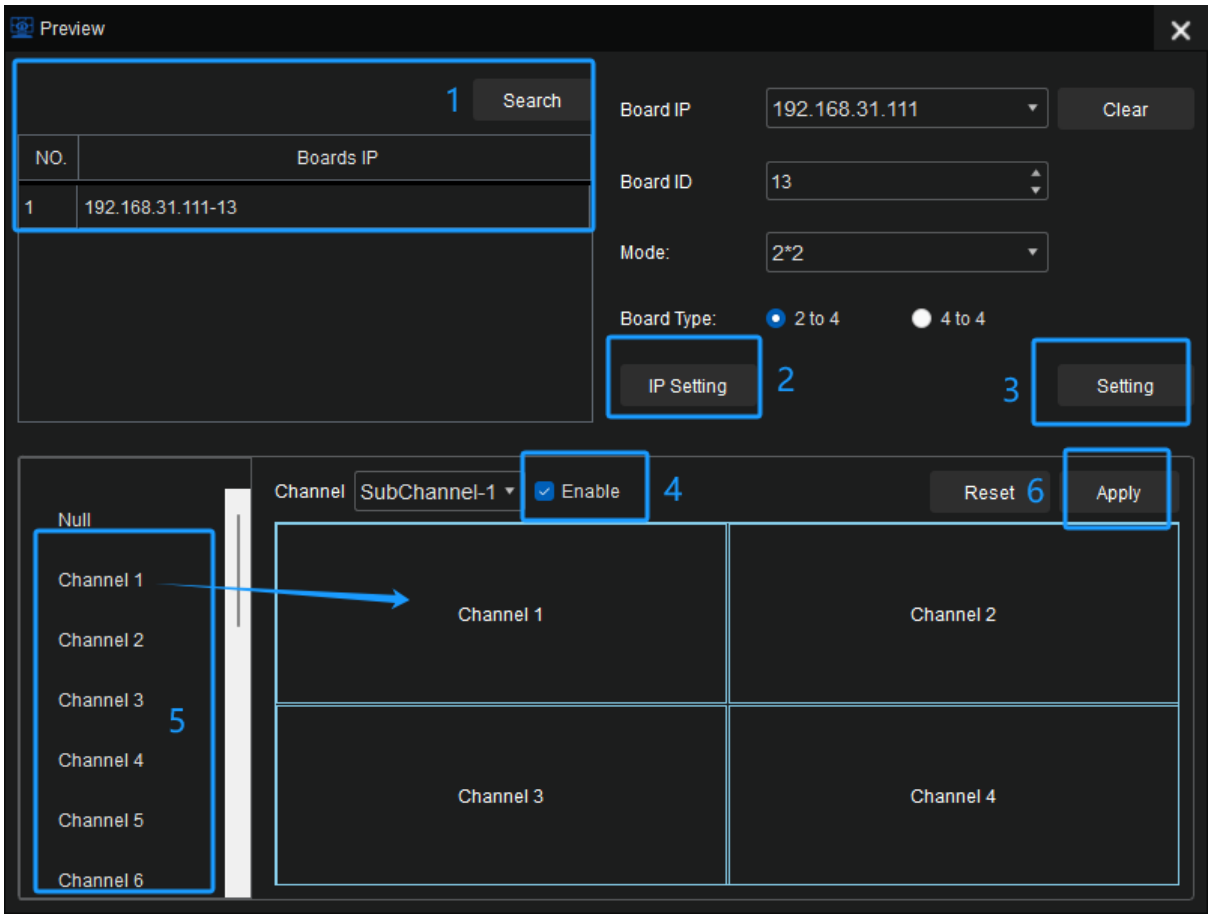
5.2.5 Preview



Before setting the preview function, please follow above diagram to connect the preview card with network switch or Wi-Fi router.



Click '**Settings**' - '**Preview**' in the navigation bar and following window pops up.



1: Search: Search the preview card IP address.

2: IP Setting: Modify the preview card IP address, gateway, etc.

3: Setting: Set the display mode to be active.

4: Enable: to enable the preview settings.

5: Drag and drop the input sources to the right-side canvas.

6: Apply: Click Apply to active the settings.

Clear: Clear the selected IP.

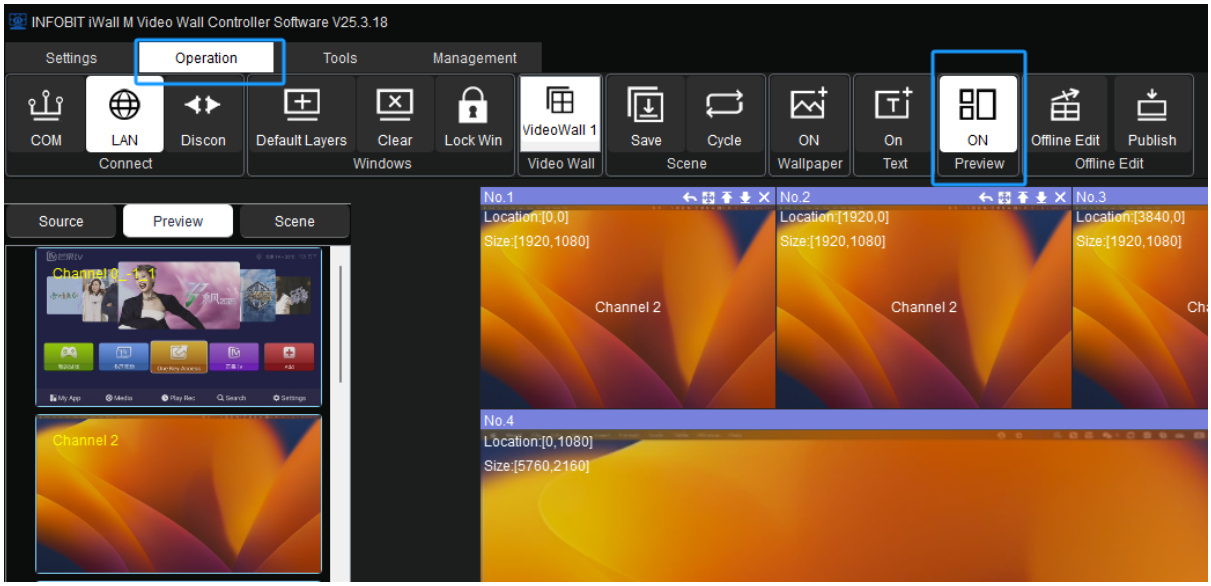
Board ID: Preview card ID.

Display mode: 1 * 2, 2 * 2, 3 * 3, 4 * 4. The 1*2 display mode is the smoothest, while the 4*4 display mode has a slight lagging effect.

Preview board type: 2 to 4 by default

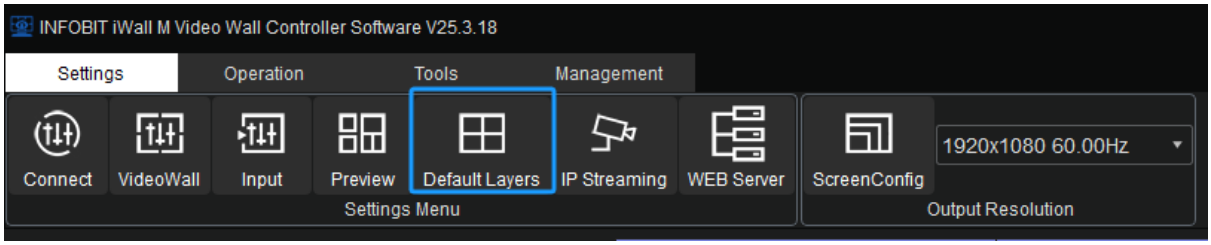
Channel: There are 4 sub-channels, and each sub-channel has 4 display mode options.

Reset: Clear all preset channels.

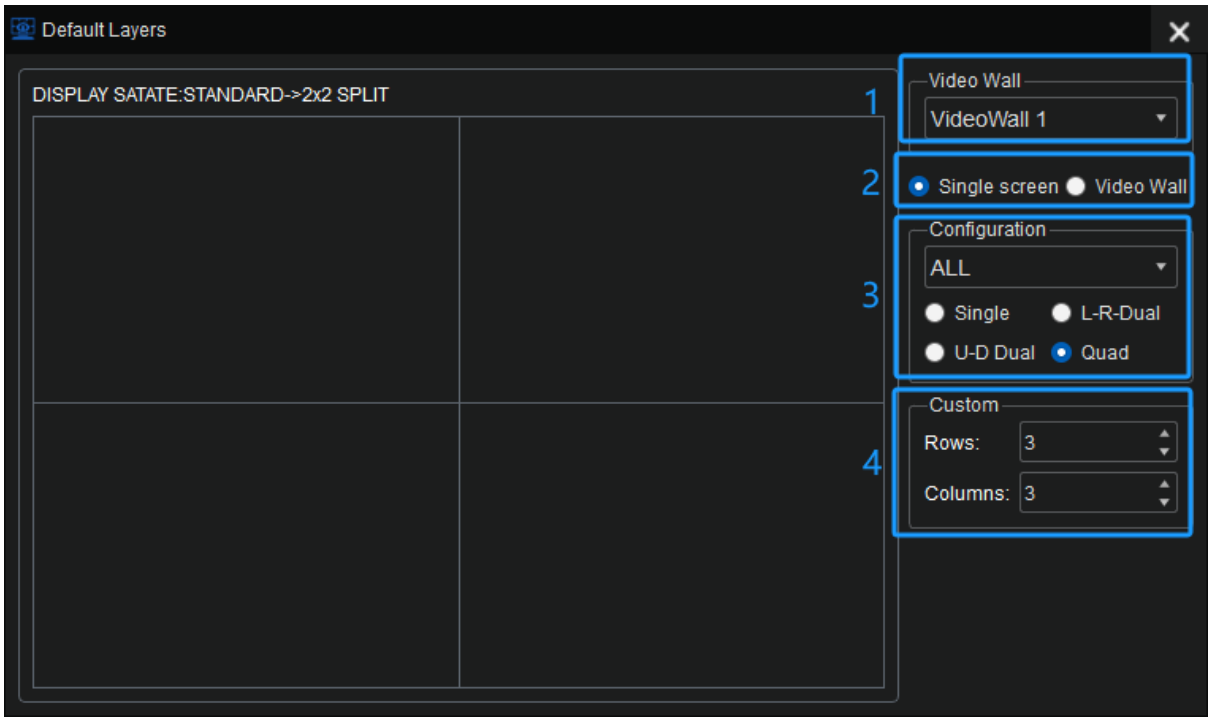


After settings, then go to **Operation→ Preview ON**, to turn ON the preview. See above picture.

5.2.6 Default Layers



The default Layers: it means user can setup shortcut for video layers on each single display or the whole video wall. Then user can open all video layers by just one-click operation.

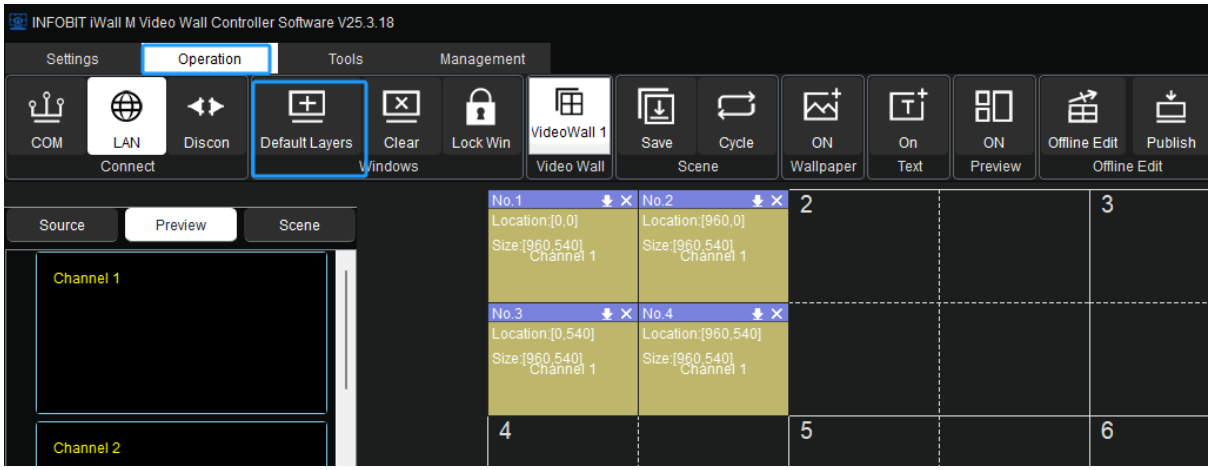


1: Video Wall: select videowall group to be setup.

2: Single screen: setup default layers for single display. **Video Wall:** setup default layers for the whole videowall.

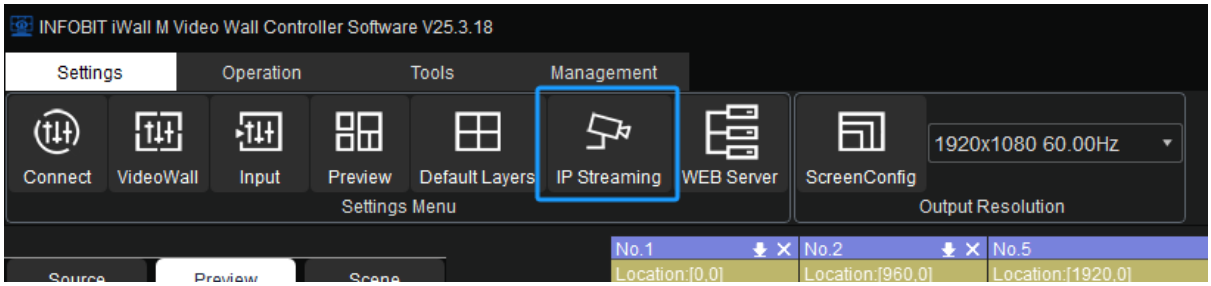
3: Configuration: Select which screen to setup and select **single** layer, **L-R** (left-right side by side) 2 layers, **U-D Dual** (Up-Down 2 layers), or **Quad** layers.

4: Custom: setup user-defined layers by Rows*Columns for the **whole videowall** (not for single display).

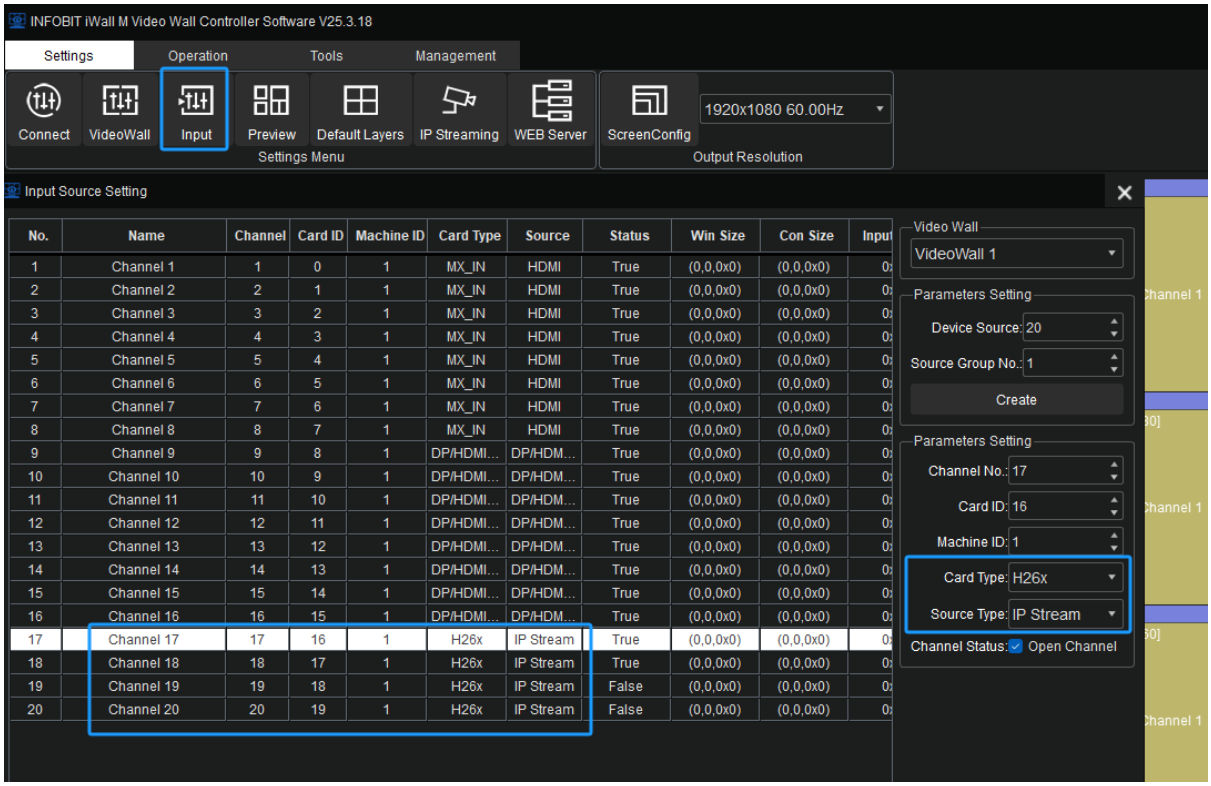


Then go to **Operation→Default Layers** to open video windows layouts by just this one-click operation. See above picture.

