DigiBird Technology

VWC2-ROC Video Wall Controller

User Manual V1.0

Table of Contents

About This Manual I

Conventions I

1. Hardware 1

1.1. Overview 1

1.2. Hardware Interface 1

1.2.1. 1U-0404 1

1.2.2. 1U-0408 1

1.2.3. 1U-0412 1

1.3. Modify IP via front panel 2

2. Software 3

2.1. Instructions 3

2.2. Requirements 3

2.2.1. Hardware requirements 3

2.2.2. OS requirements 3

2.3. Software installation 3

2.3.1. Software installation 3

2.4. Software Interface 4

3. Software Operation 5

3.1. Communication 5

3.1.1. Device Communication 5

3.1.2. Revise IP Address 7

3.2. Video Wall Configuration 8

3.2.1. Create New Video Wall 8

3.2.2. Output Channel Setting 9

3.2.3. Customized Resolution 10

3.2.4. Video Wall Mode Setting 11

3.3. Video Wall Layout 12

3.3.1. Create Windows 12

3.3.2. Switching Signal 14

3.3.3. Windows Operating 15

3.4. Layout Management 18

3.4.1. Save 18

3.4.2. Read 18

3.4.3. Refresh 19

3.4.4. Management 19

3.4.5. Layout Circle 20

3.5. Audio 20

3.6. Input Source Setting 22

3.6.1. Rename 22

3.6.2. Source Cutting 23

3.6.3. Label 23

3.6.4. Background color 25

3.7. Matrix Switch 25

3.7.1. Signal Switch 25

3.7.2. Clear Video 26

3.7.3. Rename 26

4. System Management 27

4.1. Preview Setting 27

4.2. EDID Management 27

4.2.1. Read EDID 28

4.2.2. Write EDID 28

4.3. User Management 28

4.3.1. Add User..... 28
4.3.2. Revise User Information..... 28
4.3.3. Delete User..... 29
4.4. Controller Management..... 29
4.5. Backup & Restore..... 30
4.5.1. Backup..... 30
4.5.2. Restore 30

About This Manual

Thank you for purchasing DigiBird products.
This manual is provided to help you get the most from your VWC2-ROC series controller. It covers all respects of configuration and operation.
This manual may subject to change without prior notice.

Conventions

	Note	To help understand contents in the manual
	Notice	Notices have to follow during operation
	Warning	Warning for potentially dangerous situation.

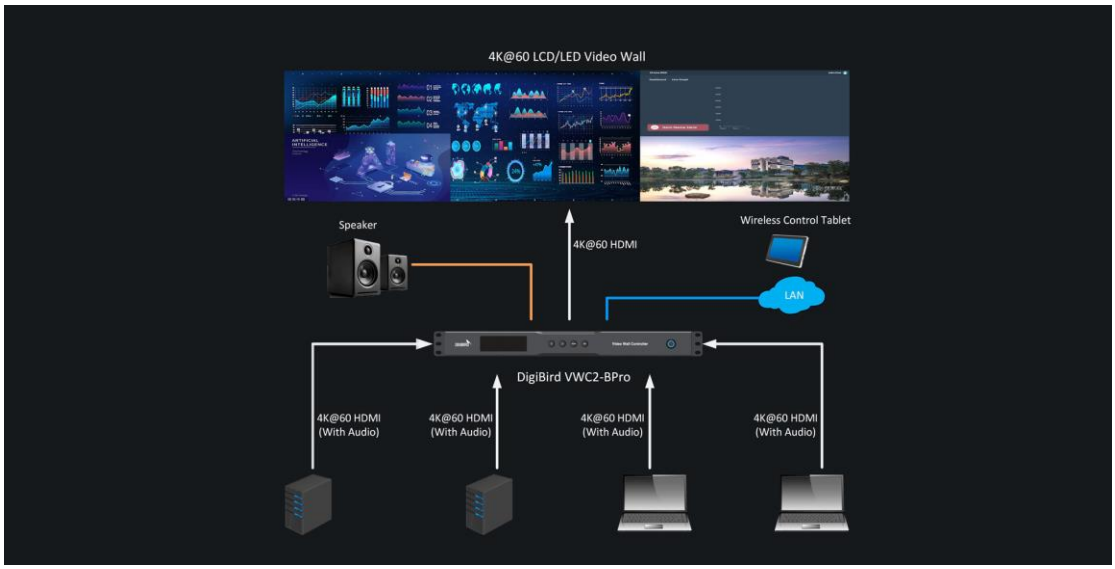
「 」	Indicates operating menu in control software.
< >	Indicates keys you should press
→	Indicates procedures or steps need to be conducted.

1. Hardware

1.1. Overview

VWC2-ROC is a compact video wall controller which delivers 4k/60 visual experiences. Up to 4x input sources can be displayed simultaneously to LCD wall or LED wall with any size and at any position.

With capabilities to support embedded audio, VWC2-ROC offers higher flexibility for versatile applications, such as meeting rooms, small control rooms and digital signage.



1.2. Hardware Interface

VWC2-ROC series have 3x types of chassis.

1.2.1. 1U-0404

Front View	Rear View
Support modify IP address via push button	4x HDMI input, 4x HDMI output, 1x Lan for control, 1x Lan for preview

1.2.2. 1U-0408

Front View	Rear View
Support modify IP address via push button	4x HDMI input, 8x HDMI output, 1x Lan for control, 1x Lan for preview

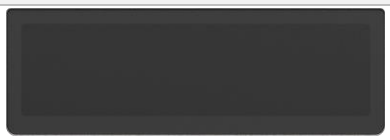
1.2.3. 1U-0412

Front View	Rear View

Support modify IP address via push button	4x HDMI input, 12x HDMI output, 1x Lan for control, 1x Lan for preview

1.3. Modify IP via front panel

User can obtain and modify IP address over push button at front panel.

	Operation	LCD
1	Initial	
2	Press any	
3	Switch to IP	
4	Enter to check IP	
5	Select to modify	
6	Confirm	
7	Select to modify	
8	Press 2s to save	

2. Software

2.1. Instructions

The software is windows-based client software, which can be used to communicate with video wall controller and manage video wall display.

2.2. Requirements

2.2.1. Hardware requirements

Computer hardware requirements as below:

Item	Minimum Requirements	Recommended
CPU	Intel Core i3	Intel Core i5 and later
RAW	2G RAM	4GB RAM
HDD	150MB	5G and above
Monitor	1366x768	1920x1080 and above

2.2.2. OS requirements

Microsoft Windows OS requirements as below:

OS	Notes
Windows XP	32/64
Windows 7	32/64
Windows 8	32/64
Windows 10	32/64

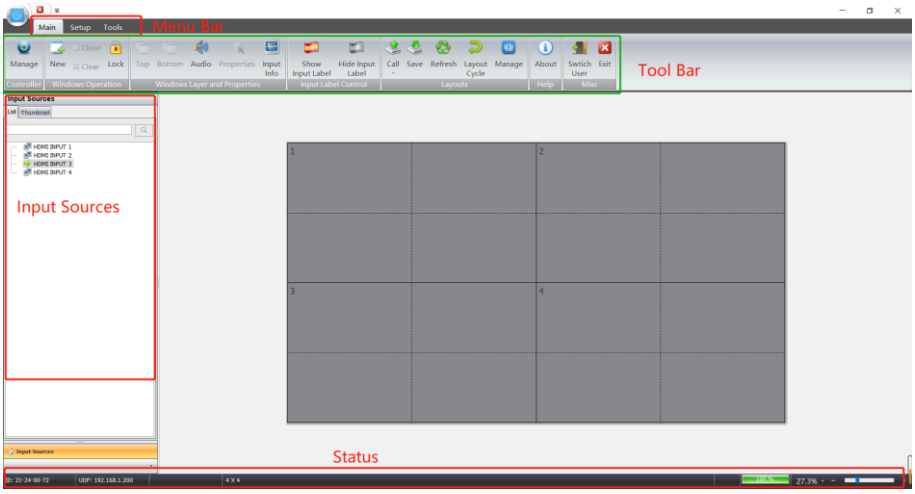
2.3. Software installation

2.3.1. Software installation

Download software from DigiBird website and install software by following the wizard.

2.4. Software Interface

With user-friendly interface, you can easily manage video wall display.



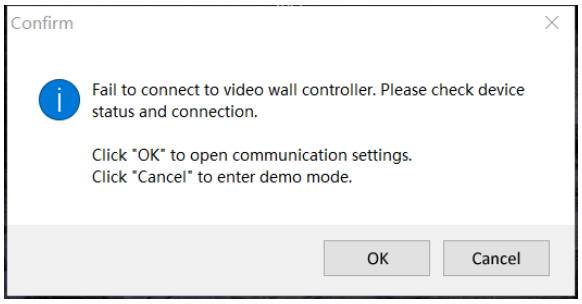
Interface description

No.	Item	Description
1	Menu Bar	Including Main, Setting and Tools
2	Tools Bar	Tools to achieve different functions
3	Input	Display all inputs in list or thumbnail
4	Virtual VW	Virtual video wall corresponding physical video wall
5	Status	Indicates operating status

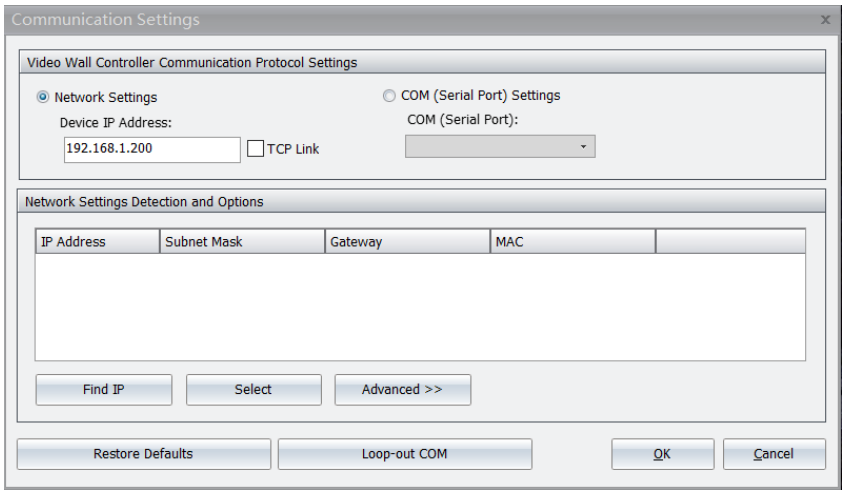
3. Software Operation

3.1. Communication

After successfully log in, a window will pop out if failed to communicate with controller. Click Confirm to start setting, or click Cancel to enter into DEMO mode.



Your control PC can establish connection with controller via serial port or network.



Default connection is UDP communication. TCP not support by this model at current stage.

