

DigiBird Video Wall Controller Software User Guide

Introduction

This section gives an overview of the guide and features of the DigiBird MultiView Controller Software and DigiBird Video Wall Controller hardware. Topics include:

- About this Guide
- About the hardware
- Overview of the DigiBird MultiView Controller Software
- Features

About this guide

This guide provides detailed information about the DigiBird MultiView Controller Software and DigiBird Video Wall Controller hardware, including software installation and configuration.

This guide also describes how these applications control the DigiBird Video Wall Controller hardware.

The features and functionality described in this guide are based on version 6.3.14 of the DigiBird MultiView Controller

Software on windows 7 64-bit. For the latest details about these products, visit www.digibirdtech.com.

Manual version information Version: 6.3.14

Release Date: Nov, 2019

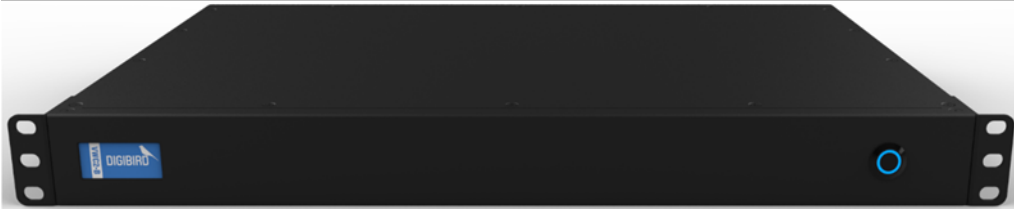

About the hardware

VWC2-B is a hardware based and cost-effective video wall controller, which delivers real-time processing and ultimate reliability for mission critical situations. It is the best choice to showcase your video content in a simple control room, meeting room or digital signage with its user-friendly interface and easy deployment features.

Structure

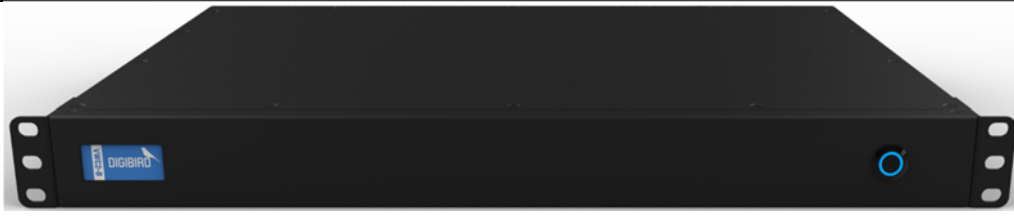

1U-0404

1U chassis, supports 4 DVI inputs, 4 DVI outputs and real time preview.

<p>Front Panel</p>	 <p>Press the button to start controller</p>
<p>Rear Panel</p>	 <p>4 DVI inputs, 4 DVI outputs, 1 NET port and RS232 serial port for communication 1 NET port for preview</p>

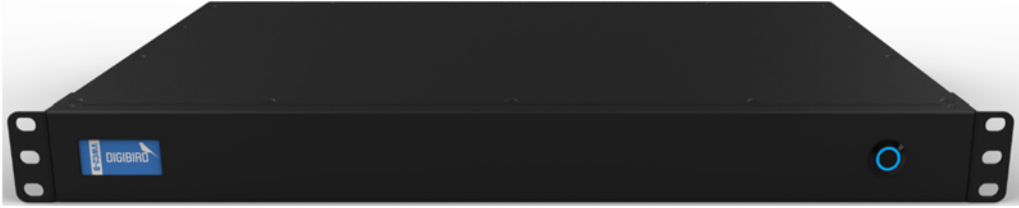

1U-0808

1U chassis, supports 8 DVI inputs, 8 DVI outputs and real time preview.

<p>Front Panel</p>	 <p>Press the button to start controller</p>
<p>Rear Panel</p>	 <p>8 DVI inputs, 8 DVI outputs, 1 NET port and RS232 serial port for communication 1 NET port for preview</p>

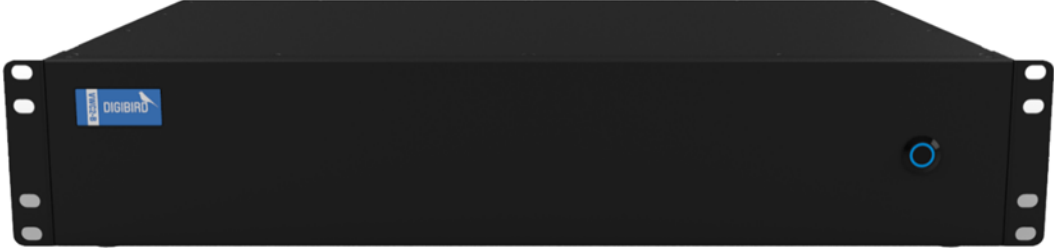
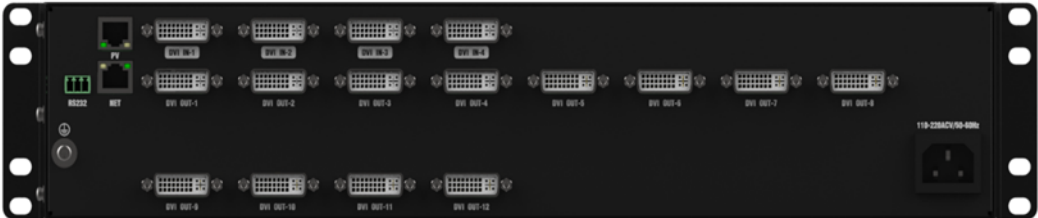
1U-0408

1U chassis, supports 4 DVI inputs, 8 DVI outputs and real time preview.

<p>Front Panel</p>	 <p>Press the button to start controller</p>
<p>Rear Panel</p>	 <p>4 DVI inputs, 8 DVI outputs, 1 NET port and RS232 serial port for communication 1 NET port for preview</p>

2U-04012

2U chassis, supports 4 DVI inputs, 12 DVI outputs and real time preview.

<p>Front Panel</p>	 <p>Press the button to start controller</p>
<p>Rear Panel</p>	 <p>4 DVI inputs, 12 DVI outputs, 1 NET port and RS232 serial port for communication 1 NET port for preview</p>

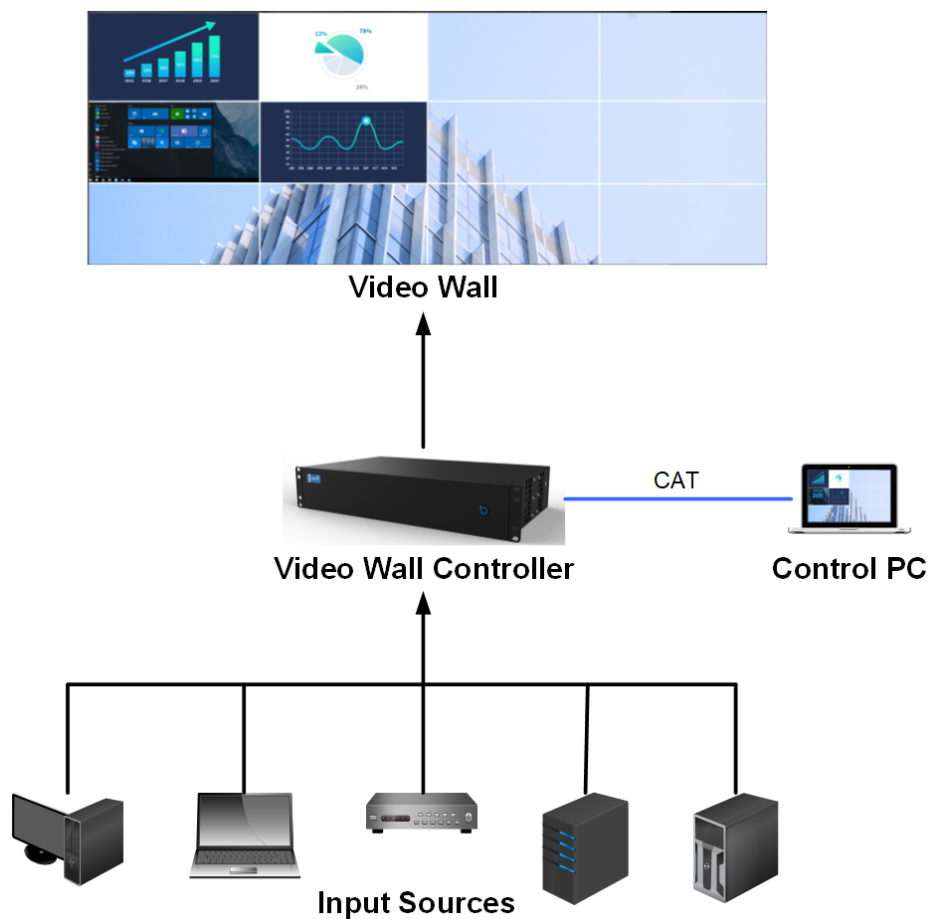
Factory Settings

The controller default IP address is 192.168.1.200, the default preview IP address is 192.168.1.201.

Features

1. Pure hard ware FPGA array. No embedded OS, designed for 24x7 mission critical working conditions.
2. The build-in preview features allow preview of input sources and the video wall configuration in real time.
3. Boot up in 20s, source switching response time less than 20ms, scenes recalling response time less than 16ms.
4. Flexible windowing supports arbitrary layout, scaling, stretching and picture in picture.
5. Maximum 8x windows per display and 16x windows per video wall.
6. The intuitive user interface allows efficient reaction time and reduce learning cost.

Connection Diagram



About the software

The MultiView Controller Software is a Microsoft® Windows®-based application that is used to control the VWC (Video Wall Controller) from your computer via an RS-232 or Ethernet cable.

Features

Some features of the MultiView Controller Software include:

- **User Friendly Interface:** The user interface is organized into a series of tasks so that you can easily navigate through them and set up the video wall.
- **Easy Configuration:** Supports quick setup. The operation can be performed by simply clicking, dragging and inputting configuration data.
- **High Flexibility:** Compatible with different application environments.
- **High Stability:** Continuous updates to maintain high adaptability and stability.

Software Installation

System Requirements

To ensure that the DigiBird MultiView Controller Software functions correctly and reliably, you must install it on a computer that meets or exceeds the following criteria:

	Minimum	Recommended
Operating System	Windows XP®	Windows XP® or Windows 7® (32-bit or 64-bit)
CPU	Intel Pentium/Celeron or faster, AMD Athlon or better	Intel Core i3 or faster
Memory (RAM)	256M RAM	2GB RAM
Hard Disk Free Memory	150MB	5GB or higher
Graphics	1024x768, 65K colors (16-bit)	1024x768, 16.7M colors (32- bit)
Network Card	10Base-T	100BASE-T
Optical Driver	CD-ROM	DVD-ROM
Input Device	Mouse and keyboard compatible with Microsoft®	Mouse and keyboard compatible with Microsoft®

Connecting to DigiBird's Video Wall Controller via Ethernet

The computer with the installed MultiView Controller Software communicates with the DigiBird Video Wall Controller via Ethernet. This can either be a direct or indirect connection. Connection to a single DigiBird Video Wall Controller can utilize either method, but multiple DigiBird Video Wall Controllers must utilize an indirect method (for example, via a hub or Ethernet switcher). The DigiBird Video Wall Controller's Ethernet port is auto-sensing, so the Crossover Cable and Straight-through Cable can both be used to connect to the Video Wall Controller.

