DB-RC4 User Guide

DigiBird 4K DVI Video Wall Controller

www.digibirdtech.com

DB-RC4 User Guide

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NOTICES

Important Notices

Thank you for purchasing this DigiBird® product. To prevent damage to your DigiBird product or injury to personnel when operating this equipment, please read the following safety precautions and user guide prior to operation. This manual includes detailed instructions for software operation. Please refer to this manual or contact DigiBird if you have any questions. DigiBird reserves the right to make changes in the hardware, software, packaging, and any accompanying documentation without prior written notice.

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To prevent damage to your DigiBird product or injury to personnel operating the equipment, please read the safety precautions prior to operation.

1) Make sure your PC configuration meets the minimum requirements indicated in this manual.
2) Make sure the operating system is compatible with the requirements indicated in this manual.
3) Make sure your operating system is safe, stable and free of viruses.
4) Close other running applications when installing this software.

Notifications

The following notifications are used in this guide:

ATTENTION: Attention indicates a situation that may damage or destroy the product or associated equipment.

NOTE: A note draws attention to important information.

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I. Introduction

Thank you for choosing the DigiBird DB-RC4. Before you begin configuring your DB-RC4 for the first time, please read completely through the document to become familiar with its features. This section gives an overview of the user guide and features of the DB-RC4 Video Wall Controller and Control & Design Software. Topics include:

About this Guide
About the DB-RC4
Key Features of the DB-RC4
Video Wall Layout Examples

1.1 About This Guide

This guide provides detailed information about the DB-RC4 Hardware and DB-RC4 Control and Design Software, including software installation and configuration. This guide also describes how the software controls the DB-RC4 Video Wall Controller. The features and functionality described in this guide are based on version 2.0 of the DB-RC4 Control and Design Software with DB-RC4 firmware version 1.0.0.0 and later. For the latest details on firmware and software, and for additional updates, visit our website at *www.digibirdtech.com*.

1.2 About the DB-RC4 Video Wall Controller

The DigiBird DB-RC4 Video Wall Controller is the simplest and most cost-effective solution to build an eye-catching and creative video wall. It is an ideal video wall solution for retail stores, shopping malls, restaurants, sport bars, hotel lobbies, trade shows and entertainment venues.

The DB-RC4 breaks the limitations of the traditional video wall alignment. Unlike traditional video walls, the DB-RC4's displays and each of its outputs can be independently flipped or rotated 90°, 180° or 270°. It also supports the alignment of varying resolutions and display sizes to build a distinctive, asymmetrical video wall. The DB-RC4 is a compact video wall controller/processor that features one single or dual-link DVI input that provides stunning 4K × 4K input capability and can flexibly route the input to four output displays.

1.3 Key Features of the DB-RC4 Video Wall Controller

- Controls up to four displays in a wall configuration.
- Cascades multiple units to create walls with more than four displays.
- Bezel compensation for input image across screens.
- Supports image rotation and mirroring. Each output can be independently rotated 90°, 180° or 270° and flipped horizontally or vertically.
- The displays aligned in the video wall can be of different sizes and of native resolution.
- Supports automatic frame lock. When the timings of the four monitors are the same, genlock will be activated. The genlock feature guarantees fluid motion video and minimizes latency to a single frame.
- Accepts Single-Link or Dual-Link DVI and HDMI input signal formats. (A DVI-to-HDMI adapter is required.)
- Ultra high input resolutions up to 4K x 4K (4088 pixels x 4088 lines).
- Supports connections to four DVI-I (VGA, DVI) displays, and all VESA resolutions (up to 1920×1200@60Hz) are supported. The four different output resolutions can be supported.
- The input source can be cropped at the user's discretion and copied to an output monitor. The smallest cropping area is one pixel.
- Supports flexible EDID management.
- Automatic input and output signal detection.
- Configure using windows-based software installed on a PC connected via a USB link.
- Durable, stainless steel chassis.
- Windows® XP, Windows® 7 (32, 64-bit), Windows® 8 (32, 64-bit) compatible.

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1.4 Video Wall Layout Examples

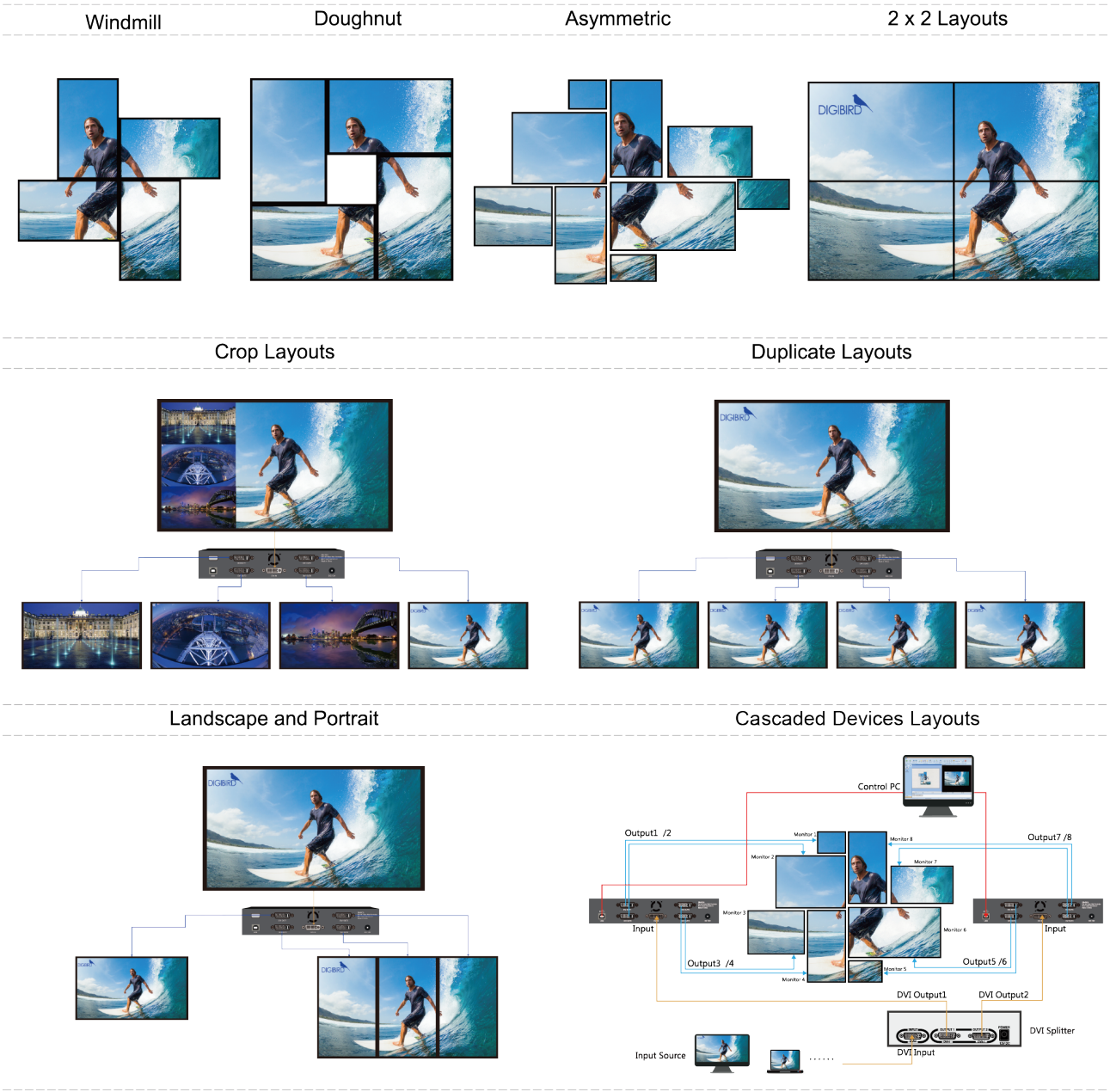

Figure 1.4 Video Wall Layout Examples

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II. The DB-RC4 Hardware

2.1 Unpacking and inspection

Your packing box should contain the following items:

Items	Quantity
DigiBird DB-RC4 enclosure	1x
DB-RC4 AC/DC Switching Power Adapter	1x
Standard Computer Power Cord, 10A, 18AWG (NEMA 5-15P to IEC-320-C13), 6-ft. (American Standard) or 1× CEE7/7 Male Plug to 2 Way IEC 60320 C13 Connector 6 Feet 10a/250v power cord (European Standard)	1x
USB 2.0 Cable Type A Male to Type B Male 5 feet, Black	1x
DigiBird CD containing Software Installation File and User Guide (PDF version)	1x
Warranty Card	1x

User guide and Software are also available on *www.digibirdtech.com*.

Before connecting any inputs or outputs, it is advised to power on the unit. Should you encounter any problems powering on the unit, immediately contact your local distributor or dealer.

The DB-RC4 enclosure will arrive boxed with internal foam for protection during shipping.
You are encouraged to retain the box and all packing material so the unit can be returned in the unlikely event that repairs should ever become necessary.

2.2 Hardware Overview

2.2.1 Technical Specification

Connectors	(1) Single-Link or Dual-Link DVI-I female for input (4) DVI-I female for output (1) power connector female (1) USB-B female	
Indicators	(1) Power LED, (1) Input LED, (1) Status LED	
Outputs	4 x Single-Link DVI or analog RGB outputs, up to 1920×1200@60Hz	
Input Resolution	Up to 4K×4K	
Input Clock Rate	330MHz	
Input Bandwidth	9.9Gbps	
Arbitrary Upscaling	Unlimited upscaling for original cropped area	
Operating Humidity	90% non-condensing	
Operating Temperature	32° to 104°F (0° to 40°C)	
Power	Input: Output: Consumption:	100-240 VAC, 1.4 Amps 12 VDC, 5 Amps 40 Watts

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Dimensions	1.75”H x 8.86”W x 8.66”D (44.5mm x 225mm x 220mm) without rack mount ears 1.75”H x 10.24”W x 8.66”D (44.5mm x 260mm x 220mm) with rack mount ears
Package Dimensions	3.74”H x 17.72”W x 12.20”D (95mm x 450mm x 310mm)
Net Weight	1.26 Kg or 2.78 lbs
Gross Weight	2.87 Kg or 6.33 lbs

2.2.2 Front Panel

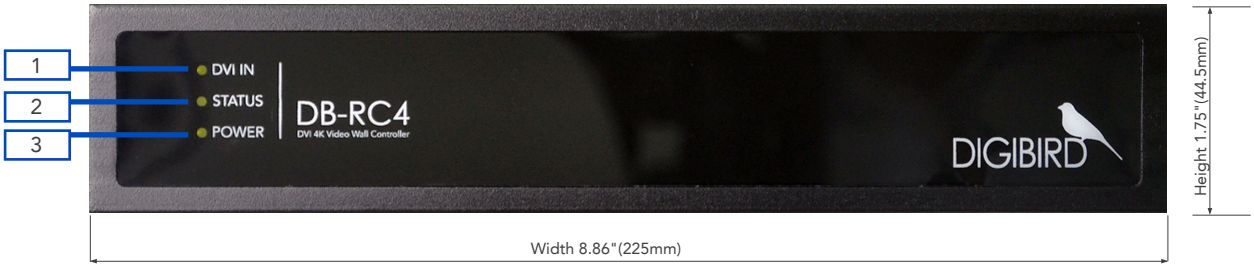

Figure 2.2.2 Front Panel

①DVI IN indicator LED: When the DVI IN LED lights orange, it indicates a valid input source is connected to the input interface of the DB-RC4.

② Status indicator LED: Solid-state lighting indicates the DB-RC4 is running properly. When the LED is blinking, it means the detected input resolution doesn’t match the default or configured input resolution. The user should follow the instructions and modify the configuration using the software.

③ Power indicator LED: This LED lights orange when the DB-RC4 is powered on.

2.2.3 Rear Panel

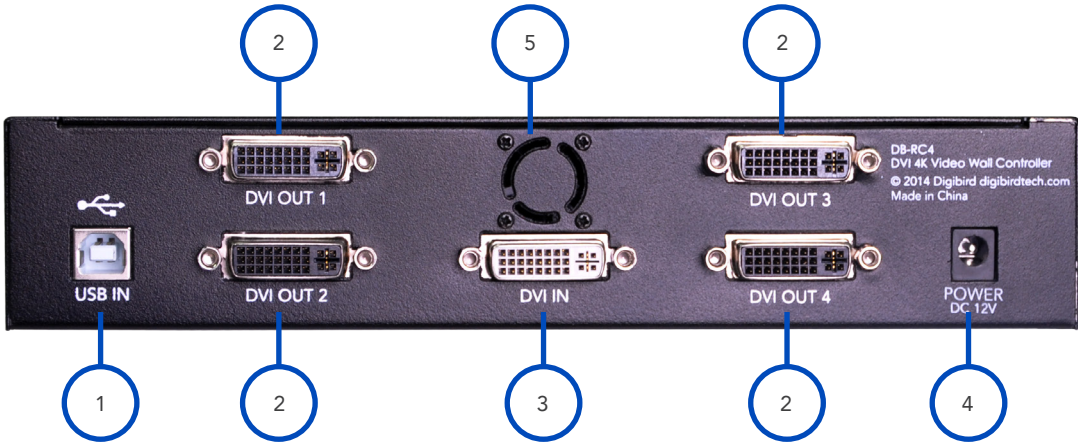

Figure 2.2.3 Rear Panel

① USB Type B Port: This USB Type B port is compatible with USB 1.0 and 2.0. The USB port is used to connect the DB-RC4 to your control PC. A USB Type A to Type B cable is supplied with the DB-RC4. The DB-RC4 can be controlled via the USB port while using the windows-based software.

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② DVI-I Output Port # 1 to # 4: The four black DVI-I Output ports are used to connect the DB-RC4 to the output monitors or displays. The DVI-I outputs support both DVI and analog RGB (VGA) signals.

③ DVI IN Port: The DVI IN port (white) is applied to connect the input source. The DB-RC4 supports Single-Link DVI-D, Dual –Link DVI-D and HDMI (not HDCP compliant) signals. When connecting an HDMI source, like a PC or laptop with an HDMI graphics card, an HDMI to DVI adapter is needed. Use a DVI-I connector as it is compatible with most DVI cables.

④ Power Socket: The power socket is used to connect the DB-RC4 power adapter. The parameters of the AC-DC switching power adapter is shown below:

| Input: 100-240 VAC, 50/60hz, 1.4A | Output: 12V DC, 5.0A, 60W Max.

⑤ Ventilation Hole: System fan and ventilation hole. Do not obstruct the ventilation hole as it may cause the DB-RC4 to overheat.

2.2.4 Side View

The following figures show both sides of the DB-RC4 ventilation grilles. Do not obstruct the ventilation grilles under any circumstances.

Figure 2.2.4 Side View

2.2.5 Optional Hardware (sold separately)

Depending on your needs, you may also require the following hardware:

A. HDMI to DVI adapter for DB-RC4 input

Figure 2.2.5 A: HDMI Male to DVI-I Dual Link Female Adapter

B. DVI to VGA adapter for DB-RC4 outputs

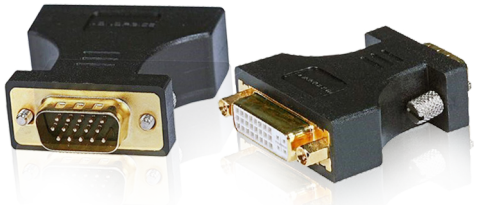

Figure 2.2.5 B: DVI-I Female to VGA Male Adapter

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C. High Quality DVI cables (male-to-male)

Figure 2.2.5 C: DVI-I Dual-Link Digital/Analog Cable

D. Rack Ears

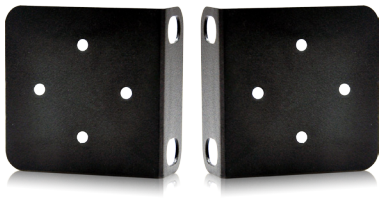

Figure 2.2.5 D: Rack Ears

2.3 DB-RC4 Hardware Installation

2.3.1 Factory Default Settings

The factory default settings are shown here:

Input EDID Preferred Mode	1920 x 1080 x 60Hz (SMPTE timings)
Output monitor resolution	1920 x 1080 x 60Hz (SMPTE)
Layout Mode	Duplicate Mode and No Rotation

The default settings can be modified with the DB-RC4 Video Wall Control and Design Software (RCS). Refer to the software section in the DB-RC4 user guide that came with your product.