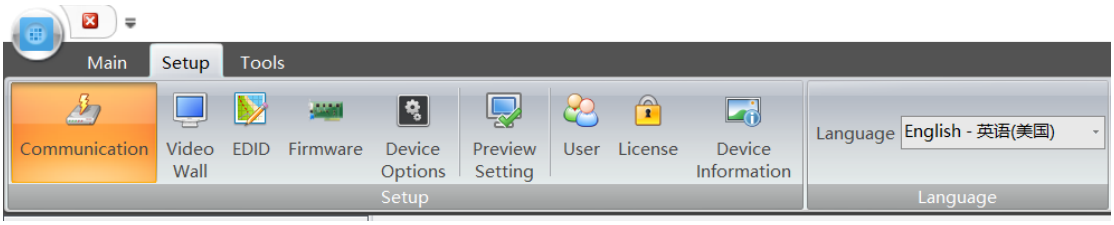
3.1.1. Device Communication

3.1.1.1. Network Communication

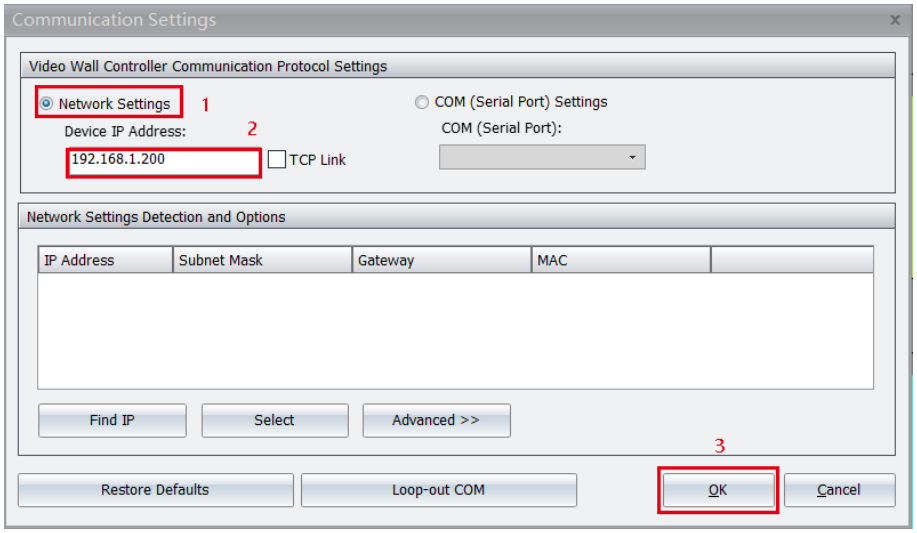
For Network connection, you have to ensure your control PC IP and controller IP within same LAN network.

Follow below steps to configure

1. Navigate to Setup, and Click 「Communication」to enter into setting page.

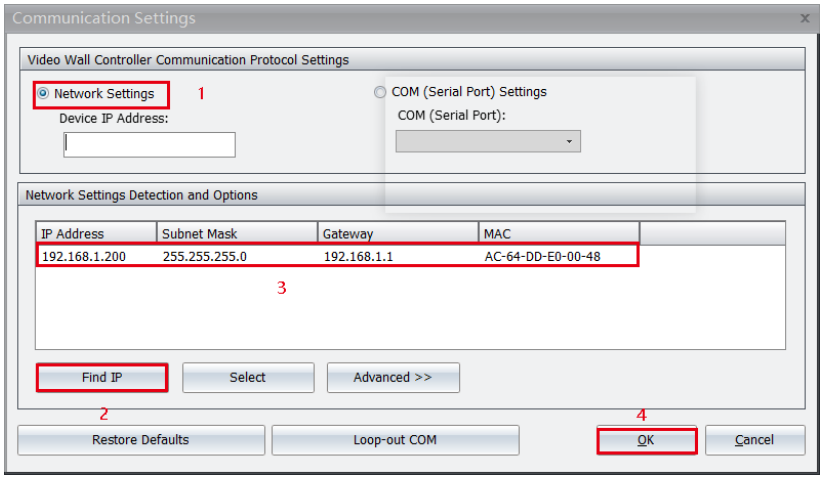


2. Select Network Setting, input IP address and click OK.



Besides of input IP manually, you can also search controller IP address.

1. Enable Network Setting
2. Click Find IP to find all controllers within network.
3. Select target controller
4. Confirm to complete setting.

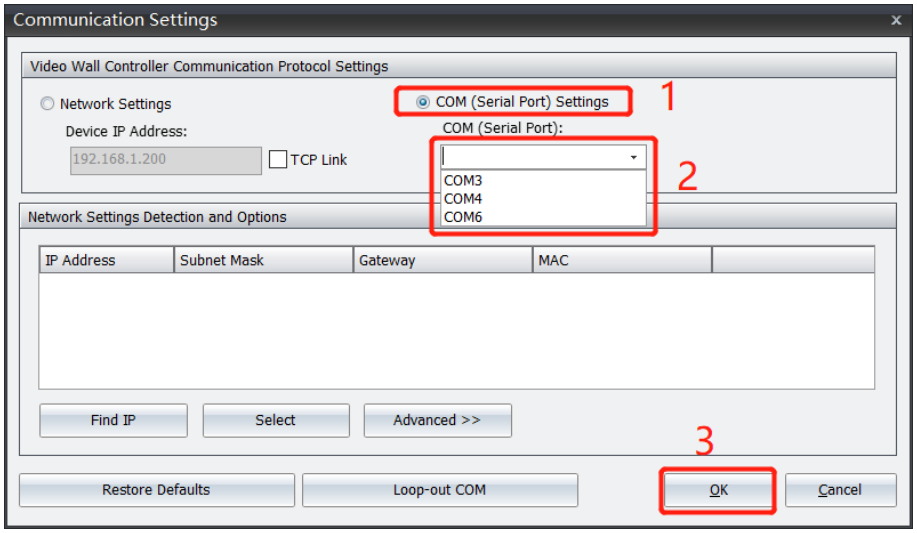


If no controller has been detected, please ensure whether PC IP and controller IP within same network.

3.1.1.2. Serial Port Communication

Connect controller to control PC via serial cable.
Follow below steps to configure:

1. Enable COM Setting.
2. Select corresponding COM port from drop down list.
3. Confirm to complete setting.

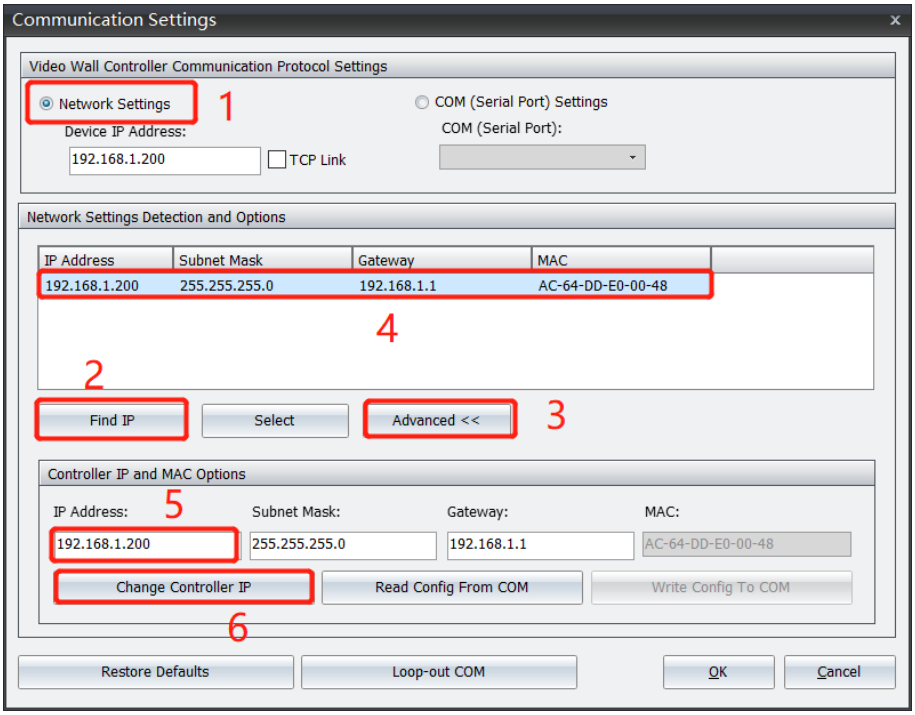


COM port should be vacant.

3.1.2. Revise IP Address

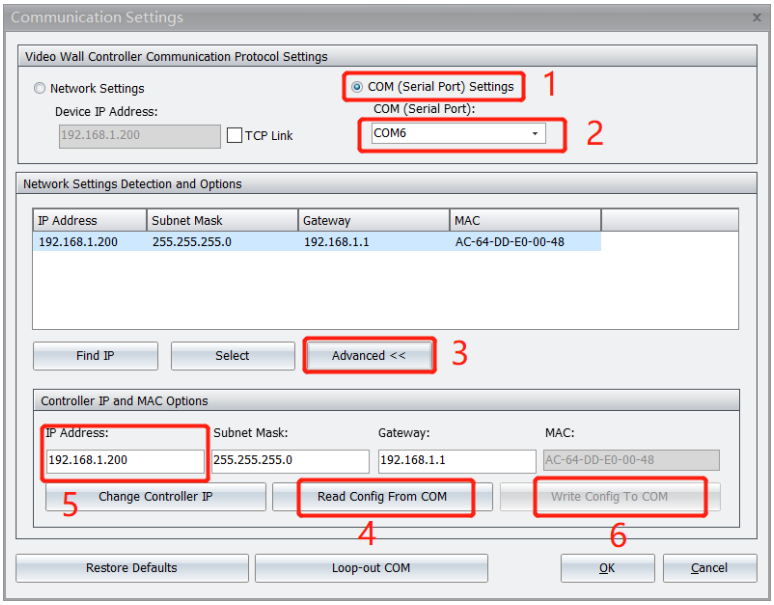
3.1.2.1. LAN Communication

1. Select Network Setting, click Find IP to view all controllers within the LAN.
2. Select target controller and click Advanced.
3. Input new IP address and click Revise



3.1.2.2. Serial Port Communication

1. Connect controller to your control PC via serial cable.
2. Select available port from drop down list.
3. Click Advanced and select Read Config From COM obtain controller IP address.
4. Input new IP address, and click Revise Config via Serial Port to complete.

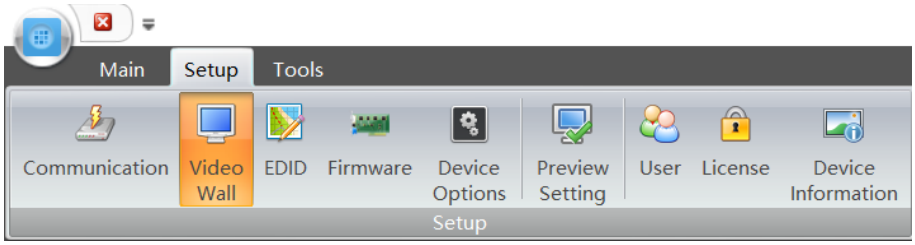


3.2. Video Wall Configuration

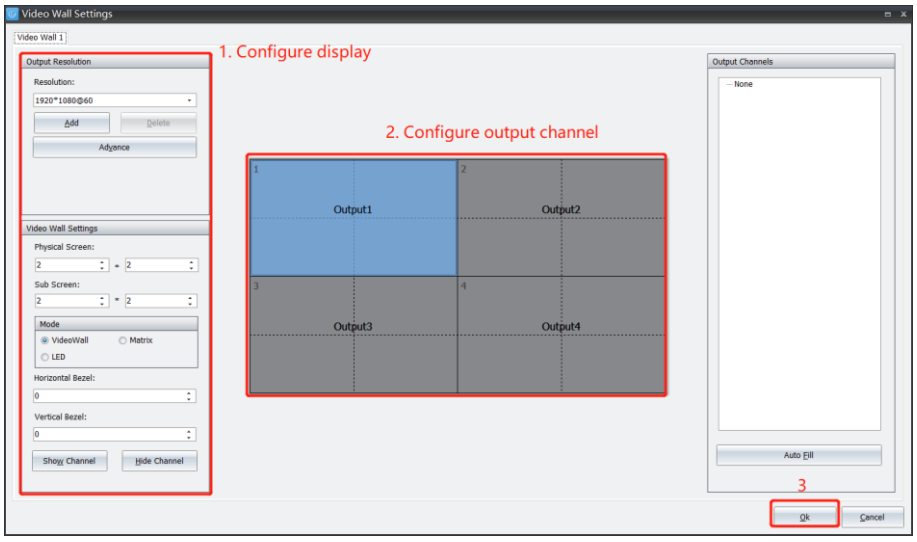
3.2.1. Create New Video Wall

Connect controller to video wall correctly via video cable.