5.2.7 IP streaming

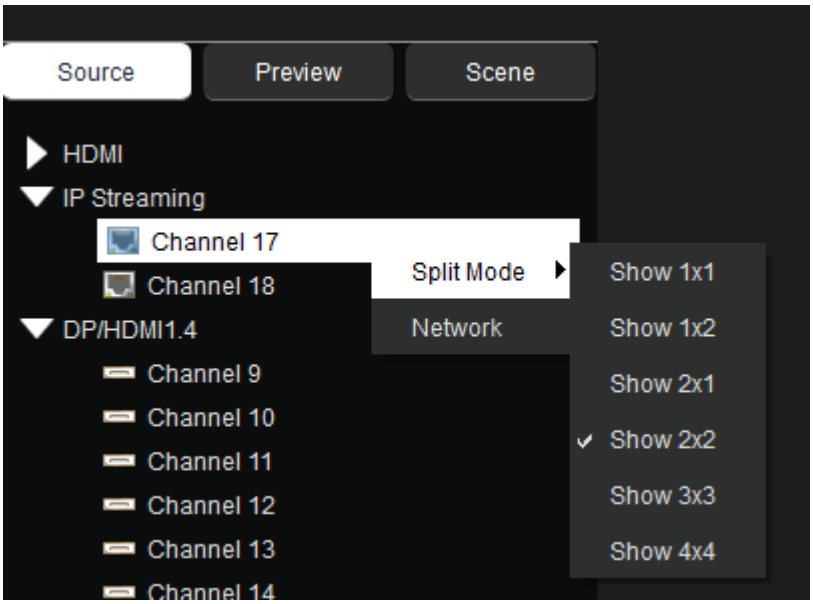


IP Streaming: to setup the IP decoder features, such as IP camera streaming.

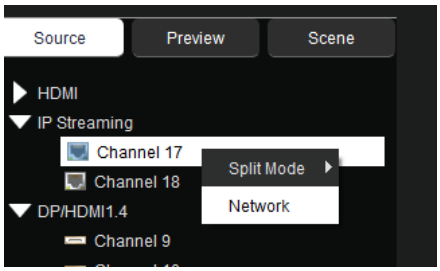


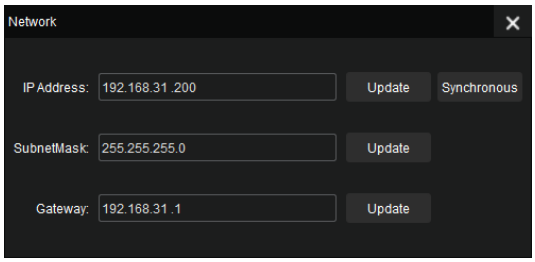
Before setup the IP Streaming, user must Click '**Settings**' - '**Input**' in the in the navigation bar and the above window pops up. Set the card type to **H26X** and select the **'IP Stream'** as source type.

Notes: These settings are done by us before the machine leaves the factory. It is not recommended for non-technical users.

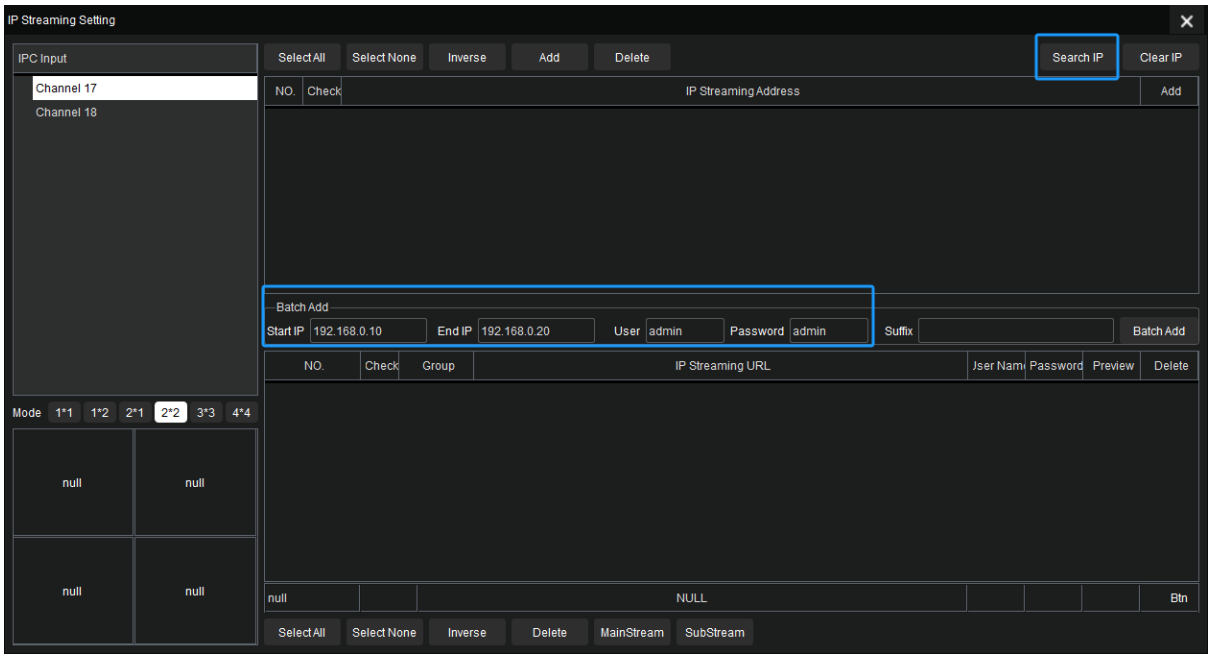


Right click on the IP Streaming channel in the Source list, user can select split mode (Multiview mode) for each IP input signal.





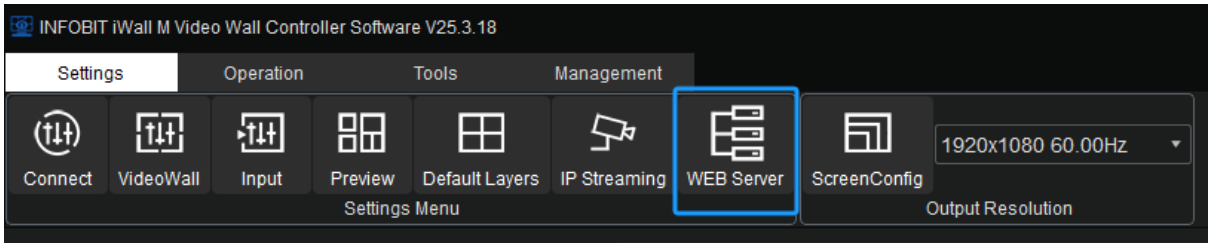
Right click on the IP Streaming channel in the Source list, user can setup the IP decoder (INPUT) card IP address.



Then click **IP Streaming**, **Search IP** or **Batch Add** manually.

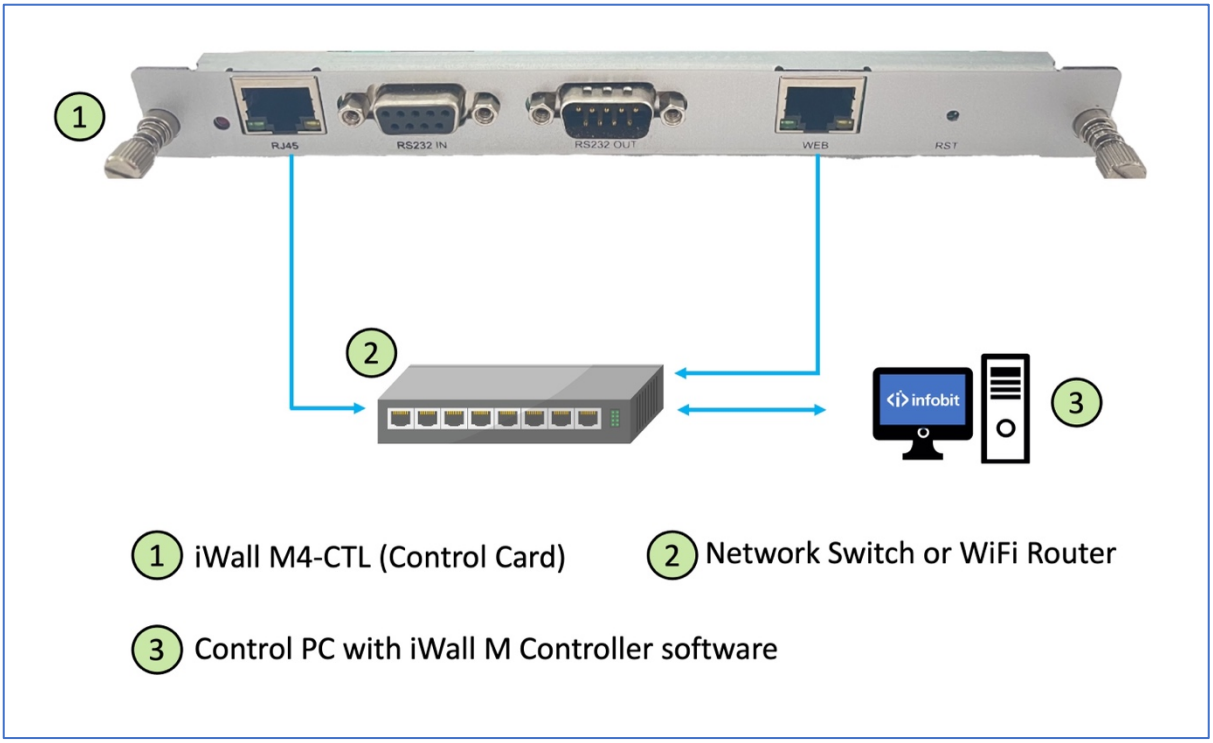
Note: The IP decoder input card only support H.264 codec. H.265 doesn't support.

5.2.8 WEB Server

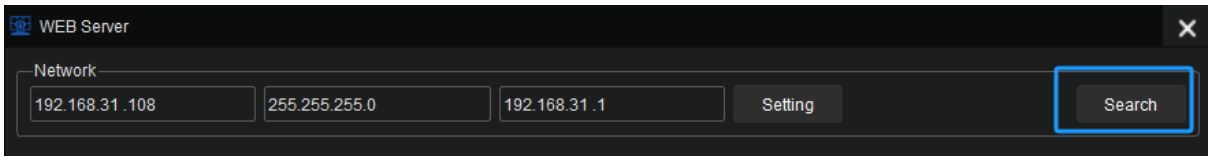


The iWall M4 supports Web GUI control, here user can setup web GUI connection.

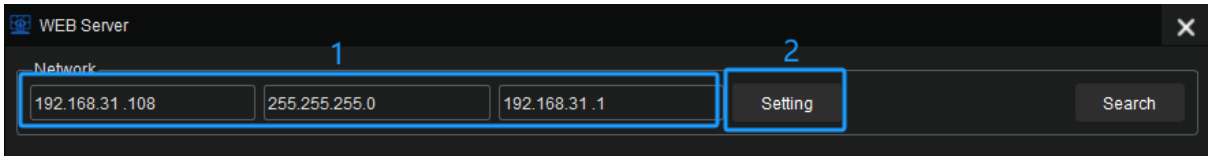
Before setup the WEB Server, please follow below picture to make sure the right hardware connection.



Connect Control PC, control card RJ45 and WEB ports to network switch or Wi-Fi router and setup PC's IP in the same subnet.

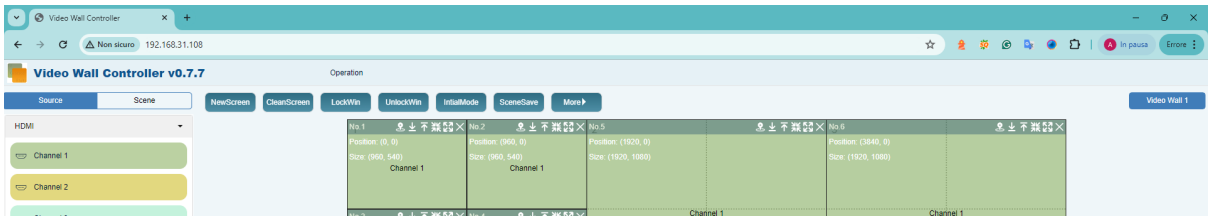


Clear the existing WEB card IP address. Then click '**Search'** to search the WEB card IP address.



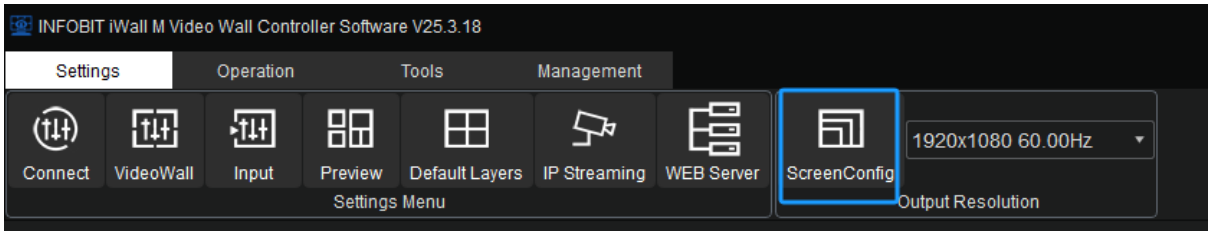
1: IP address: If the user can't find the IP address of the WEB card, the user can modify the IP address manually.

2: Setting: click to confirm the modification.

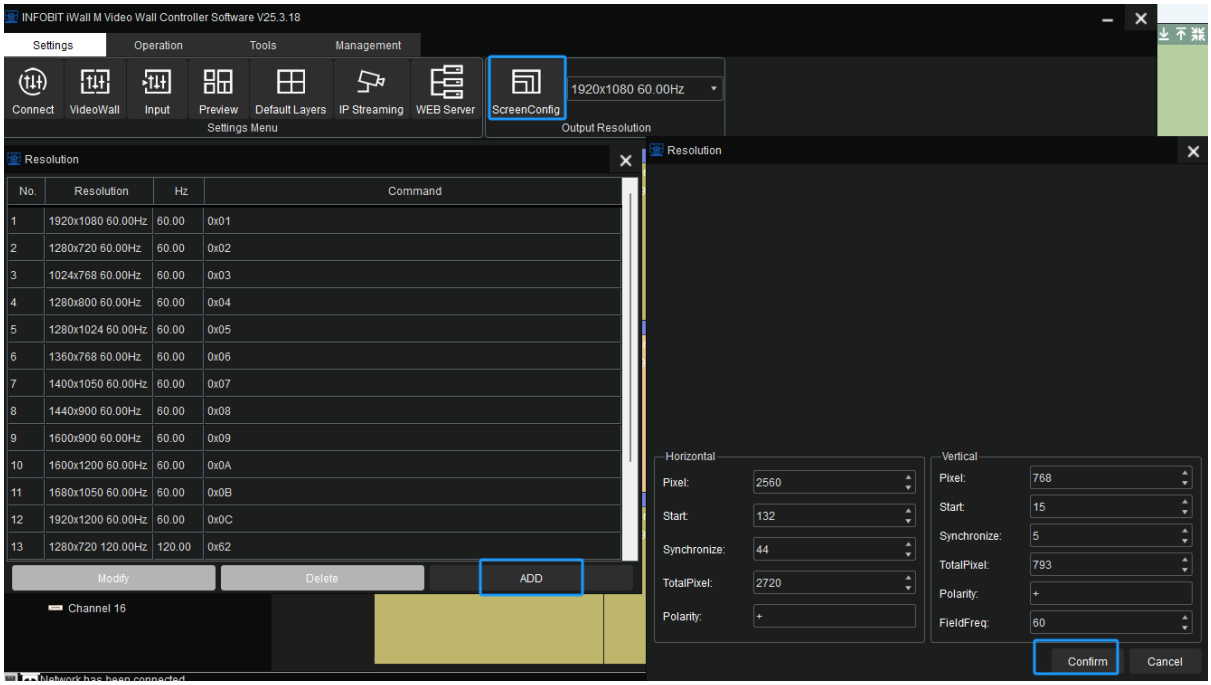


Open web browser and input the WEB Server IP address. For more details of web operation, please see**: 6. WEB GUI**

5.2.9 ScreenConfig



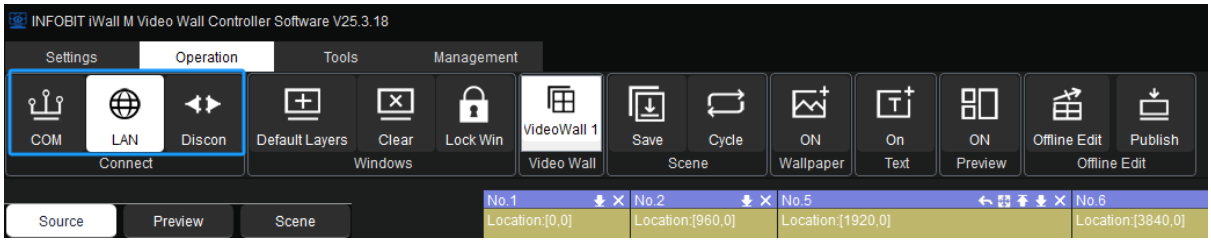
ScreenConfig: can setup non-standard or customized resolution for each screen. User can select standard resolution from the drop-down list.