2.3.2 Installation Steps

1) Disconnect all equipment from power sources.
2) (Optional) Mount the DB-RC4 to a rack or other desired place using the optional rack mount ears.
3) Monitors/Displays Installation: Install the monitors or displays at the desired place. A video wall mounting system could be needed for your specific installation needs. The monitors may be rotated from their traditional landscape-style placement according to the user's requirement. It is strongly recommended to employ a clockwise rotation.
4) Input Connection: Connect the DVI IN port (white, single-link or dual-link DVI) of the rear panel to an input source, like a graphic workstation, PC or laptop. The DVI input is not compatible with HDCP which means you cannot use a Blu-ray DVD as an input source.
5) Output Connection: Connect the DVI-I Dual-Link Digital/Analog Cables to the DVI outputs of the rear panel starting from number 1 to number 4.
6) Control Connection: Connect the USB to the port of the rear panel and to the controlling PC's port using the USB Type A to Type B cable.
7) Power Connections:
   Connect the DC output connector of the DB-RC4 AC/DC power adapter to the power socket at the rear panel of the DB-RC4. *See Figure 2.3.2 DB-RC4 Power adaptor.*
   Connect the power cord to the 3-pole AC inlet of the adapter.
   Connect the power cord to a reliable source with a voltage between 100 and 240VAC.
8) Power on all connected devices.
9) Install and set up the DB-RC4 control and design software.
10) Use the software to configure the sources and displays for your creative video wall system.

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Figure 2.3.2 DB-RC4 Power adaptor

2.4 Connection Diagram

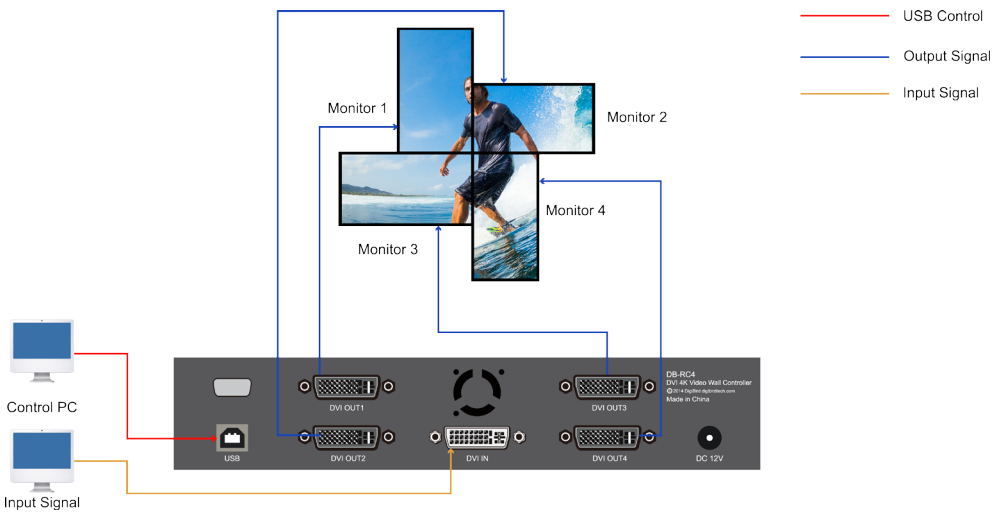

Figure 2.4 Connection Diagram

III. About the DB-RC4 Control and Design Software

The DB-RC4 Control and Design Software is a Microsoft® Windows® -based application used to control the DB-RC4 Video Wall Controller from your computer via a USB cable (compatible with version 1.0 and 2.0).

Some features of the DB-RC4 Control and Design Software include:

- User interface is organized into a series of tasks so that you can easily navigate them and set up the video wall.
- Supports quick setup. Once the dimensions and positions of the monitors are set up, the software is able to automatically calculate the display area.
- The monitors in the physical layout and the white frames in the capture regions can be moved by using the up ↑ , down ↓ , left ← and right → arrows on the keyboard.
- The DB-RC4 Control and Design Software provides a monitor database, and most well-known manufacturers are already included at launch. It also allows users to add their own monitors manually.

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- Monitor information such as screen dimensions (in pixels and millimeters), bezel sizes and refresh rates are all included.
- Supports arbitrary cropping of input sources and previewing of cropped regions.
- A virtual canvas provides a screen layout (physical layout) for the video wall where monitors can be positioned and rotated.
- Custom video wall configurations can be saved as templates for future recall.

3.1 Computer System Requirements

For the DB-RC4 Control and Design Software to function correctly and reliably, it must be installed on a computer that meets or exceeds the following criteria:

	Minimum	Recommended
Operating System	Windows® XP 32-bit and 64-bit versions	Windows® 7 32/64-bit, Windows® 8 32/64-bit
CPU	Intel® Pentium® /Celeron® /AMD Athlon™	Intel® Core™ i3 or above
Memory (RAM)	256MB RAM	2GB RAM or above
Hard Disk Free Space	150MB	5G or above
Graphics	1024 x 768, 65K colors (16-bit)	1024 x 768, 16.7M colors (32-bit)
CD-ROM	DVD-ROM	DVD-ROM
Input	Microsoft compatible keyboard and mouse	Microsoft compatible keyboard and mouse

3.2 Software and Driver: Installing and Uninstalling

This section contains the following topics:

| Installing the Driver | Installing the Software | Uninstalling the Software | Running the Software |

3.2.1 Installing the Driver

Before installing the DB-RC4 Control and Design Software, the user must install the USB driver.
The USB driver installation steps are shown below:

1. Copy to your computer the file named "RCSCtrl_2.0" from the CD that came with the DB-RC4.
2. Click the "INSTALL" button to install the driver (Figure 3.2.1 A).

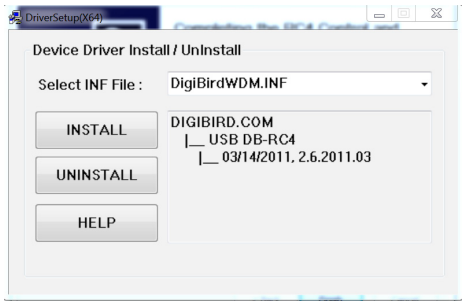

Figure 3.2.1 A: Installation of driver

Figure 3.2.1 B: Driver installed

3. When the driver is installed successfully, it will appear in the device manager (Figure 3.2.1 B: Driver installed).

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3.2.2 Installing the Software

The Control and Design Software installation file is provided on a CD with your DB-RC4 (it is also available for download from the DigiBird website at www.digibirdtech.com). Install the program on your computer in the following way:

1. Copy the file "RCSCtrl_2.0" from the CD to your PC and double-click the icon in Figure 3.2.2 A.

Figure 3.2.2 A: RC4 software icon

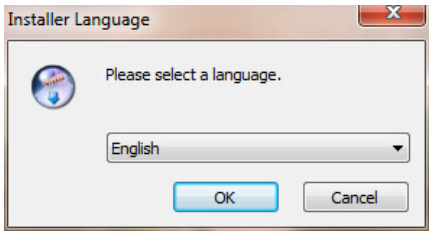

Figure 3.2.2 B: Select language

2. Select the desired Language and then click "OK", as shown above in Figure 3.2.2 B.
3. Follow the instructions on the Setup Wizard to complete the software installation, as demonstrated below:

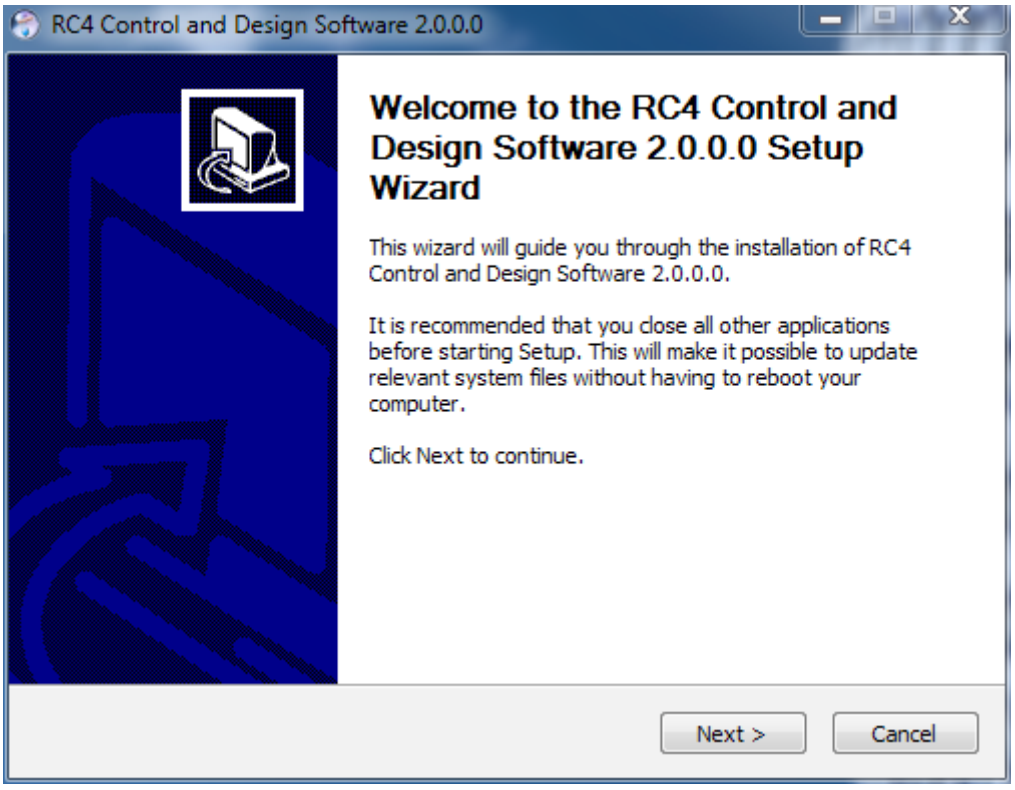

Figure 3.2.2 C: RC4 software setup wizard

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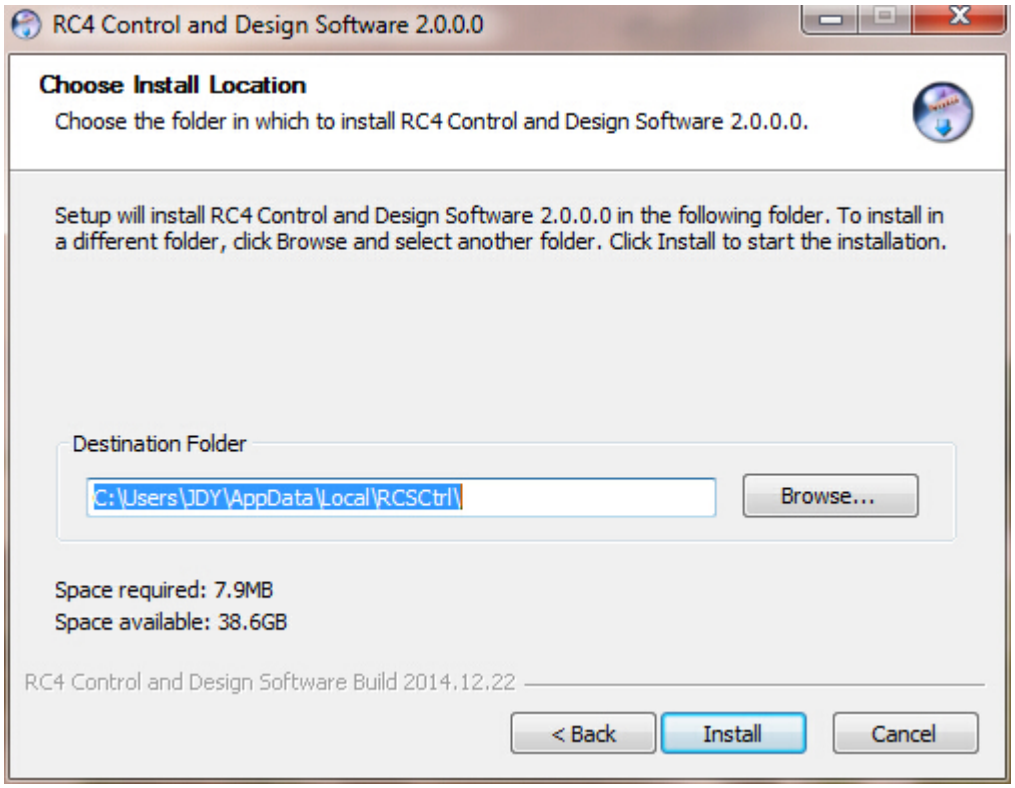

Figure 3.2.2 D: Choose install location

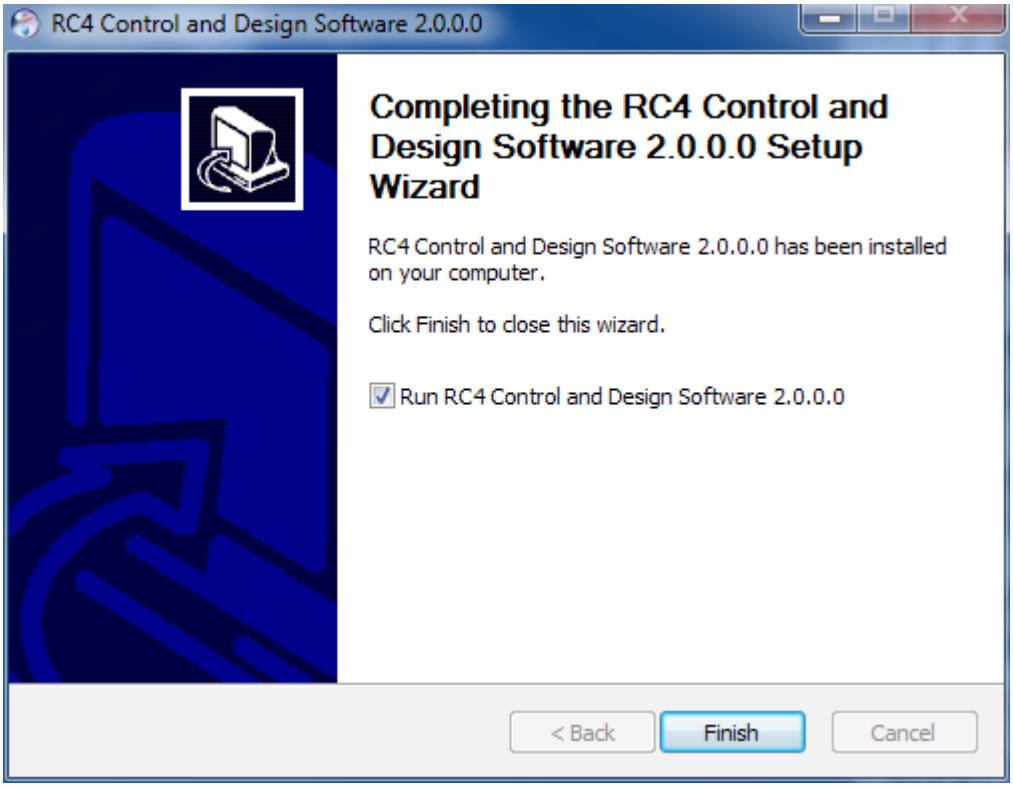

Figure 3.2.2 E: Finish

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4. After the program is installed successfully, it will generate a shortcut on the desktop:

Figure 3.2.2 F: RC4 Control and Design software shortcut

3.2.3 Uninstalling the Software

The software uninstall steps are explained below:

1. Open the Start Menu by clicking the Start button and then click "All Programs" → " RC4 Control and Design Software" → "Uninstall", as shown:

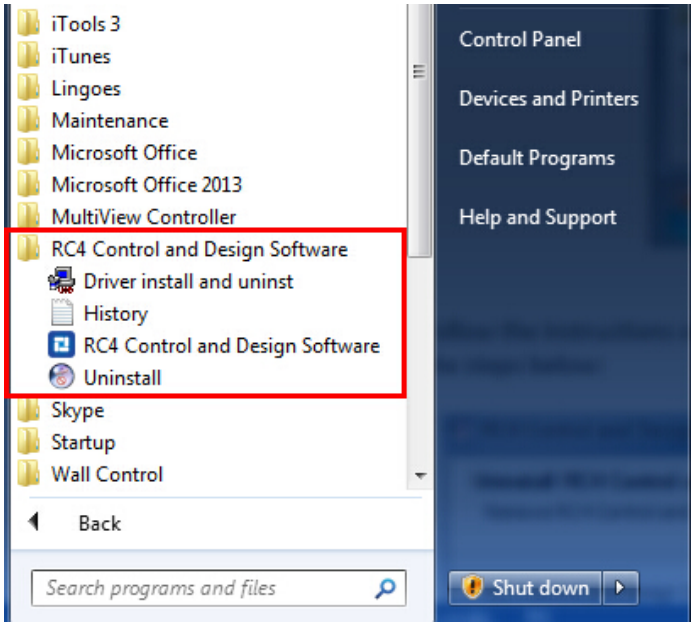

Figure 3.2.3 A: Uninstall

2. Follow the instructions on the Uninstall Wizard to complete the uninstall as shown in the steps below:

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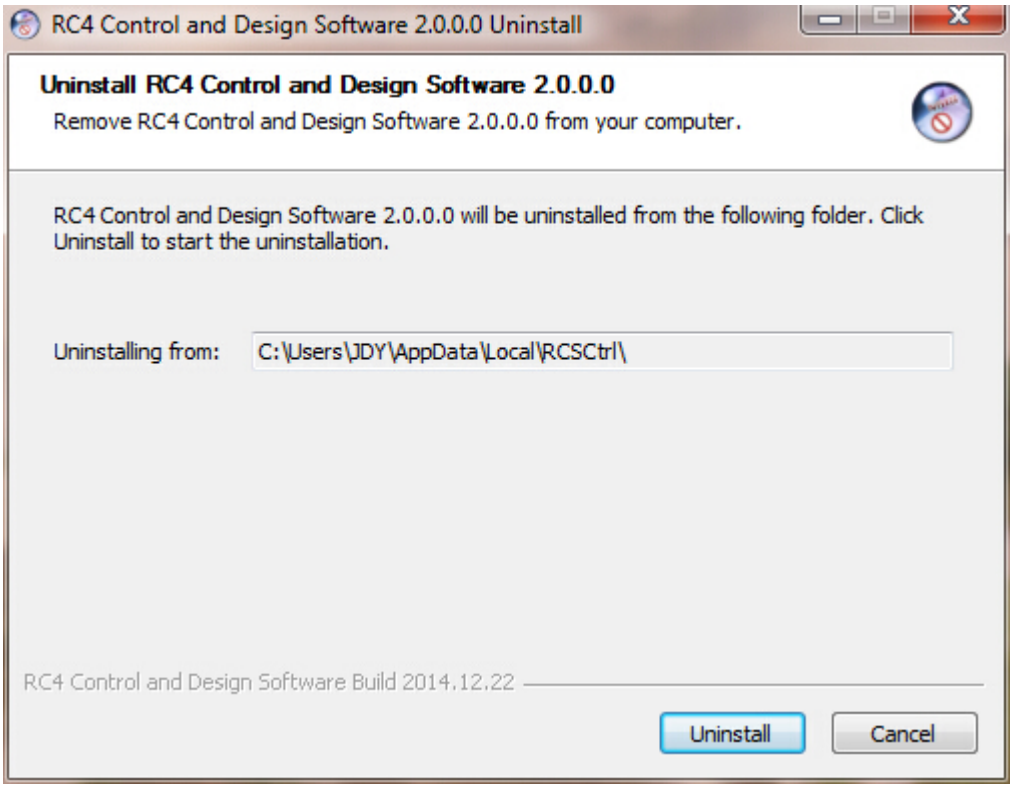

Figure 3.2.3 B: Uninstall

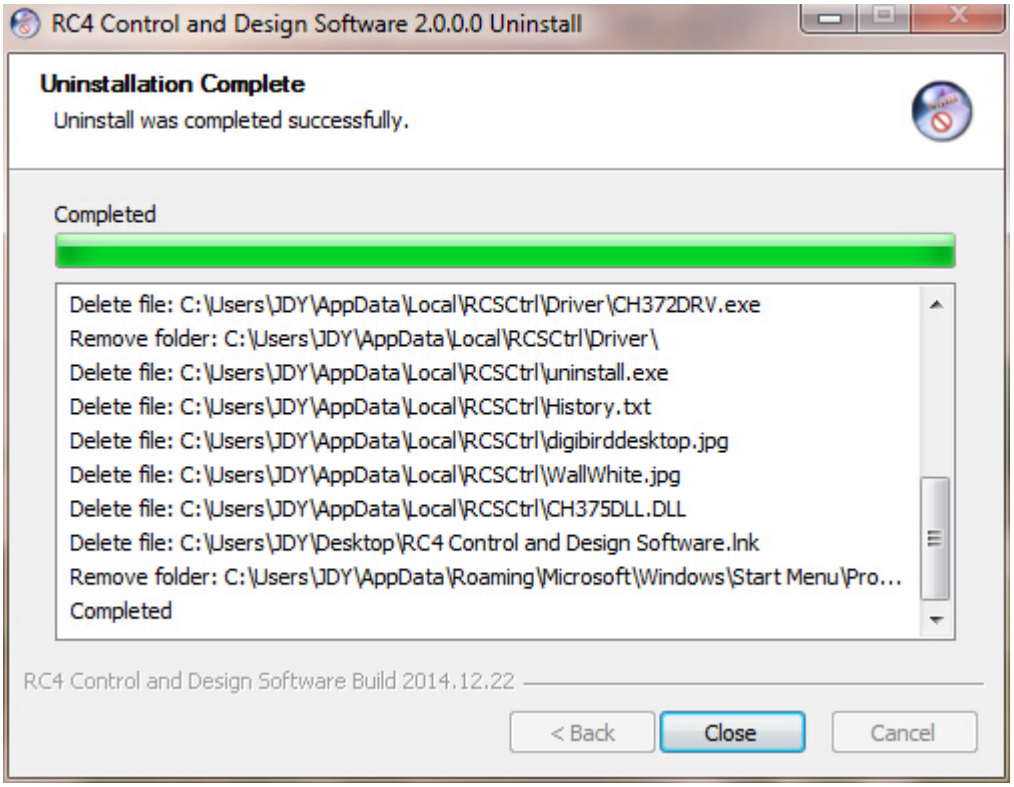

Figure 3.2.3 C: Uninstallation completed

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IV. Running the Software

Once the DB-RC4 Control and Design Software has been installed, the user can run the application with any of the following methods:

- Double-click the DB-RC4 icon (shortcut) on the desktop.
- From the desktop, click Start > All Programs > RC4 Control and Design Software > RC4 Control and Software.

The opening screen below will appear:

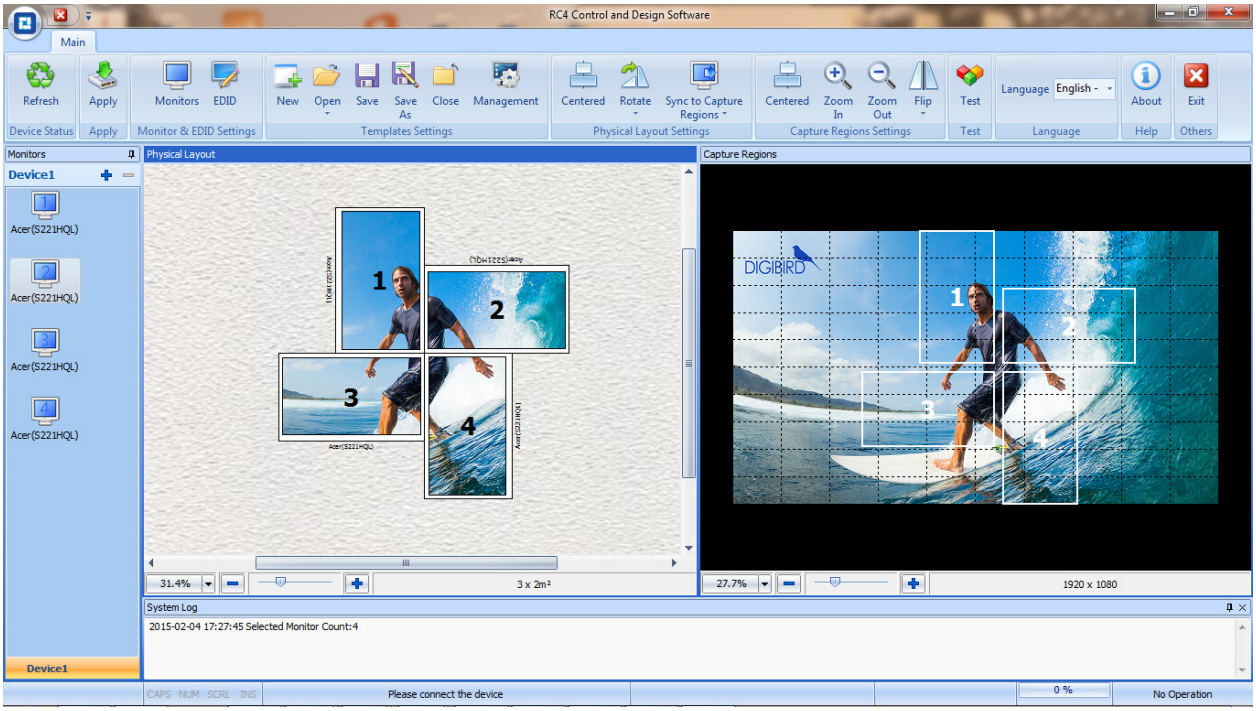

Figure 4.0 RC4 Software Interface

You can exit the DB-RC4 Control and Design Software using any of the following methods:

- From the Main Menu, select Exit.

- Or click the "Exit" button at the top left corner of the main application window.

V. Software Operation

This section contains the following topics:

Mounting Wall Size Setting	Input Resolution Setting	Monitors Setting
Physical Layout Design and Setting	Capture Regions Settings	EDID Management
Other Software Operations		

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5.1 Software Overview

Prior to setup of the positions of monitors and capture regions, the user needs to be conversant with the software. The DigiBird DB-RC4 Control and Design Software application window contains the following elements:

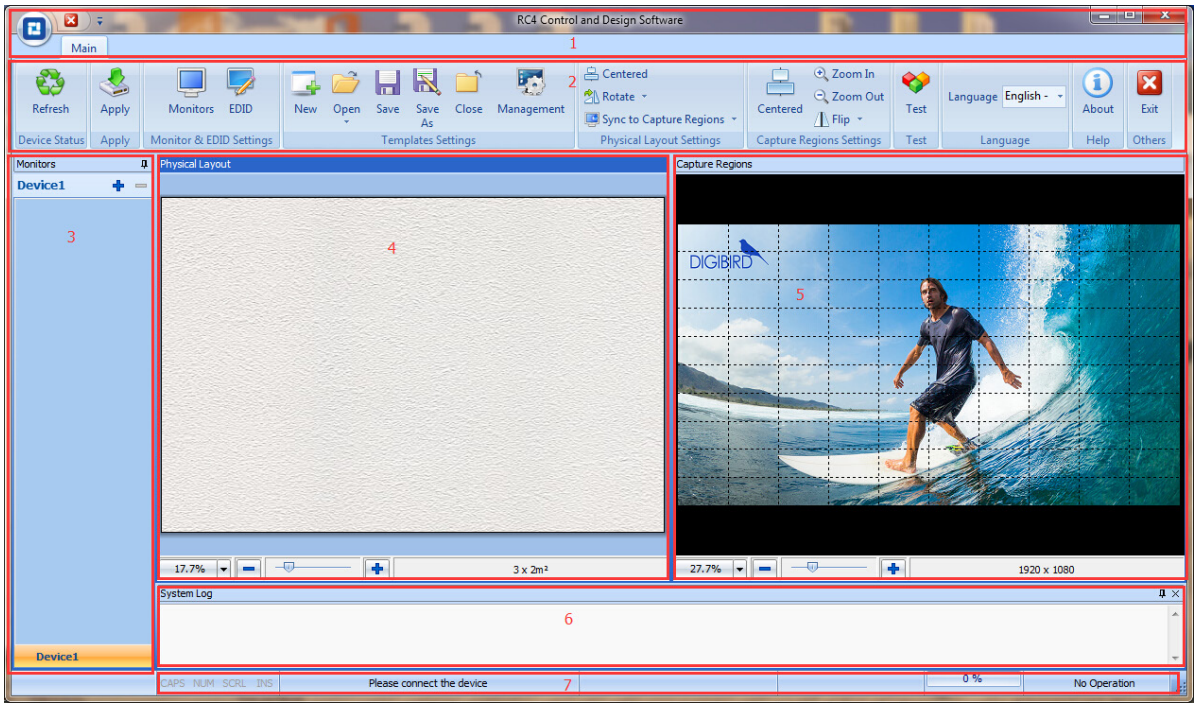

Figure 5.1 A: Software Overview

① Menu Bar: includes Start Menu and Customized Toolbars.

② Toolbars: includes Configuration Templates, Physical Layout Settings, Capture Regions Settings, Test, Help and Others.

③ Monitor Listing Window: the monitors list will be shown here after completing the Monitors Settings. The trade names and models of the selected monitors will be displayed in the list. *See below figure 5.1 B.*
The Monitor Listing window can be docked or undocked. Look for the small pushpin in the title bar of the Monitor Listing window and click it so that the pin is pointing to the left, as shown in the figure below. The window will now automatically hide itself when it is not being used. *See below figure 5.1 C.*

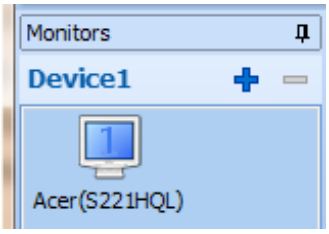

Figure 5.1B: Monitor list

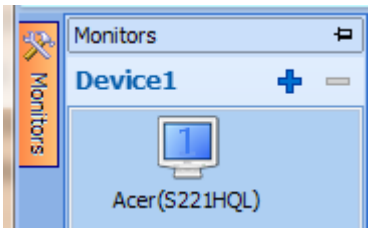

Figure 5.1 C: Undocked bar

④ Physical Layout Window: The background of the Physical Layout Window serves as the virtual area for which video wall monitors will be mounted or placed. The monitors in the Physical Layout window can be dragged and rotated in the custom designing of the video wall.

⑤ Capture Regions Window: The input signal (image or video) will appear here. The input signal can be cropped and flipped in the Capture Regions window.

⑥ System Log Window: The system events will be displayed in the System Log window.

⑦ Status Bar: Includes Device ID, prompt message and Input Resolution, etc.

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5.2 Mounting Wall Size Setting

The Mounting Wall is the physical area where the actual video wall monitors will be mounted, or placed. (Figure 5.2 A).

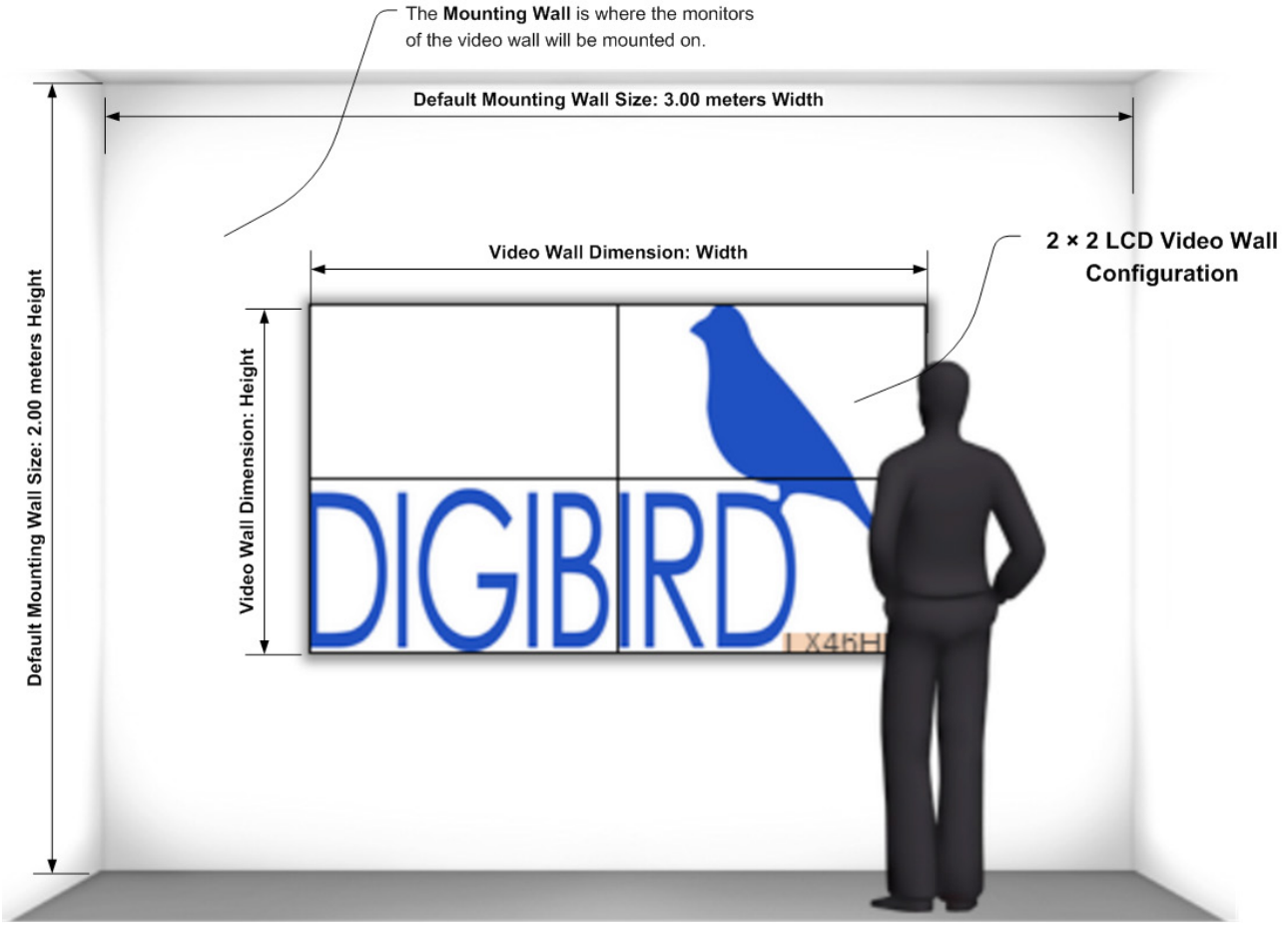

Figure 5.2 A: Mounting Wall Size Setting

The default Mounting Wall dimension is 3.00 meters width by 2.00 meters height. Users can use the Mounting Wall Size setting to define the wall size according to on-site conditions.