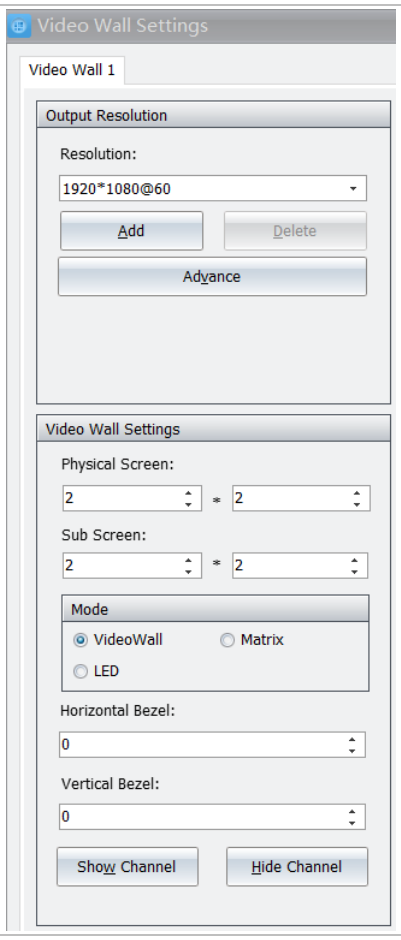
1. Navigate to Setup and Click Video Wall.



1. Configure video wall parameters at Video Wall Configuration. Refer 3.3.3 Parameter for more details.
2. Allocate output channel to corresponding screen. Refer 3.2.3 Output Channel Setting for more details.
3. Click Confirm to complete setting.

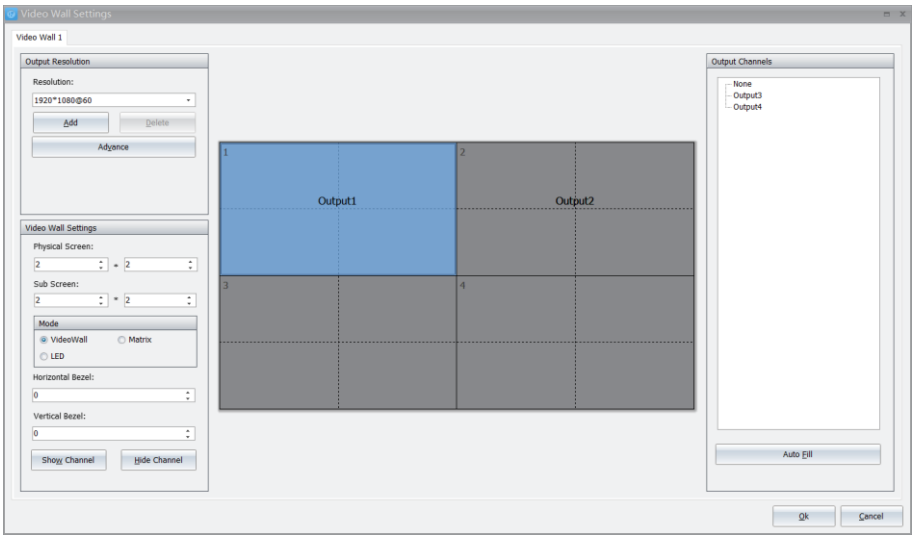


Parameter
Below table is description of parameter.

Screen Resolution Select desired screen resolution. Support customized resolution. Refer 3.2.4 Screen Resolution Setting for more details.	
Video Wall Input video wall Rows and Columns	
Sub Screen Virtual sub screen of physical screen to help locate window position. Default is 2x 2.	
Mode With options of LCD Wall, Matrix, LED wall. Refer 3.2.5 Video Wall Mode Setting.	
Bezel Under LCD mode, can input bezel information as compensation.	
Show Channel Display output channel number on screen, to indicate connection relationship	
Hide Disable channel number display	

3.2.2. Output Channel Setting

When configure video wall, output channel will automatically map to connected screen from left to right and from top to bottom.



- For irregular video wall, if the screen is not installed physically. Can click that screen from software, right click and apply No Output.

- To change mapping relationship between output channel and screen, you need to select target screen and double click target output channel.

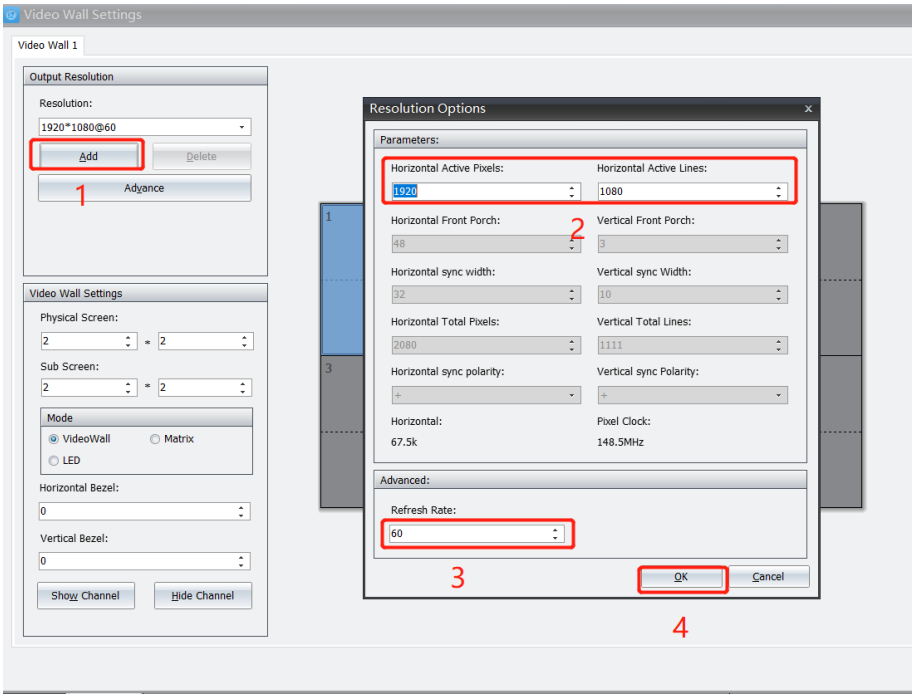
  Apply Auto Pair to pair unconfigured channel to available screen.

3.2.3. Customized Resolution

If offered resolution in library can not meet demand, user can customize resolution upon demand.

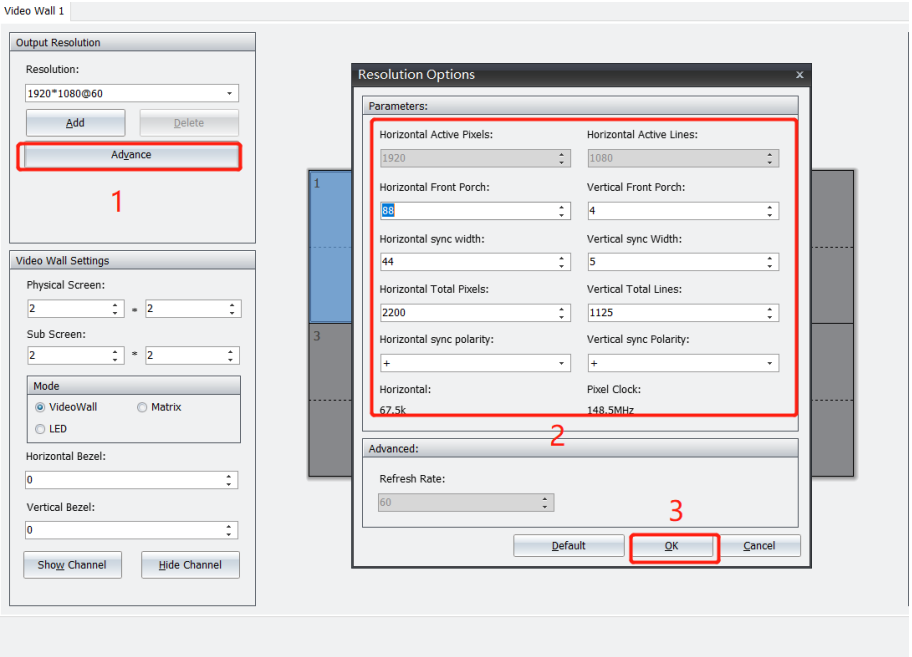
3.2.3.1. Add Resolution

Click Add and input required parameters at Resolution Options. Confirm to complete.



3.2.3.2. Revise Resolution

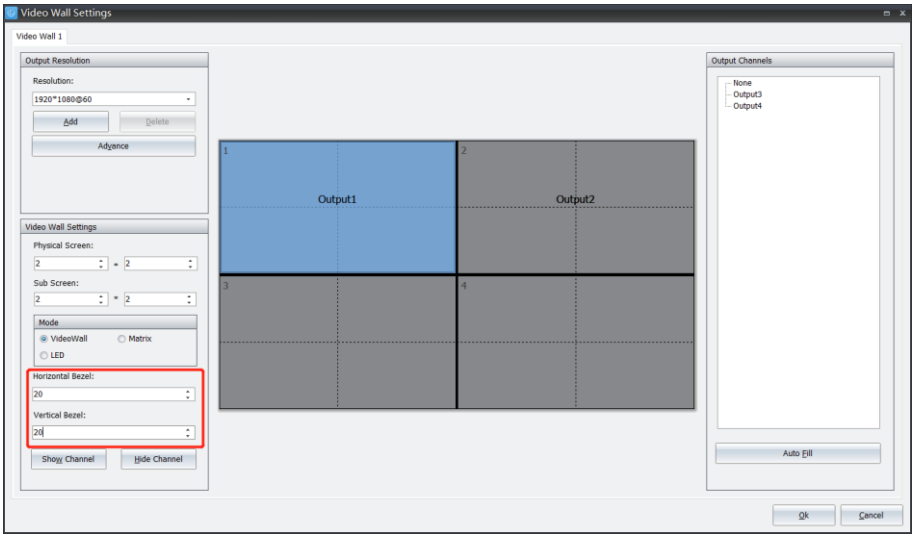
Click Advanced and input required information to revise current resolution at popped out window.



3.2.4. Video Wall Mode Setting

3.2.4.1. LCD Mode

For LCD and DLP video wall, please select LCD wall mode. Under this mode, you can input bezel information by pixel as bezel compensation to ensure the whole image is unified to avoid image tearing and distortion.