Setup

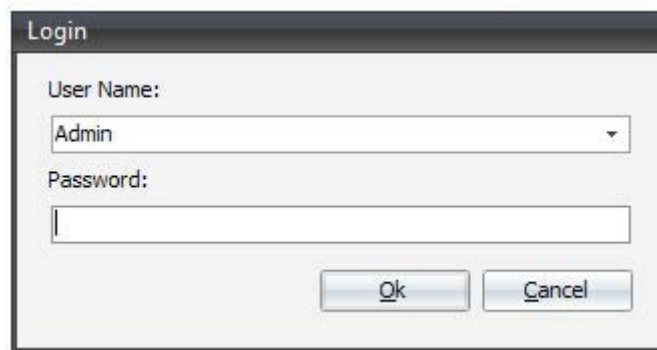
Logging in

To log in to the MultiView Controller Software:

From the User drop-down list, select the desired role.

In the Password field, enter the required password for the chosen role.

The default user name is admin, and the default password is left blank in the example below:

A screenshot of a "Login" dialog box. The dialog has a title bar with the word "Login". Inside, there are two labels: "User Name:" and "Password:". Under "User Name:", there is a dropdown menu with "Admin" selected. Under "Password:", there is an empty text input field. At the bottom right, there are two buttons: "Ok" and "Cancel".

Login	
User Name:	Admin
Password:	
Ok Cancel	

Figure 4.1: Logging in

Setting the IP address of DigiBird's Video Wall Controller

The first time you log in to the MultiView Controller Software and click "OK", the following dialog box will appear:



Figure 4.2 A: Click OK to open settings

The above dialog box indicates you need to set the correct IP address for the computer and the Video Wall Controller because the communication link between them has not been established. Clicking "Cancel", will take you into demo mode. When you click "OK", the following dialog box will appear:

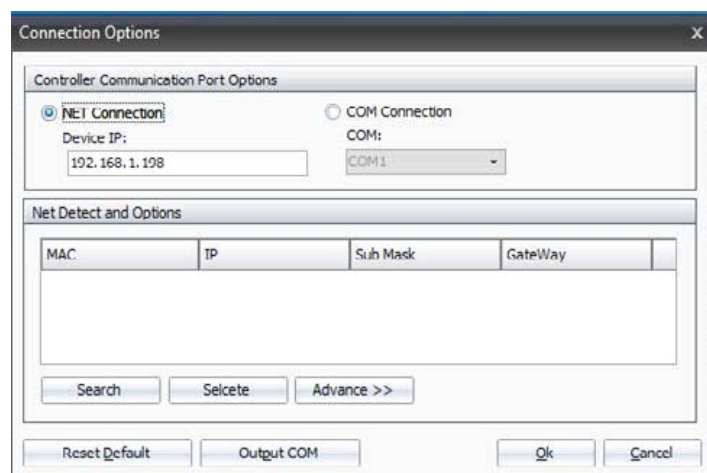


Figure 4.2 B: Connection settings

Click the "Advance" button; you can then set the IP address, subnet mask and gateway for the video wall controller:

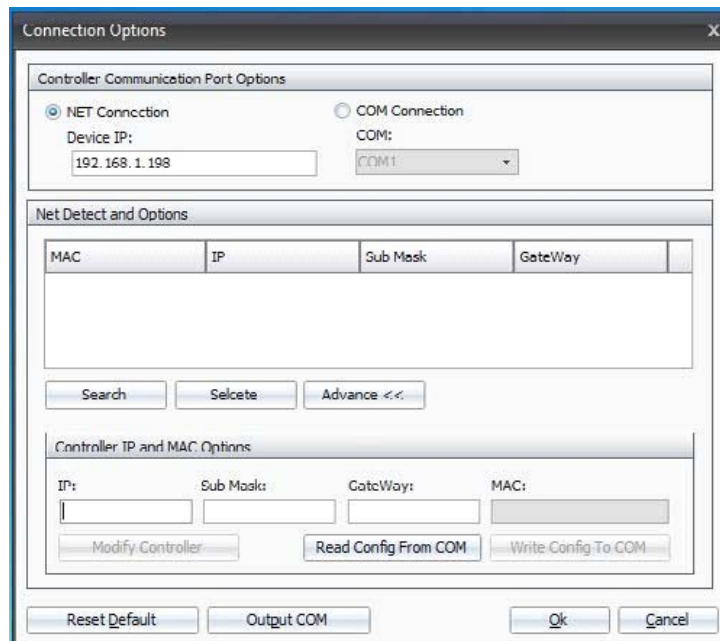


Figure 4.2 C: Advanced settings

The Default IP address is 192.168.1.200; the subnet mask is 255.255.255.0, and the gateway is 192.168.1.1:

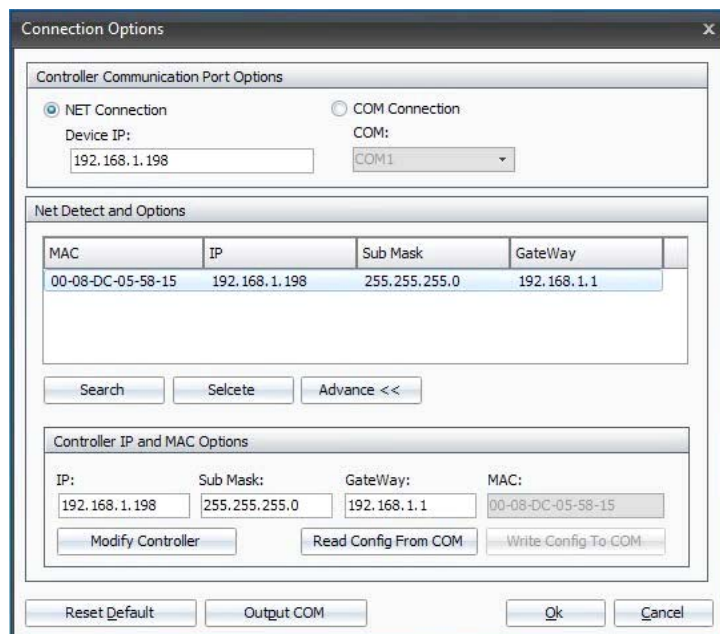


Figure 4.2 D: Change IP settings

Do not close the above dialog box because you now need to set the IP address for the computer that installed the Multiview Controller software.

Setting the computer's IP address that installed the MultiView Controller

Software:

The network port on the computer must be configured to use the same communications protocol as the DigiBird Video Wall Controller (TCP/IP). The computer must also be allocated an IP address on the same subnet as the DigiBird Video Wall Controller.

To change the IP address for your computer, follow the instructions provided in your Windows program help file. Here is a sample of how to change your IP address on Windows 7 (32-bit or 64-bit):

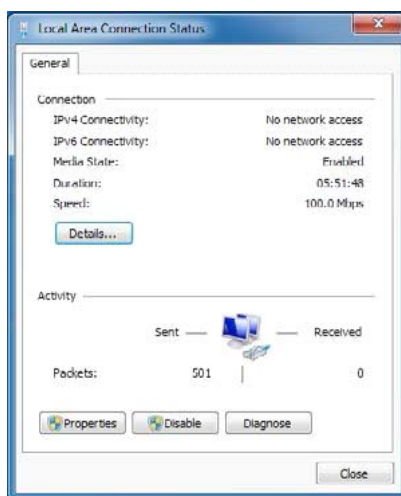


Figure 4.3 A: Computer's IP

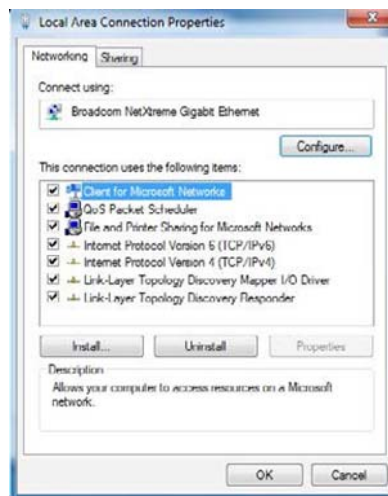


Figure 4.3 B: Properties

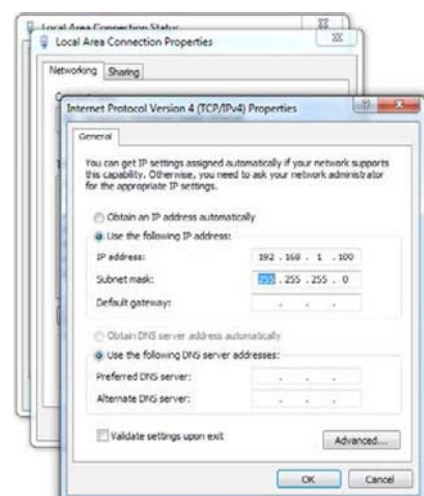


Figure 4.3 C: IP Settings

In this example, the computer's IP address is set to 192.168.1.100 and the subnet mask is set to 255.255.255.0.