To do this, hover your mouse cursor over the Physical Layout Window, and then right-click on the window background. The Mounting Wall Size menu will appear. Left click to perform setup as shown in the figures below:

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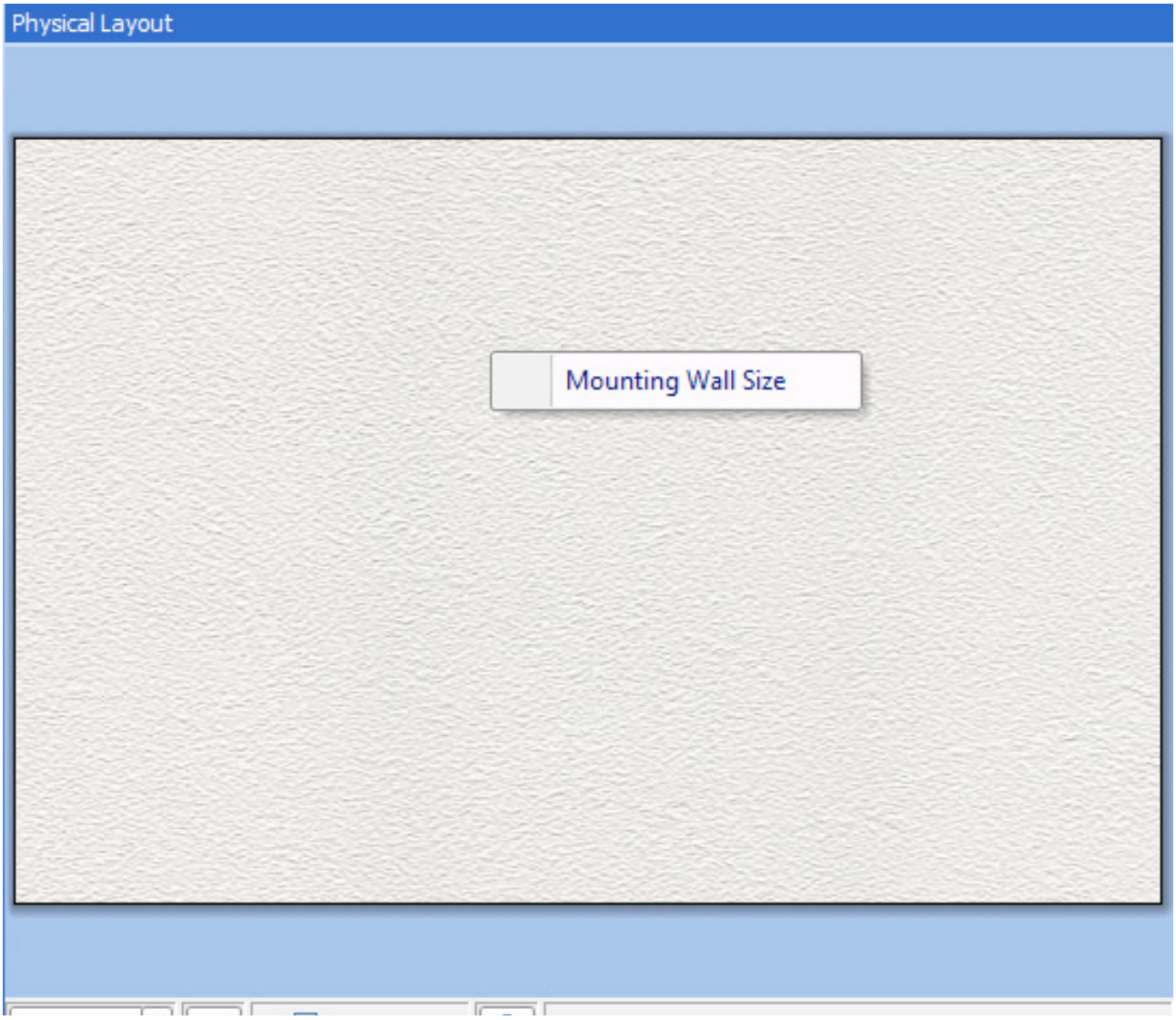

Figure 5.2 B: Mounting Wall Size

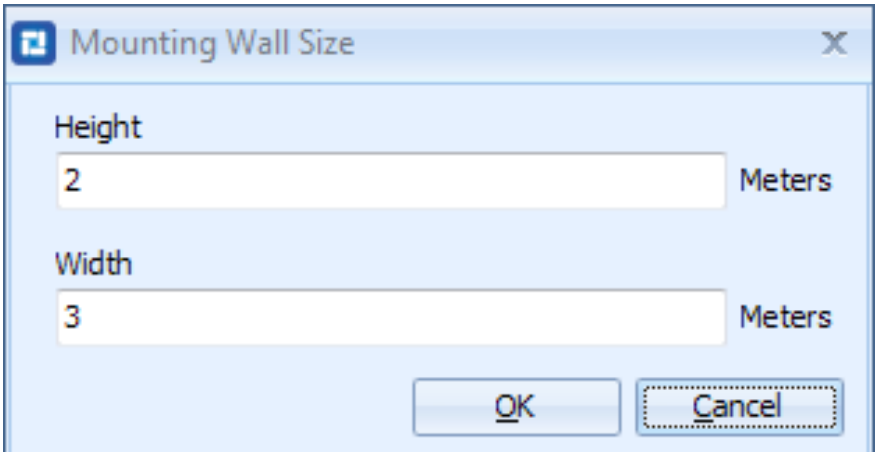

Figure 5.2 C: Height and width

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5.3 Input Resolution Settings

The default input resolution is 1920 × 1080 @ 60Hz. The user can change this default by selecting the Input Resolution Settings menu.

Hover your mouse cursor over the background image of the Capture Regions Window and then right-click on the background. The Input Resolution Settings menu will appear. Left-click it to enter the Input Resolution Settings, as shown in the figures below: *see figure 5.3 A*.

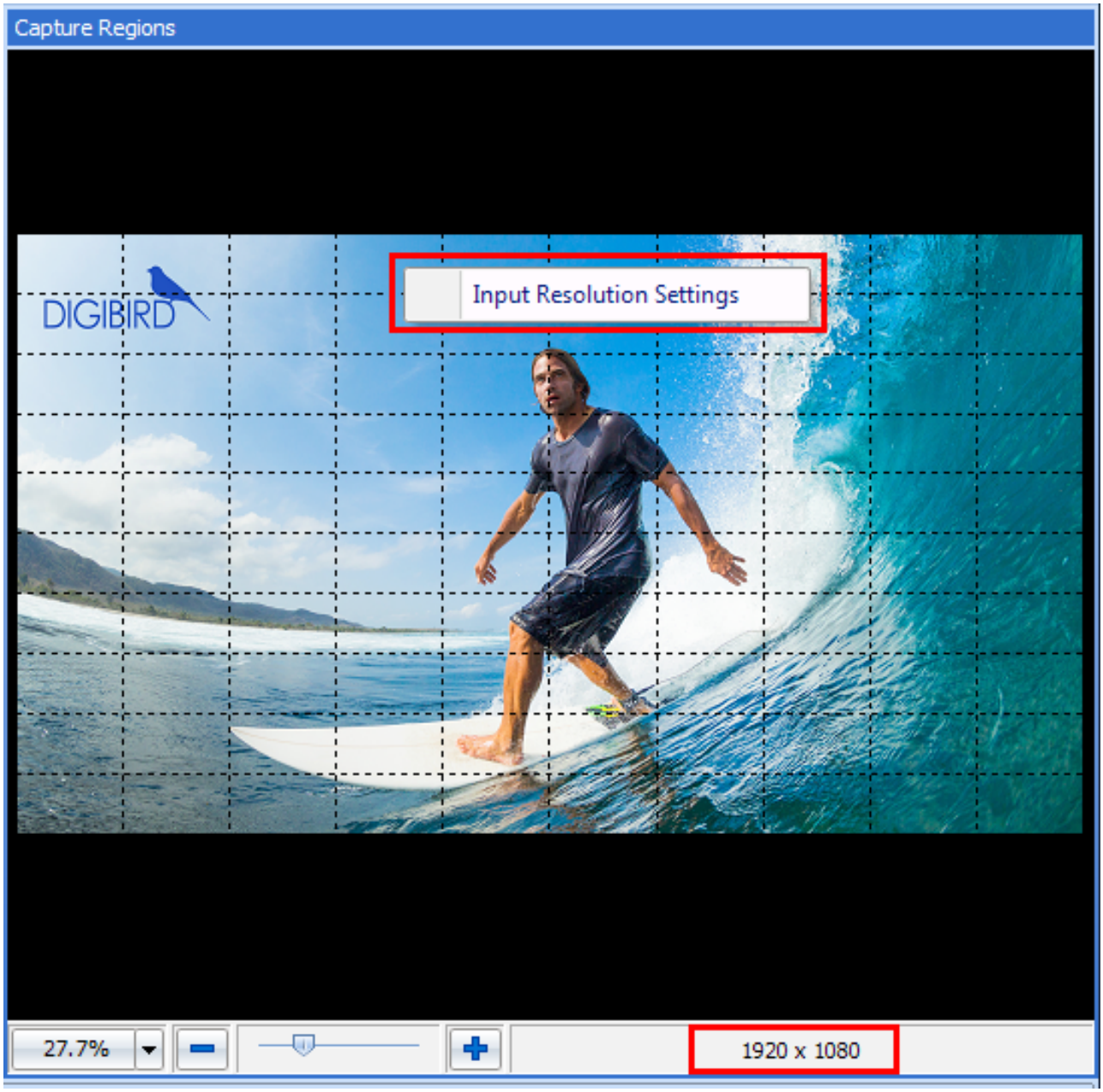

Figure 5.3 A: Default input resolutions

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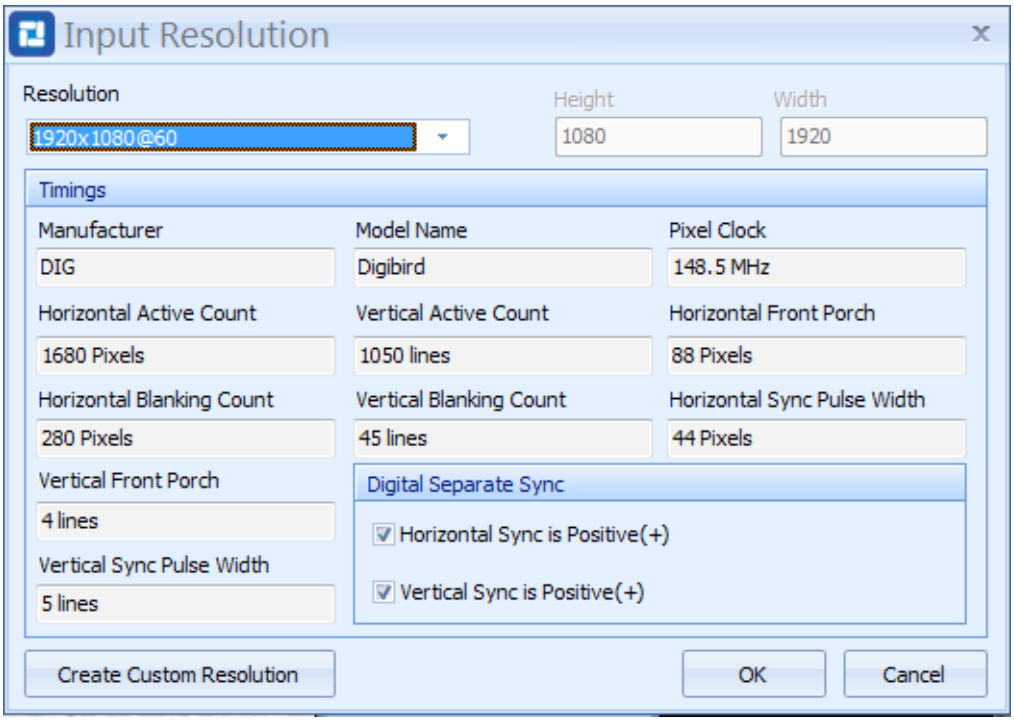

Figure 5.3 B: Resolutions dropdown list

Click the drop-down menu at the top left of the Input Resolution window and then select the desired input resolution. (see Figure 5.3 B) If you're unable to find your desired resolution from the drop down list, you can select "Custom" at the bottom of the list to create a custom resolution. After filling in the values of the resolution timing parameters, click "Create Custom Resolution" and then press "OK". The custom resolution will be created, as shown in the figure 5.3 C.

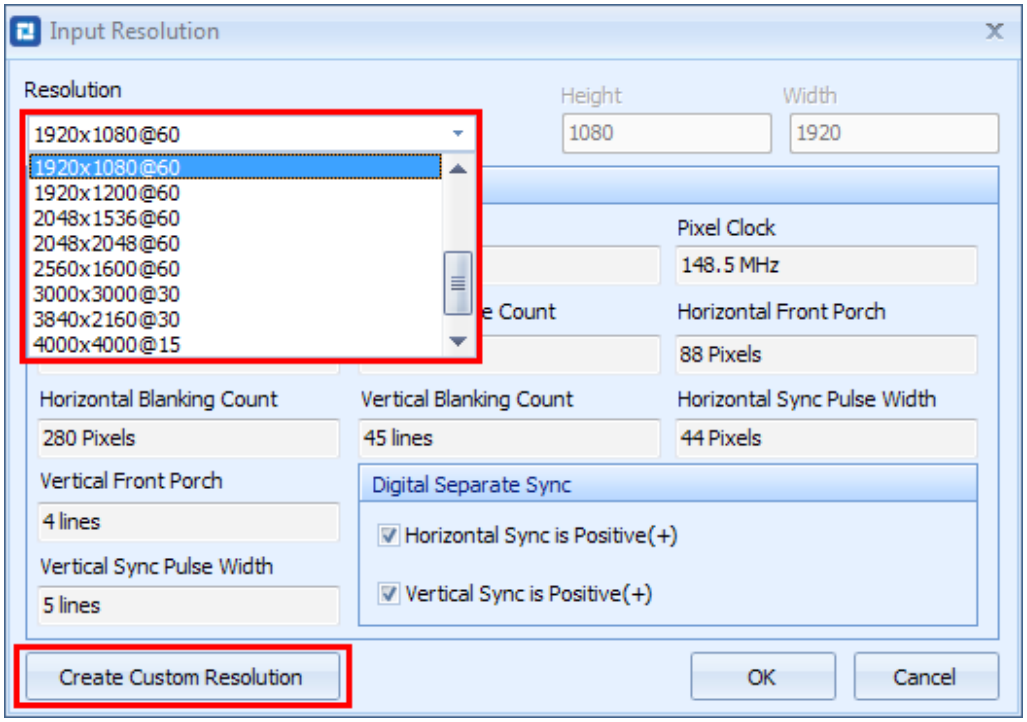

Figure 5.3 C: Create custom resolution

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When clicking the "OK" button, a command will be sent to the DB-RC4 device to adjust the input resolution. If it fails to send the command, an information window will appear, as shown in the figure below:

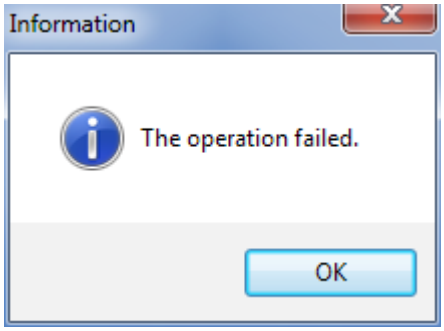

Figure 5.3 D: The operation failed.

5.4 Monitor Settings

DigiBird's DB-RC4 Control and Design Software provides a monitor database which includes the most common manufacturers and models.