1. Horizontal bezel indicates the space between 2x adjacent screens. The space includes right bezel of left screen and left bezel of right screen and measured in pixels.
2. Vertical bezel indicates the space between 2x adjacent screens. The space includes bottom bezel of top screen and top bezel of bottom screen and measured in pixels.

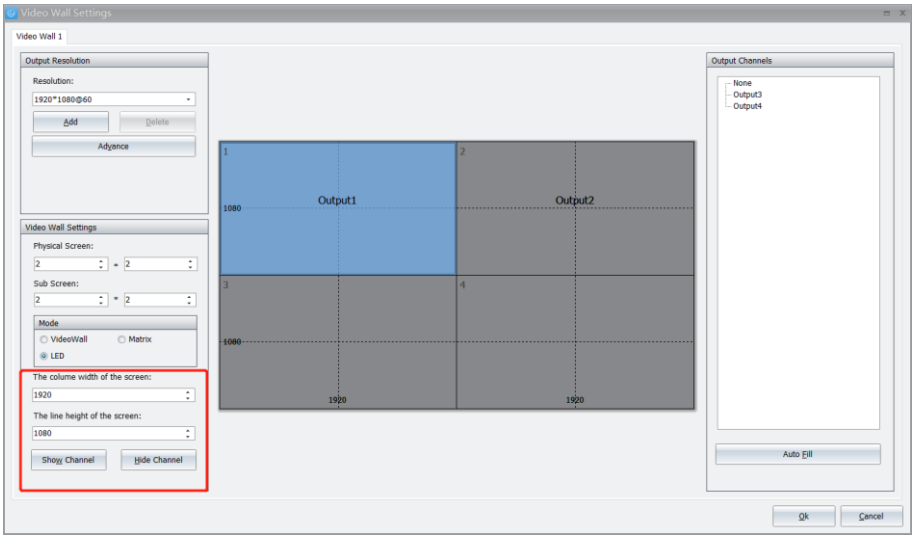
Pixel is calculated by physical width of horizontal bezel divides monitor size, then multiple monitor resolution.

3.2.4.2. LED Mode

As LED display areas, which are powered by sending card, are not same, need to apply LED Mode to configure.

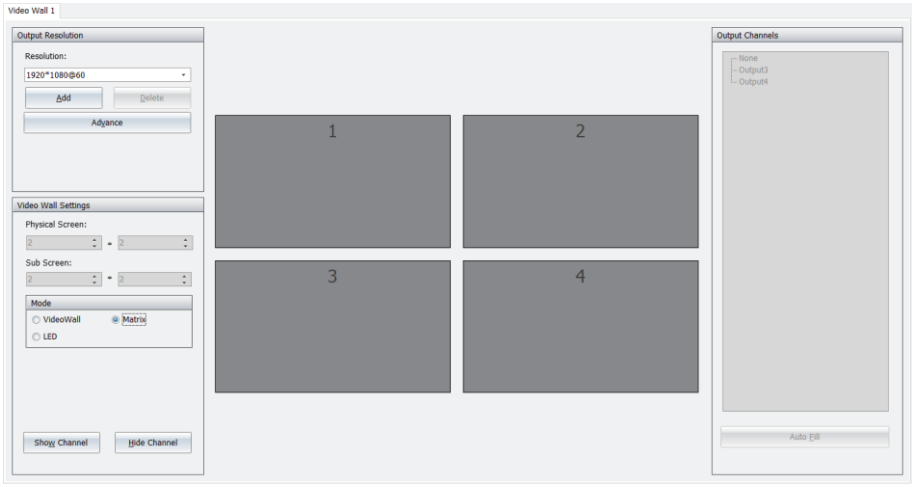
Select one screen and set up Row height and Column Width

1. Row height of screen indicates the row height where screen located in pixel.
2. Column width of screen indicates the column width where screen located in pixel.



3.2.4.3. Matrix Mode

If you want to activate matrix functions, need to select Matrix Mode. Controller will auto detect all available output channel. Please refer 3.7 Matrix Switching for more details.



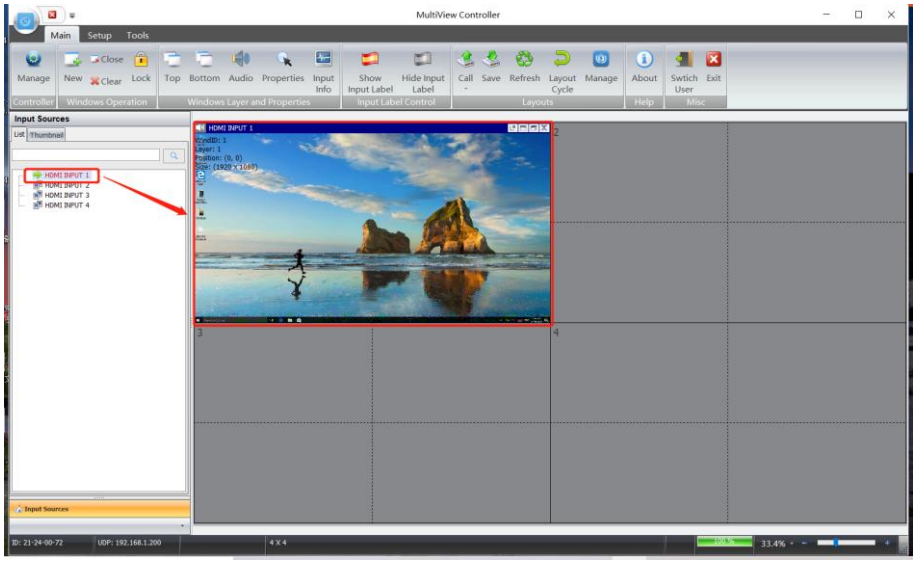
3.3. Video Wall Layout

After video wall created, user can create new windows and manage window display by resizing, roaming and locking.

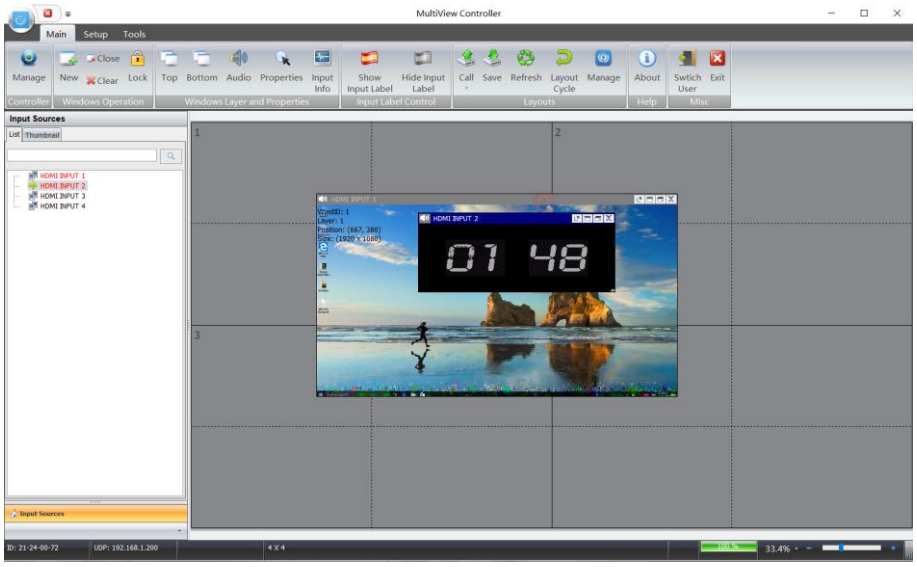
3.3.1. Create Windows

There are four methods to create new windows.

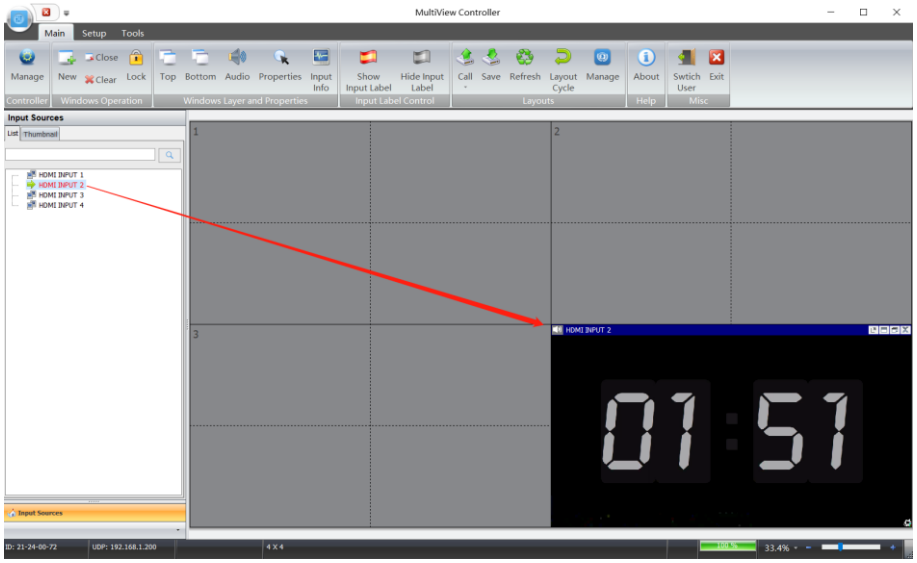
1. Arbitrary creating. Click to select one source in the inputs list, then press left key and drag to desired position to release.



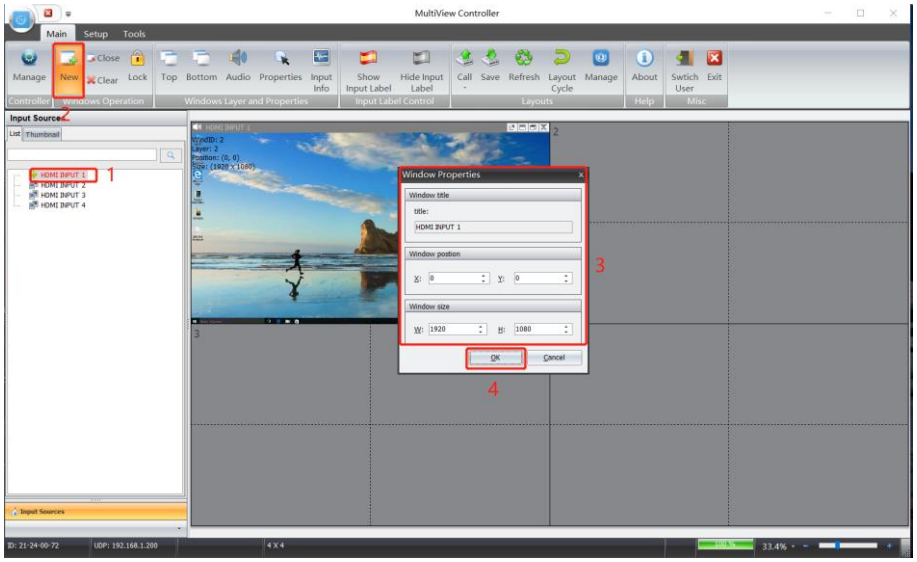
2. Overlay Creating. If you want to create a window on existing window, please press <Ctrl> and arbitrary create window.



Single Screen. Select one input, drag it to virtual video wall and release. The window will auto fit the screen which your mouse was located.