Click **ScreenConfig→ADD→** input parameters→**Confirm** to setup customized resolution.

5.3 OPERATION

5.3.1 CONNECT

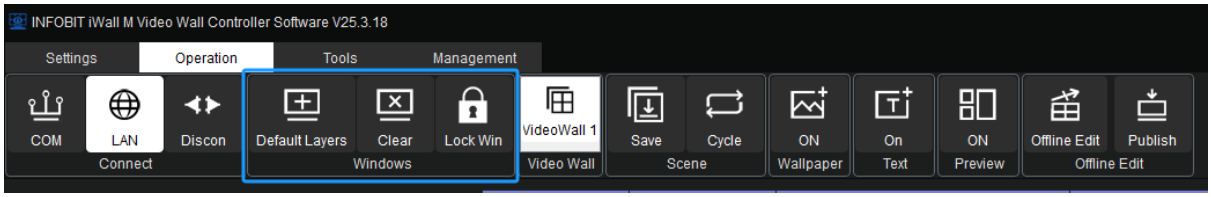


COM: enable the connection via COM port.

LAN: enable the connection via network.

Discon: Disconnect the control PC and iWall M4 controller.

5.3.2 WINDOWS

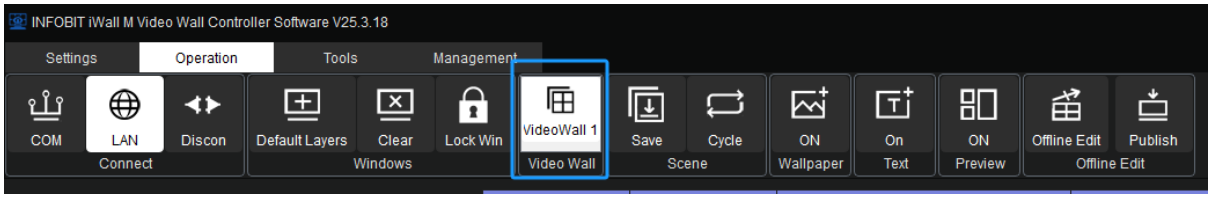


Default Layers: it means user can setup shortcut for video layers on each single display or the whole video wall. Then user can open all video layers by just one-click operation. See **5.2.6 Default Layers** for details.

Clear: Close all video windows.

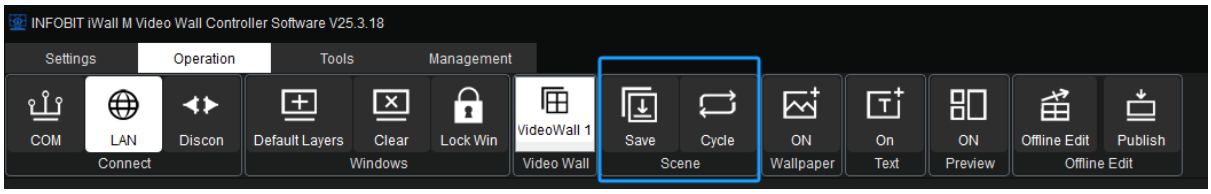
Lock Win: To lock all video windows, and all the windows cannot be moved but the user still can open a new window on it.

5.3.3 VIDEO WALL GROUP

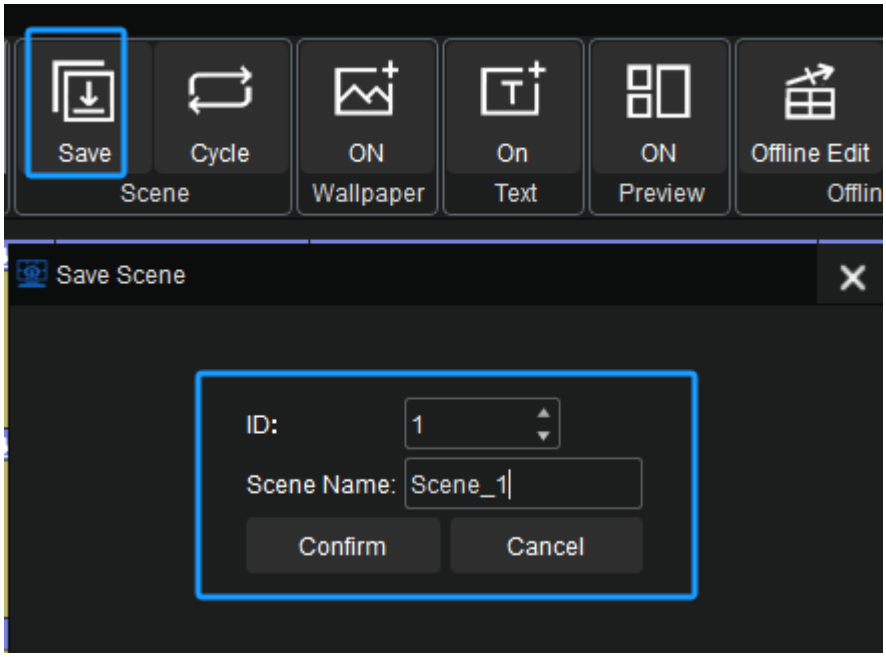


Video Wall: Select which Videowall group to enable.

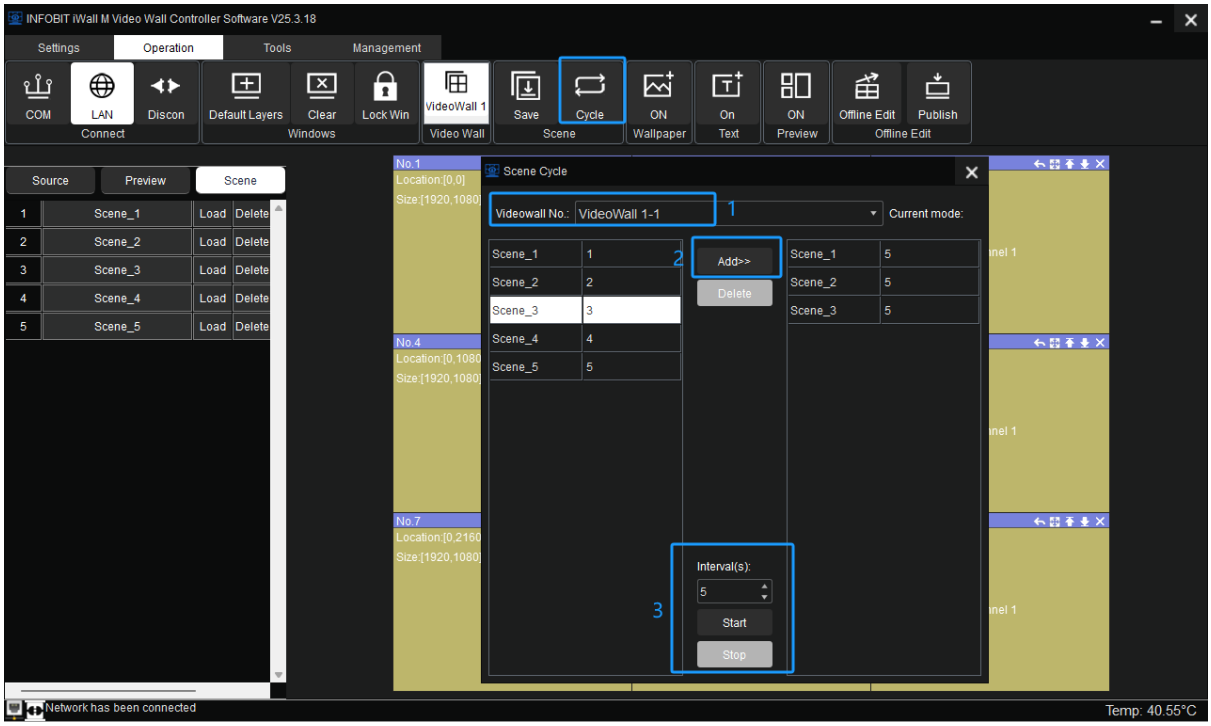
5.3.4 SCENE



It allows users to create customized display layouts and then recall the scenes.



Save: After creating the desired layout, select **'Operation' - 'Save'**. This will create a scene ID and the scene name can be edited.

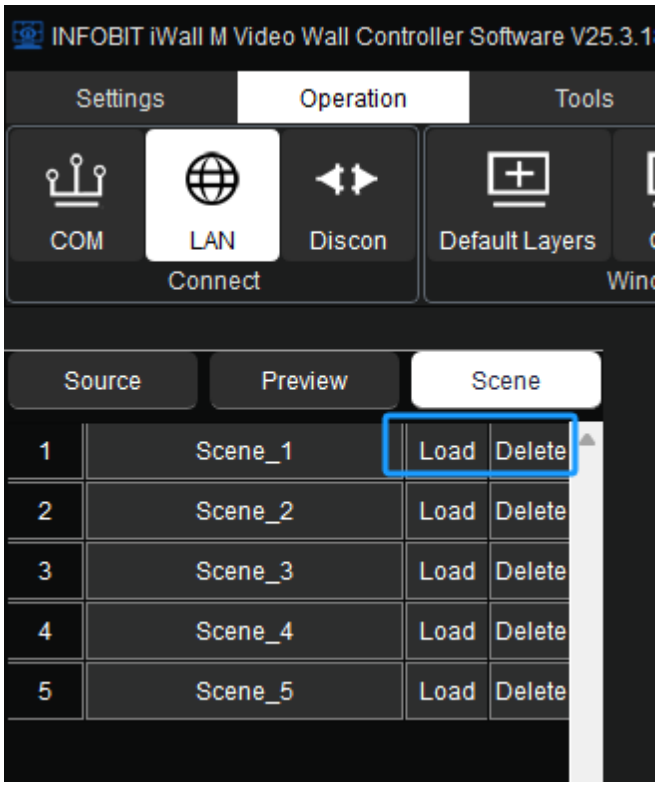


Cycle: Can setup auto-cycle be playing among saved presets (scenes).

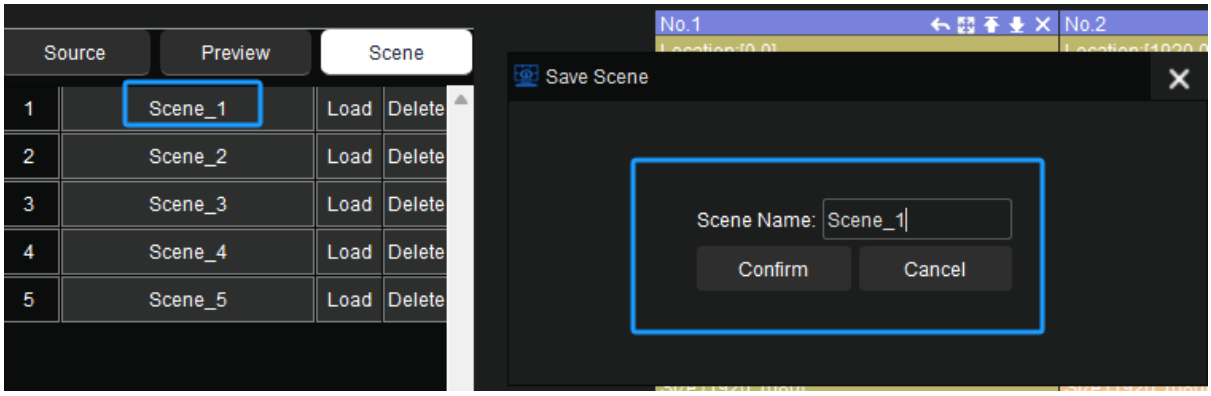
1: Select videowall group if have.

2: Select saved scenes and **Add** to right list.

3: Setup auto-cycle **Intervals** (in seconds), click **Start** to enable or **Stop** to disable.



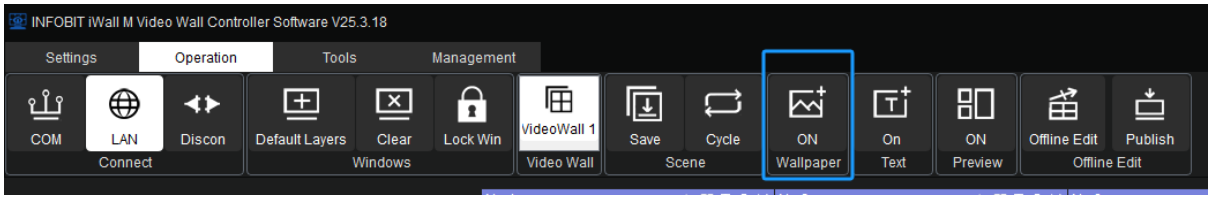
All saved scenes will be listed under **Scene** menu, user can click **Load** to recall or **Delete** any preset.



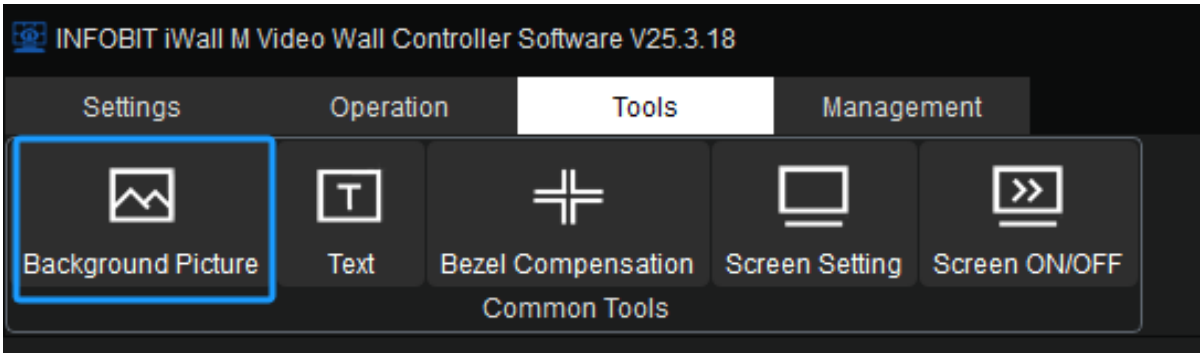
Click on each scene list, user can **rename** it.

User also can recall the scene via front touch panel, see details in **4.1 FRONT PANEL.**

5.3.5 ON/OFF WALLPAPER



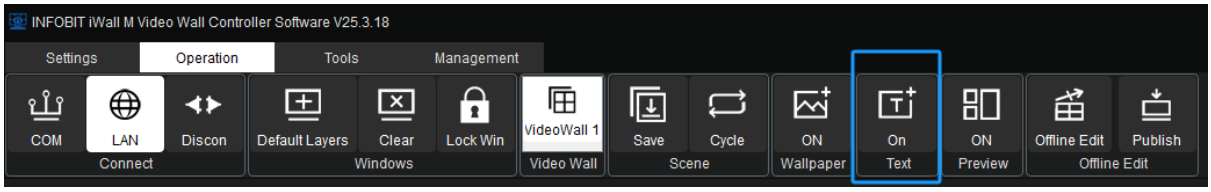
The user can turn ON or OFF the wallpaper (background picture).



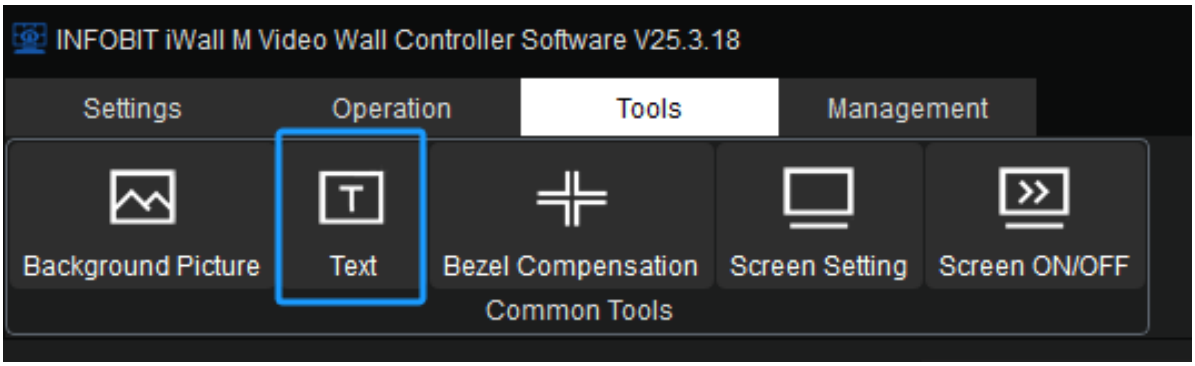
Before turning on Wallpaper, the user shall go to **Tools→ Background Picture** to upload an image.

Select the videowall group number. Then load the HD image and click **'Upload'**. When the upload is finished, click **'Loading'** and finally reboot the device.