The DigiBird Video Wall Controller and the computer are in the same subnet. When you click the "OK" button in the dialog box, as shown in the figure below, the main application window will appear:

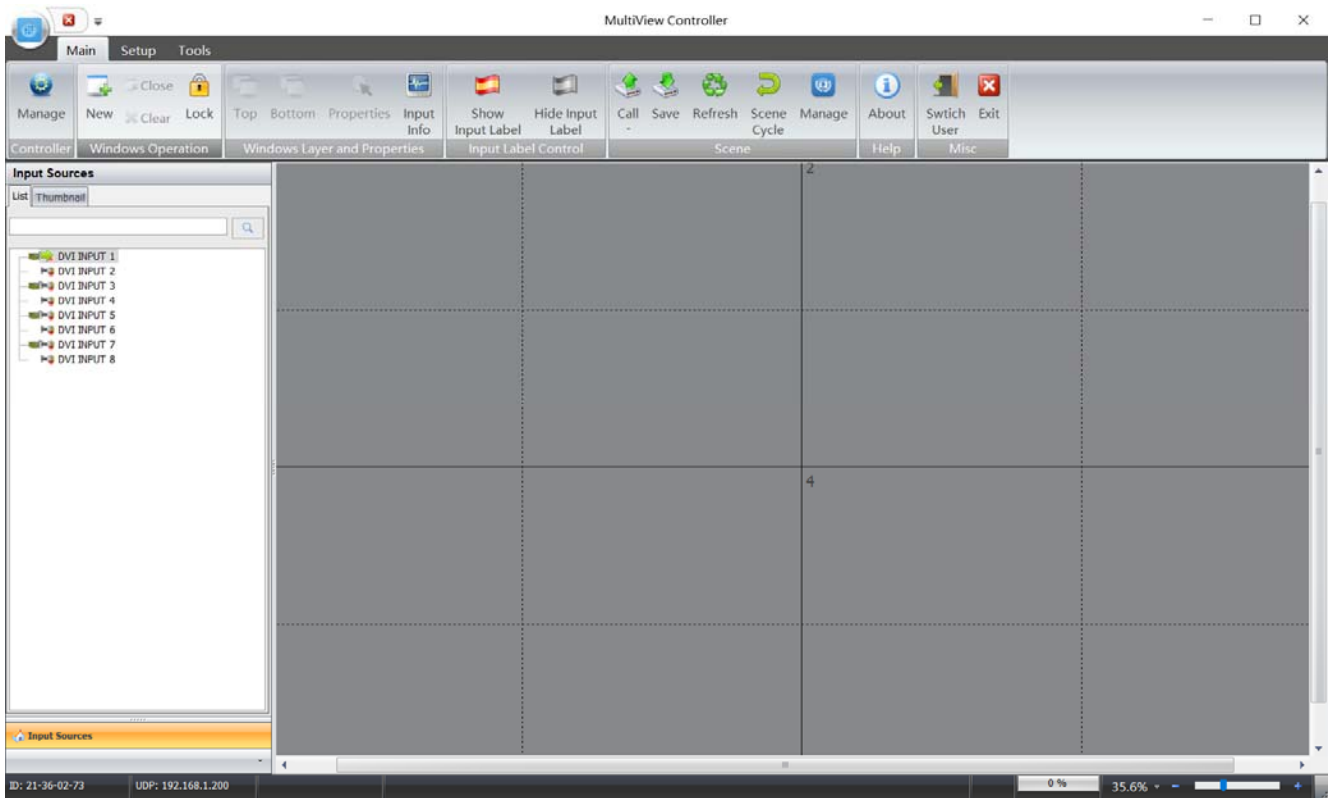


Figure 4.3 E: Software main interface

Testing the Ethernet Link

To test the connection of the Ethernet link between the computer and the DigiBird Video Wall Controller, you can use the Ping utility.

Enter a ping command from your desktop.

- For Windows XP, 2000, and NT:

- On the desktop, click Start > Run. The Run dialog box will open.
- In the Run dialog box, type the following command: ping nnn.nnn.nnn.nnn—t

While nnn.nnn.nnn.nnn is the IP address of the DigiBird Video Wall Controller that you want to test.

- Click OK or press the <Enter> key.

- For Windows 7:

- On the desktop, click Start.
- In the Search programs and files field at the bottom of the Start menu, enter ping

nnn.nnn.nnn.nnn —t and press <Enter>.

- A. command window opens showing a series of messages which are explained below.
- B. To close the ping utility, press <Ctrl + C> on your keyboard or click the X button in the upper-right corner of the command window.

Here is an example:

When you run the ipconfig utility in CMD mode, it displays the IP address of the computer that installed the DigiBird MultiView Controller Software, as shown below:

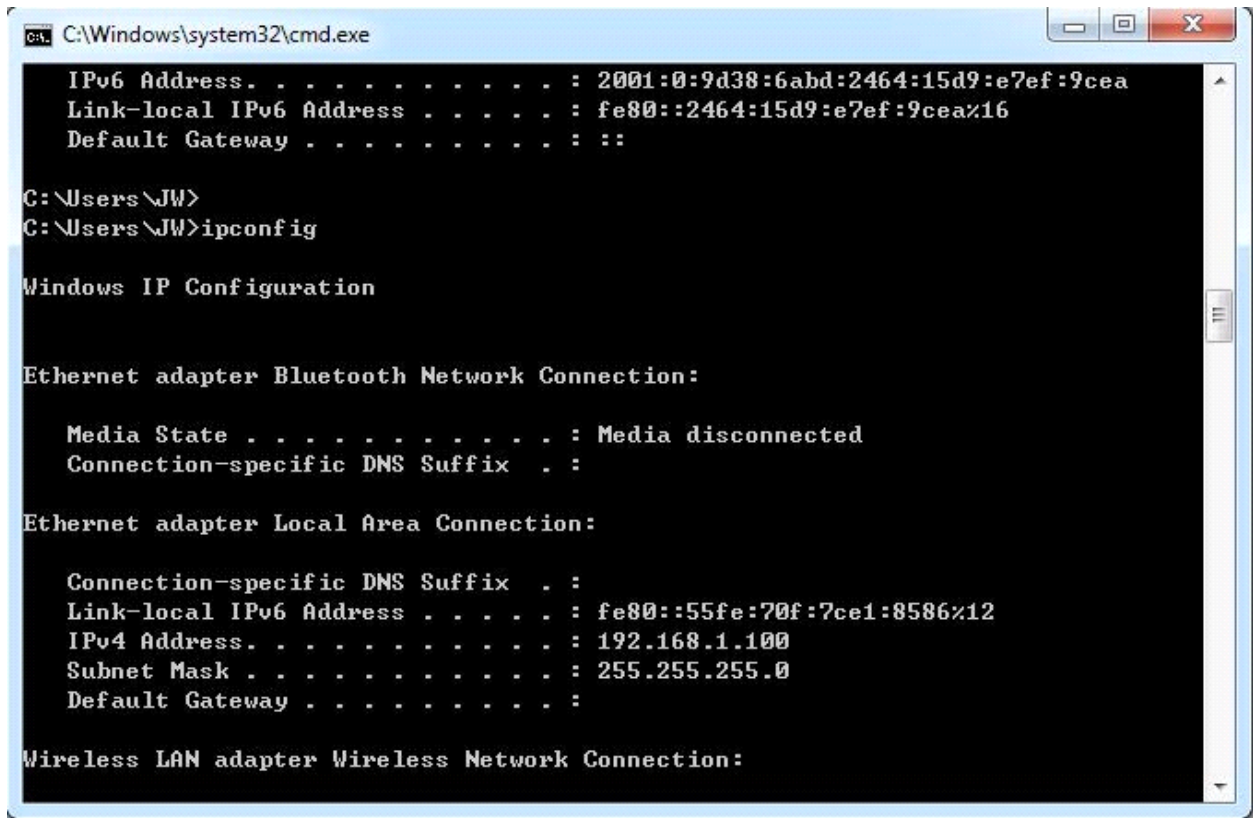


Figure 4.4 A: Ping command

When you run the Ping utility, it displays a series of response messages which you can use to determine the state of the communications link.

For example, if you send a ping command to a DigiBird Video Wall Controller with the address 192.168.1.198, you should get a message similar to the following:

```

C:\Windows\system32\cmd.exe
Tunnel adapter Local Area Connection* 11:

Connection-specific DNS Suffix . :
IPv6 Address . . . . . : 2001:0:5ef5:79fb:34f2:508:e7ef:9cea
Link-local IPv6 Address . . . . . : fe80::34f2:508:e7ef:9cea%16
Default Gateway . . . . . : ::

C:\Users\JW>ping 192.168.1.198

Pinging 192.168.1.198 with 32 bytes of data:
Reply from 192.168.1.198: bytes=32 time<1ms TTL=128
Reply from 192.168.1.198: bytes=32 time<1ms TTL=128
Reply from 192.168.1.198: bytes=32 time<1ms TTL=128
Reply from 192.168.1.198: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.198:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\JW>

```

Figure 4.4 B: Ping response

This is the correct response as it indicates that the device at the specified address is set correctly.

The response time value may vary according to network traffic.

If you get the following message: "Request timed out", this means there has been no response from the specified address. Either the DigiBird Video Wall Controller is not receiving data from the computer or it is not sending data back. Check that the DigiBird Video Wall Controller connection is powered and set to the same address to which you sent the ping command. Also, check that you are using the correct type of Ethernet cables and that they are not faulty or damaged.

If you get the message, "Reply from 192.168.1.198: Destination host unreachable", the IP address of the computer is not in the same class as that of your Video Wall Controller. See your Windows program help file for instructions for changing your computer IP address.

Using DigiBird's MultiView Controller Software:


Starting and Exiting the MultiView Controller Software

You can run the MultiView Controller Software using any of the following methods:

- Double-click the MultiView Controller icon (shortcut) on the desktop.
- From the desktop, click Start > All Programs > MultiView Controller > MultiView Controller.
- Double-click a project file (file name has a CTP extension) in Windows Explorer.

You can exit the MultiView Controller Software using any of the following methods:



- From the Main Menu, select Exit. 
- Click the button at the top right corner of the main application window.
- Click the icon in the top left corner of the application window, or single-click the same icon and select Close from the drop-down menu.

Overview of the Main Application Window

The DigiBird MultiView Controller Software application window contains the following elements:

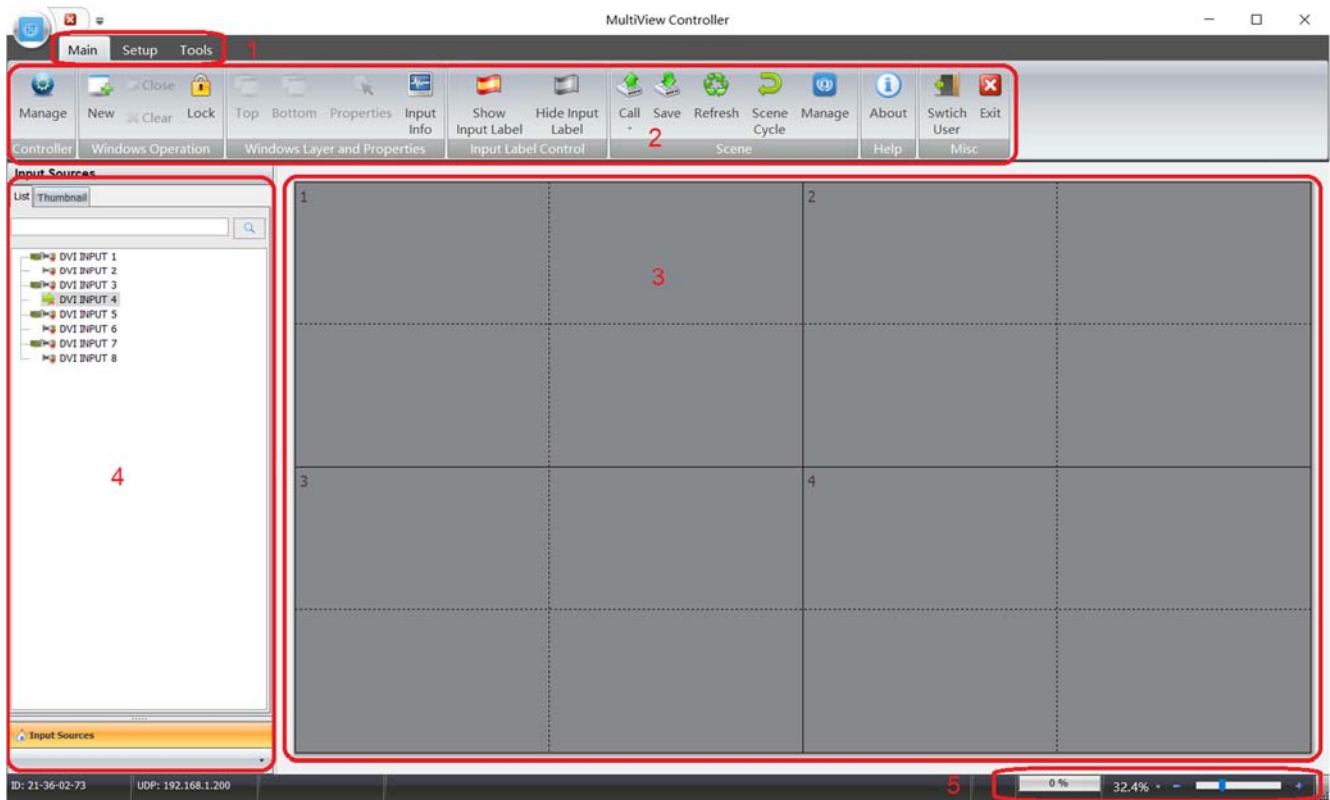


Figure 5.2 Software Main Interface

1. Menu bar: Hosts three menus (Main, Setup and Tools) to access various functions in the Multiview Controller Software. Most of the menu functions can be performed by the buttons on the toolbars.
2. Toolbar: The various toolbars allow quick access to the most commonly used functions within the currently selected task.
3. Workspace: resembling a canvas, you can control input, output, window and display operations here.
4. Input source: allow user to view input source list and real time preview at thumbnail mode.
5. Status bar: Shows information about the current status of the Multiview Controller Software.

System Configuration

Clicking "Setup" on the menu bar will open the system configuration interface. It includes: Communication, Video wall, EDID, Firmware, Output Mapping, Preview Setting, User, License, Device Information and Language settings.



Figure 6.0: Setup menu

Connection / "Communication Settings"

When clicking the Communication icon on the Setup menu, the Communication Settings dialog box opens:

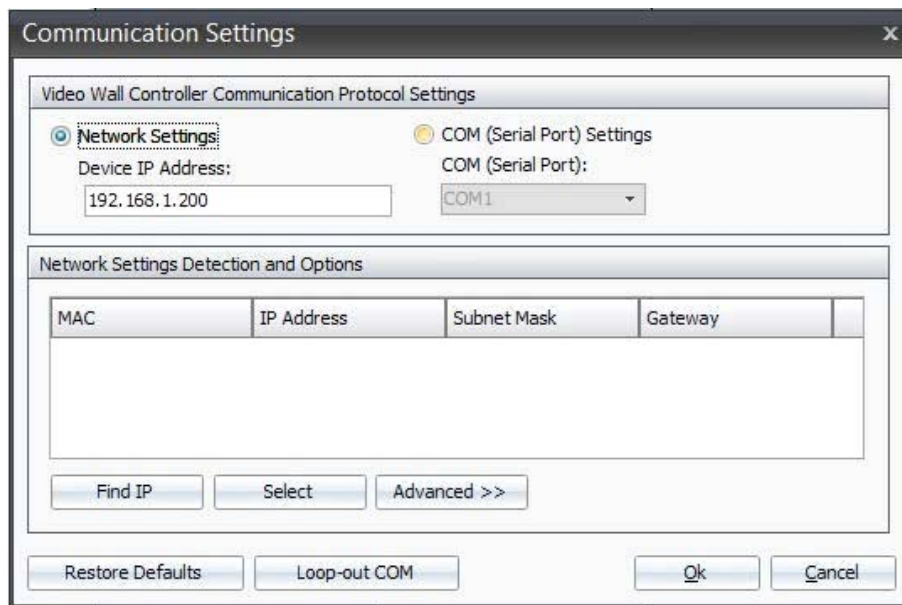


Figure 6.1 A: Connection Settings

You can set up the network connection between the device (DigiBird Video Wall Controller) and the computer and configure the serial port.

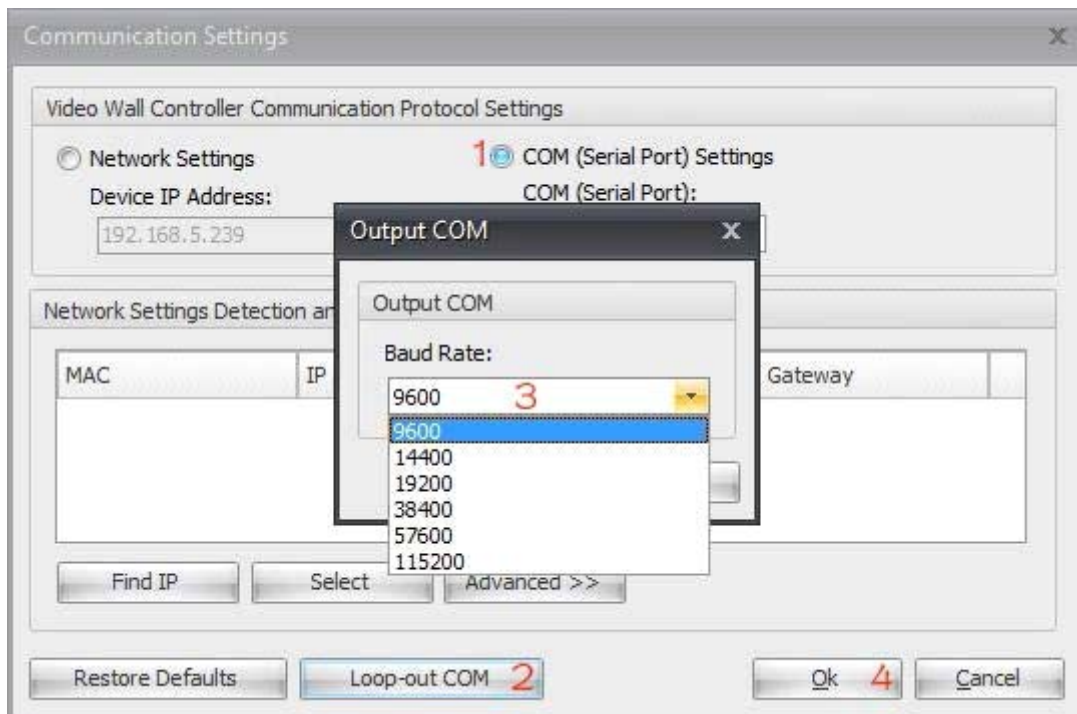


Figure 6.1 B: Com Connection Settings

Video Wall Configuration (Video Wall, input and output configuration)

Using "Video Wall Configuration", you can configure the video wall, output formats and inputs.

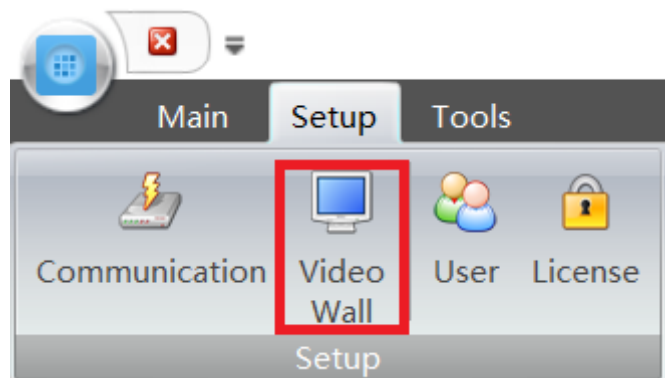


Figure 6.2: Video Wall Configuration menu

Video wall and output configuration

Click "Video Wall Configuration" on the "Setup" menu. The following dialog box will open:

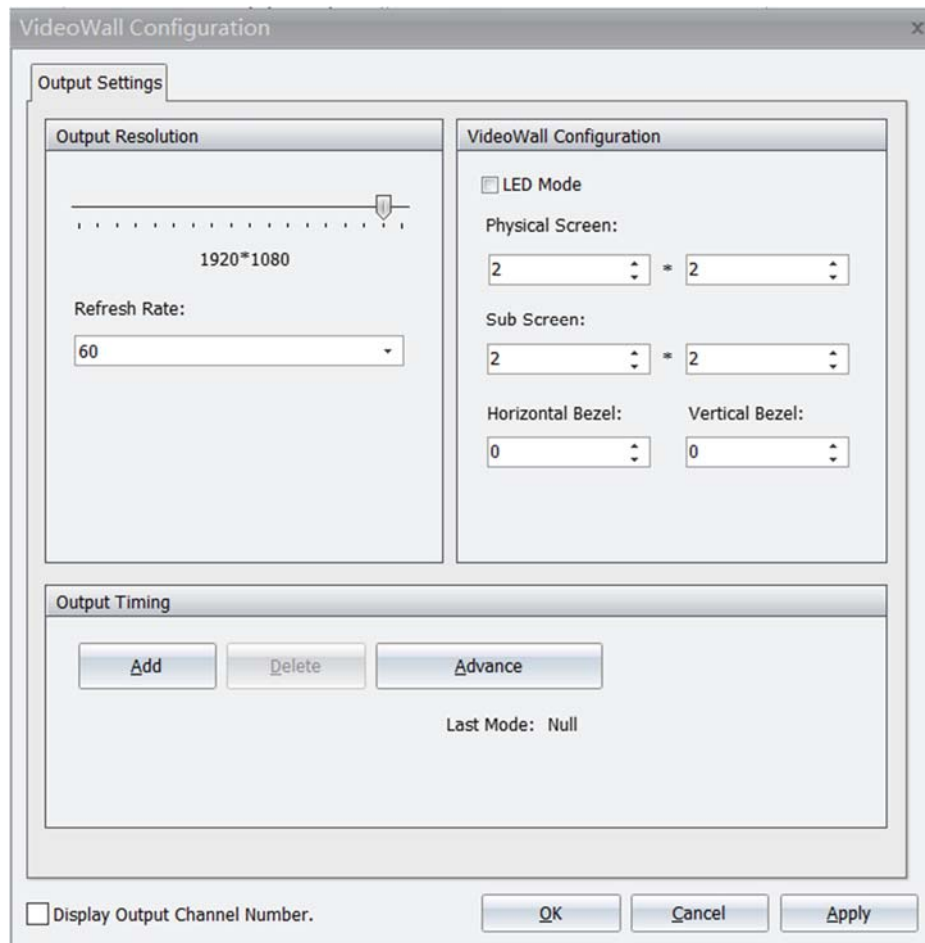


Figure 6.3 A: Video Wall Configuration

1. Drag the slider horizontally to select the desired resolution of each screen.
2. In the physical screen, set the overall horizontal and vertical size of the target display (measured in whole screens) by clicking the Up and Down Arrows. The maximum wall size available is dependent upon the model. In the Logical Sub Screen, set the overall horizontal and vertical size of a screen by clicking the Up and Down Arrows. For example, "horizontal=2 and vertical=2", means you can open four windows per screen.
3. In the screen option, you can choose the refresh rate of the screens by clicking the Up and Down arrows.
4. In the edge width options section, you can adjust bezel compensation by clicking the Up and Down arrows. Bezel is the frame border area that exists between two displays. This area must be taken into account so that when an image is spread across two or more displays, the image flow is not distorted.