3. Precisely Creating. Select target input, Click New, and complete required information.



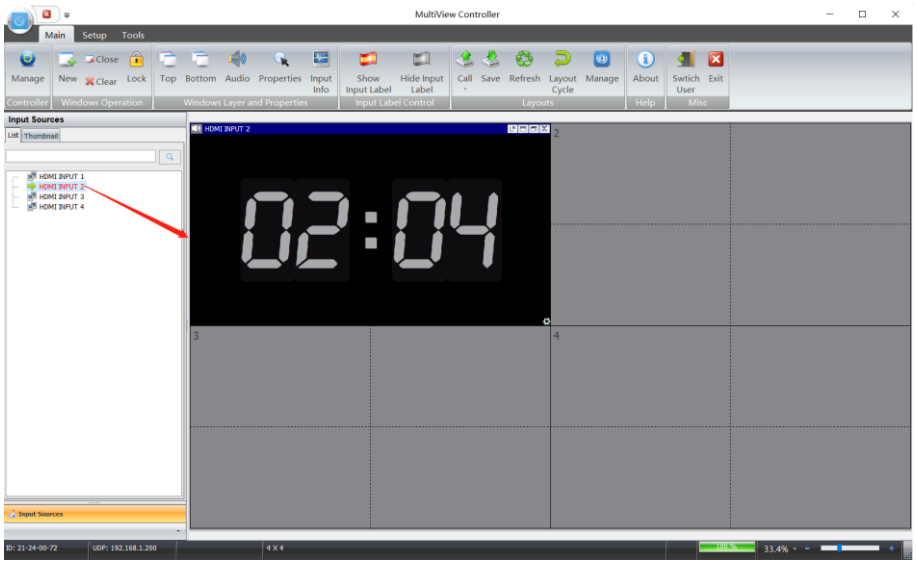
Window parameters are descried in below table.

No.	Parameter	Description
1	Name	Display input source name
2	Coordinates	To locate window position by pixel. Take left top corner as valid.
3	Size	et window height and width

3.3.2. Switching Signal

There are 2x methods to switch signal

1. Select one window at virtual video wall, double click target signal from inputs list to switch.
2. Drag one input source and drop to a window to switch.

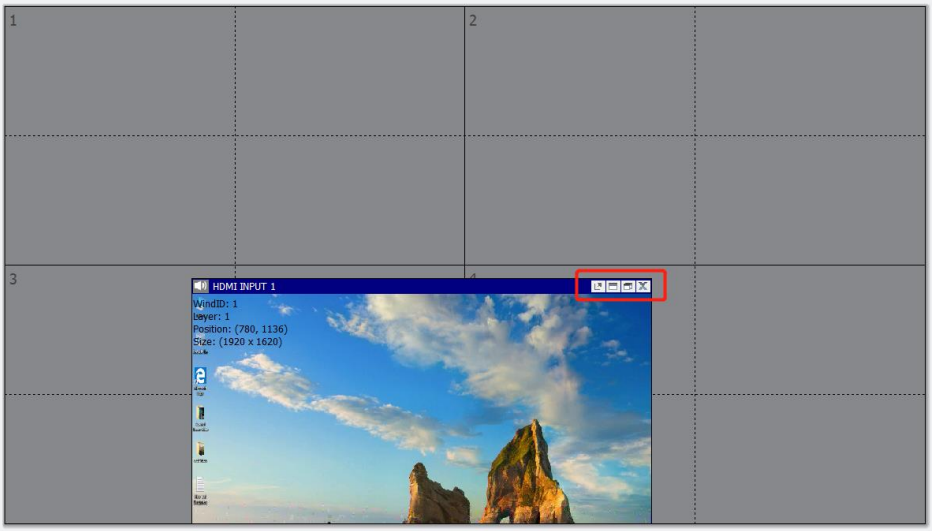


3.3.3. Windows Operating

Basic window operation includes Set Top, Set Bottom, Resize, Clear, etc.

3.3.3.1. Window Button

Through 4x buttons of top right corner, you can manage window display.

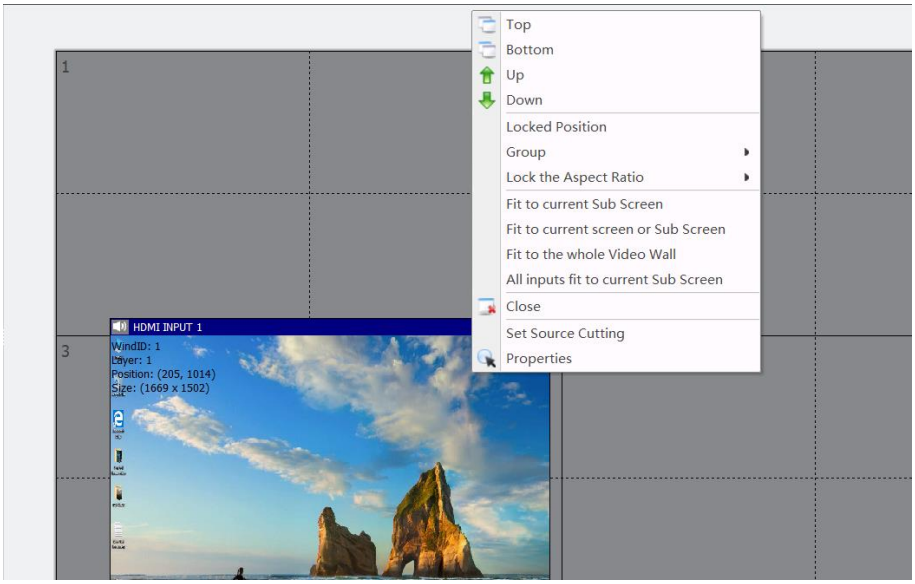


Button description as shown in below table.

No.	Button	Description
1		Zoom in this window to fit for occupied sub screen.
2		Zoom in this window to full screen.
3		Resume to previous size.
4		Close this window.

3.3.3.2. Window Setting

Right click to call out setting menu:

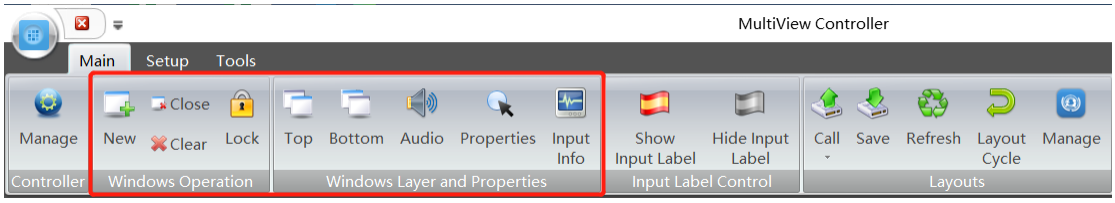


No	Options	Description
1	Top	Set window to top
2	Bottom	Set window to bottom
3	Up	Move up by one layer
4	Down	Move down by one layer
5	Locked Position	Window can not be moved
6	Group	Select multiple windows and group them
7	Lock the aspect ratio	Remain aspect ratio when resizing
7	Fit to current sub screen	Zoon window to fit to screen where window top left corner located.
8	Fit to occupied screen	Zoom window to fit to occupied screens
9	Full screen	Zoom window to entire video wall
10	All fit to single screen	Zoom all window to corresponding screen
11	Close	Close window
13	Properties	Set up widow title, position and size.

Can move mouse cursor on window boarder and drag to resize window.

3.3.3.3. Toolbar Button

Windows can be managed from Windows Operation, Windows Layer and Properties.



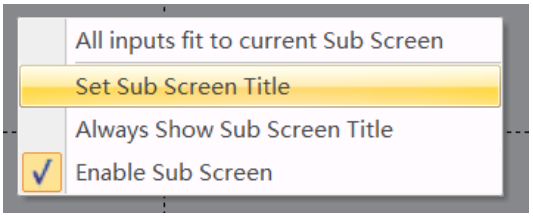
Description of Toolbar button:

No.	Button	Description
1	New	Create new window
2	Close	Close selected window or group of windows.
3	Clear	Close all windows on the video wall
4	Lock	Click to freeze window, click again to unlock
5	Top	Set selected window to top
6	Bottom	Set selected window to bottom
7	Properties	To edit window properties
8	Input	To check input resolutions

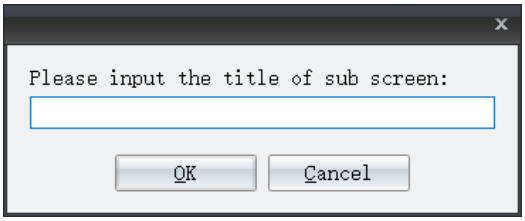
3.3.3.4. Sub-screen Title Setting

Sub-screen title can be customized to help user detect desired sub-screen.

1. Move your mouse to vacant area of sub-screen and right click to call out menu.

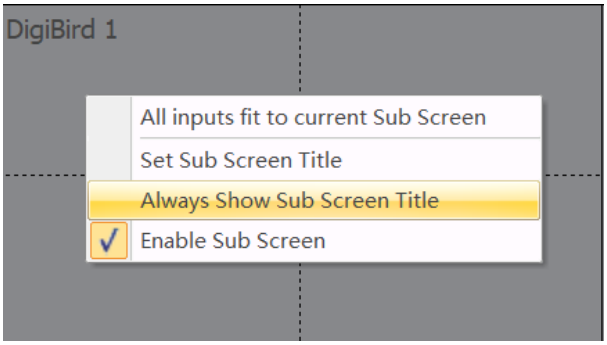


2. Input screen title and confirm.



3. New title will show as below.

4. If title has been covered by window, can enable always show title.

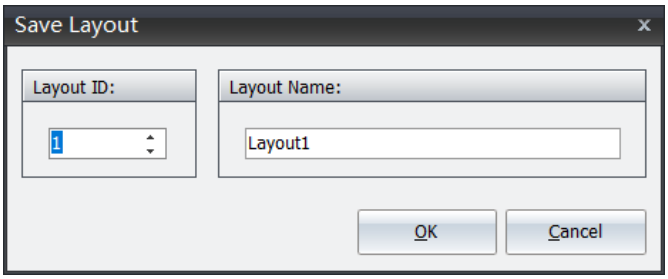


3.4. Layout Management

Video wall display, including window position, size, layer order and input properties, can be saved as layout. That information will be stored in hardware and maximum support 64x layouts.