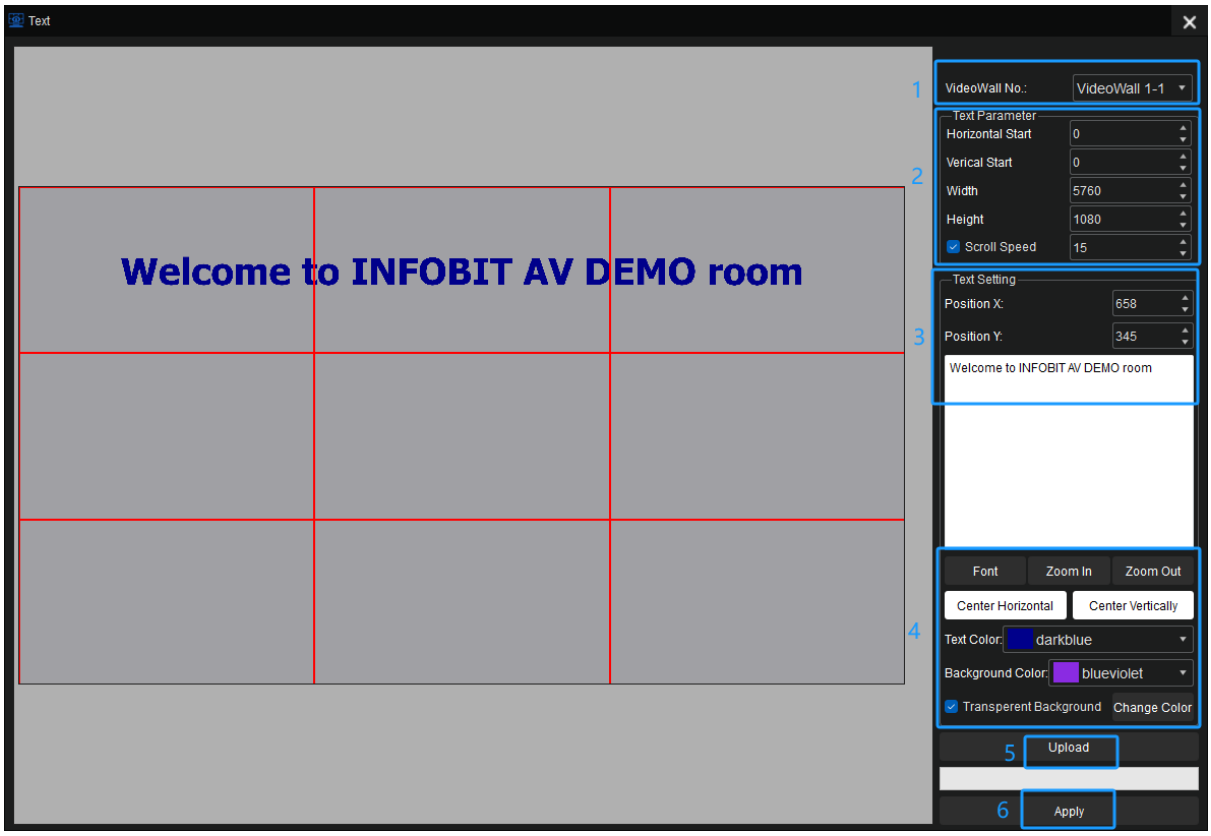
5.3.6 ON/OFF TEXT



The user can turn ON or OFF the scrolling text.



Before turning on Scrolling Text, the user shall go to **Tools→ Text** to upload a text.



1: Select Videowall Group.

2: Input the text parameters.

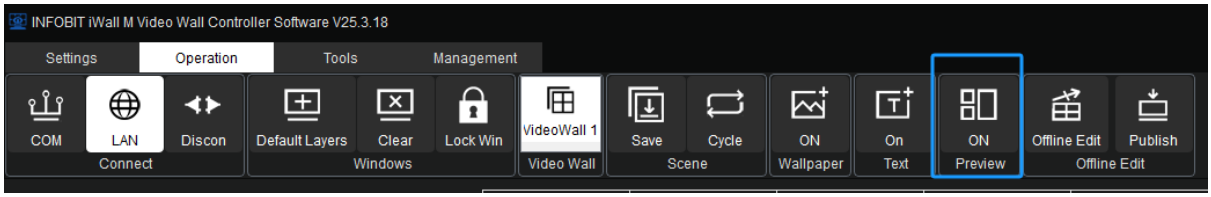
3: Input the text

4: Setup Font, Zoom, Alignment, Color, background color.

5: Click Upload

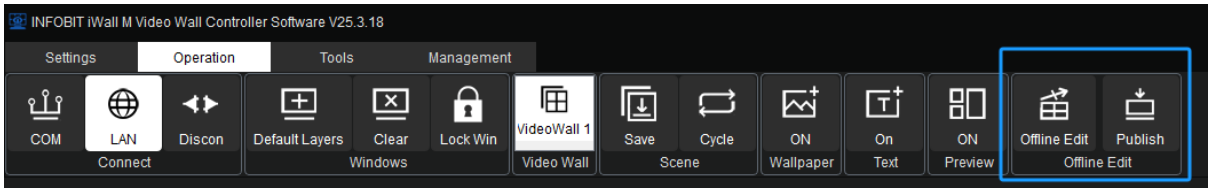
6: Click Apply. Then reboot the iWall M4 device.

5.3.7 ON/OFF PREVIEW



The user can turn ON or OFF the input signals preview here, for more settings please refer to **5.2.5 Preview.**

5.3.8 OFFIINE EDIT

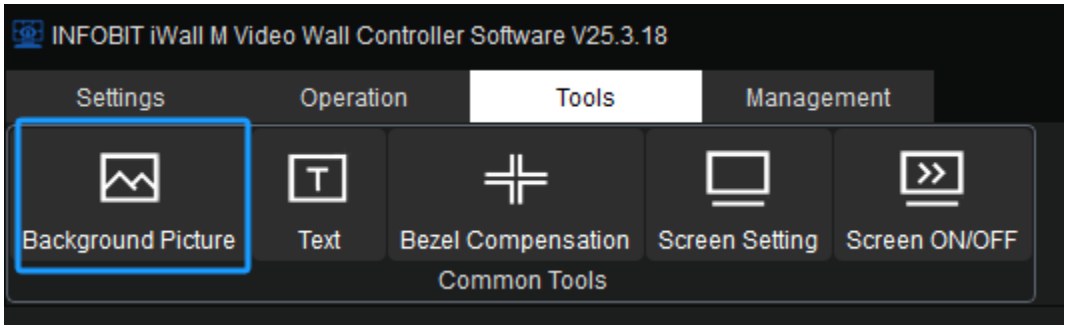


Offline Edit: To set the video windows/layers position, size, roaming, etc. And it will not take effect otherwise the user is ready to click **Publish** to confirm. By this feature, any operation by this user will not impact on the current displaying and make the switching more smoothly and without any interruption.

Publish: to confirm the pre-edit and enable it.

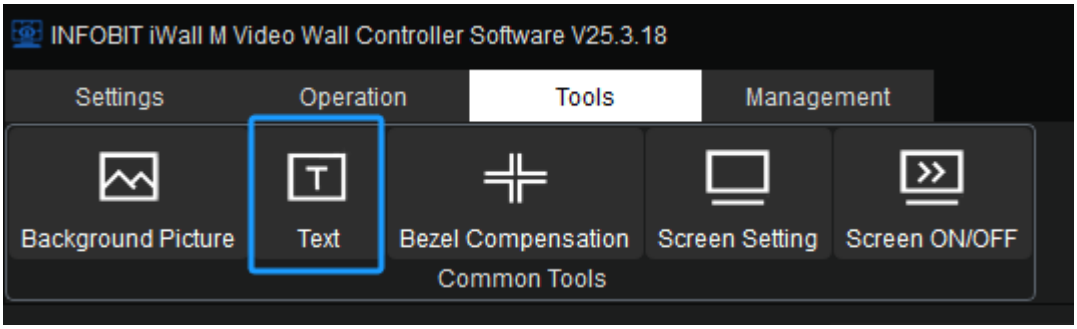
5.4 TOOLS

5.4.1 BACKGROUND PICTURE



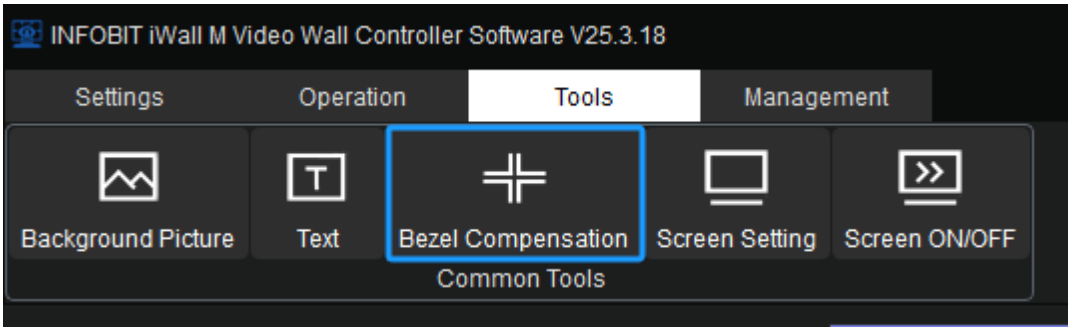
To upload background picture, please refer to **5.3.5 ON/OFF WALLPAPER** for details.

5.4.2 TEXT

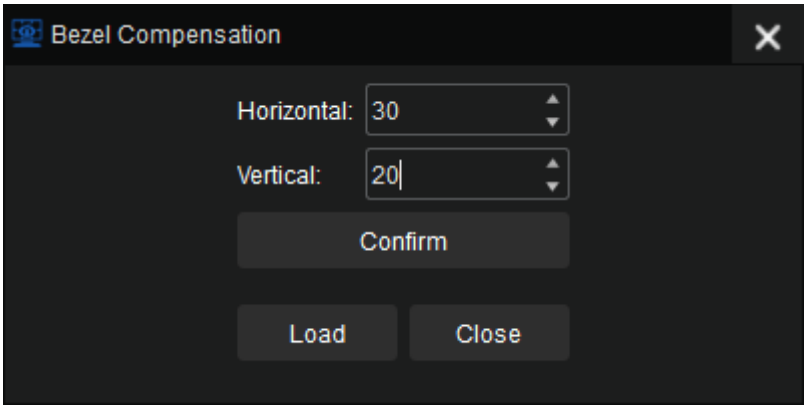


To upload scrolling text, please refer to **5.3.6 ON/OFF TEXT** for details.

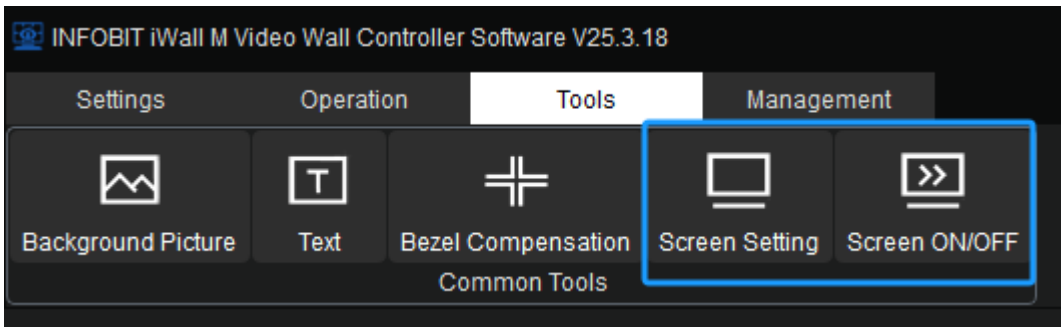
5.4.3 BEZEL COMPENSATION



Click **'Tools' - 'Bezel Compensation'** in the navigation bar and the following window pops up. This function can be used for monitors with large bezels. The user can enter the pixel points to be masked horizontally and vertically.

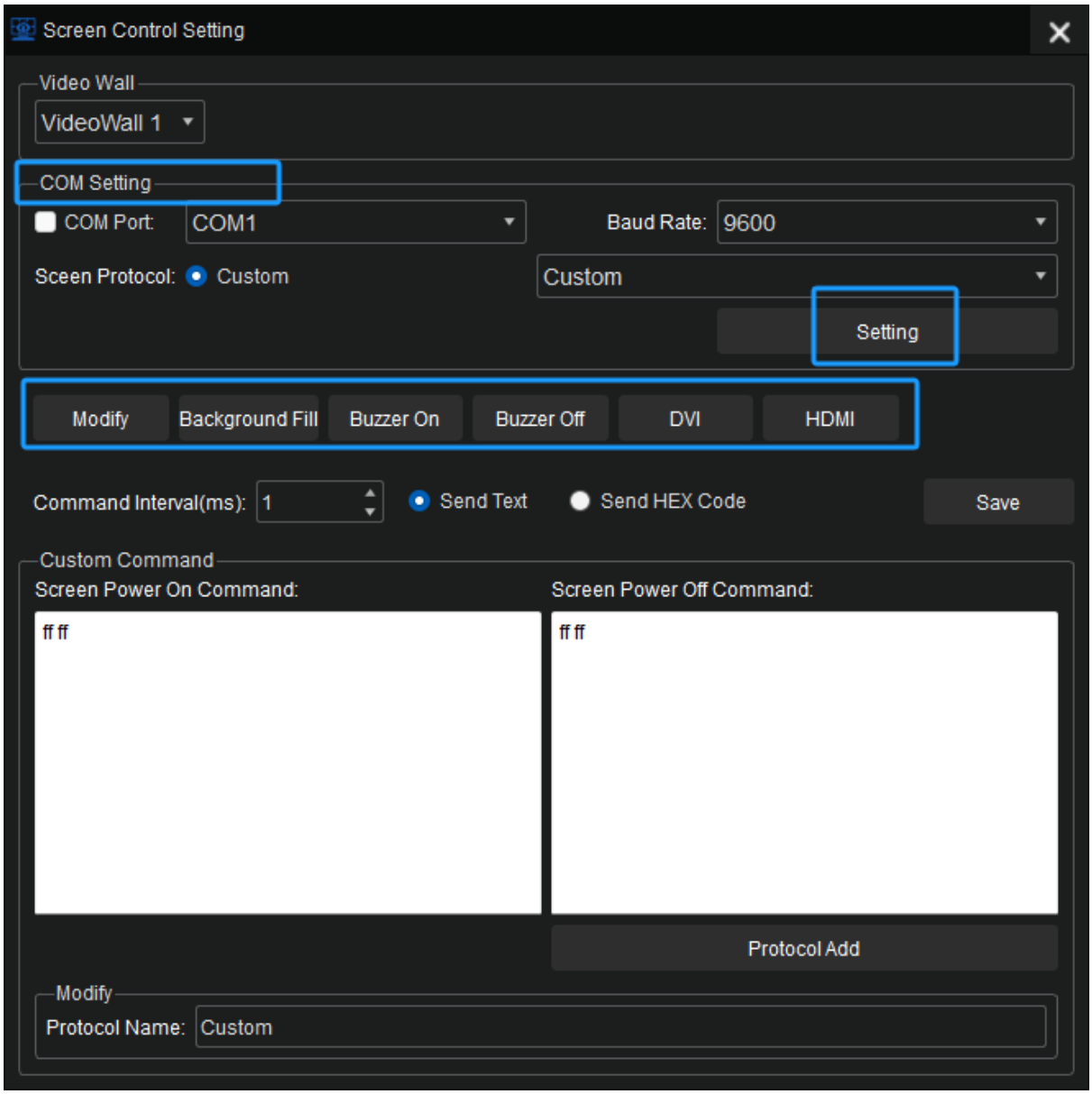


5.4.4 SCREEN SETTING & SCREEN ON/OFF



Click **'Tools' - 'Screen Setting'** and the following window pops up.

After selecting, clicking **'ON'** or **'OFF**' to power on or off the screen.



COM Setting: Select COM port, Baud Rate.

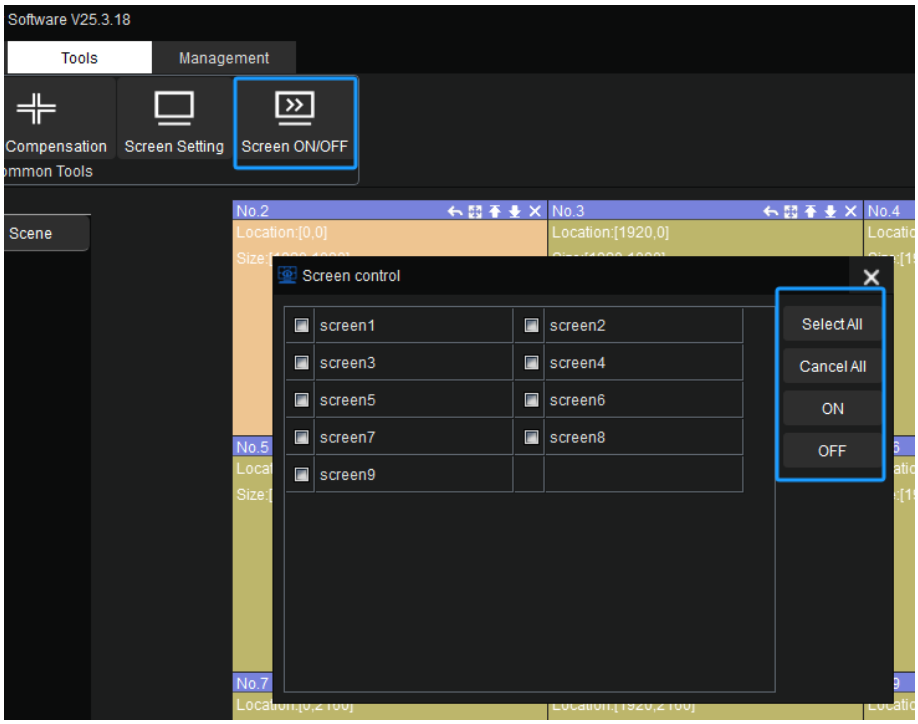
Setting: Click here to confirm the setup.