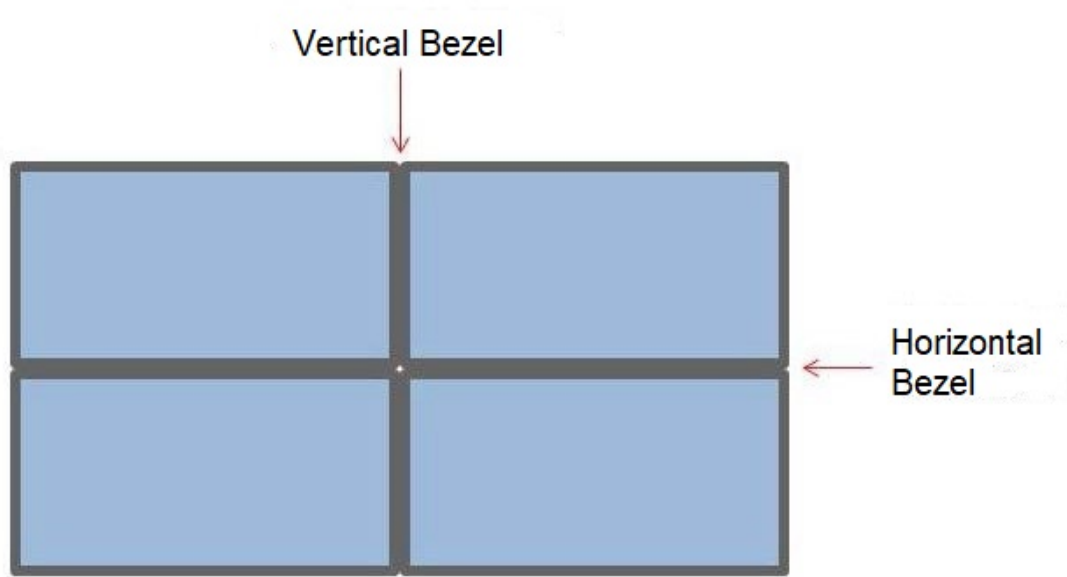
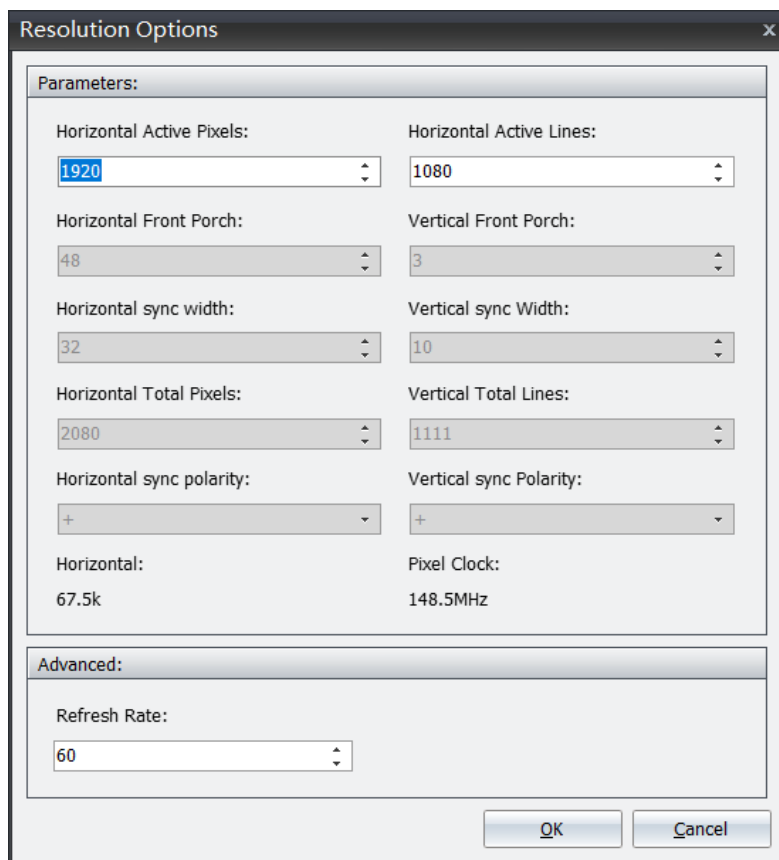


Figure 6.3 B: Bezel Compensation

5. If there is no option in the “screen resolution option” that matches the specific signal for your display device, you can create a new resolution for your display by clicking the “Add” button:



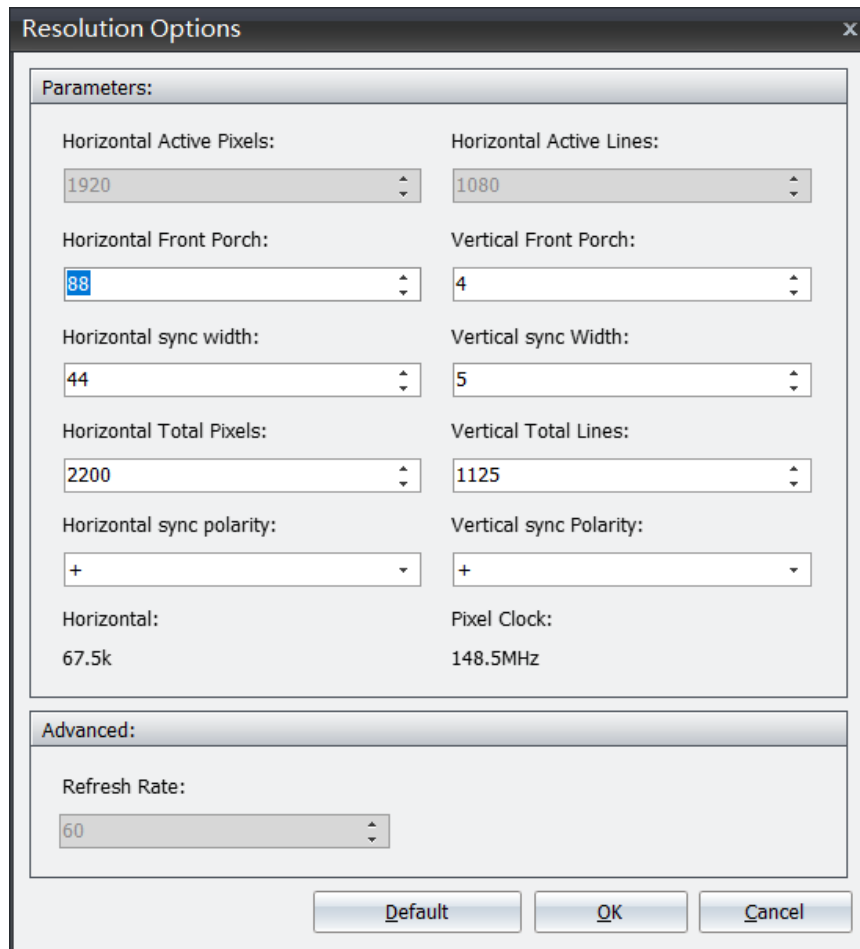
Parameters:	
Horizontal Active Pixels:	Horizontal Active Lines:
1920	1080
Horizontal Front Porch:	Vertical Front Porch:
48	3
Horizontal sync width:	Vertical sync Width:
32	10
Horizontal Total Pixels:	Vertical Total Lines:
2080	1111
Horizontal sync polarity:	Vertical sync Polarity:
+	+
Horizontal:	Pixel Clock:
67.5k	148.5MHz

Advanced:
Refresh Rate:
60

Figure 6.3 C: Resolution Settings

Click "OK" to save the changes.

6. Choose the specific resolution, and then click "Advance". You can now modify its parameters.



The image shows a "Resolution Options" dialog box with the following parameters:

Parameters:	
Horizontal Active Pixels: 1920	Horizontal Active Lines: 1080
Horizontal Front Porch: 88	Vertical Front Porch: 4
Horizontal sync width: 44	Vertical sync Width: 5
Horizontal Total Pixels: 2200	Vertical Total Lines: 1125
Horizontal sync polarity: +	Vertical sync Polarity: +
Horizontal: 67.5k	Pixel Clock: 148.5MHz

Advanced:

Refresh Rate: 60

Buttons: Default, OK, Cancel

Click "OK" to save the change.

Screen Mapping Settings

The corresponding relations between outputs and screens can be adjusted as below:

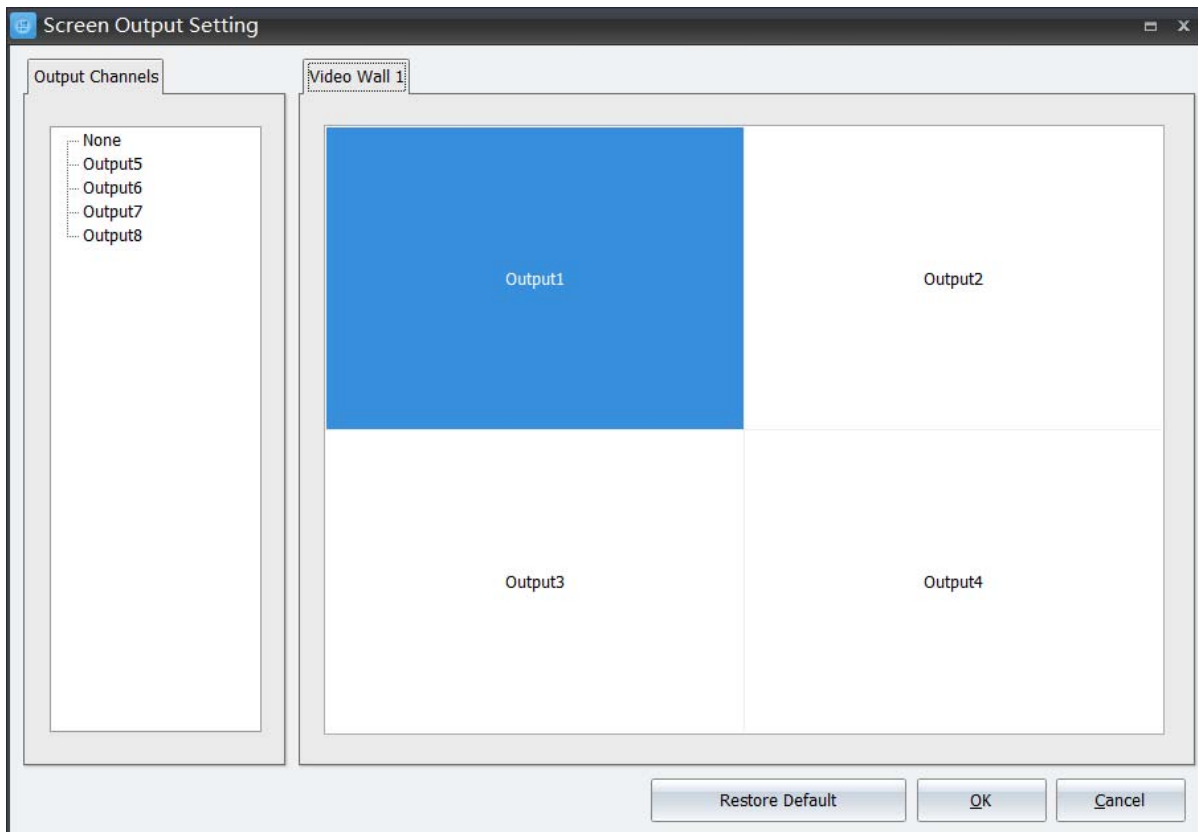


Figure 6.8: Screen Mapping

The User

The MultiView Controller Software allows different operators to have access to different tasks according to their needs and responsibilities. This feature helps to prevent end users from being able to make unauthorized changes to the setup of the DigiBird Video Controller system.

The following table lists the three available access levels and the tasks that are accessible to each level.

Authority	Access Level		
	Administrator	Super User	User
Configure, Connection, Large Screen, User Management, License, External Tools	YES	N/A	N/A
Save, set up, manage scenes	YES	YES	N/A
Backup and restore data	YES	YES	N/A

Click "User" on the "Setup" menu to open the "User Management" dialog box:

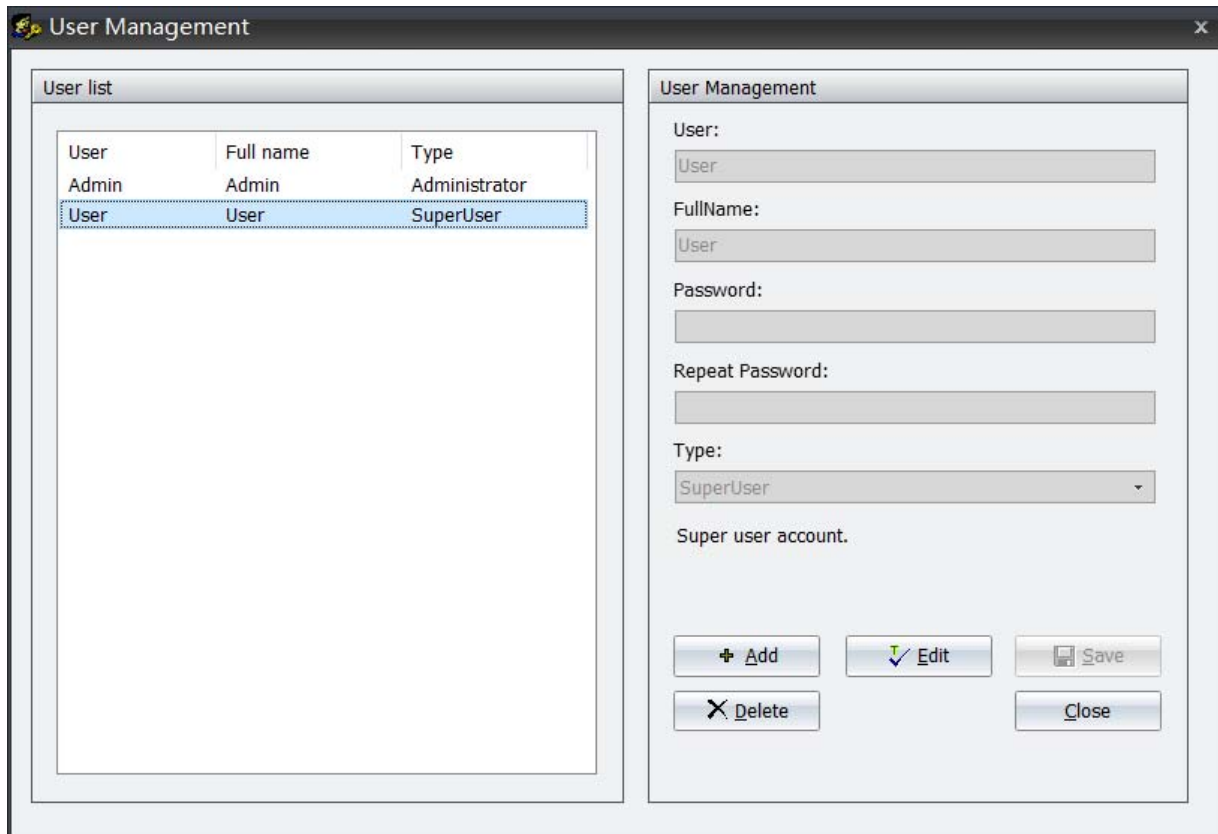


Figure 7.0: Users Setup

License

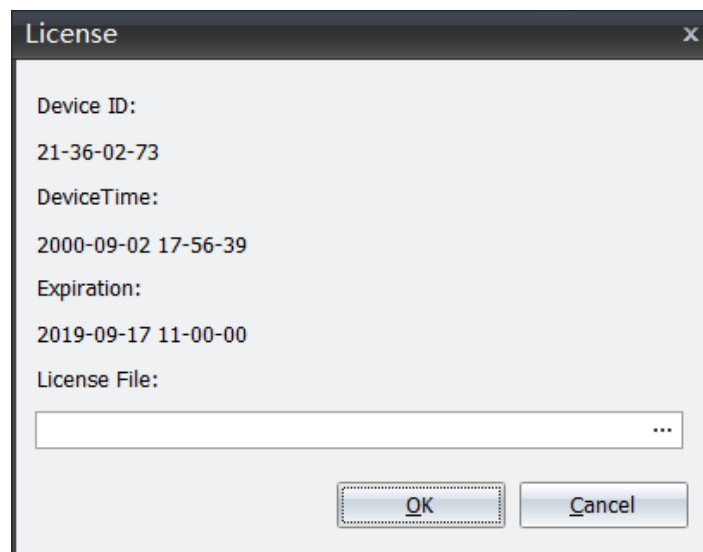


Figure 8.0: License Options

Language Settings

The MultiView Controller Software currently supports four language packs, including English, Simplified Chinese and Traditional Chinese. By clicking the drop-down box, you can select the desired language.



Figure 9.0: Language Settings

Windows and input signal management

The Workspace is a canvas-like virtual display area where you can design window arrangement and the display content for your video wall, as shown in the figure below. You can create windows on the workspace by dragging and dropping input signals from the input list. You can also reset the windows' properties. The content of each window can be the same or can differ.

Basic Operation:

- You can select and drag the input source to the workspace.
- The Workspace can be zoomed in and out by scrolling up and down with your mouse or by using the scroll bar on the workspace.
- By clicking the right mouse button, a popup window will appear. The popup windows may differ, as shown below.
- In this example the video wall configuration is 2×2.