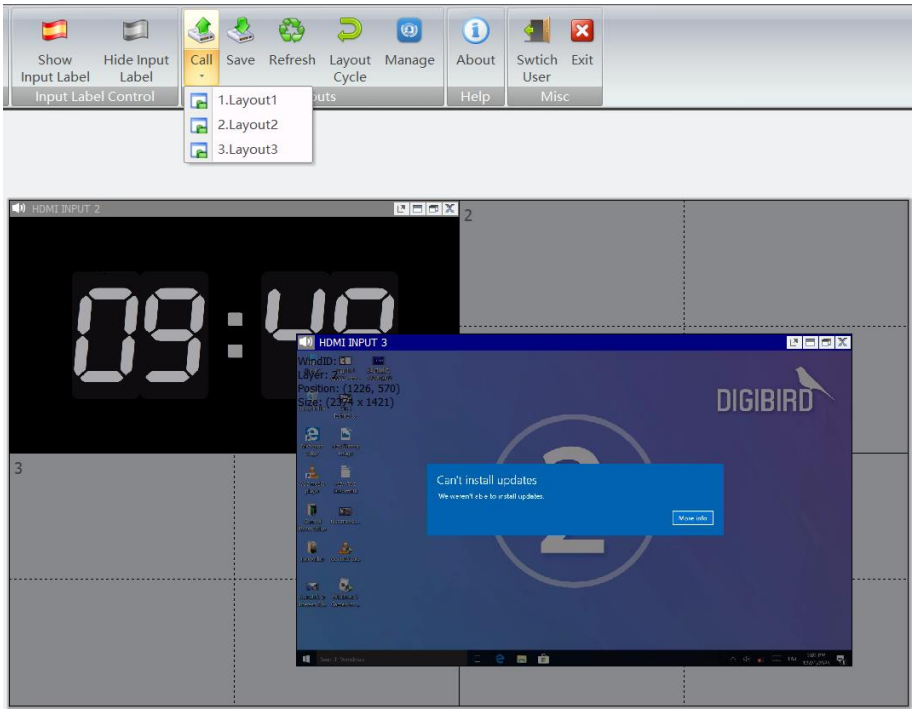
3.4.1. Save

Save current display as layout. Input preset ID and save. If preset ID has been occupied before, new layout will auto replace previous one.



3.4.2. Read

To recall saved layouts, you need to click Read and select desired layout.

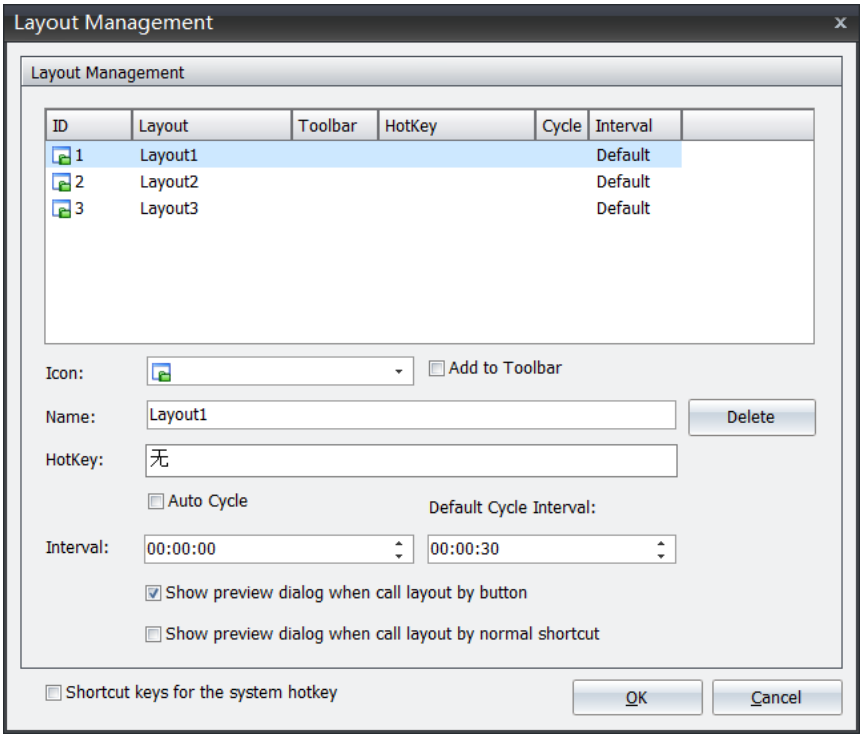


3.4.3. Refresh

Click Refresh to reload window information from controller.

3.4.4. Management

Click Management to call out preset management window.



Setting instructions as below:

No	Options	Description
1	Icon	Select icon for layout
2	Add to toolbar	Add selected preset to tool bar, easy to recall.
3	Name	Edit preset name
4	Delete	Delete selected layout
5	Hotkey	Set up hotkey for quick recall
6	Auto Circle	Enable circle for selected layout
7	Interval	Set up intervals for layout
8	Default interval	Presets will carousel by default intervals if have not been designated interval.
9	Show preview dialog when call layout by button	If enabled, window preview will be shown when recalling preset over button
10	Show preview dialog when recall layout by normal shortcut	If enabled, window preview will be shown when recalling preset.
11	System hotkey	User can recall preset over system hotkey even control software is running at backstage.

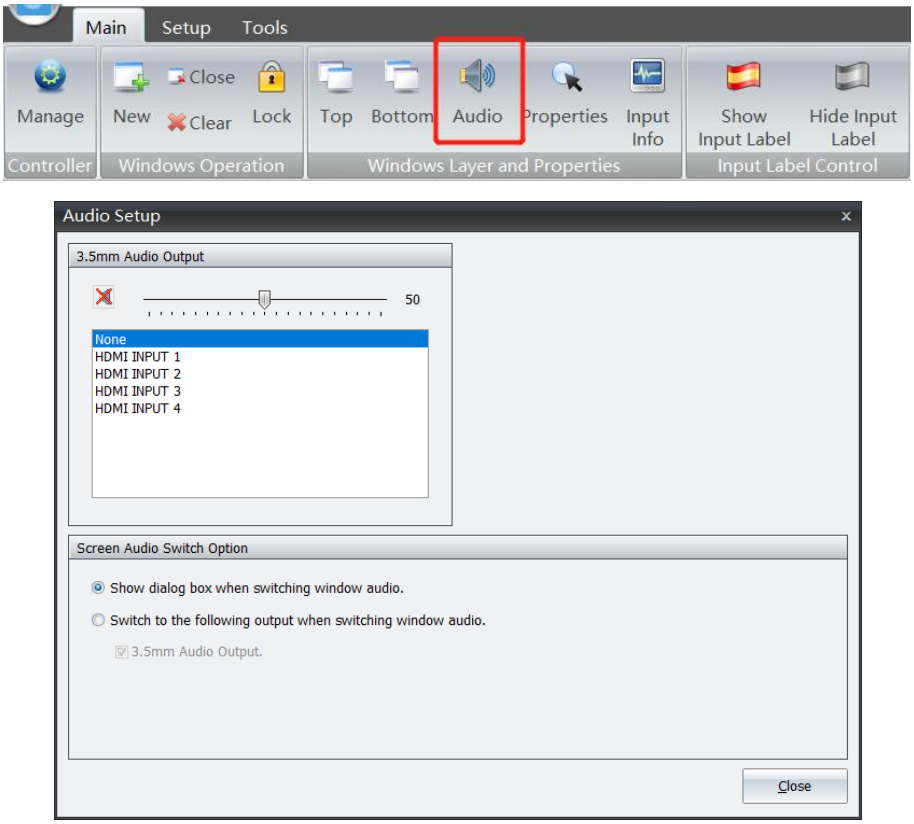
3.4.5. Layout Circle

To play layout with designated intervals.

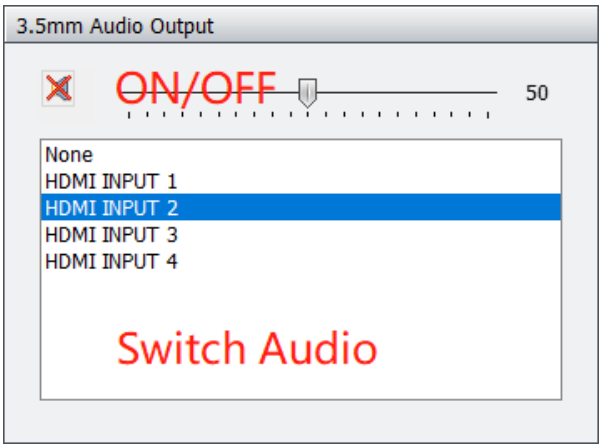
3.5. Audio

System supports turn on/off audio, volume adjustment and audio output model setting.

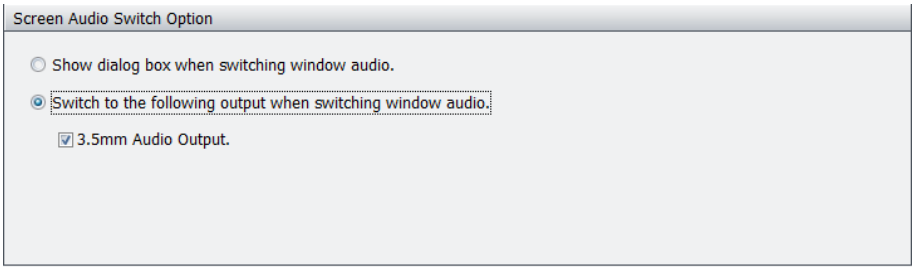
Navigate to Main Menu, and click Audio to enter into setting page.



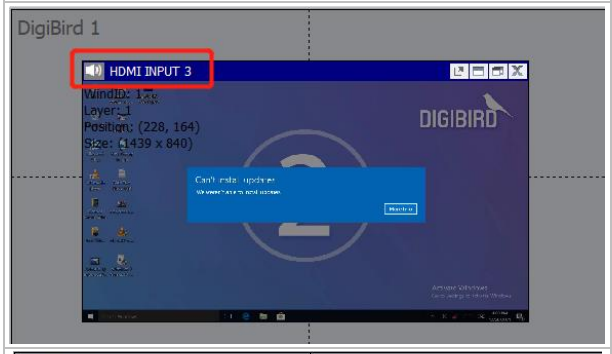
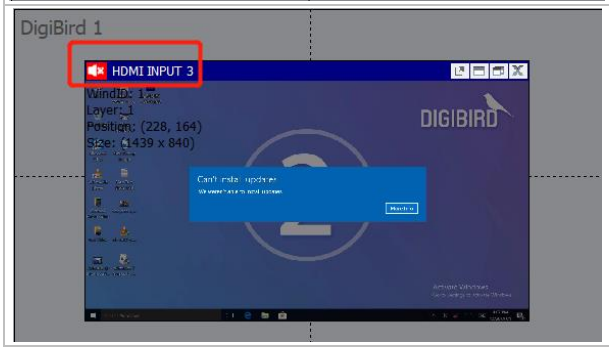
Click output channel to switch audio output via 3.5mm mini-jack. Volume can be adjusted by dragging audio bar.



There are 2x options for audio output, including 3.5mm mini-jack and embedded HDMI output.

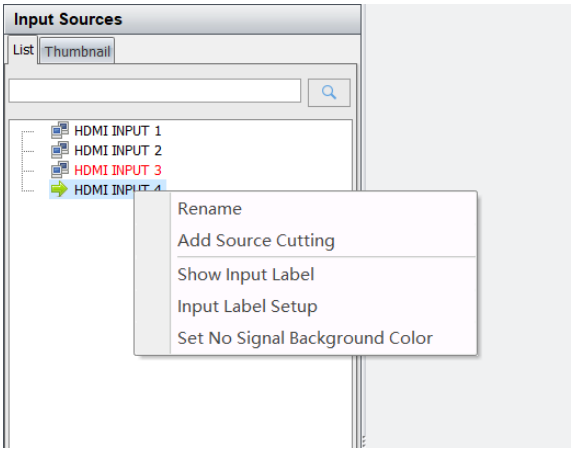


You can click audio button on widows to manage audio.

	Green indicates audio of this input source has been activated
	Click to activate current audio.
	Red indicates audio has been disabled. Click again can enable it.