Modify: Adding the existing screen power-on/off protocols for the display, or a custom command. The custom protocol should be in HEX or character.

Background Fill: Set the output image color when the layer is cleared.

Buzzer On/Off: Turn on or off the buzzer sound of the device.

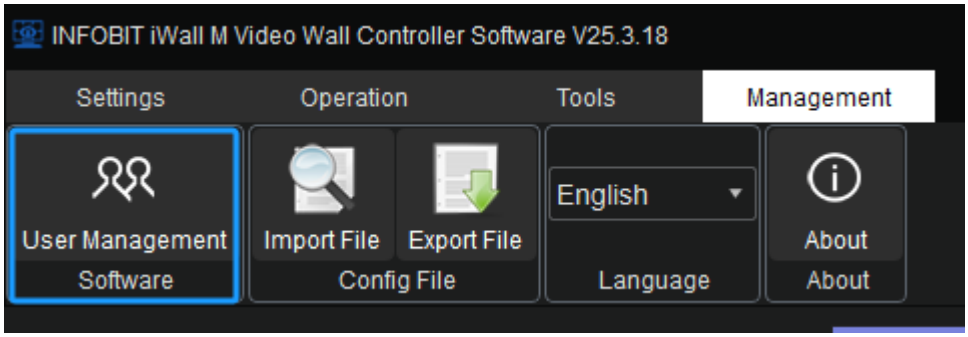
DVI / HDMI: Select the output image format.



After Screen Setting, the user can click **Screen ON/OFF** to select which display to turn ON/OFF.

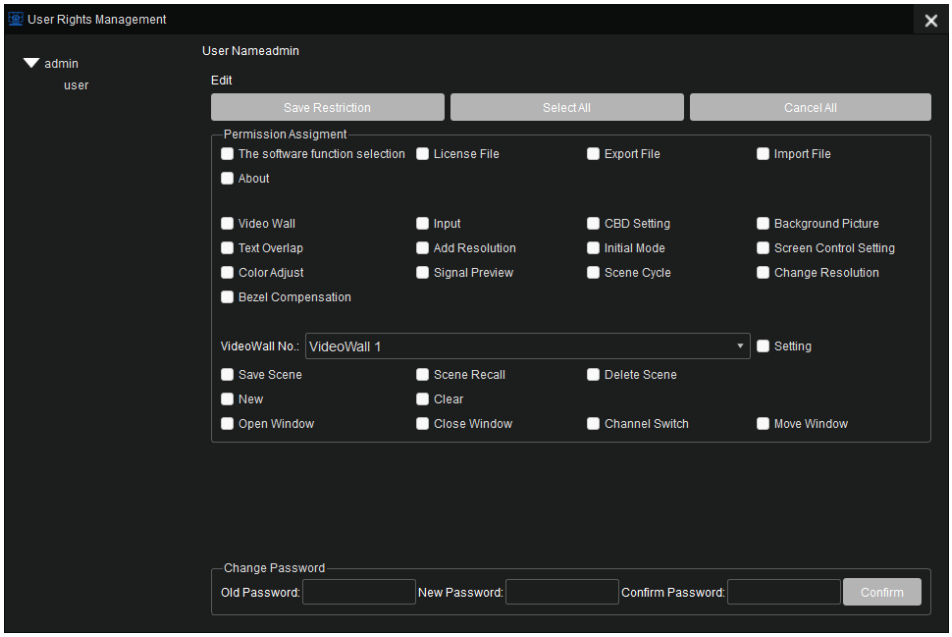
5.5 MANAGEMENT

5.5.1 USER MANAGEMENT



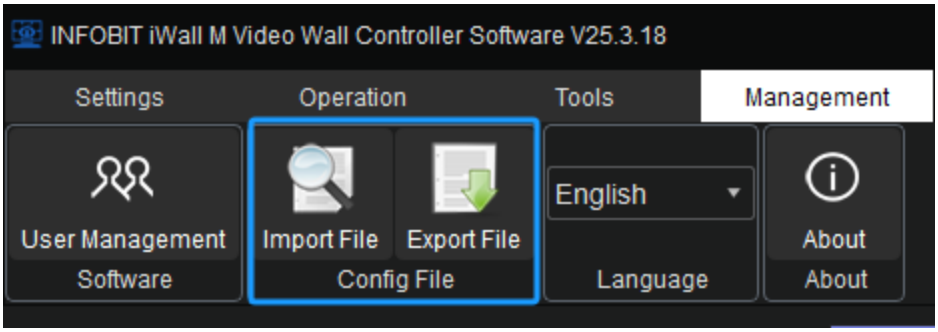
From this interface, user permissions and passwords can be easily changed.

Notes: The settings are not recommended for non-technical users.



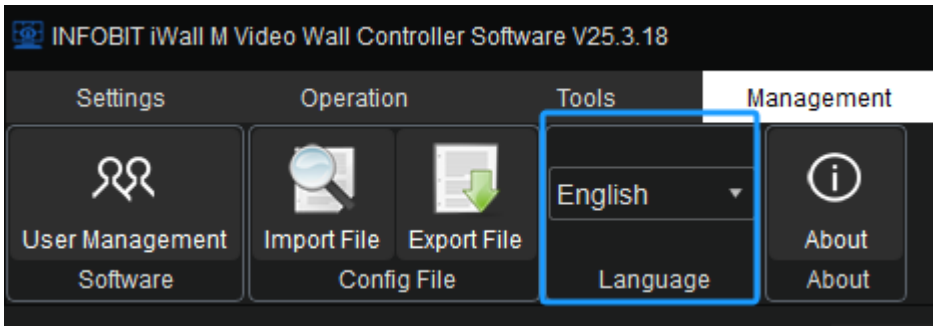
Check options which rights want to grant to the user role.

5.5.2 IMPORT & EXPORT FILE



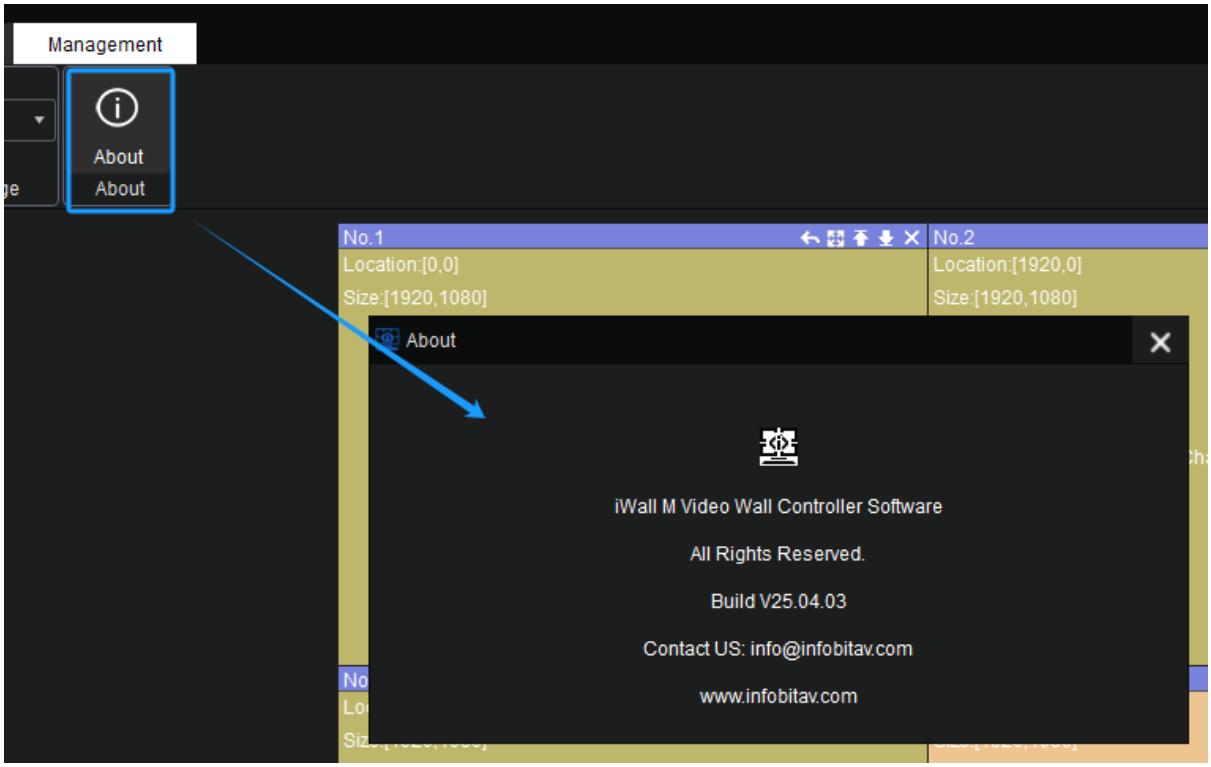
Here user can import or export the config files.

5.5.3 LANGUAGE



The user can switch language here.

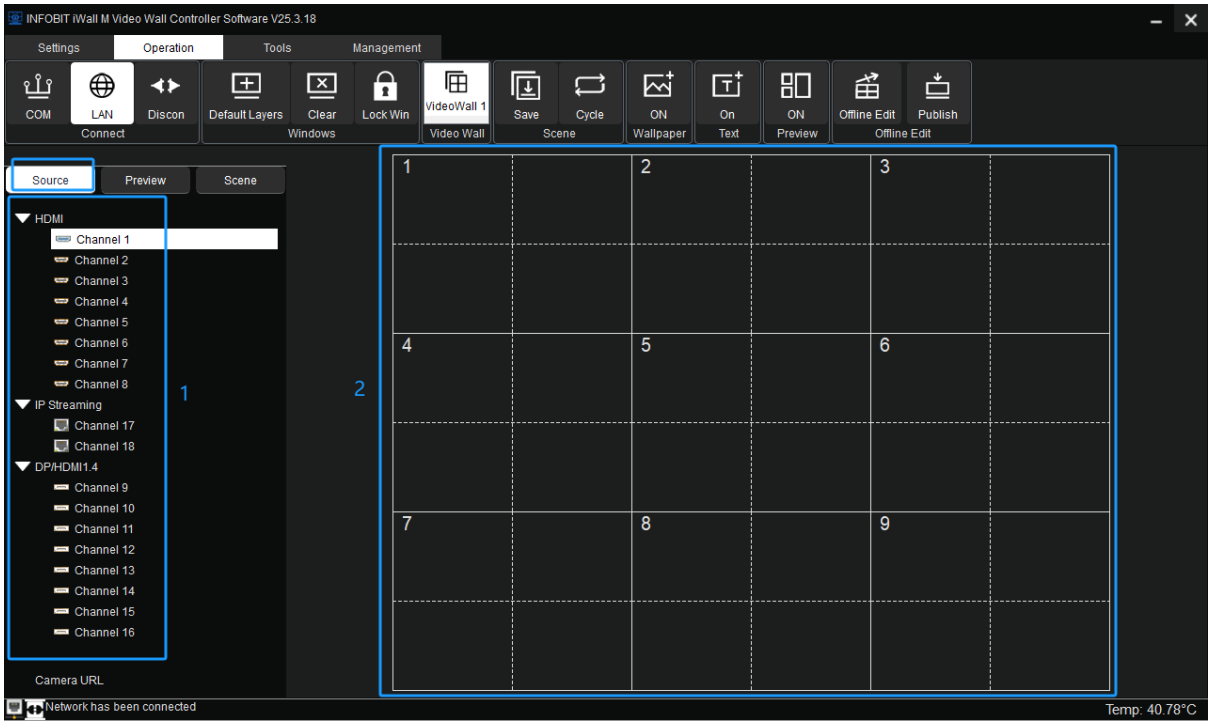
5.5.4 ABOUT



Here user can check software version information.

5.6 INPUT SOURCE OPERATION

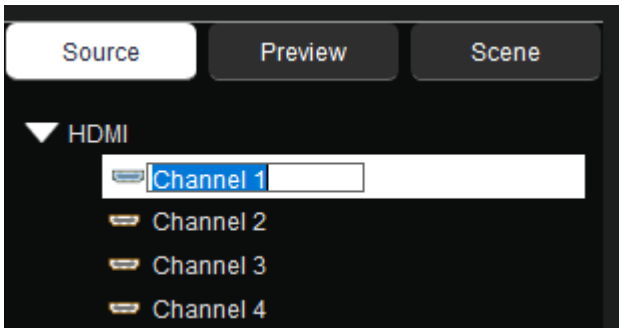
5.6.1 INPUT SOURCE LIST



1: Source List: here displays all the input signals. Each channel number corresponds to the input port number on the rear panel of iWall M4.

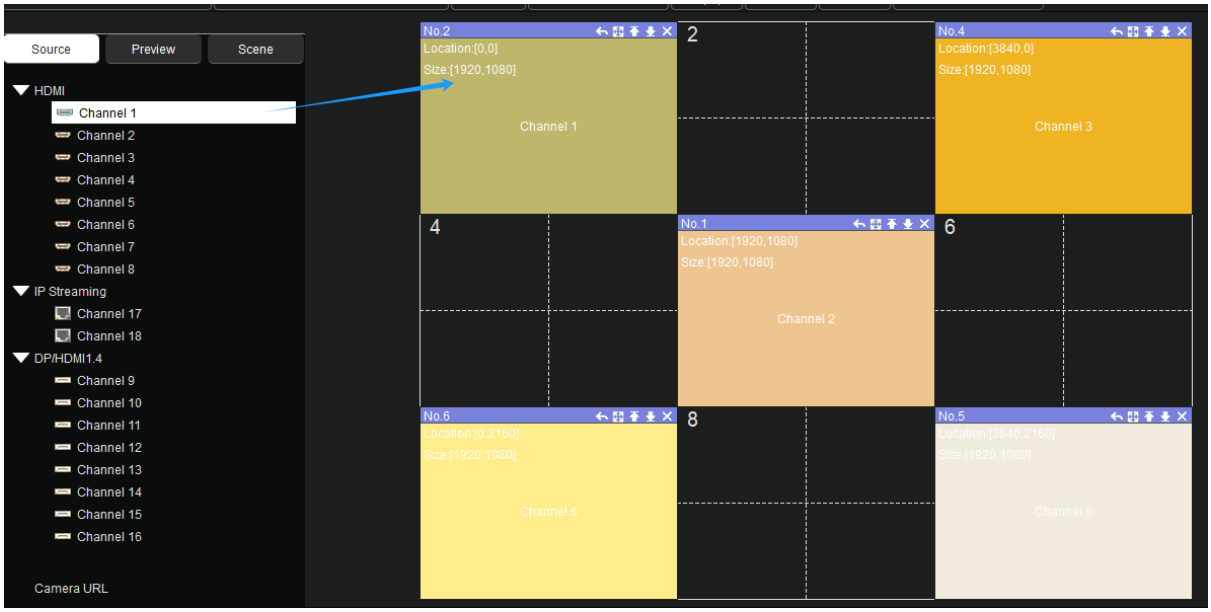
2: Video Wall Canvas: here displays the videowall physical layouts.