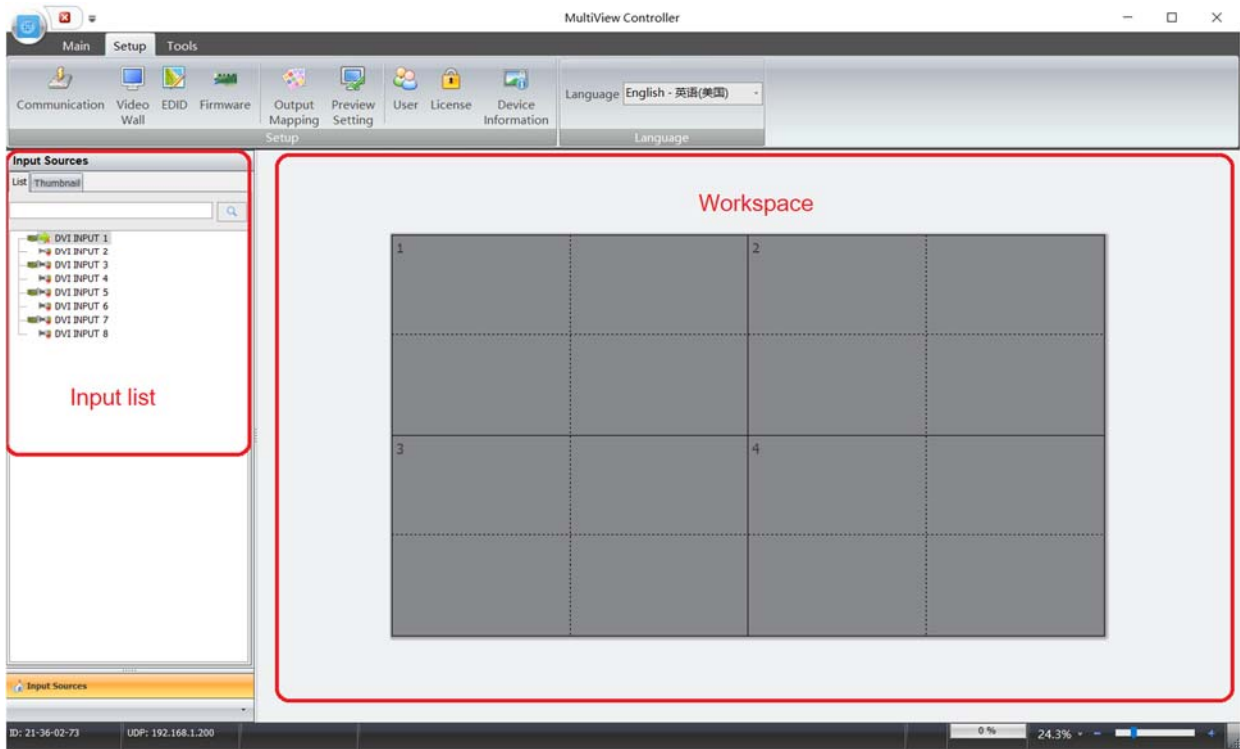


Figure 10.0 A: Video Wall Array

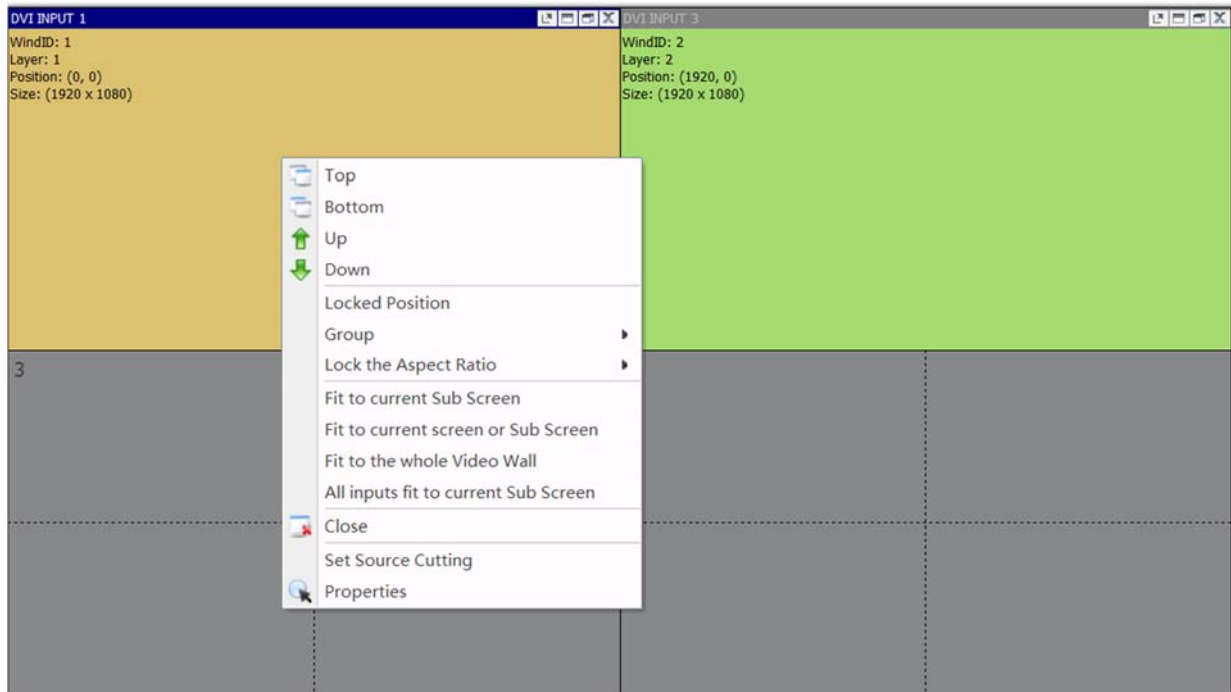


Figure 10.0 B: Windows Settings

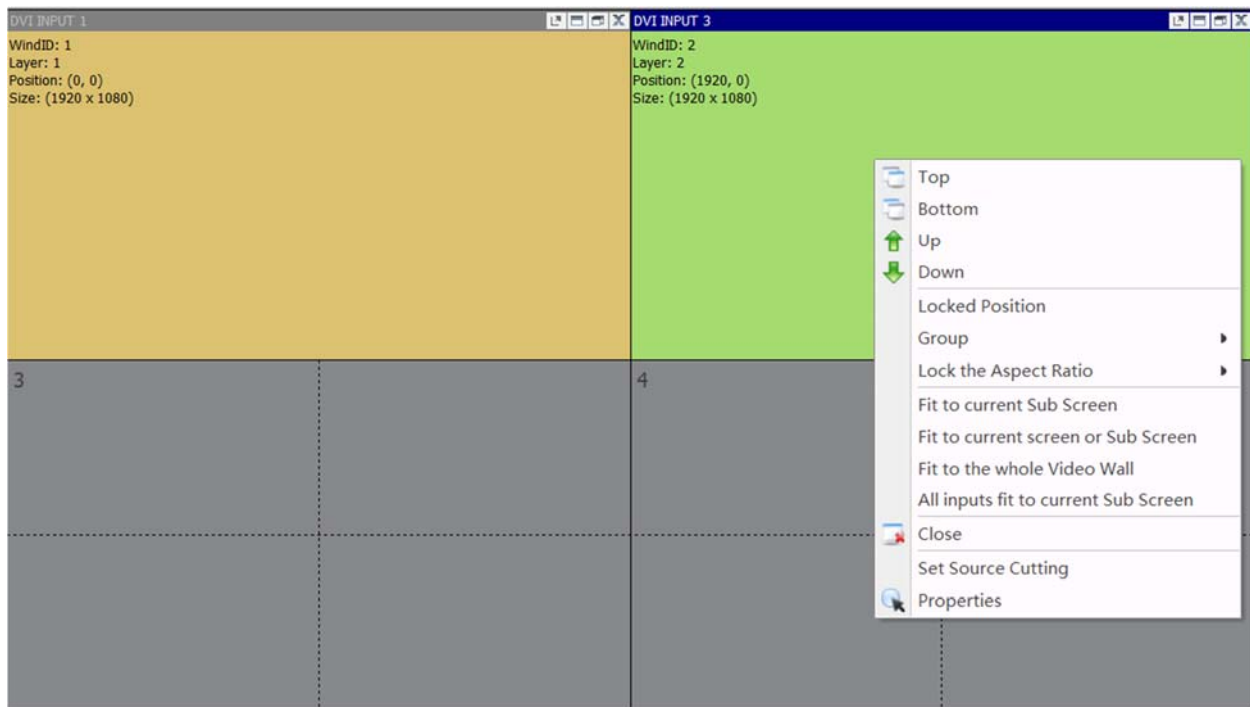


Figure 10.0 C: Windows Settings

Adding a window to the Workspace

In the beginning, the Workspace is empty, so you need to add windows to it. The methods of adding windows are described in the following sections.

A. Creating a window from the "Controller Input"

This method is the simplest and therefore most highly recommended. To create a window from the input sources list

(Controller Input):

Click on an input channel in the Controller Input (input list) and drag it to the desired location on the Workspace. A window with the input source selected appears in the Workspace, as shown in the figure below. The size of the window will match the current physical screen automatically.

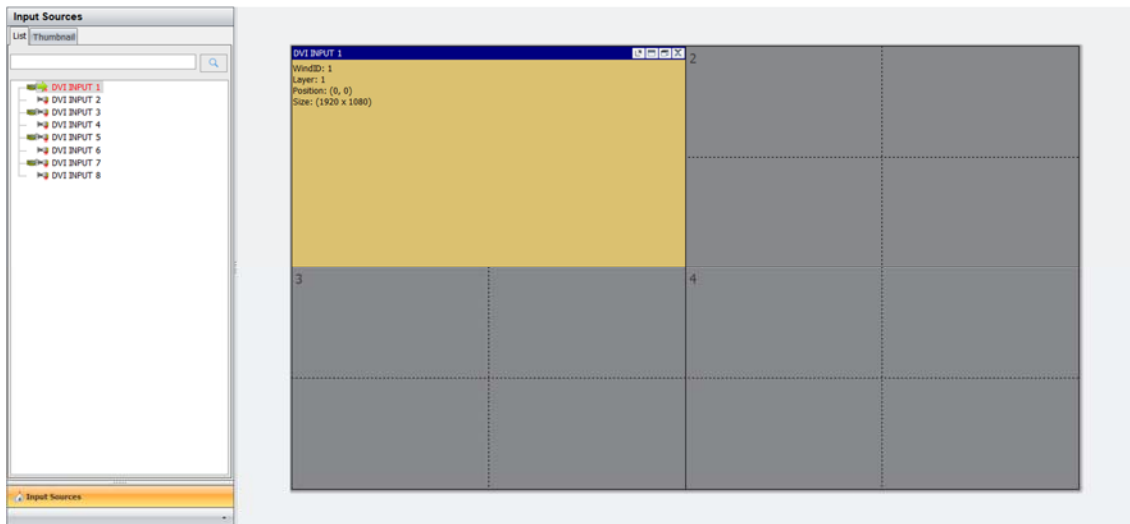


Figure 10.1 A: Create a Window

Limitation: you can open 8 windows with 8 different input sources on a physical screen.

Forcing open a window: if you would like to open a new window on a screen that already occupies a window, you can click on an input source and simultaneously press the "CTRL" key, and then drag and drop it to the screen. While a new window will be opened, the original window will still be there, but will be located in a lower layer (you cannot see it because the new window overlaps the original window).

B. Creating a window from the "New" button on the Main menu

Click "New" on the "Main" menu. A popup window will appear on the workspace, as shown below. You can then set the parameters for the new window.

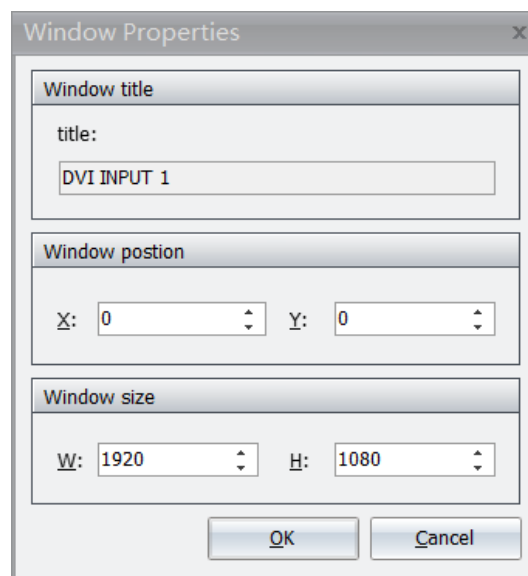


Figure 10.1 B: Window Position

Closing windows

You can close all the windows on the Workspace by clicking the “Clear” button on the “Main Menu”.

The methods of closing a window are described in the following sections.

- Click the “X” button in the top right corner of the screen.
- Click the “Close” button on the “Main Menu”.
- Right-click a window and select the “Close” option.

Changing Z-order (layers)

Windows may be positioned anywhere on the wall and can be placed to overlap other windows. When windows overlap, they are layered in an order of a user defined priority. The layer of a window determines whether it appears in front of or behind other windows. A layer is also known as a Z order. Layers are identified by a number and the higher the number, the further forward the window. For example, a window on layer 3 appears in front of a window on layer 2, but behind a window on layer 4, as shown in the figure below. The farthest back is layer 0.