5.4.1 Monitor Selection

In the Toolbar window, click the "Monitors" icon to open the "Monitors" setting window, as shown in the figures below:

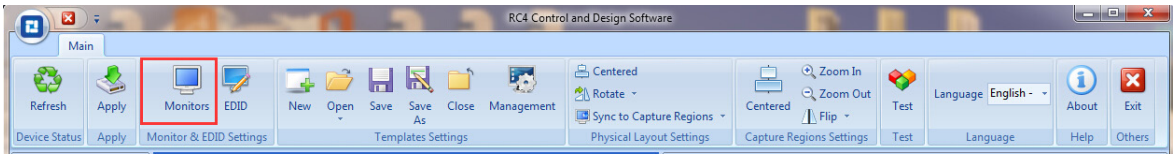

Figure 5.4.1 A: Monitor Selection

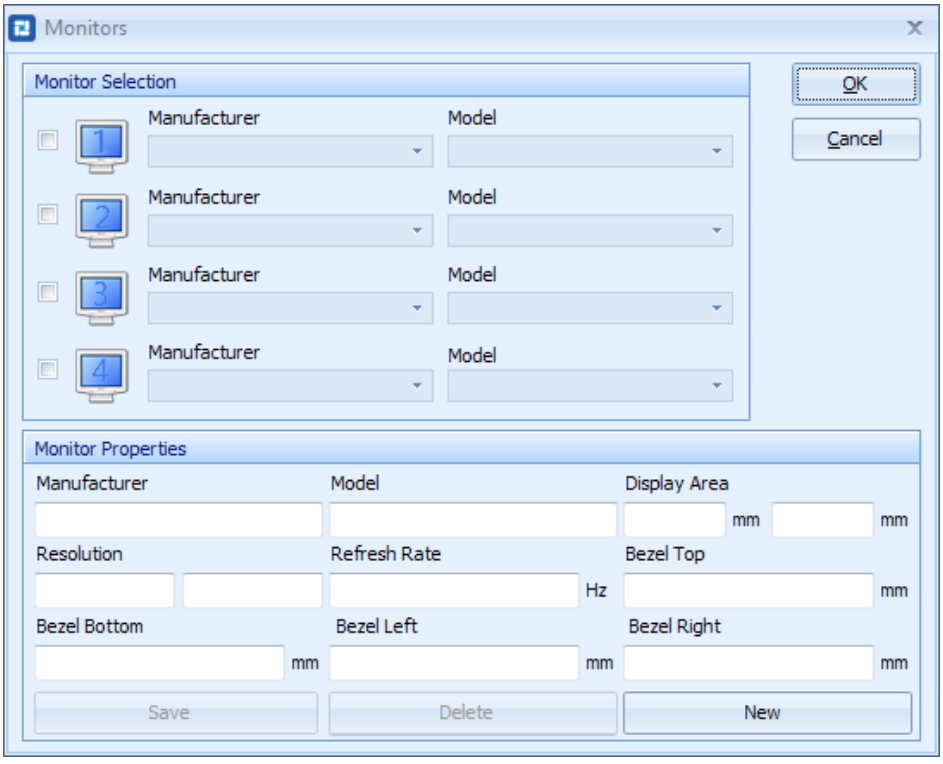

Figure 5.4.1 B: Monitors selection

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Click the check boxes at the left of the Monitors setting window to add the monitors being used. Select the Manufacturer and Models dropdown lists to choose a specific, listed monitor. Refer to the following figures for reference:

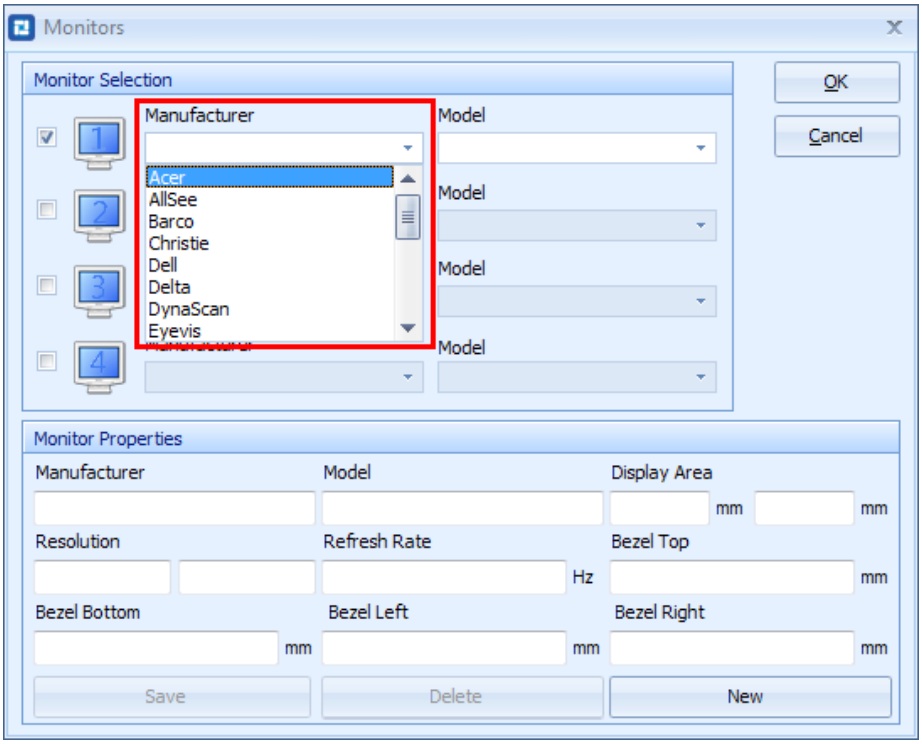

Figure 5.4.1 C: Manufacturer Dropdown List

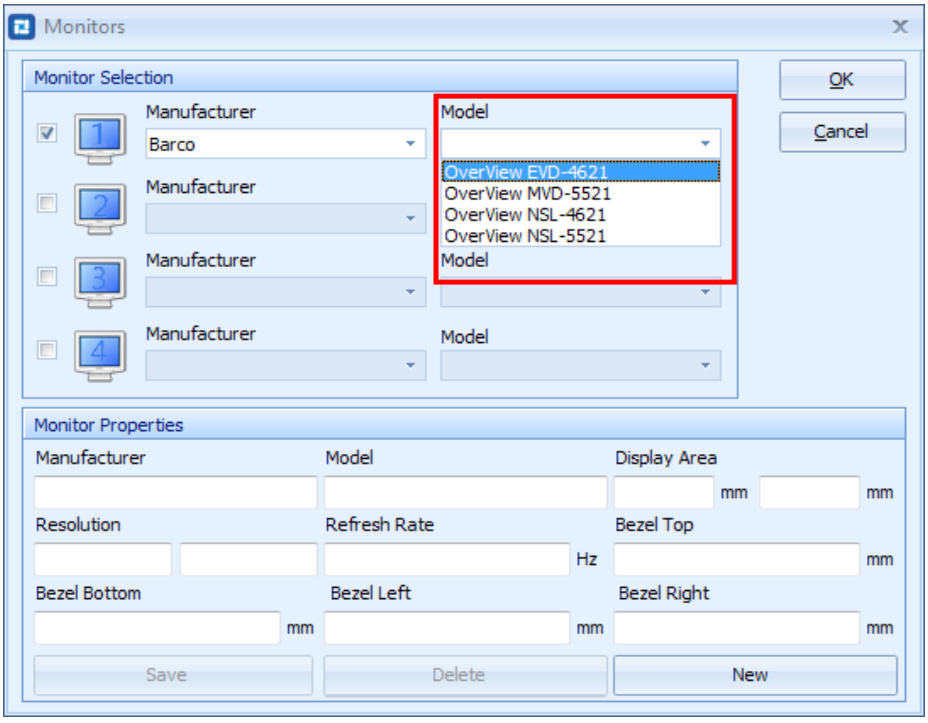

Figure 5.4.1 C: Models Dropdown List

After the manufacturer and model selection, data will appear in the Monitor Properties window. The Monitor Properties

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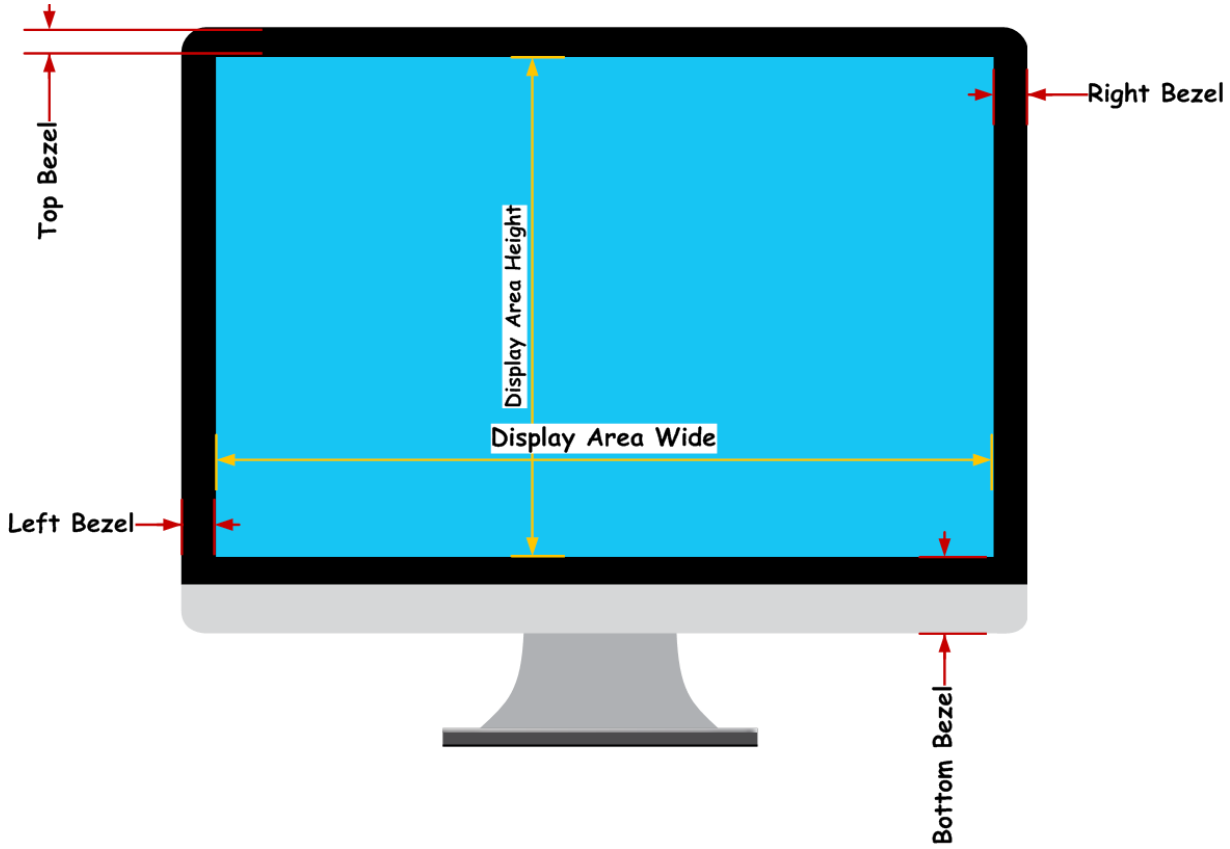
are a group of specifications that are required by the software to ensure the device is configured correctly. The Monitor Properties include the following information: Manufacturer, Model, Display Area, Resolution, Refresh Rate, Top Bezel, Bottom Bezel, Left Bezel and Right Bezel.

5.4.2 Adding New Monitors

If a monitor being used in the design of your video wall is not listed in the database, you can manually add the desired monitors by filling in the required values to the Monitor Properties fields using the manufacturer's datasheet.

If you cannot find the parameters in the display datasheet, measure the parameters according to the following figures:



Display Bezel Compensation

After filling in the required values, click the Save Details button at the bottom left of the Monitors setting window. The new monitor will appear in the manufacturer and models dropdown list, as shown in the figure below:

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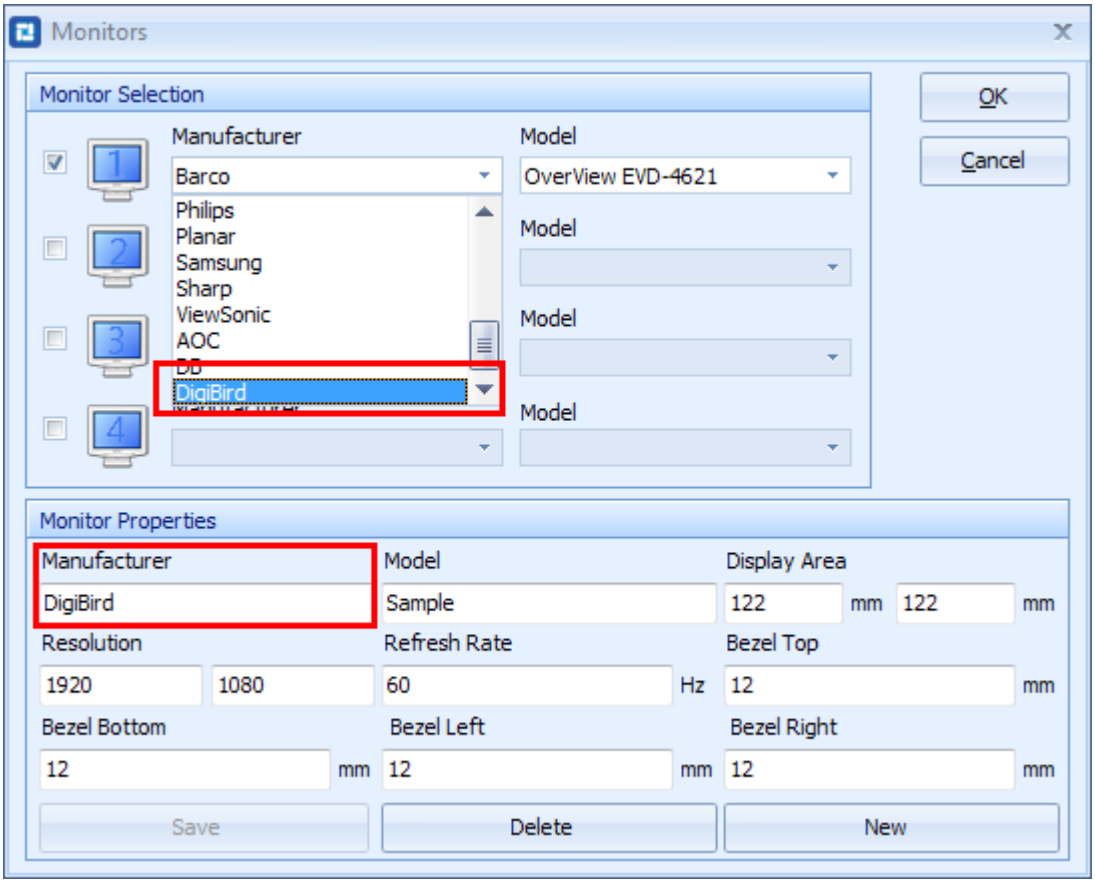

Figure 5.4.2 Added monitor

NOTE: It is very important that the specifications of the monitors are accurate so as to ensure the capture regions are calculated correctly.