5.6.2 RENAME INPUT SOURCE



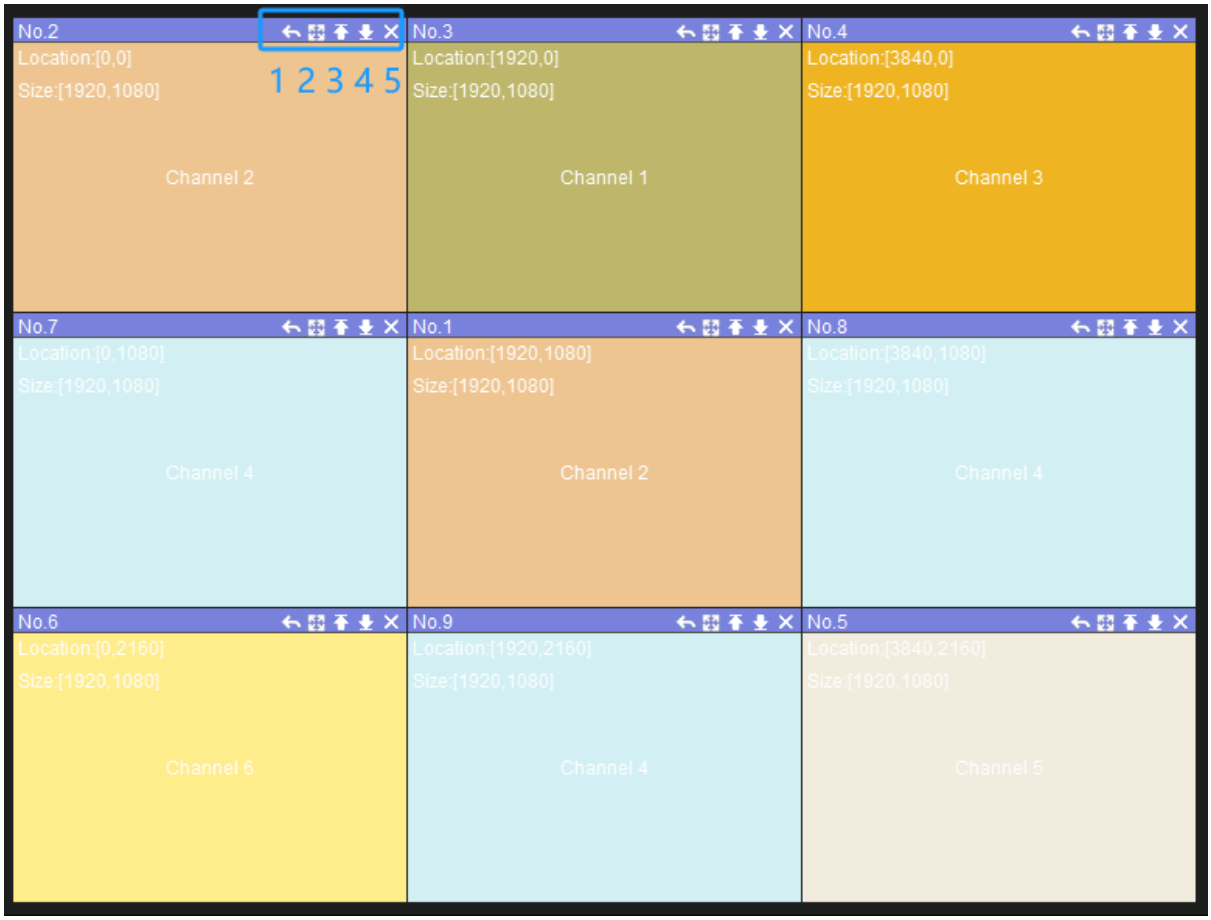
To change the name of a given channel, double left-click the desired input source channel and enter the name of your choice.

5.6.3 OPEN VIDEO WINDOW



User can drag-and-drop any source to the display grid in the video wall canvas area to open video windows.

5.6.4 VIDEO WINDOWS OPERATION



Any video windows can be drag-n-drop to reposition, resize, zoom in, zoom out, change layers order.

Open a video window

Press the left mouse button to pull out a rectangle, then release the left button to bring up a rectangular window in the control interface.

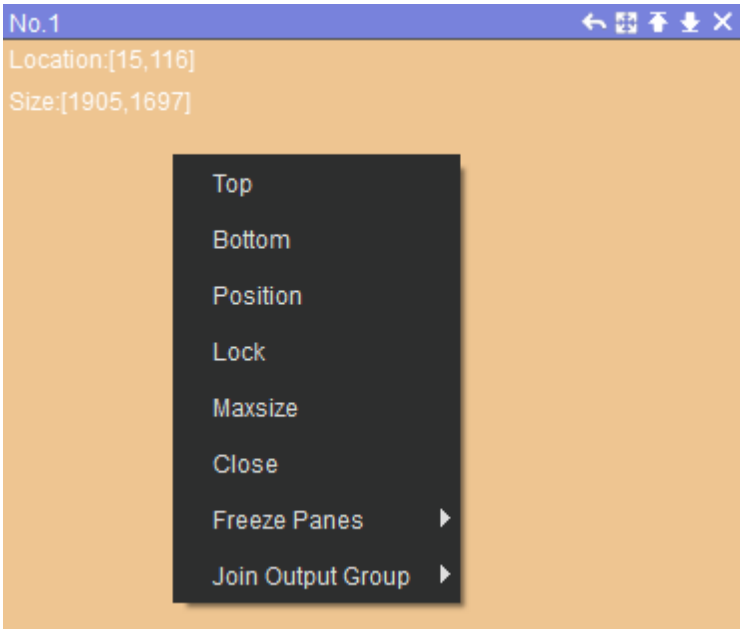
Adjust video window position

Place the mouse on the window, press and drag the window to the appropriate position and then release to change the window position.

Adjust video window size

Place the mouse in the lower right corner of the window and drag when the mouse changes to a two-way arrow to change the window size.

	Return: After selecting the menu, the current window will be fully displayed on the 1st screen of the row and column in which it is currently located.
	Full screen display: Click this menu to make current operation window to be displayed on full video wall. Click this menu again, it will return to previous size.
	Top: Change the video window to the top layer.
	Bottom: Change the video window to the bottom layer
	Close: Close the current video window.



Right click on any video window, there will list more options:

Top: Change the video window to the top layer.

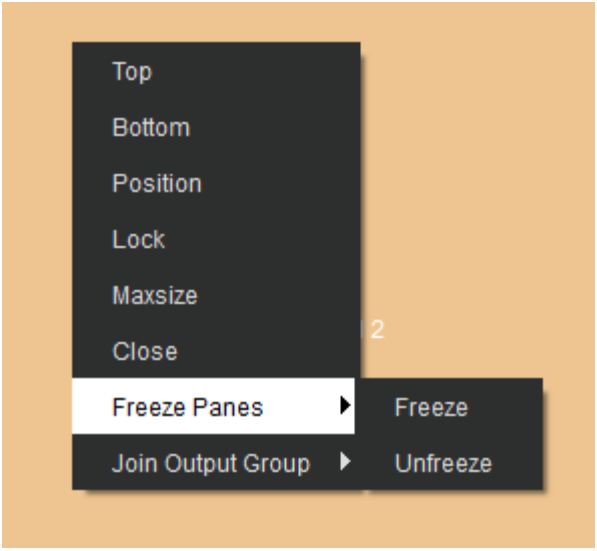
Bottom: Change the video window to the bottom layer

Position: Setup the fine-tune position by input the position parameters. See above.

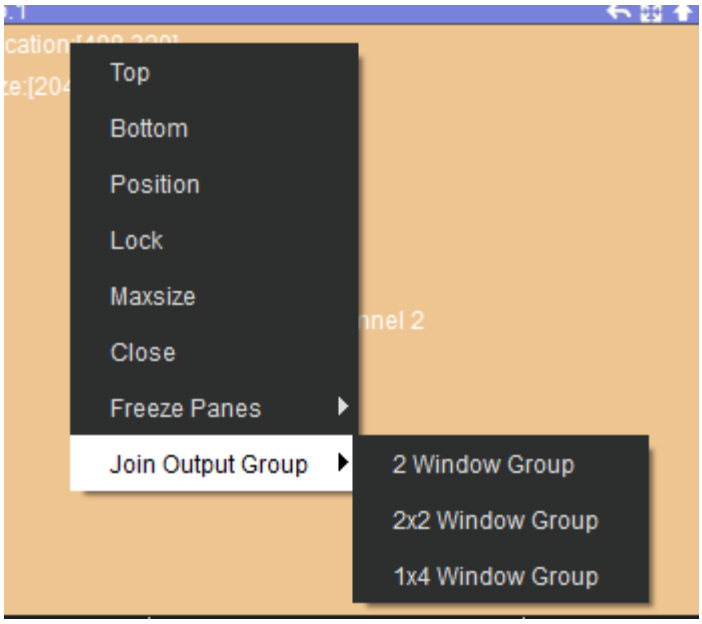
Lock: To lock the window and cannot be edited or moved.

Maxsize: Click this menu to make current operation window to be displayed on full video wall. And then click **Return** to resume.

Close: Close the current video window



Free Panes: To Free or Unfreeze the video playing. (Note: not pause the input playback, by this feature, it will show a screen crop at the video wall).



Join Output Group: Copy this signal and open as 2x windows, 2x2 or 1x4 windows at one-time operation. Also, the Join Output Group is used for 4K input video windows.

There are 2 kinds of 4K input cards:

iWall M4-IN-1HDMI4K: 1 port on a card(4K60hz)

iWall M4-IN-2HDMI4K: 2 ports on a card(4K30hz).

	
A: iWall M4-IN-1HDMI4K	**B: iWall M4-IN-2HDMI4K**

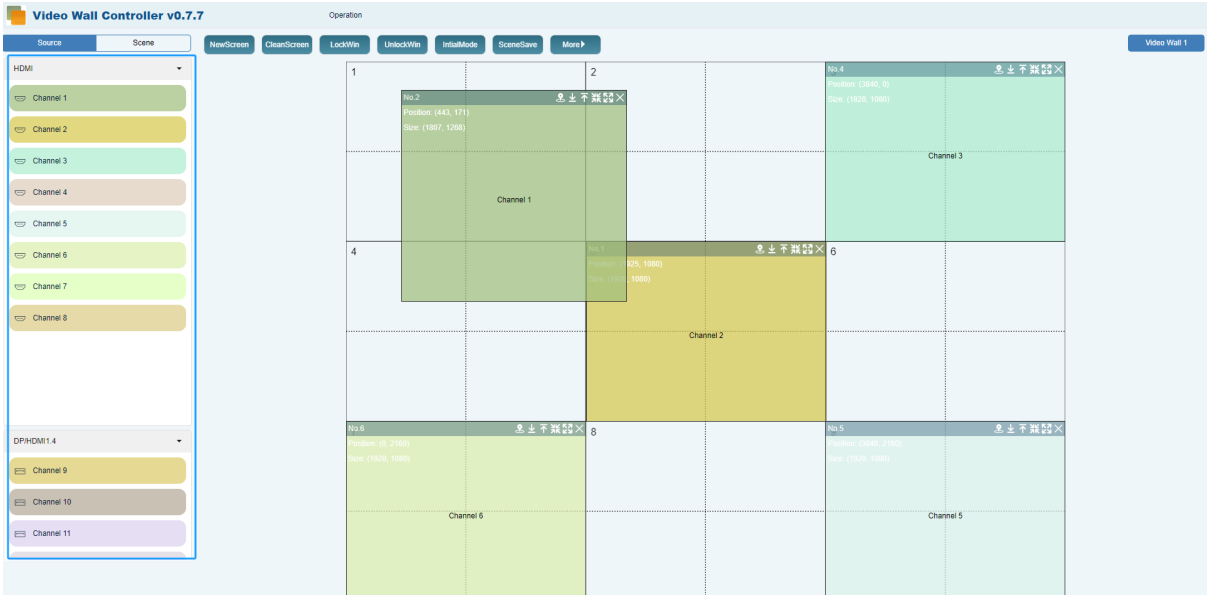
A: For 1 port card, drag a window on any output (4 /8 windows model) and drag a window on 2 or more outputs (2 windows model). Then right click on the window and select the popup menu **'2*2 window group'** or **'1*4 window group'**. Finally drag the 4K input signal to this window to display.

B: For 2 ports card, drag a window on 2 rows * 1 column or larger area (vertically larger than 1 output area), then right-click and select the popup menu **'2 window group'**. Finally, drag the 4K input signal to the output window.

6. WEB GUI

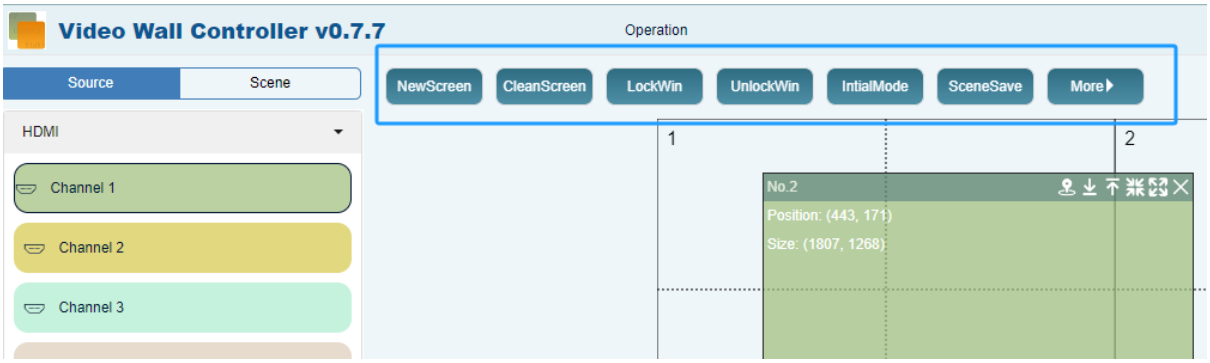
Before login the Web GUI, please follow **5.2.8 WEB Server** to connect and setup the web server IP address.

6.1 INPUT SOURCE LIST



Source List: here displays all the input signals. Each channel number corresponds to the input port number on the rear panel of iWall M4.

6.1 WINDOWS OPERATION

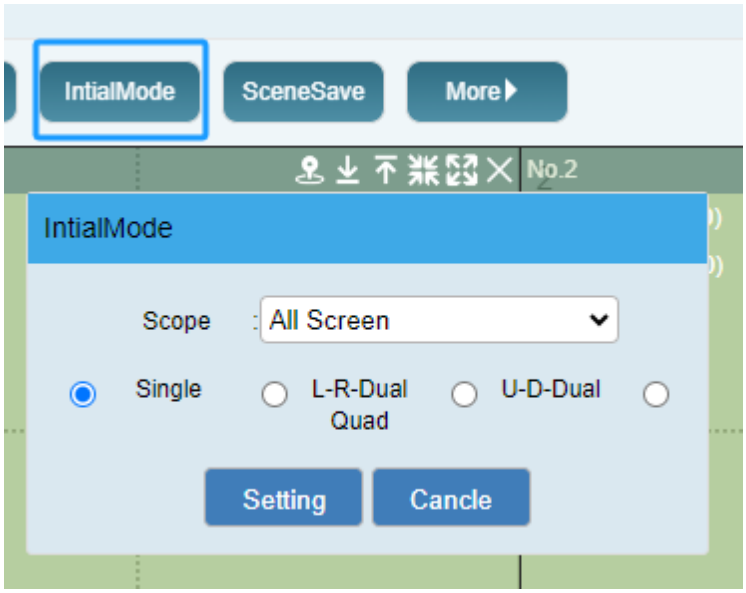


NewScreen: Quickly initialize all outputs with a single screen display.

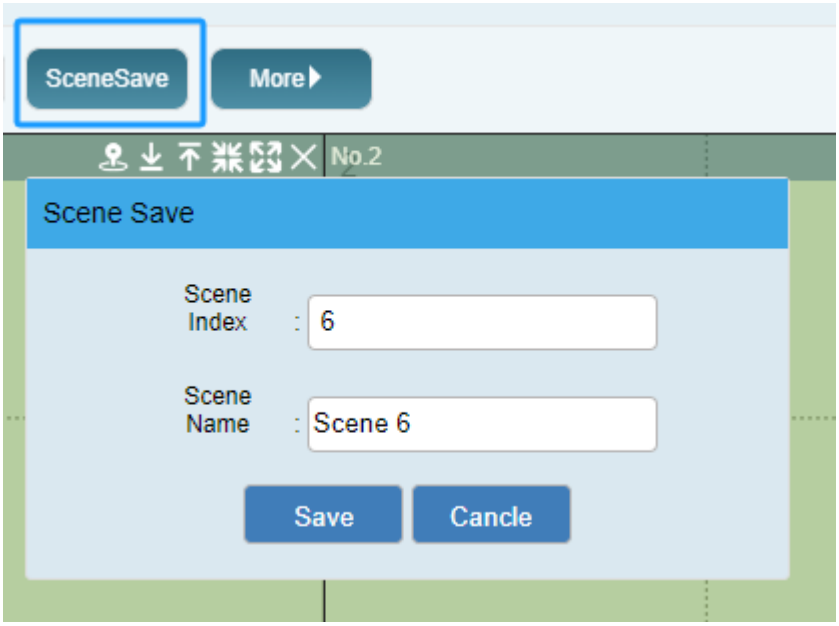
CleanScreen: Quickly clear all window layers and display the bottom background color (The default is blue and can be customized)

LockWin: Lock the currently opened window layer.

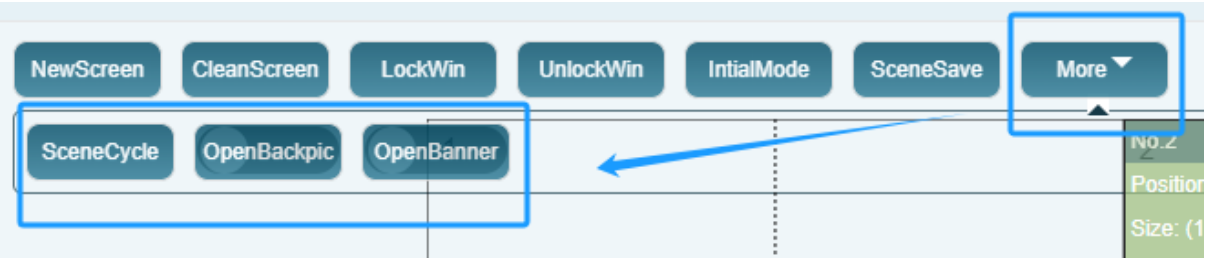
UnlockWin: Unlock all window layers.