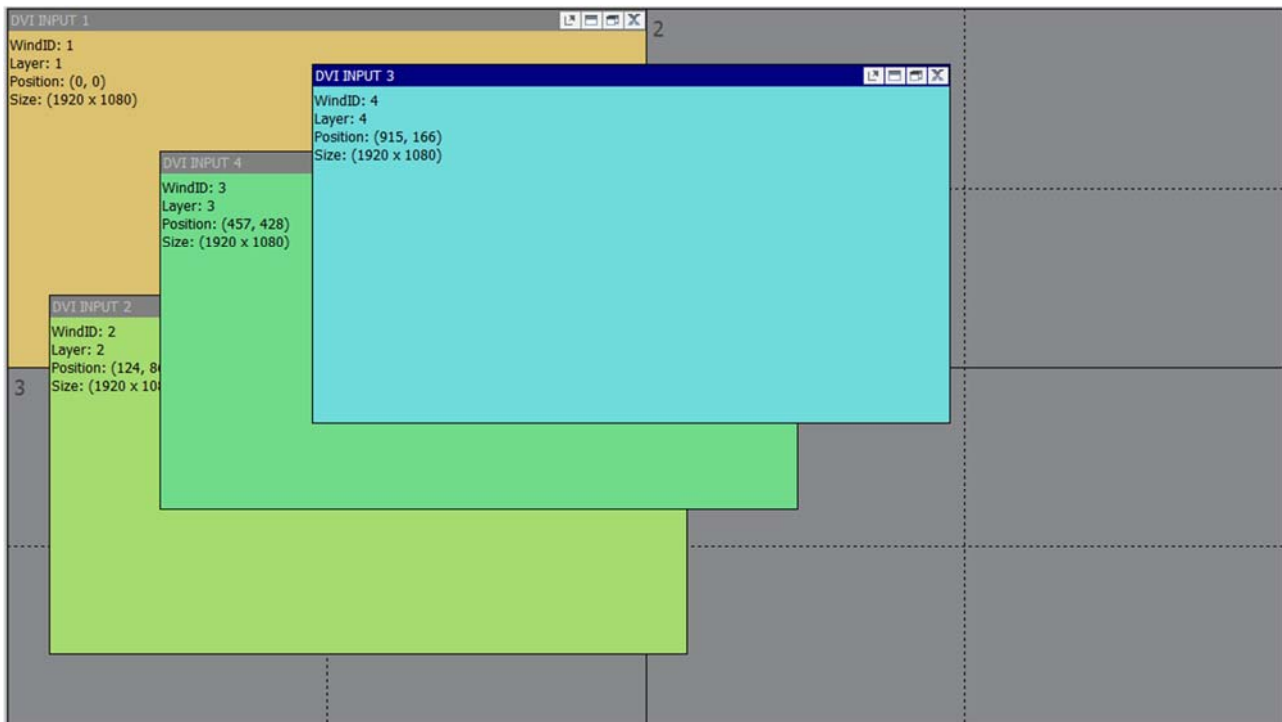


Figure 10.3 A: Layering settings

Top option

By setting a window's layer to the Top, it will appear on top of all other windows and have the highest priority (Z-order).

Bottom option

Setting a window's layer to the Bottom means that it will be placed below all other windows and have the lowest priority (Z-order).

Up option

Clicking "Up" will bring the window up one layer at a time (one Z-order number).

Down option

Clicking "Down" will send the window down one layer at a time (one Z-order number).

Locked position

The MultiView Controller Software has the ability to freeze the location of the window on the video wall.

Locking a specific window is accomplished by the following procedure:

- Right-click on the desired window on the virtual screen.
- Click the left mouse button to select the "Locked Position" operation. Follow the same procedure above to unlock a window.

Moving a window

To move a window, position the cursor over the window on the virtual screen and then click and drag the window to the new position.

Grouping windows

The windows can be merged into a group by right-clicking any window and locking it in place. The group (all of the windows) will be locked. As mentioned, you can use this function to create a high resolution or dynamic background image.

Windows 1, 2, 3, and 4 belong to group 1; windows 5 and 6 belong to group 2, as shown in the figure below:

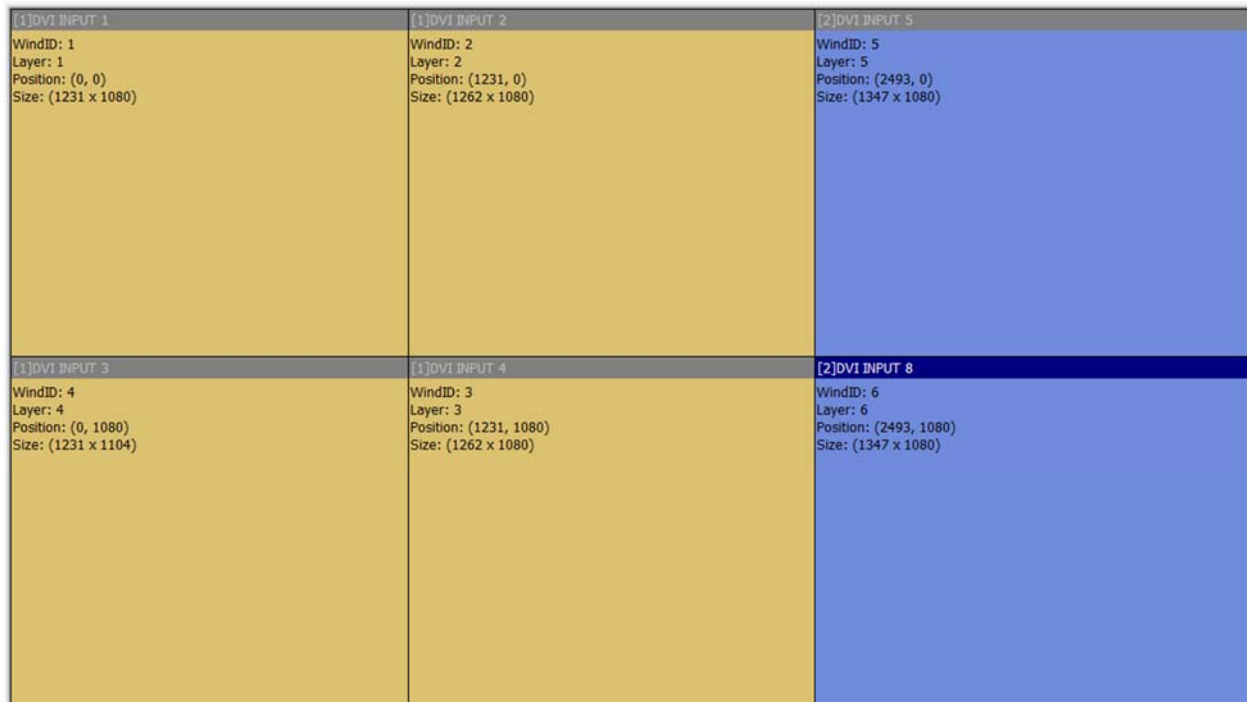


Figure 10.3 B: Grouping Windows

Zooming in on the windows

Any window can be set to automatically fill the complete video wall, any single screen on the video wall, or any virtual screen. Right-click the desired window. The following popup will open:

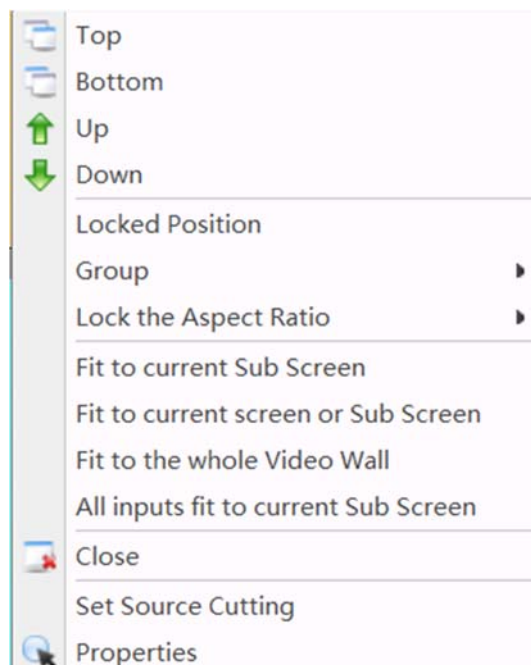


Figure 10.4: Zooming

Fit to current sub screen: the selected window will be set to fill a sub screen.

Fit to current screen or sub screen: the selected window will be set to fill the current screen or sub screen.

Fit to the whole videowall: the selected window will be set to fill the whole video wall.

All inputs fit to current sub screen: all windows will fill the sub screens.

Cropping an input source

If you use a source with black bands on top/bottom or left/right, you can crop it. Right click a window and select the "Set Source Cutting" option. A popup window will then open. Use the Top, Bottom, Left, and Right values to crop your input.

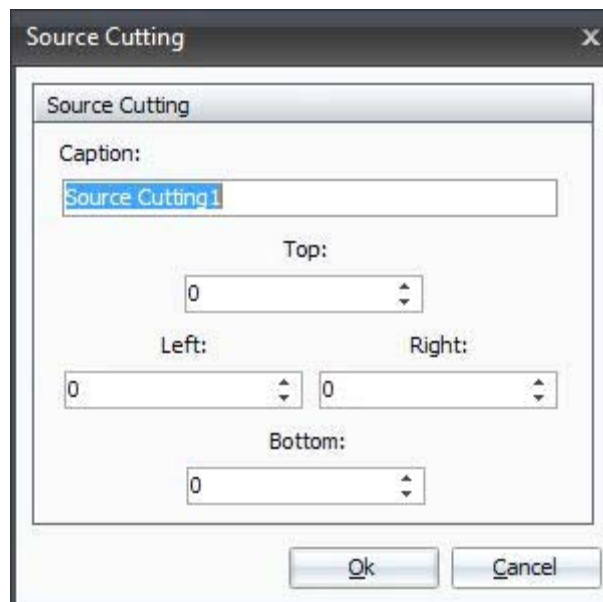


Figure 10.5: Source Cutting

Scene design and control

A scene means a collection, including the size, position, and contents of one or more windows. You can store and recall them as needed. Each scene can have a different arrangement of windows and sources. Several scenes can be made into a project.

Creating a scene

To create a new scene, you can click the "Save" button on the "Main Menu":

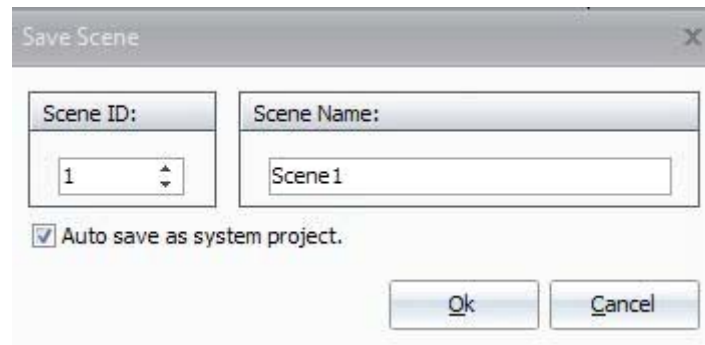


Figure 11.1: Save Scene

Recalling a scene

The methods of recalling a scene are described in the following sections.

Click "Call" on the "Main Menu" and then select the desired scene:



Figure 11.2 Call Project



Technical Support

Notices: for additional technical support, please contact DigiBird:

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