5.4.3 Delete a Custom Monitor

Select the custom manufacturer and model and click the Delete button. The custom monitor will be deleted from the monitor database, as shown in the figure below:

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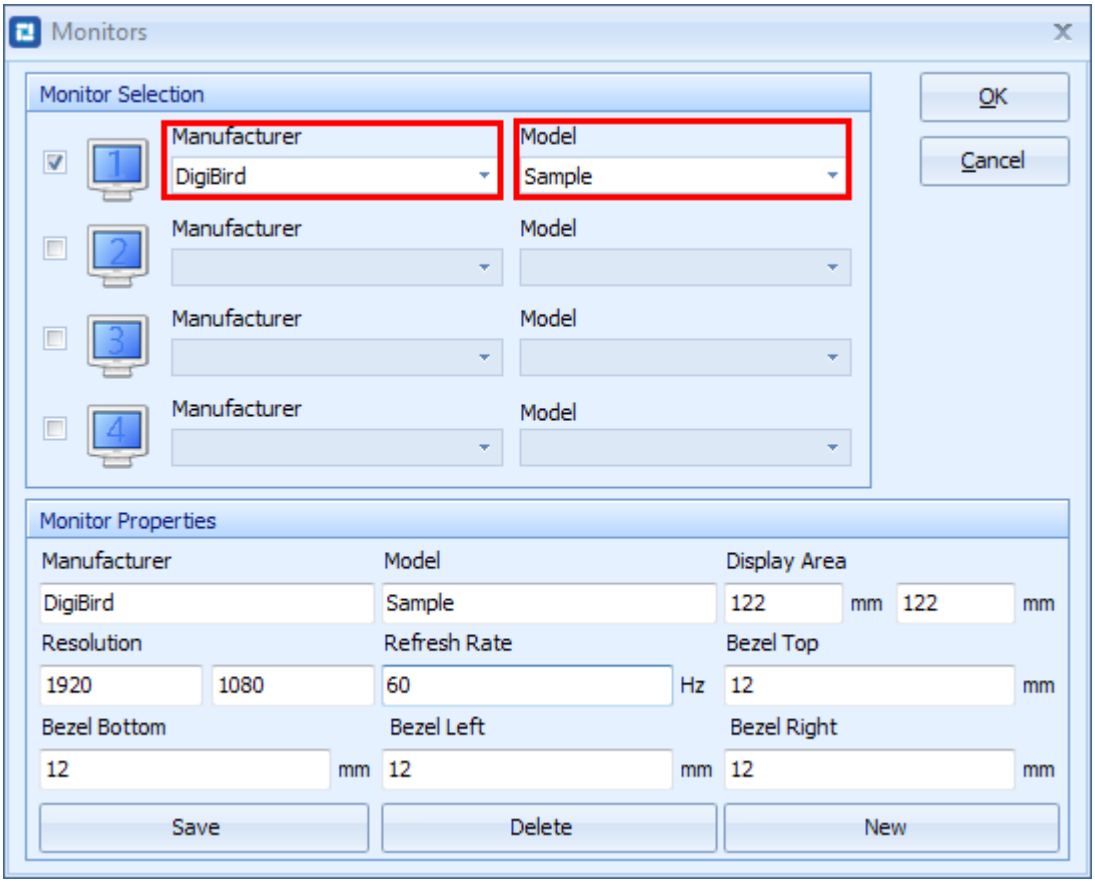

Figure 5.4.3 Delete a custom monitor

5.5 Physical Layout Design and Settings

Once the desired models have been selected and displayed in the Monitor Listing window, the user can proceed to the Physical Layout window and Capture Regions window to design a creative video wall. The Physical Layout window will display the physical position of the monitors with numbers (1, 2, 3 and 4) for cross-referencing.

Click on a monitor to select it. When the selected the monitor is highlighted red, the monitor can then be dragged to a specific area in the Physical Layout window.

Right click on a monitor to bring up the context menu. This allows you to change its rotation or to sync the operation to the Capture Regions, as shown in the figures below.

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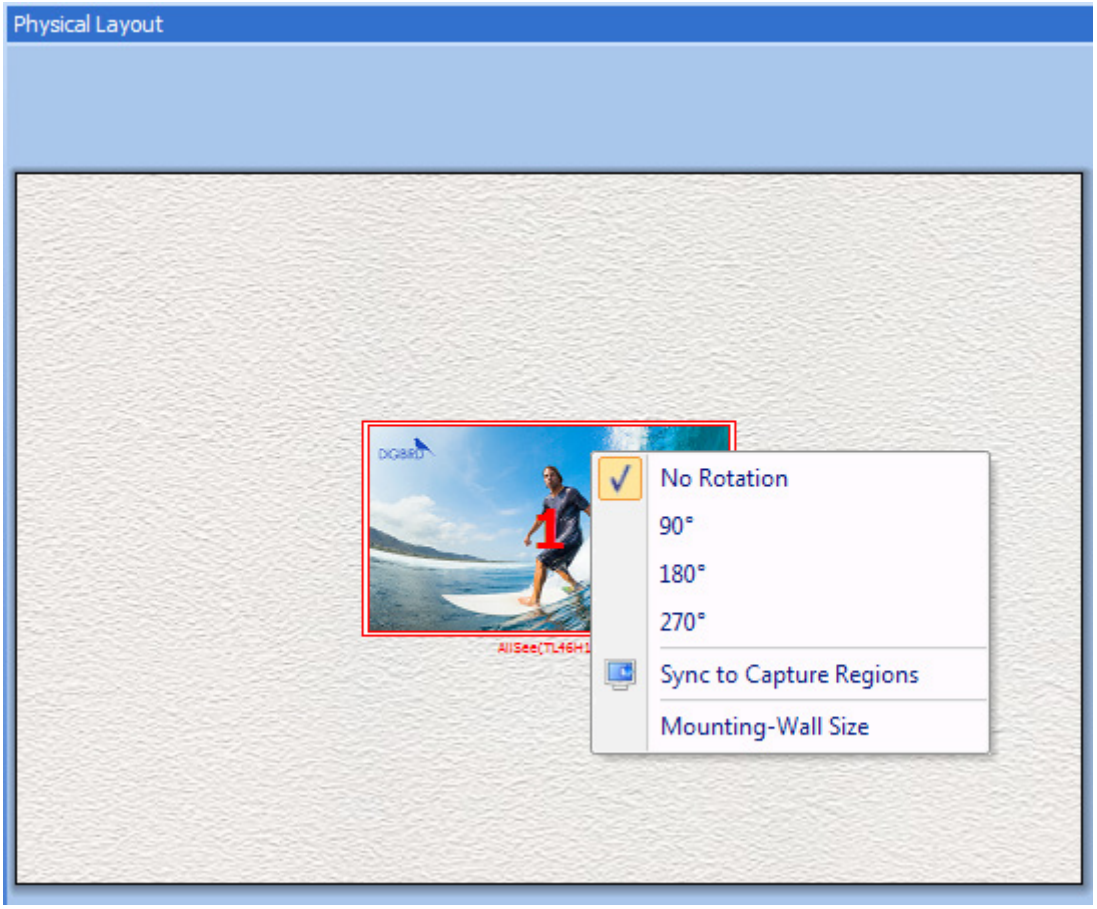

Figure 5.5 A: Physical layout design and settings

NOTE:

I. After selecting a monitor, the user can use the arrow keys on his keyboard to move the monitor one pixel at a time.

II. Use the Ctrl key + arrow key to move the monitor ten pixels at a time.

III. The methods of alteration for the display proportion include: (see Figure 5.5 B):

a. Choose from the drop down list

b. Left-click the slider in the zoom bar and drag it to the left to zoom out; drag to the right to zoom in

c. Sliding the mouse wheel

d. Using the col-resize ⇹ or row-resize cursor ⇳

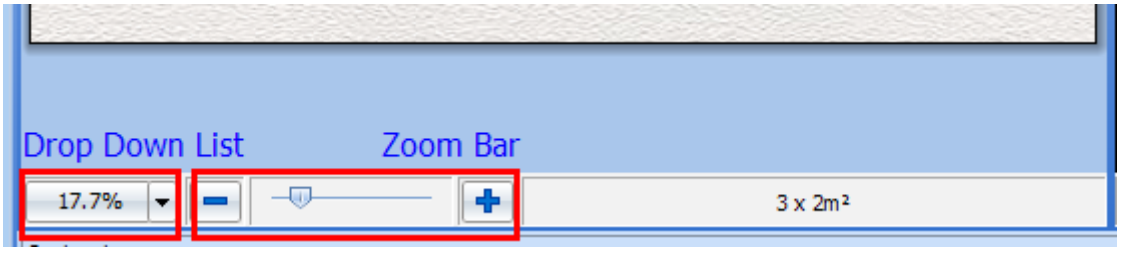

Figure 5.5 B: Display proportion

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5.5.1 Toolbar for Physical Layout Settings

The Toolbar for the Physical Layout includes three icons: "Centered", "Rotate" and" Sync to Capture Regions".

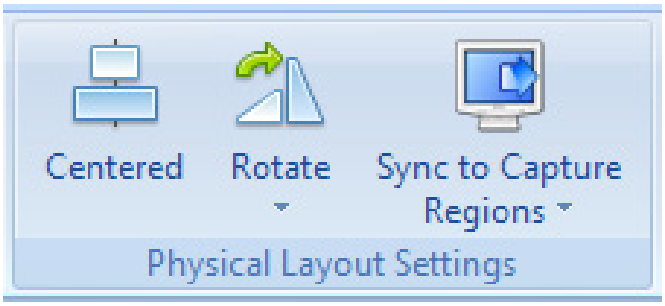

Figure 5.5.1 Physical layout settings

5.5.2 Centered Icon

When clicking the Centered icon, the group of monitors will be placed in the middle of the Mounting Wall.

5.5.3 Rotate Icon

When clicking the Rotate icon, a drop down list will appear. The user can choose the desired Rotation angle from the drop down list.

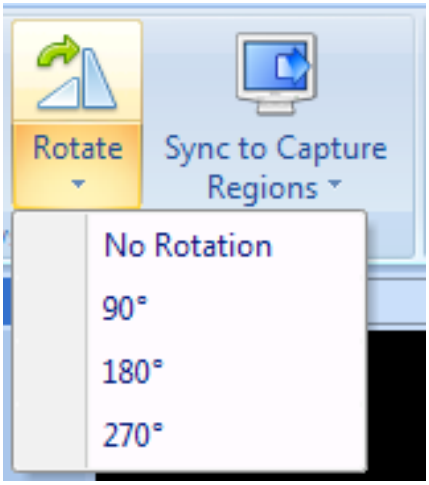

Figure 5.5.3 A: Rotate

Below is an example of a video wall configuration. Monitor #1 is rotated clockwise 90°; Monitor #2 is rotated clockwise 180°; Monitor #3 is rotated clockwise 270°. This kind of video wall configuration is commonly referred to as a "Windmill" layout:

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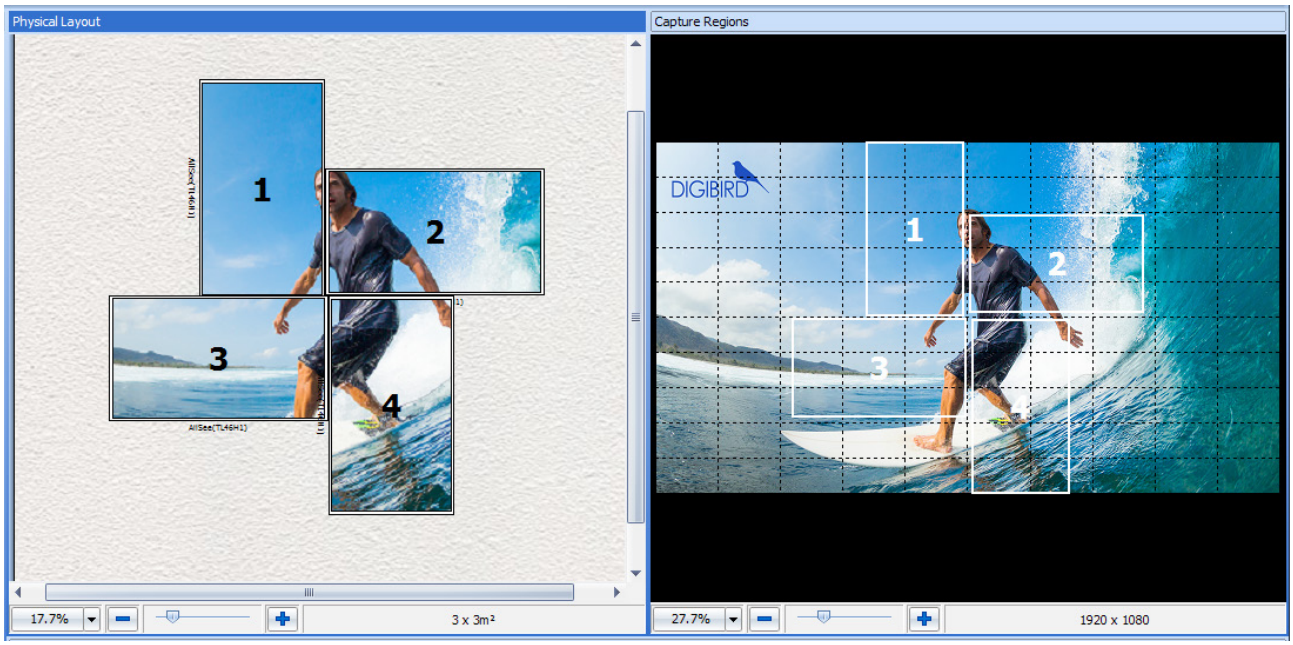

Figure 5.5.3 B: "Windmill" layout

5.5.4 Sync to Capture Regions Icon

The Sync to Capture Regions function allows the software to automatically calculate the pixel size and position of the capture regions in the input source or the background picture according to the actual physical size and position of the monitors on the mounting-wall.

When clicking the Sync to Capture Regions icon, a drop down list will appear. The user can choose one of two modes of synchronization from the drop down list, Lock Aspect Ratio or Unlock Aspect Ratio.

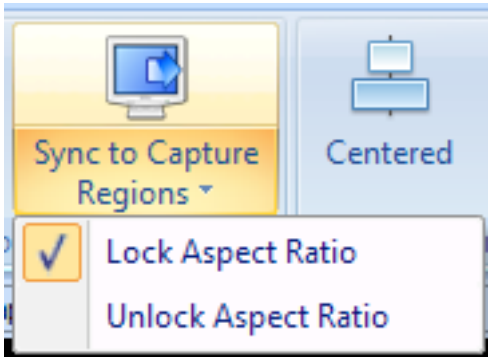

Figure 5.5.4 A: Sync to capture regions

Right clicking on the Physical Layout window will make the context menu appear, which includes the following options: Centered, Sync to Capture Regions and Mounting Wall Size.

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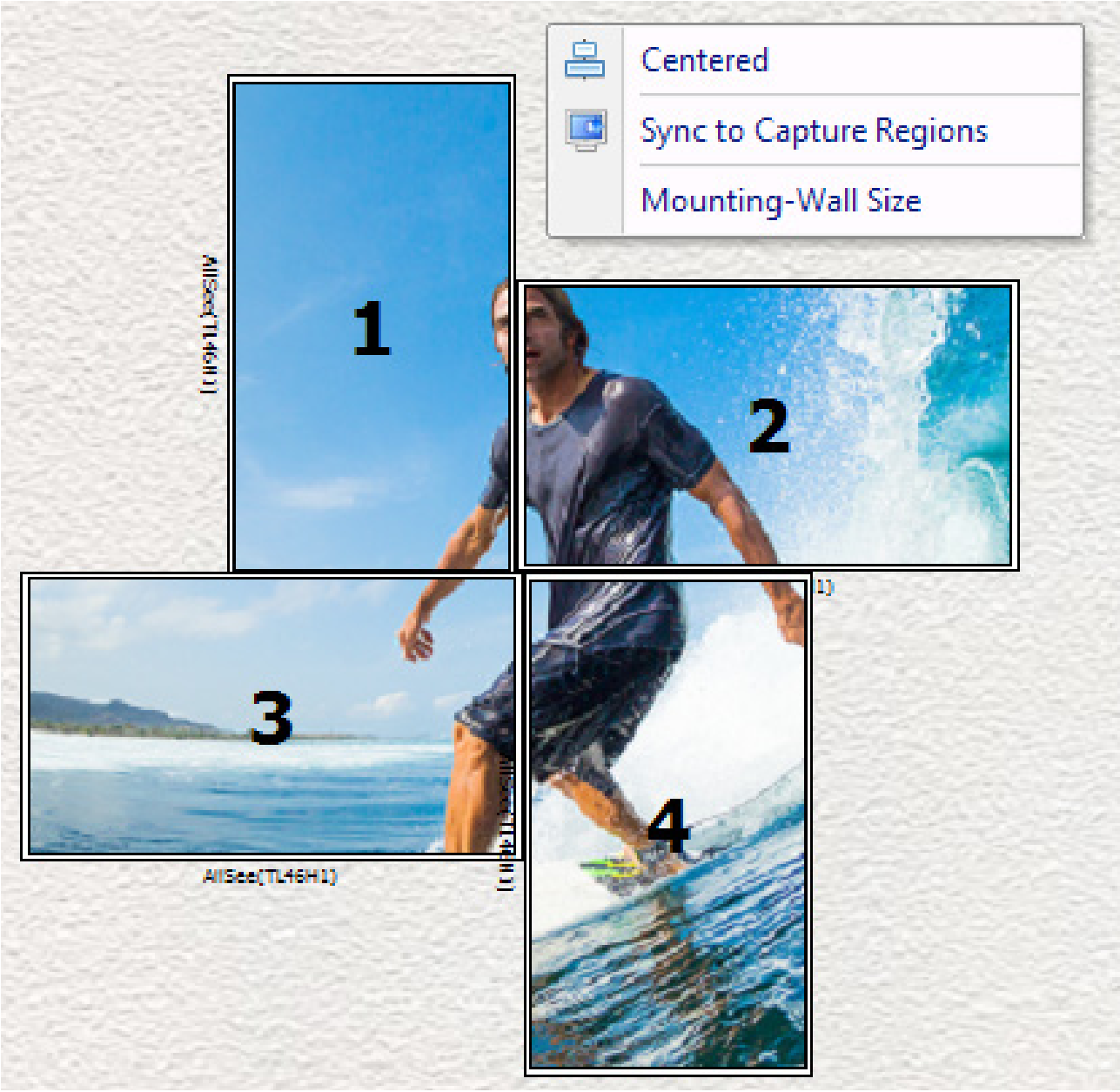

Figure 5.5.4 B: Context menu bar of Physical Layout

Right click on a monitor in the Physical Layout window. The context menu will appear, as shown in the figure below.