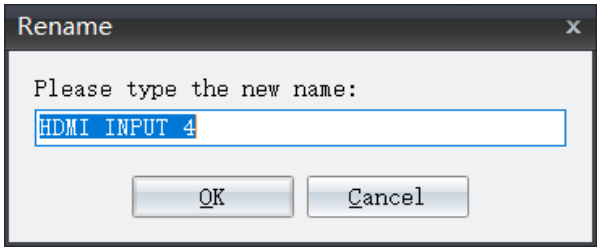
3.6. Input Source Setting

Select one input from Input Source List, right click call out setting menu.



3.6.1. Rename

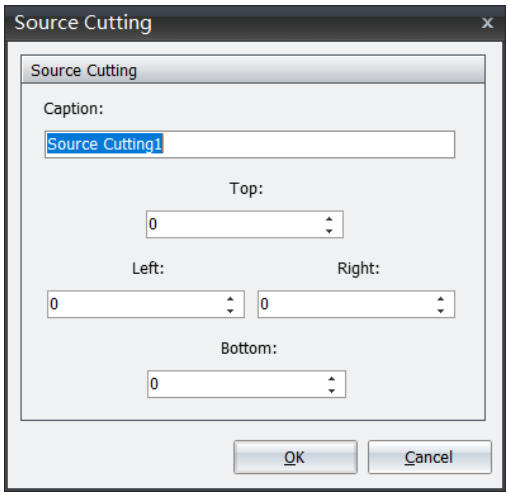
Click Rename and input new name upon demand.



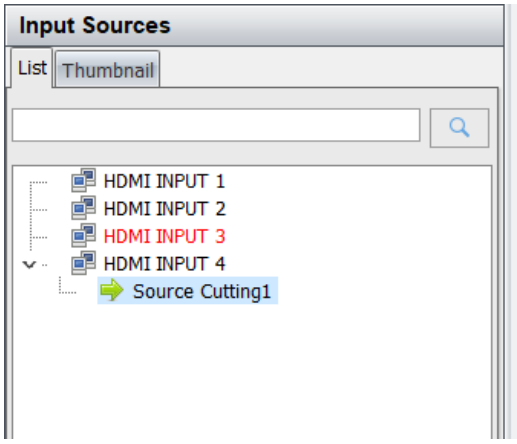
3.6.2. Source Cutting

When you want to emphasize certain part of image or current aspect ratio is not perfect, you can cut input source.

1. To cut input source, need to define which part to be cut off by inputting pixel information.



2. Cropped source will display under original source.



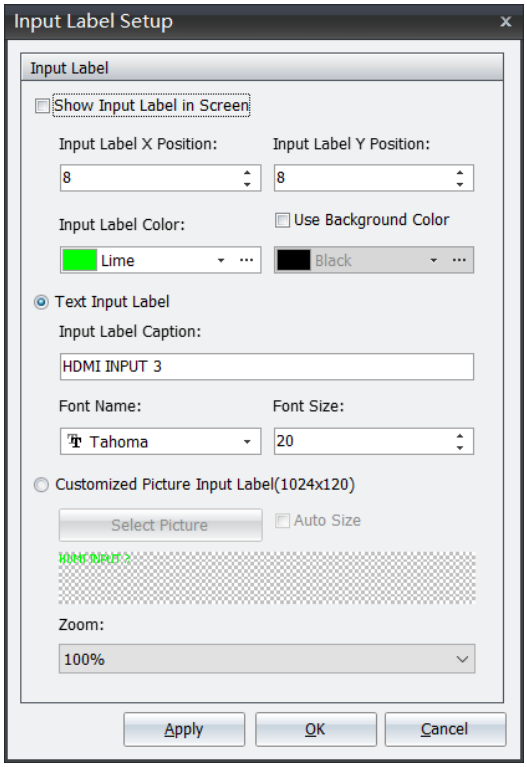
3. Operating of cropped source is same to regular input source.

3.6.3. Label

User can put label on input source and display on video wall.

3.6.3.1. Label Setting

Select one input source, right click and select Label to enter into setting page.

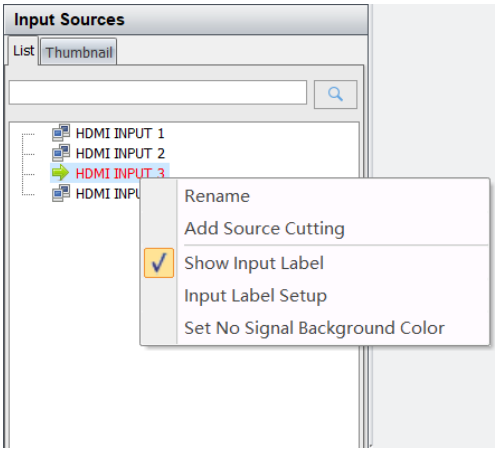


No	Item	Description
1	Show Input Label	Enable to display label
2	Position	Distance to left top corner by pixel
3	Label Color	Click to select color from drop-down list or click to select desired color from color plate.
4	Background Color	To add background color for station logo.
5	Text logo	Select text logo, type logo title, select font and size.
6	Customized Picture	Support imports local picture as station logo
7	Zoom	Select scale ratio

3.6.3.2. Input Label On/Off

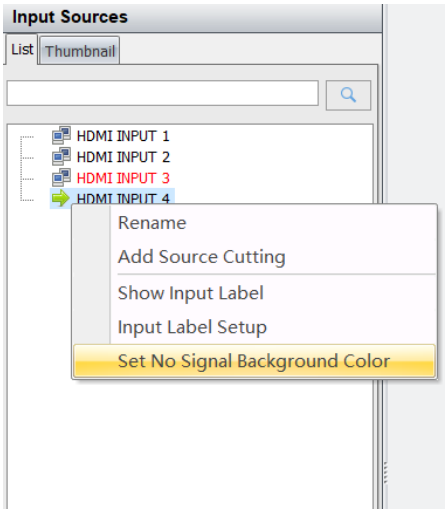
Navigate to Main Menu and Click Show Input Label or Hide label. Click Show Label to display on video wall. Click Hide Label to disable all labels.

To manage label of individual input source, can right click and disable label display.



3.6.4. Background color

If there is no valid input, user can set up background color for window that displaying on video wall.



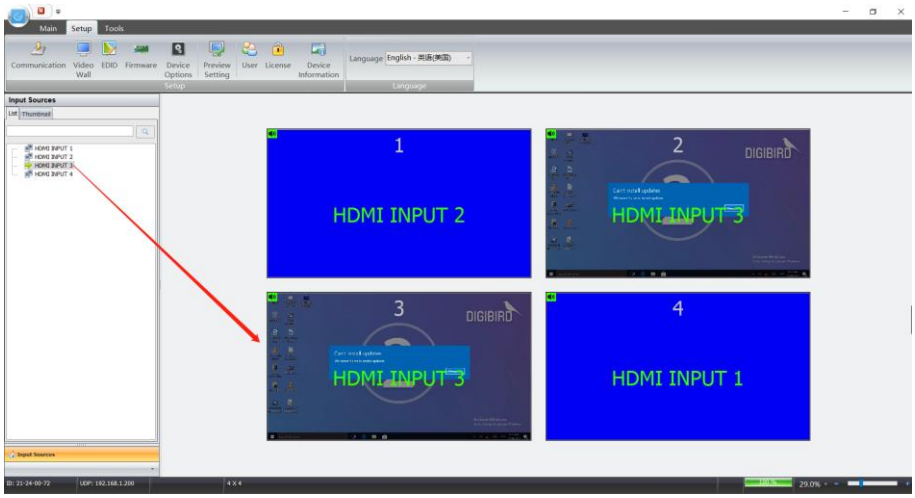
3.7. Matrix Switch

To conduct matrix function, controller need to be configured as matrix mode, please refer 3.2.5 Video Wall Setting

3.7.1. Signal Switch

There are 3x methods to switch signal.

1. Select one output channel at virtual video wall, double click one input source to switch.
2. Select one input source, drag it and drop to desired output channel.
3. Press <Ctrl> and select multiple output channels, then double click or drag-and-drop to complete switch.



Source not supported under matrix mode.

3.7.2. Clear Video

Right click output channel and select Clear video to delete current displaying signal.

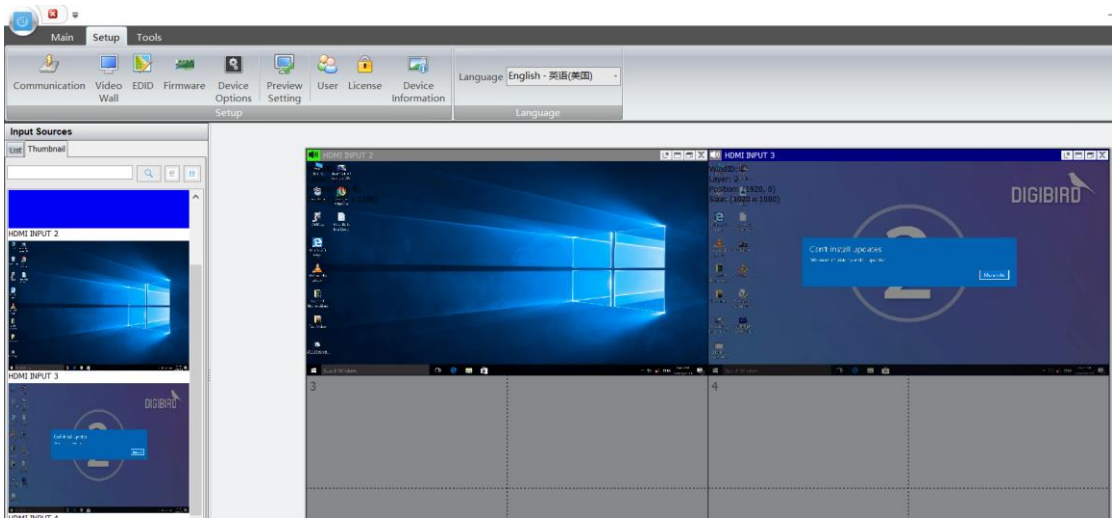
3.7.3. Rename

Right click output channel, and select Rename.

4. System Management

4.1. Preview Setting

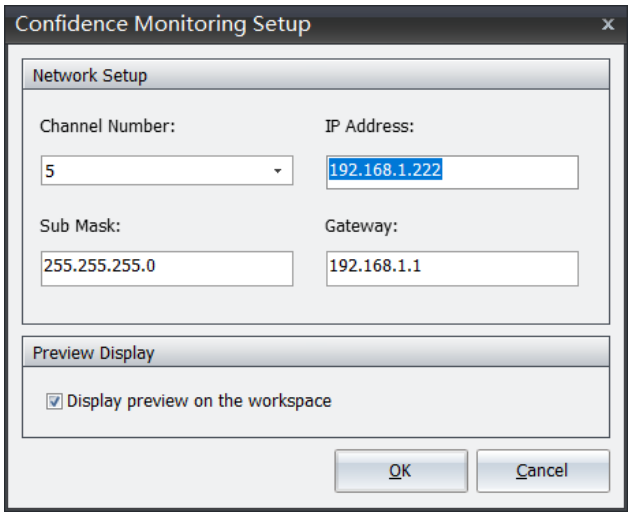
For the model that supports preview, use can live preview input source content and video wall display.



Default IP of preview card is 192.168.1.201. Follow below steps to revise IP address.

1. Navigate to Setting, and click Preview to enter into setting page.

Enter desired IP address, subnet mask and gateway. Trigger “Display preview image on video wall”, you can preview input source and video wall display at software.