IntiaMode: Select the window layers in each display, including 1X1(**Single**-1 layer), 1X2(**L-R Dual**-2 layers by left and right), 2X1(**U-D Dual**-2 layers by up and down), 2X2(**Quad**-4 layers).



SceneSave: Save the current window layout as a scene. The user can modify the scene name.

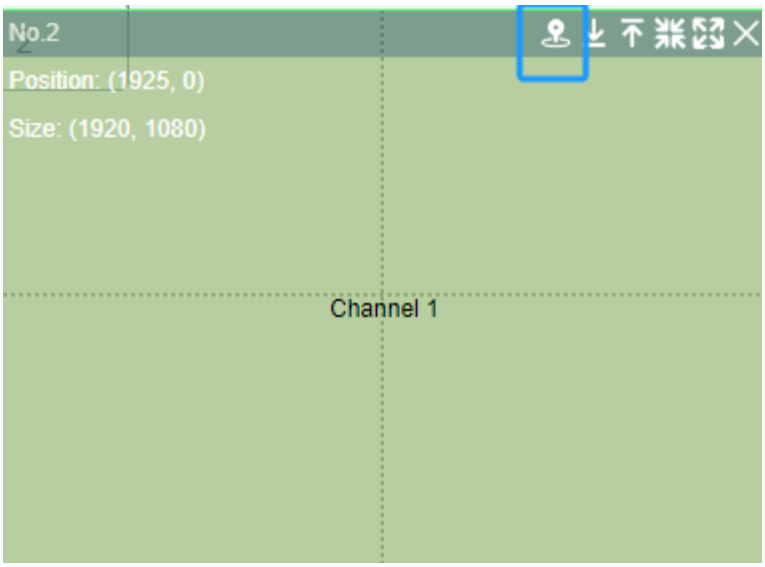


More: including below functions:

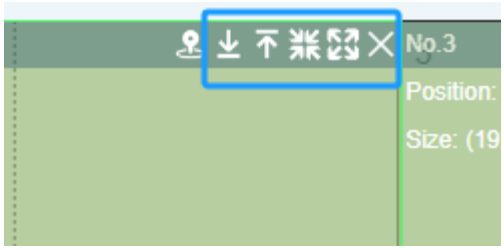
SceneCycle: setup the auto-cycling of the scenes.

OpenBackPic: Enable background picture.

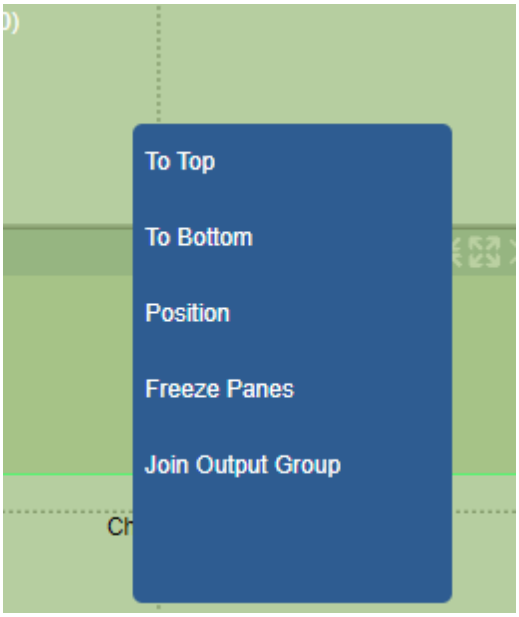
OpenBanner: Enable scrolling text.



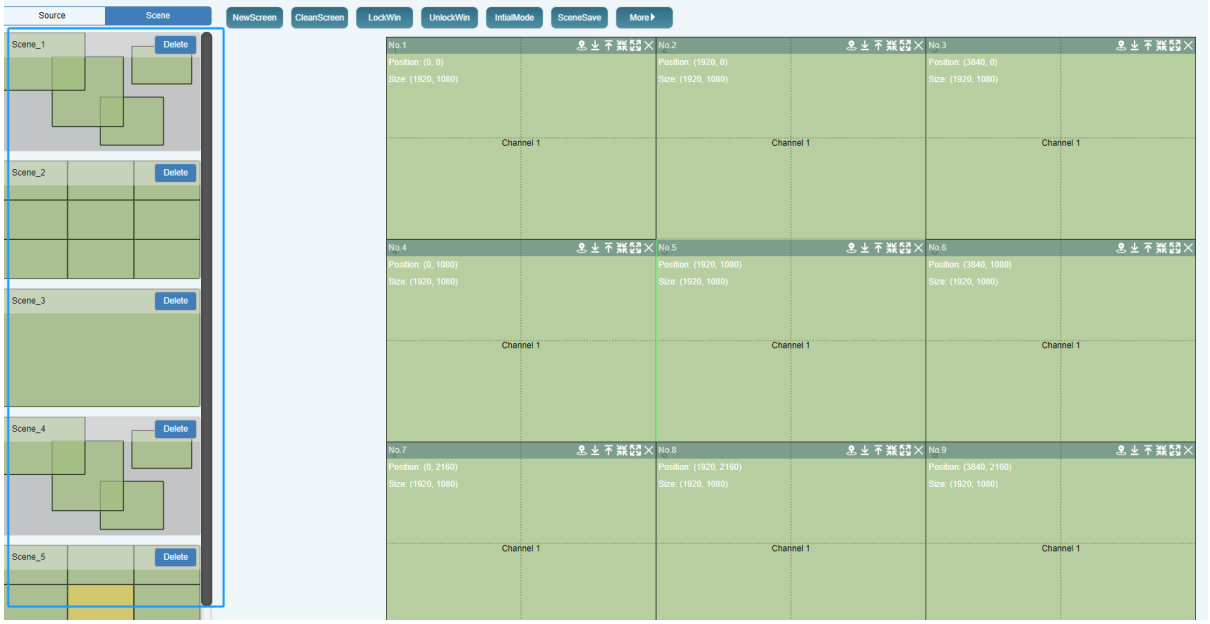
	**Position Fine-tune** (Precise coordinates)**:** The user can click this icon on the window to fill in the coordinate position in the following dialogue box.



	**Bottom:** Change the video window to the bottom layer
	**Top:** Change the video window to the top layer.
	**Resume:** Click and return to previous size.
	**Enlarge:** The window will fill the entire screen where the dotted grid is located.
	**Close:** Close the current video window.



Right click on any window to list more options as shown above. Refer to 5**.6.4 VIDEO WINDOWS OPERATION** to see the same operations.



Click on each Scene to recall.

7. CENTRAL CONTROL API

7.1 Search IP

Communication method: **UDP Socket**

Target port: **58000**

7.1.1 Search device IP address

Communication method: **UDP**, send port: **58000**

Send: "SEARCHMX;"

Receive: The IP address of the searched device, in the format of

"192168003233HYAMATRIX;000" Multiple device addresses in the same LAN can be received.

7.1.2 Search Preview card IP address

Communication method: **UDP**, send port: **58000**

Send: "SEARCHPREVIEW;"

Receive: The IP address of the searched board and the board number in the format of "192168003153HPYPREVIEW;003", the value after the ";" is the board number. Multiple board addresses in the same LAN can be received.

7.2 Send commands to the machine

7.2.1 Via Network RJ45 Port

Data packet description

Data sending method: **UDP** Socket

Target port: **5000**

Sending packet format: 8-bit header + command

8-bit header

header[0]: marker, the default value is: (0x0004>>8)&0xFF, when sending a background image or banner command, the value is (0x0008>>8)&0xFF

header[1]: marker, the default value is: (0x0004>>0)&0xFF, when sending a background image or banner command, the value is.(0x0008>>0)&0xFF

header[2]: default value: 0x00. When sending a background image or banner command ,the value is: (def_pak>>8)&0xFF and the def_pak indicates the current send packet size.

header[3]: default value: 0x00, When sending a background image or banner command ,the value is (def_pak>>0)&0xFF and def_pak indicates the current send packet size.

header[4]: the 1st bit of the device IP address, such as 192 in "192.168.3.100"

header[5]: the 2nd bit of the device IP address, such as 168 in: "192.168.3.100"

header[6]: the 3rd bit of the device IP address, such as 3 in "192.168.3.100"

header[7]: the 4th bit of the device IP address , such as 100 in "192.168.3.100"

Example

Send clear window command to target IP: 192.168.3.91 with command <rset, 0>, send command 00 04 00 00 c0 a8 03 5b 3c 72 73 65 74 2c 30 3e

Send create window command to target IP: 192.168.3.91 with command <open,1,0,0,0,0,1919,1079>, send command 00 04 00 00 c0 a8 03 5b 3c 6f 70 65 6e 2c 31 2c 30 2c 30 2c 30 2c 30 2c 31 39 31 3c 2c 31 30 37 39 3e

Send switch window command to target IP: 192.168.3.91 with command <move,1,7,0,490,405,2129,1402>, send command 00 04 00 00 c0 a8 03 5b 3c 6d 6f 76 65 2c 31 2c 31 2c 30 2c 34 39 30 2c 34 30 35 2c 32 31 32 39 2c 31 34 30 32 3e

Send switch mode 1 to target IP: 192.168.3.91

For RS232 serial port, send command <load,mode,0,0> directly.

For RJ45 port, send command by network 00 04 00 00 c0 a8 03 5b 3C 6C 6F 61 64 2C 6D 6F 64 65 2C 30 2C 30 3E

7.2.2 Via RS232 Serial port

Data packet description

The difference between the serial port and network port is 8-bit header. For RS232 serial port, just send the command directly without 8-bit header.

Send clear window command <rset, 0>

Send create window command <open,1,0,0,0,0,1919,1079>

Send switch window command <move,1,7,0,490,405,2129,1402>

7.3 Create a new display window

7.3.1 Protocol description

<open,W_ID,SourceChl,SourceType,x0,y0,x1,y1>

W_ID: Window ID, starts from 1

SourceChl: Input channel, starts from 0

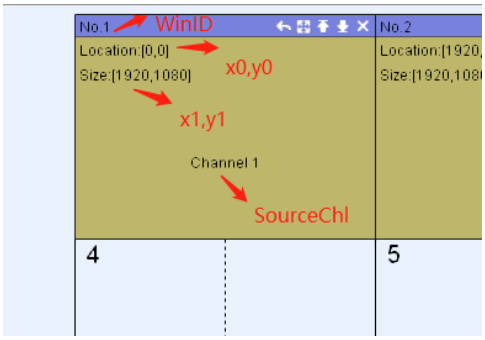
SourceType: Inputs type, fixed at 0

x0: The horizontal start of the window, starts from 0

y0: The vertical start of the window, starts from 0

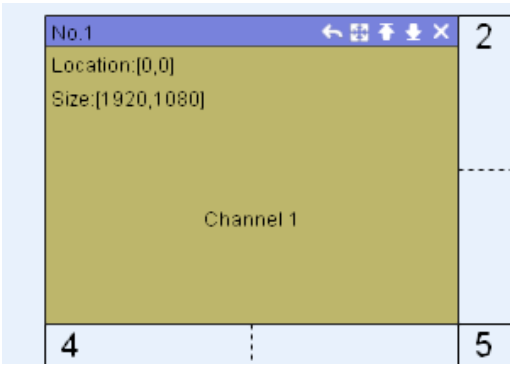
x1: The horizontal end of the window

y1: The vertical end of the window



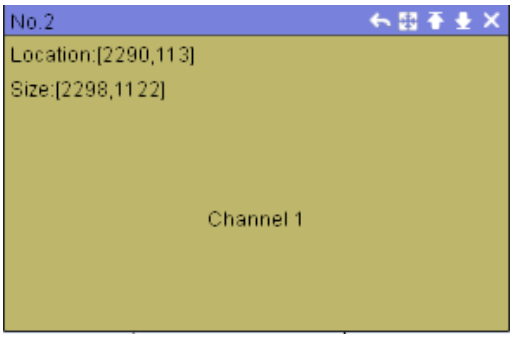
Create window 1

<open,1,0,0,0,0,1919,1079>



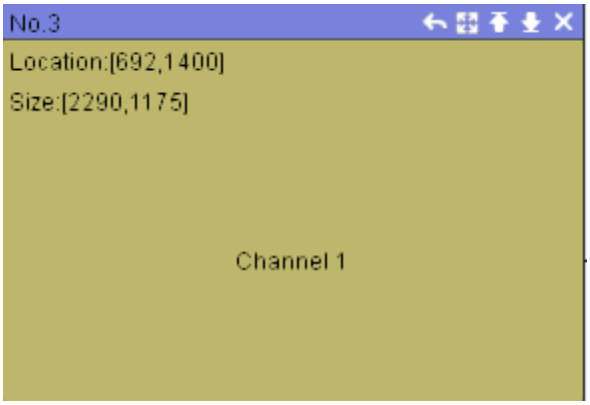
Create window 2

<open,2,0,0,2290,113,4587,1234>



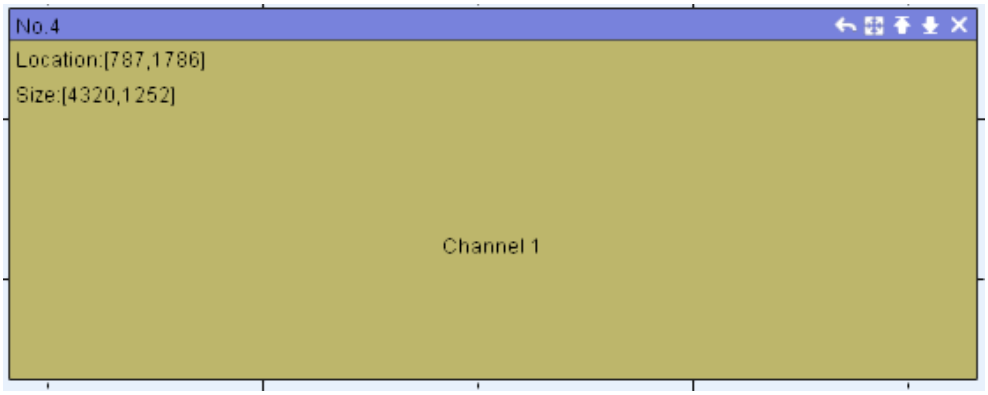
Create window 3

<open,3,0,0,692,1400,2574>



Create window 4

<open,4,0,0,787,1786,3037>



7.4 Switch sources

7.4.1 Protocols description

move,W_ID,SourceChl,SourceType >

W_ID：Window ID，start from 1

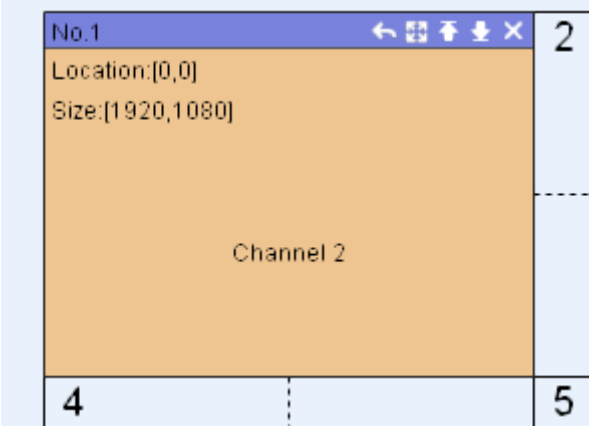
SourceChl：Input channel, start from 0

SourceType：Input source type,fixed at 0

7.4.2 Examples

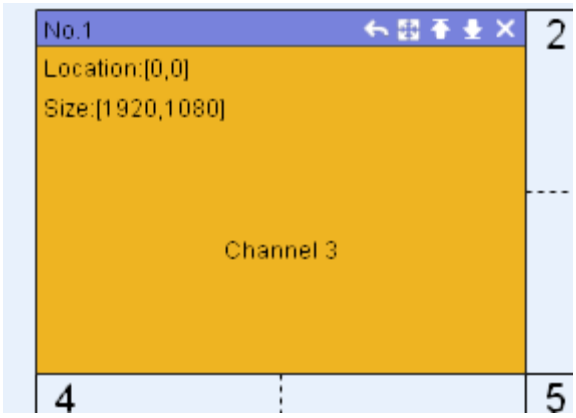
Switching window 1 with input channel 2

<move,1,1,0 >



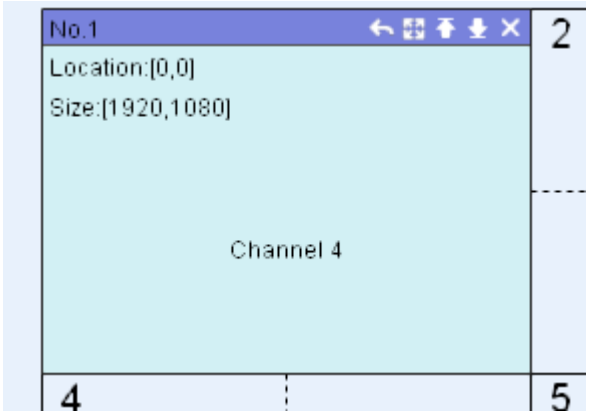
Switching window 1 with input channel 3

<move,1,2,0 >



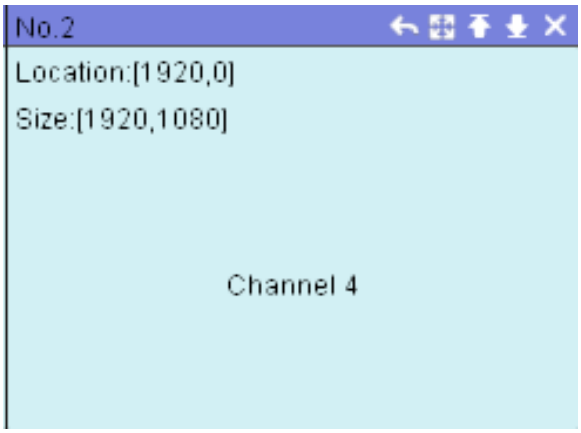
Switching window 1 with input channel 4

<move,1,3,0>



Switching window 2 with input channel 4

<move,2,3,0>



7.5 Scene save

7.5.1 Protocol description

<save, mode, groupID, modeIndex,sname>
groupID: fixed at 0
modeIndex: Scene mode serial number,starts from 0
Sname: Scene mode name5.2 Protocol examples