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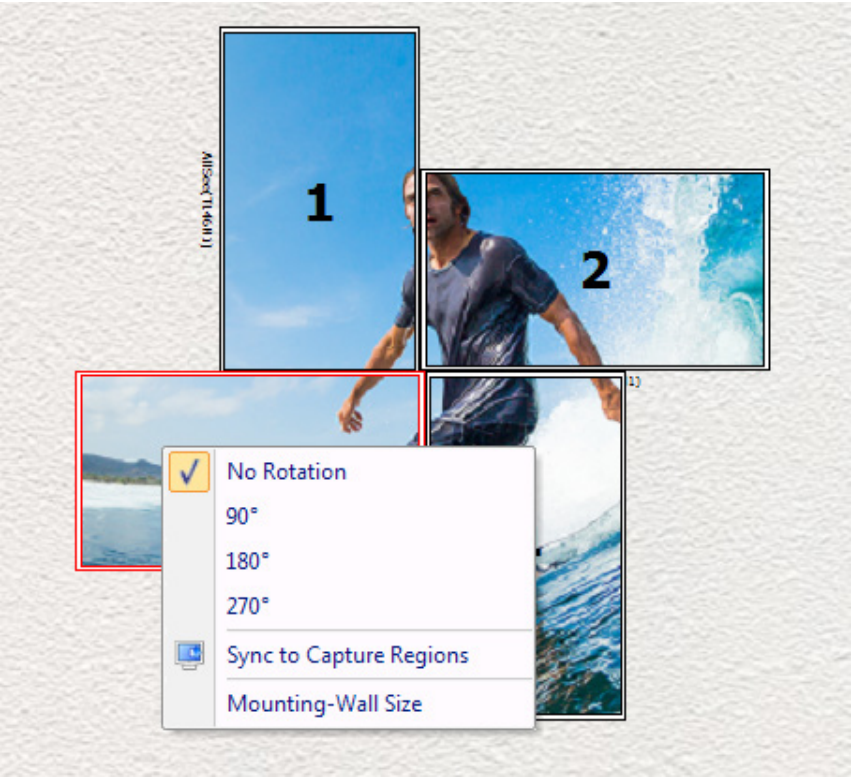

Figure 5.5.4 C: Context menu bar of monitor

5.6 Capture Regions Settings

The Capture Regions section of the software allows the user to attach an input and allocate regions to each monitor on the video wall. The Capture Regions window allows the user to manually set and adjust each separate capture region. After setting up the monitors in the Physical Layout window, the input source, in this example the default background image of the surfer, is displayed over the main Capture Regions window with the capture regions of each monitor overlain.

5.6.1 Moving and Resizing the Capture Regions

Capture regions can be moved and resized by clicking and dragging. Selecting a capture region will bring it to the front and highlight it red. Capture Regions can also be selected by clicking the corresponding monitor in the Physical Layout window.

5.6.2 Zooming in or out the Capture Regions Window

Use the following methods to zoom in or out the Capture Regions window:

- Choose from the drop down list (Figure 5.6.2 A)
- Left-click the slider in the zoom bar, and drag it to the left to zoom out and to the right to zoom in (Figure 5.6.2 A)
- Slide the mouse wheel
- Use the col-resize ⇹ or row-resize ⇳ cursor
- Hover the mouse cursor over the blank area of the Capture Regions window, right click, and the context menu will appear

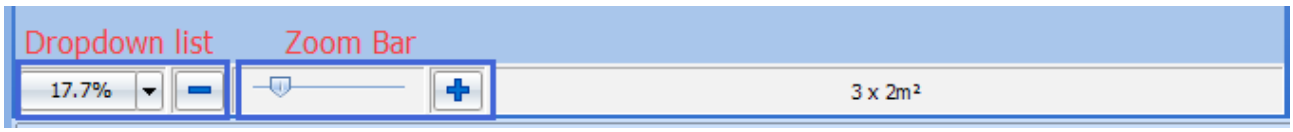

Figure 5.6.2 A: Dropdown list and Zoom Bar

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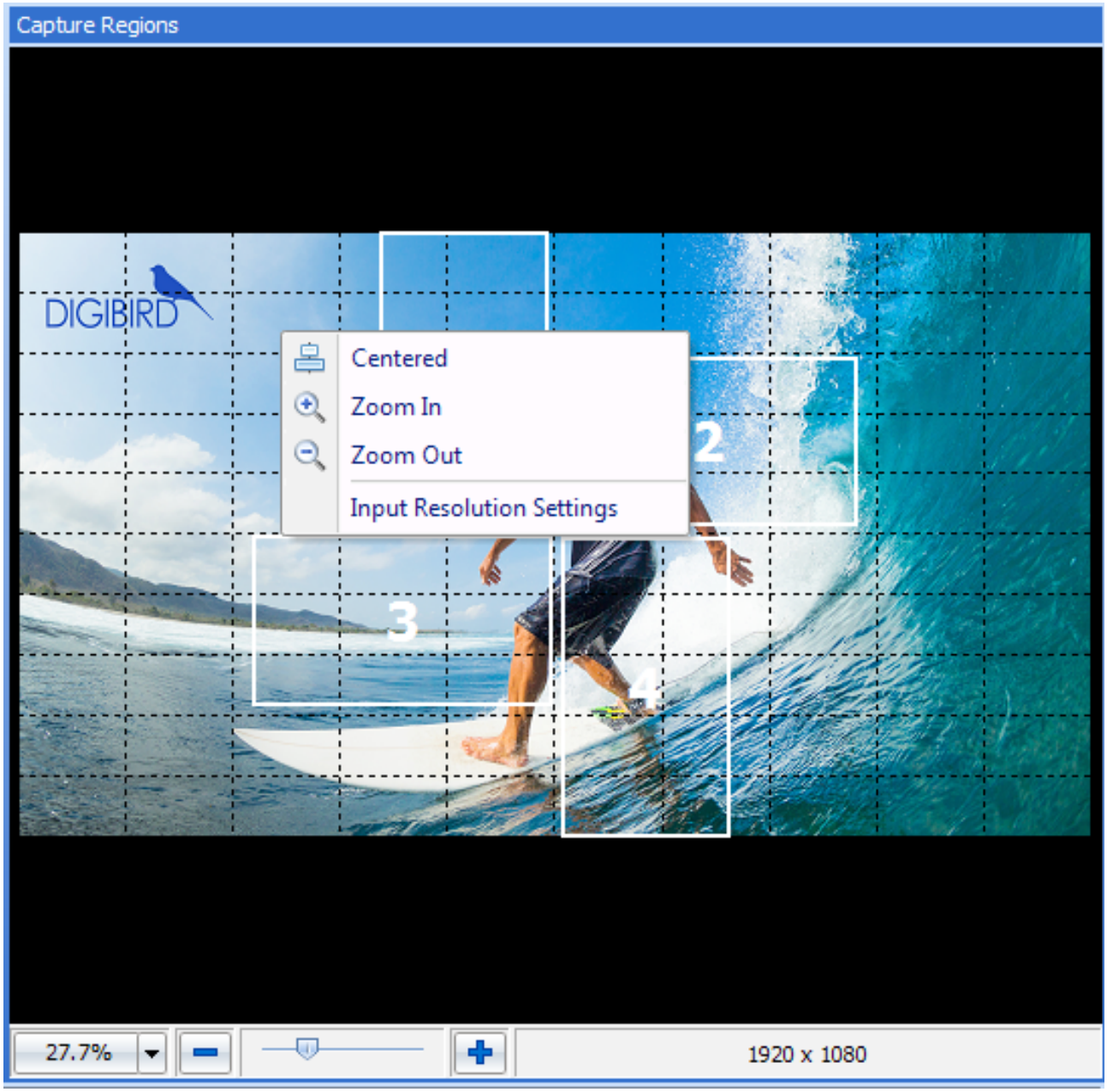

Figure 5.6.2 B: zoom in/out

5.6.3 Context Menu of the Capture Regions

Hover the mouse cursor over the capture region and right click. The context menu will appear, as shown below:

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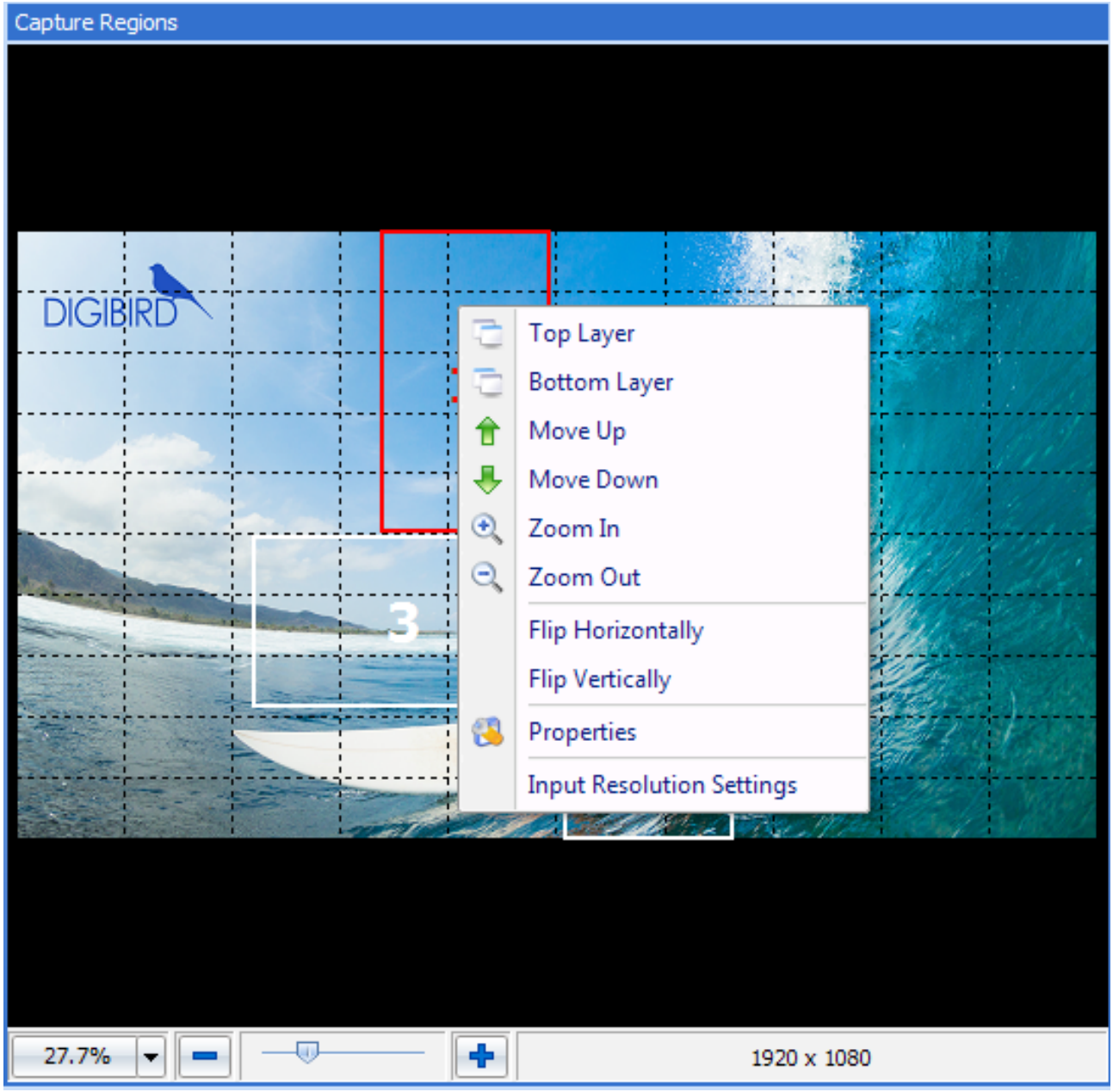

Figure 5.6.3 Context menu bar of the Capture Regions

5.6.4 Layering the Capture Regions

When the Capture Regions overlap, they are layered. The default layer priority overlapping from bottom to top starts at monitor No. 1 at the bottom, layering sequentially to monitor No. 4 at the top. The user can change the layer priority of the capture regions by selecting Top Layer, Bottom Layer, Move Up and Move Down.

Below is an example of how to use the layering function to design a video wall:

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Figure 5.6.4 Layering the Capture Regions

Monitors No. 1 and No. 2 display the entire input source on each monitor. No.1 Capture Region is the bottom layer of the Capture Regions window.

5.6.5 Flip Horizontally or Vertically

Choose Flip Horizontally or Flip Vertically from the above context menu. The resulting display of the monitors should look like the following:

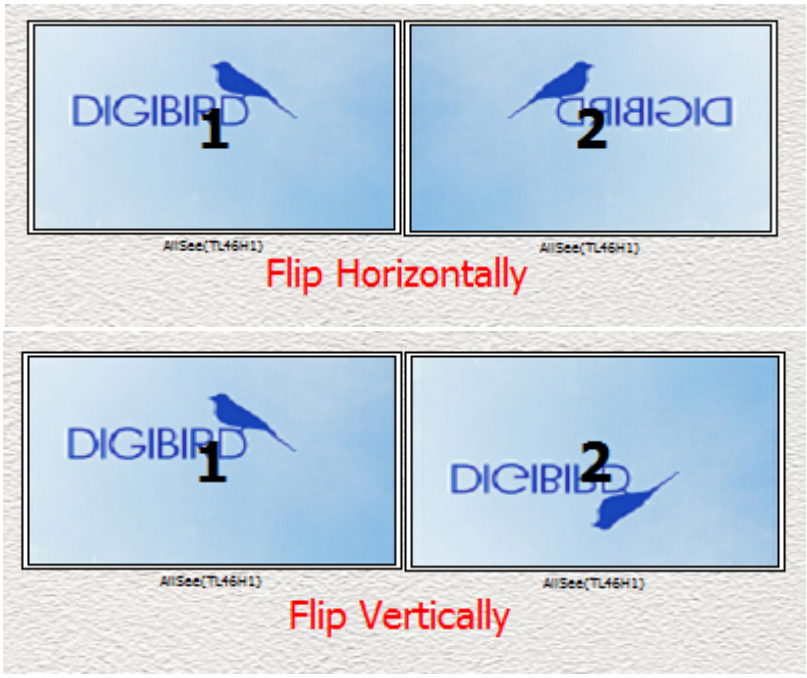

Figure 5.6.5 Flip horizontally/ vertically

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5.6.6 Capture Regions Properties

According to the physical position and size of the monitors, the software automatically calculates the pixel size of the Capture Regions. Related information about the Capture Regions, including Region Coordinates, Region Resolution, Region Rotation and Flip will be shown in the Capture Regions Properties box. The following figure (Figure 5.6.6) will help the user to better understand the Capture Regions properties.