Preview card IP and controller IP should within same LAN network.

4.2. EDID Management

Navigate to Setting and click EDID to enter into setting page.

4.2.1. Read EDID

Select target input or output, click Read EDID and select local folder to save EDID file.

4.2.2. Write EDID

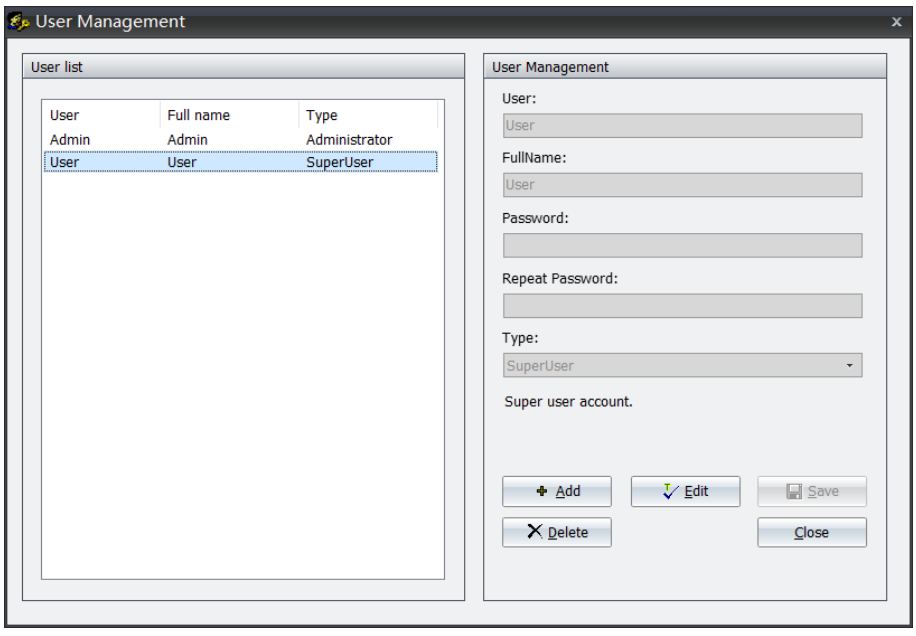
Select targeted input channel, click Write EDID and import EDID file.

4.3. User Management

Default password of Admin account is blank.
Navigate to Setting, click User to enter into setting page.

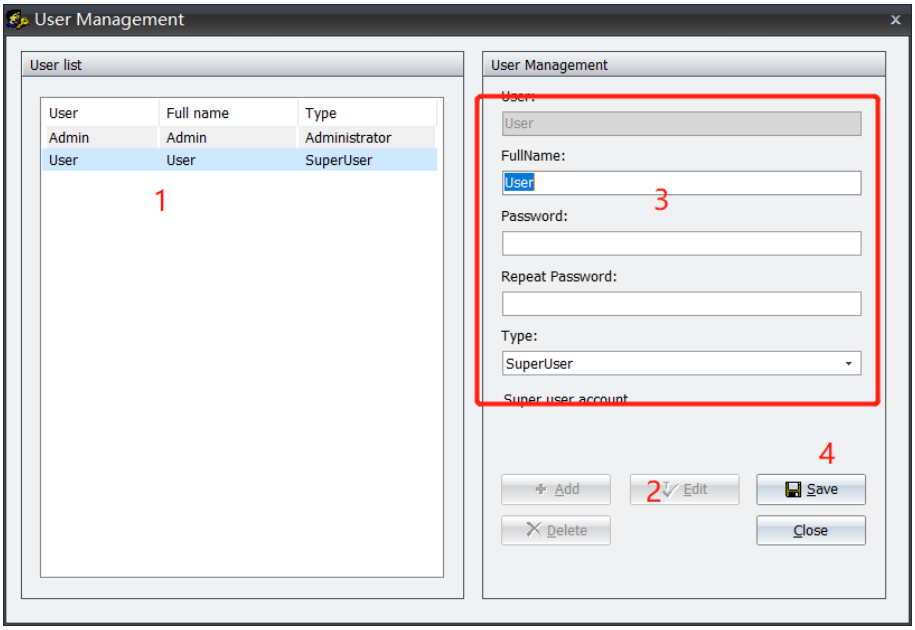
4.3.1. Add User

Click Add and input required information.



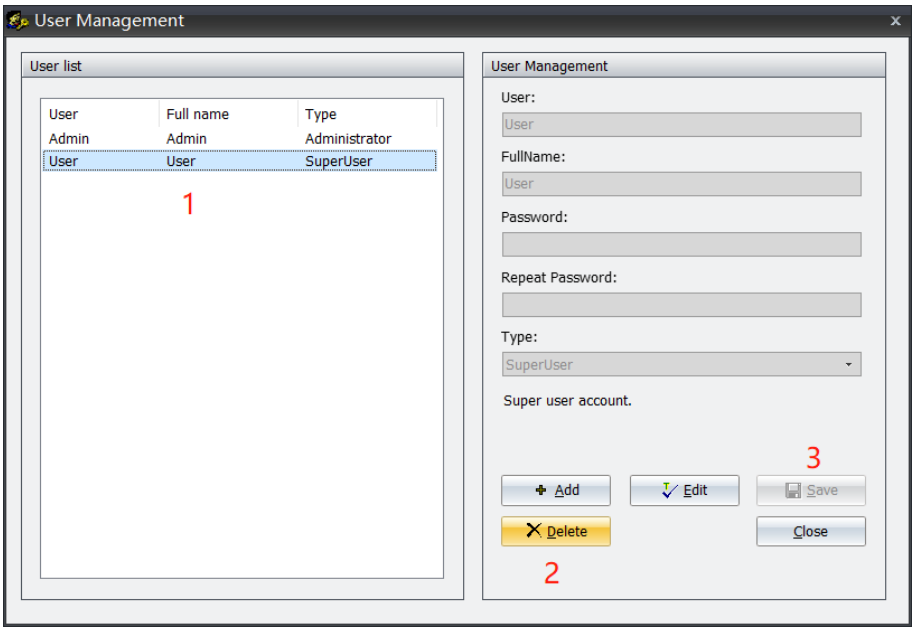
4.3.2. Revise User Information

Select desired user, click Edit, input required information and Save.



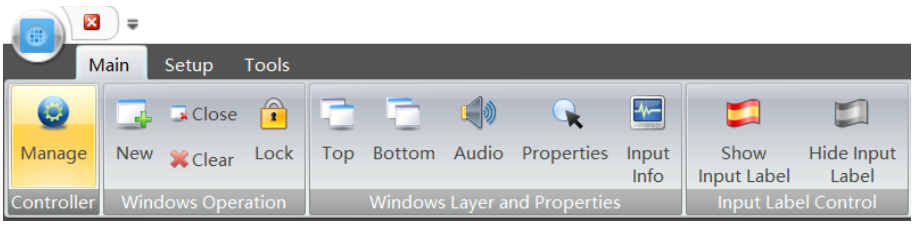
4.3.3. Delete User

Select desired user, click Delete and confirm to execute.

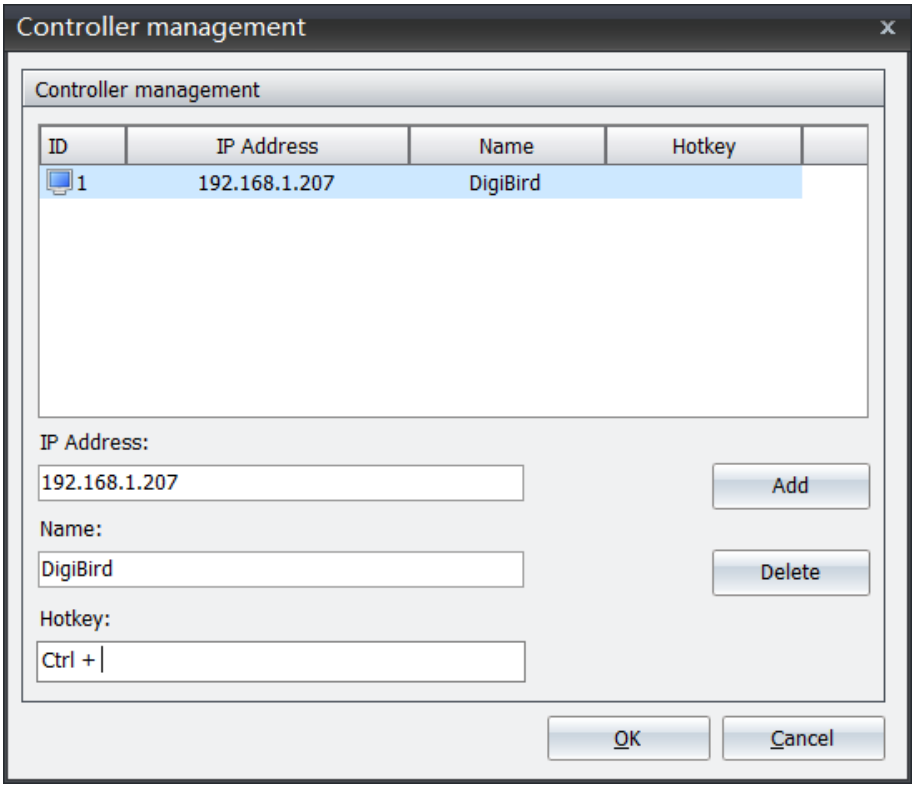


4.4. Controller Management

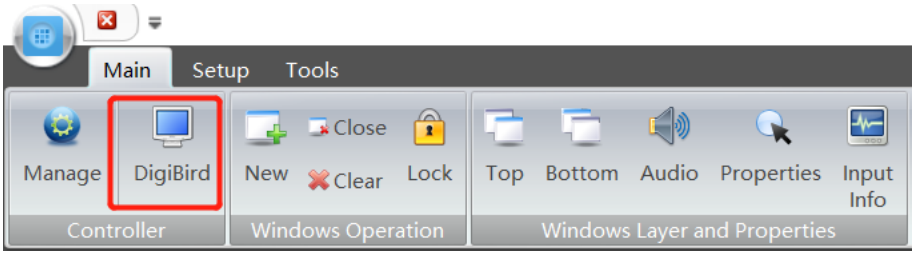
This software can manage multiple controllers at a time. Navigate to Main Menu and click Management to enter into setting page.



Click Add and input controller IP. You can also set up hotkey for the controller.



Newly added controller will show up as shortcut, click icon to manage this controller.



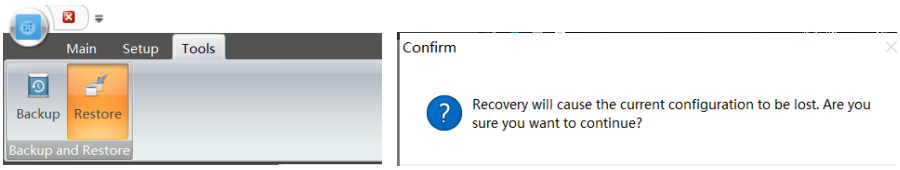
4.5. Backup & Restore

4.5.1. Backup

Navigate to Tools, click Back Up and save configuration file to your local PC.

4.5.2. Restore

1. Navigate to Tools, click Restoration and confirm to continue.



2. Select corresponding file and import file.

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