7.5.2 Example

Save scene mode 1,the mode name is mode 1
<save,mode,0,0,573a666f005f0031>
Save scene mode 2,the mode name is mode 2
<save,mode,0,1,573a666f005f0032>
Save scene mode 3,the mode name is mode 3
<save,mode,0,2,573a666f005f0033>
Save scene mode 4,the mode name is mode 4
<save,mode,0,3,573a666f005f0034>

7.6 Clear video window

7.6.1 Protocol description

<rset, wallID>
wallID: Video wall group number, start from 0

7.6.2 Example

Empty the video wall 1
<rset, 0>
Empty the video wall 2
<rset, 1>

Empty the video wall 3

<rset, 2>

Empty the video wall 4

<rset, 3>

7.7 Scene mode recall

7.7.1 Protocols description

<load,mode,groupID,modeIndex>

groupID: fixed at 0

modeIndex: Scene mode serial number,starts from 0

7.7.2 Protocols examples

Recall Scene mode 1

<load,mode,0,0>

Recall Scene mode 2

<load,mode,0,1>

Recall Scene mode 3

<load,mode,0,2>

7.8 Open the background image

7.8.1 Protocols description

<config,board,output,backpic,open,wallID,matrixCh,totalWidth,totalHeight>

wallID: Videowall display group ID, starts from 0

matrixCh: Background image channel

totalWidth: Background image width

totalHeight: Background image height

7.8.2 Protocols Examples

Open the background image with resolution 3840*1080
<config,board,output,backpic,open,0,9,3840,1080>

7.9 Close the background image

7.9.1 Protocols Description

<config,board,output,backpic,close,wallID,wallID,matrixCh>
wallID: Videowall group ID, starts from 0
matrixCh: Background image channel, fixed at 0

7.9.2 Protocols examples

Close the background image
<config,board,output,backpic,close,0,0>

7.10 Open the banner (Scrolling text)

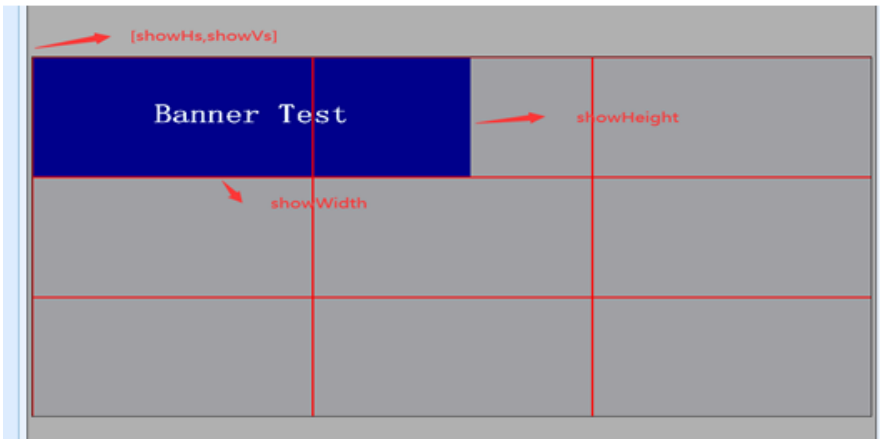
7.10.1 Protocols description

<config,board,output,banner,open,wallID,matrixCh,isRoll,rollSpeed,showHs,showVs,showWidth,showHeight>
wallID: Video wall display group ID, starts from 0
matrixCh: Banner channel
isRoll: Banner scrolling or not, 0 or 1
rollSpeed: Banner scrolling speed, the default is 5
showHs: Banner horizontal start

showVs: Banner vertical start

showWidth: Banner display width

showHeight: Banner display height



7.10.2 Protocols examples

Open the banner

<config,board,output,banner,open,0,10,0,5,0,0,5760,1080>

7.11 Close the banner

7.11.1 Protocols description

<config,board,output,banner,open,wallID,matrixCh,showHs,showVs,showWidth,showHeight>

wallID: Video wall display group ID, starts from 0

matrixCh: Banner channel

showHs: Banner horizontal start

showVs: Banner vertical start

showWidth: Banner display width

showHeight: Banner display height

7.11.2 Protocols examples

Close the banner

<config,board,output,banner,close,0,10,0,0,5760,1080>

7.12 Display control protocols

7.12.1 Protocols description

<send,control,screen,IsHex,cmd>

IsHex: Command sending method, 1 represents hexadecimal sending, 0 represents string sending. Here is string form.

Cmd: String command

7.12.2 Protocols examples

Close the display control

<send,control,screen,0,ffff>

7.13 Put the window to the top/ bottom

7.13.1 Protocols description

<TorB,W_ID,Z>

W_ID：Window ID, starts from 1

Z：1 represents to put the window to the top and 0 represents to bottom.

7.13.2 Protocols examples

Put the No.3 window to the top

<TorB,3,1>

Put the No.2 window to the bottom

<TorB,2,0>

7.14 Close single output window

7.14.1 Protocols description

<shut,W_ID>

W_ID： Window ID, starts from 1

7.14.2 Protocols examples

Close the window No. 3

<shut,3>

7.15 Close all output windows

7.15.1 Protocols description

<reset,wallID>

wallID: Video wall display group ID, starts from 0

7.15.2 Protocols examples

Close all the window of video wall group 0.

<rset,0>

7.16 Input source configuration

7.16.1 Protocols description

<config,board,input,index,property,inputPort,B_ID,M_ID,typeBoard,sourceType,resolution,winsize,win_left,win_right,win_top,win_bottom,consize,conleft,con_right,con_top,con_bottom>

Index: Input source serial no., starts from 0

inputPort: Input channel, starts from 1

B_ID：Board ID

M_ID: Machine ID

typeBoard: Board Type

sourceType: Input source type 1—VGA，2—AV，3—YPBPR，4—DVI，5-HDMI，6—SDI

Resolution: Input source resolution
win_left: Input window horizontal start

win_right: Input window horizontal end

win_top: Input window vertical start

win_bottom: Input window vertical end

con_left: Image cropping horizontal start

con_right: Image cropping horizontal end

con_top: Image cropping vertical start

con_bottom: Image cropping vertical end

7.16.2 Protocol examples

Configure input channel 1

<config,board,input,0,property,1,0,1,1,1,1,0,winsize,0,1919,0,1079,consize,0,1919,0,1079>

Configure input channel 2

<config,board,input,1,property,2,1,1,1,1,4,0,winsize,0,1919,0,1079,consize,0,1919,0,1079>

Configure input channel 3

<config,board,input,2,property,3,2,1,1,1,1,0,winsize,0,1919,0,1079,consize,0,1919,0,1079>

7.17 Set output resolution

7.17.1 Protocol description

<config,board,output,resolution,MachineID,wallID,pixelCmd,BoardID>

MachineID: The controller serial number corresponding to the current display

wallID: Video wall display group ID, starts from 0

pixelCmd: The resolution corresponds to the machine protocols, for example, the machine protocol of 1920x1080@60Hz is 0x01

BoardID: The ID of Internal board corresponding to the current screen, starts from 0

7.17.2 Protocol examples

Set the board 0 resolution as 1280x760 60Hz

<config,board,output,resolution,1,1,2,0>

Set the board 1 resolution as 1280x800 60Hz

<config,board,output,resolution,1,1,4,1>

Set the board 2 resolution as 1366x768 60Hz

<config,board,output,resolution,1,1,6,2>

Set the board 3 resolution as 1280x800 60Hz

<config,board,output,resolution,1,1,7,3>

7.18 Video wall display configuration

7.18.1 Protocols description

<config,screen,size,splictNum,Line,Column,,machineType,spliceType,backboardType,winNumber,pixelIndex,previewState,previewState,initChannel,backpicType,bannerType>

splictNum: Video wall display numbers

Line: Rows

Column: Columns

machineType: Machine type, starts from 0

spliceType: Video wall type, 0-Video wall, 1-Edge Blending, 2-LED

backboardType: Main board type, 0-2U 2Wins-1, 1-2U 2Wins-2, 2-3U 2Wins, 3-6.5U Wins, 4-11U 2Wins, 5-2.5U 4Wins, 6-4U 4Wins, 7-6.5U 4Wins, 8-11U 4Wins

winNumber: Image layer per display, 1-1 layer image, 2-layer images, 4-layer images

pixelIndex: Resolution serial number, starts from 0

previewState: Preview and echo function on/off

initChannel: Start channel

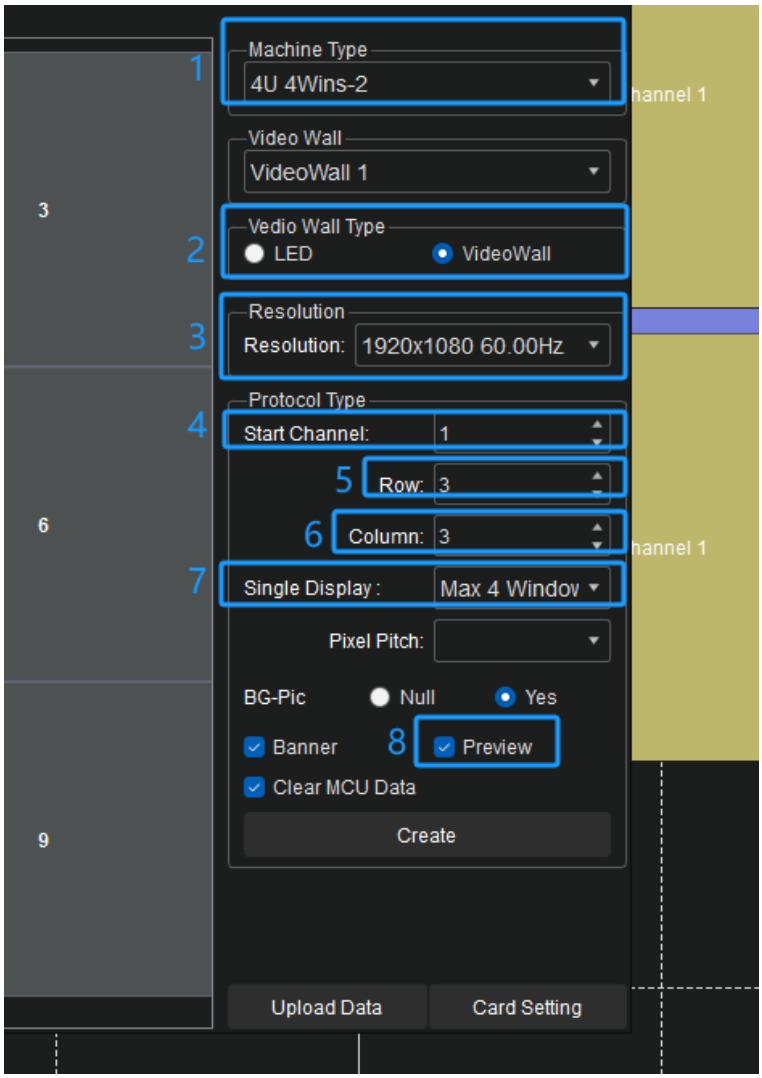
backpicType: Background image type

bannerType: background image display mode, default as 0

7.18.2 Protocol examples

Configuration: 1*2 Video wall, Video wall type is LED, 2U 2Wins-1,2 layer images,preview on, start channel is 1.

The protocol is <config,screen,size,2,1,2,2,0,0,2,17,1,1,1,5>



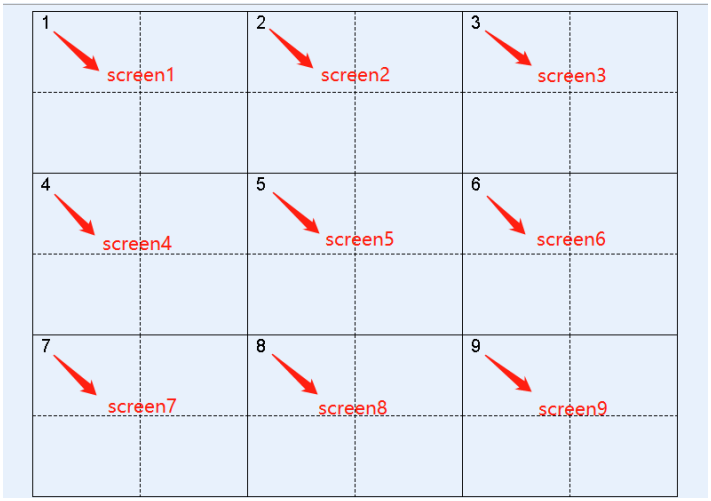
1	machineType
2	spliceType
3	pixelIndex
4	initChannel
5	Line
6	Column
7	winNumber
8	previewState

7.19 Display configuration

7.19.1 Protocols description

<config,screen,property,S_ID,G_ID,B_ID,M_ID,W_Number,W1,
matrixOutput1,W2,matrixOutput2,W3,matrixOutput3,W4,matrixOutput1,
B_Output,S_X_Start,S_Y_Start,S_X_End,S_Y_End>
S_ID: Display serial number, starts from 0
G_ID: Video wall group number, starts from 0
B_ID: The ID of the internal board corresponding to the current display
M_ID: The controller machine ID to current corresponding display
W_Number：The display image layers
W1：Input port in layer 1 (board input port)
matrixOutput1: Matrix output port to be connected with the layer 1
W2：Input port in layer 2 (board input port)
matrixOutput2: Matrix output port to be connected with the layer 2
W3:Input port in layer 3 (board input port)
matrixOutput3: Matrix output port to be connected with the layer 1
W4:Input port in layer 4 (board input port)
matrixOutput4: Matrix output port to be connected with the layer 4

B_Output: Board output port to current display
S_X_Star: Current display horizontal start
S_Y_Start: Current display vertical start
S_X_End: Current display horizontal end
S_Y_End: Current display horizontal end



7.19.2 Protocols examples

Configure the display 1

<config,screen,property,0,1,0,1,2,1,1,2,2,8,0,0,1399,1049>

Configure the display 2

<config,screen,property,1,1,0,1,2,3,3,4,4,2,1400,0,2799,1049>

Configure the display 3

<config,screen,property,2,1,1,1,2,1,5,2,6,8,2800,0,4199,1049>

Configure the display 4

<config,screen,property,3,1,1,1,2,3,7,4,8,2,0,1050,1399,2099>"

Configure the display 5

<config,screen,property,4,1,2,1,2,1,9,2,10,8,1400,1050,2799,2099>

Configure the display 6

<config,screen,property,5,1,2,1,2,3,11,4,12,2,2800,1050,4199,2099>

Configure the display 7

<config,screen,property,6,1,3,1,2,1,13,2,14,8,0,2100,1399,3149>

Configure the display 8

<config,screen,property,7,1,3,1,2,3,15,4,16,2,1400,2100,2799,3149>

Configure the display 9

<config,screen,property,8,1,4,1,2,1,17,2,18,8,2800,2100,4199,3149>

7.20 Modify board IP address

7.20.1 Protocols description

<config,board,controlsys,machineID,groupID,boardType,boardID,network,target,ipAddress,ipPort>

machineID: Machine ID, starts from 1

groupID: Video wall display group ID, starts from 0

boardType: Board type, the default value is 3.

boardID: Board ID, the board serial number which need to change the IP address

Target: IP address type,“targetip” change IP address, “targetmask”change subnet Mask,

“targetgate”change gateway

ipAddress:“###.###.###.###” new address, the format is “###.###.###.###”

ipPort: Port number, need to use it when the target value is “targetip”

7.20.2 Protocols examples

Modify the board 1 IP address. The new address is 192.168.3.91, the port number is 5000

<config,board,controlsys,255,255,6,1,network,targetip,192.168.3.91,5000>

Modify the board 1 subnet mask, the new address is: 255.255.255.0

<config,board,controlsys,255,255,6,1,network,targetmask,255.255.255.0>

Modify the board 1 gateway, the new address is 192.168.3.1

<config,board,controlsys,255,255,6,1,network,targetgate,192.168.3.1>