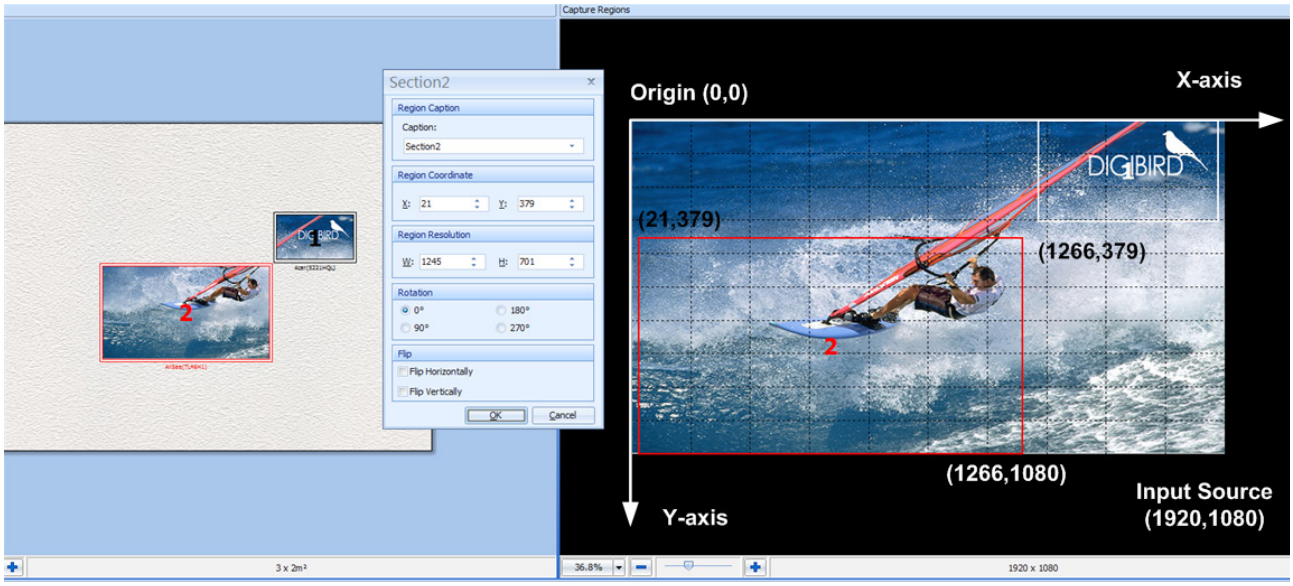

Figure 5.6.6 Capture regions properties

5.6.7 How to Calculate the Pixel Size and Position of a Capture Region

After positioning the monitors in the Physical Layout window and clicking the Sync to Capture Regions button, the software will automatically calculate how many pixels the capture region and the corresponding monitor should have. Below is a simple example to illustrate this calculation process:

Two Acer S221HQL monitors are positioned on the Mounting Wall. There is no gap between the two monitors, as shown in the following figure:

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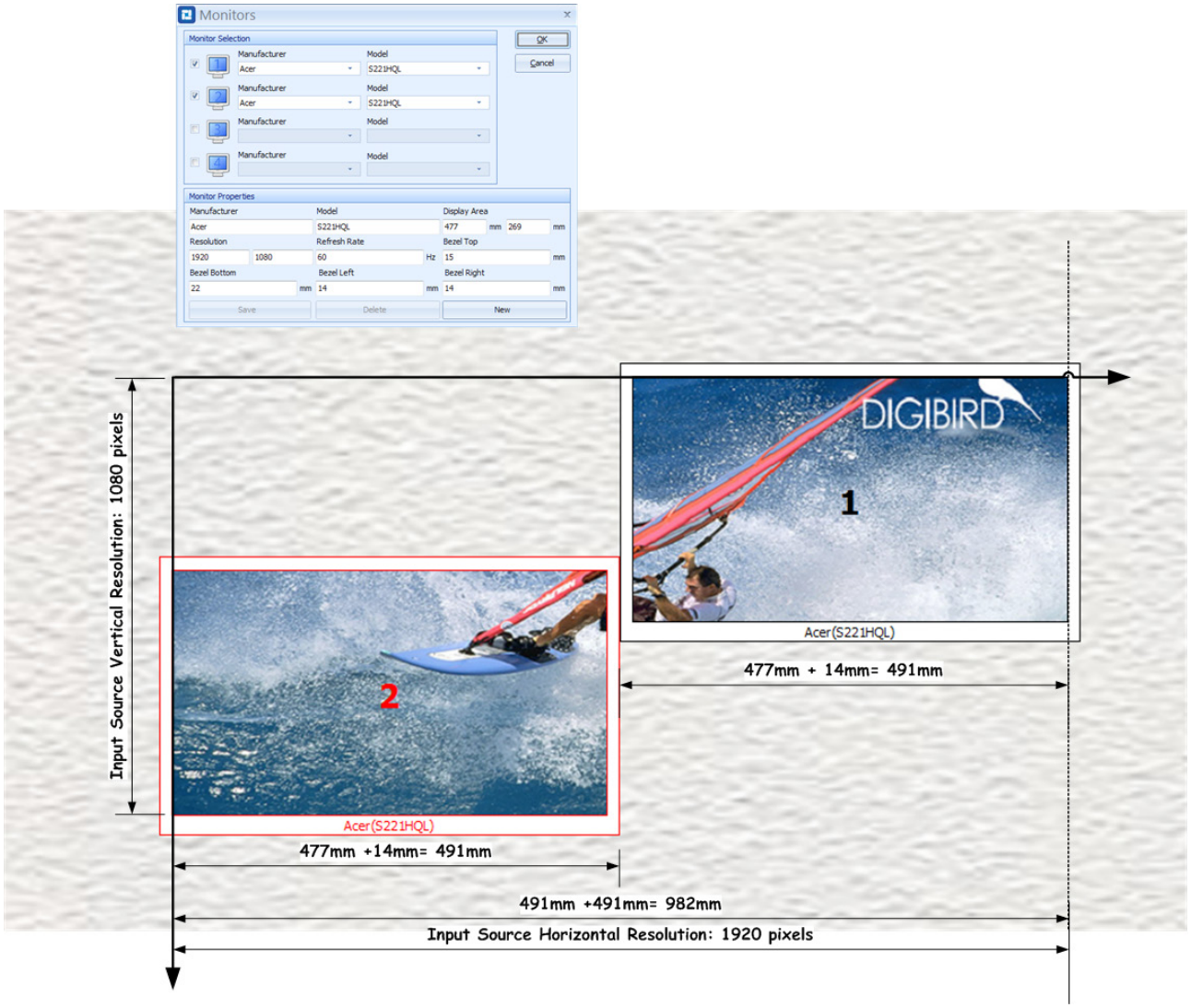

Figure 5.6.7 A: Calculations

First of all, calculate the physical size of the video wall in the horizontal direction. The calculating formula is shown below:

Screen Width + Right Bezel +Left Bezel +Screen Width= 477+14+477+14= 982mm

Second, divide the horizontal resolution by the horizontal physical size to get the number of pixels per millimeter.

NOTE: The default input resolution is 1920 × 1080@60Hz.

1920 pixels/982 mm= 1.9552 pixels/mm

Third, calculate how many horizontal pixels the No. 2 monitor should have by using the following formula:

Viewable Width × 1.9552 pixels/mm= 477mm × 1.9552 pixels/mm= 932 pixels

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Now we can use the Capture Regions Settings to check the calculation. Hover the mouse cursor over Region 2, right click, and the context menu will appear. Choose the "Properties" option, and the Region Properties window (Section Properties) will appear. Check the Region Resolution--region two is 932 pixels wide, which is the same as the calculation.

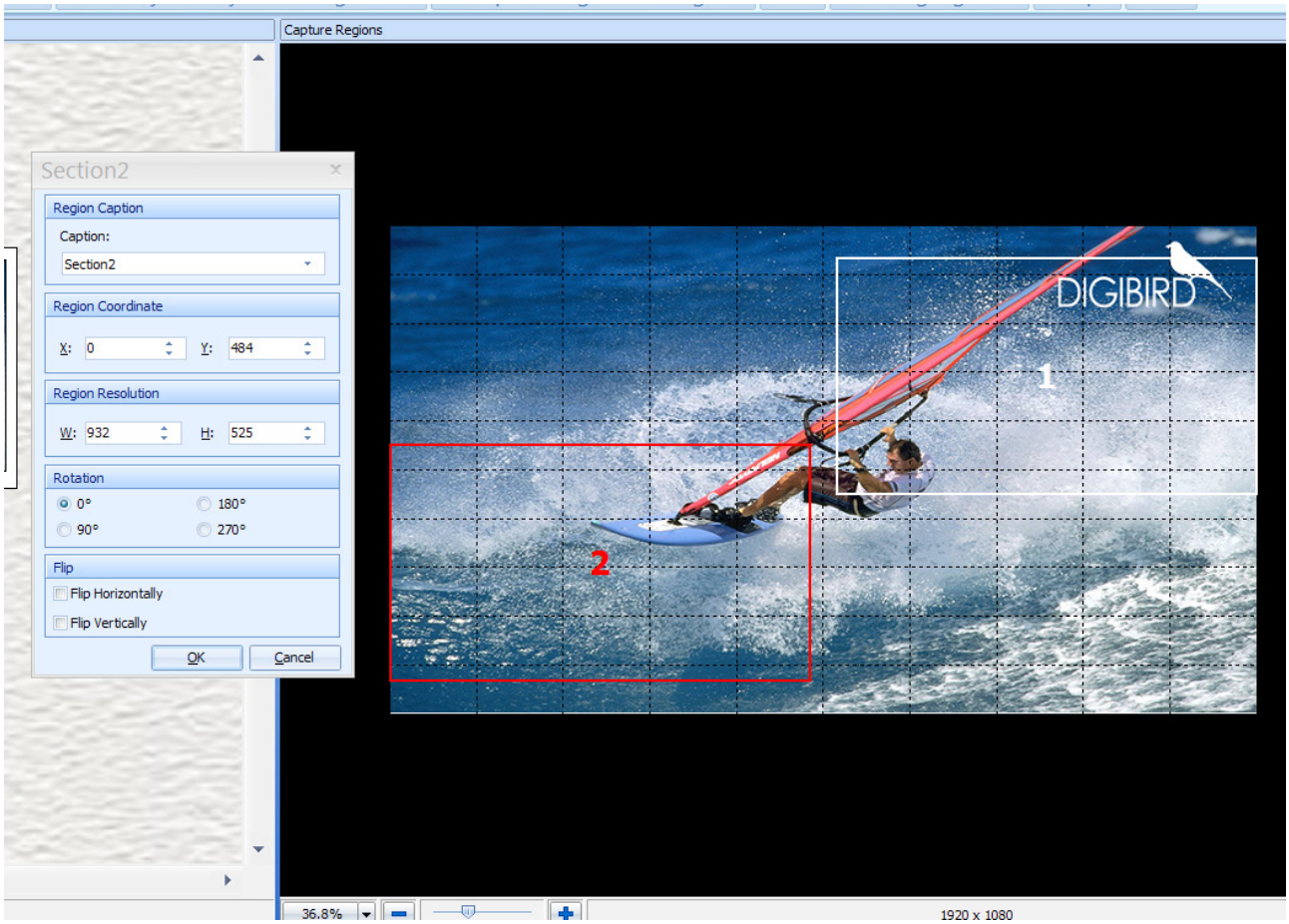

Figure 5.6.7 B: Position

5.7 Adding a Device (DB-RC4)

If large video walls are required for your solution (more than four monitors or displays), you can add additional DB-RC4 devices by connecting them with a DVI splitter and then adding them on the software. The DVI splitter distributes the input source across all of the connected DB-RC4s. The following diagram shows how to create such a video wall configuration with multiple DB-RC4s.

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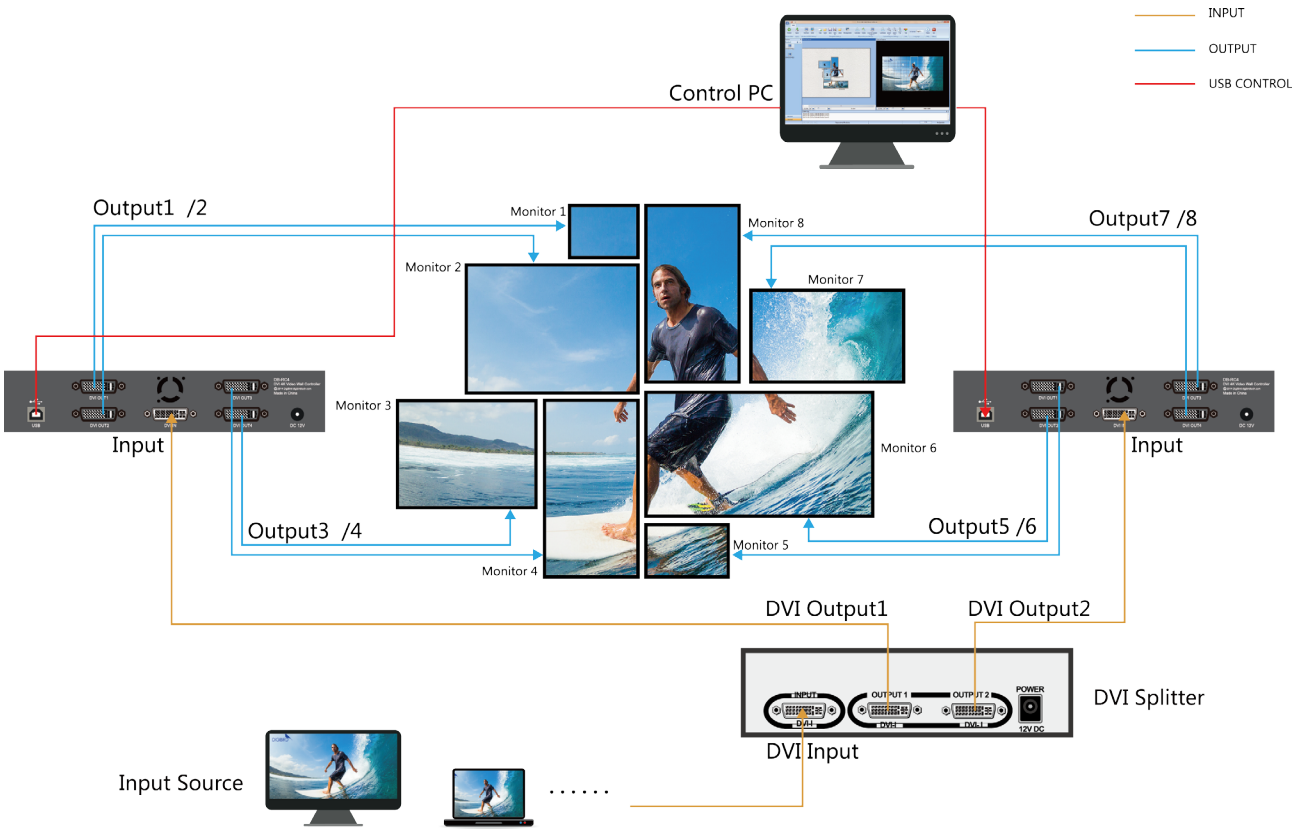

Figure 5.7 A: Cascaded devices layout

Add or delete the DB-RC4 devices by clicking the Plus (+) icon or Subtract (-) icon on the Monitor Window, as shown below. After that, the selected monitors on the Physical Layout Window and the selected Capture Regions on the Capture Regions Window can be moved by clicking and dragging them.

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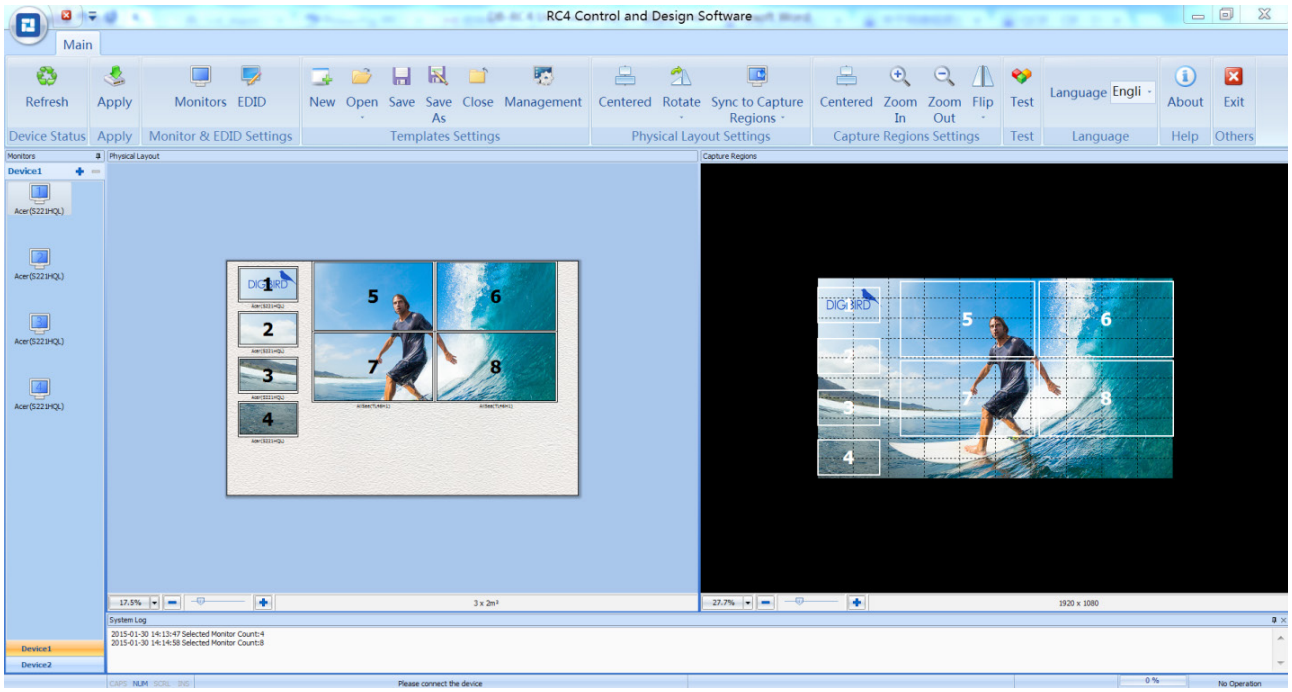

Figure 5.7 B: Adding devices

5.8 Apply

After setting up the Monitors and Capture Regions and connecting the DB-RC4 hardware, click the "Apply" icon in the Toolbar. The software will send the configuration template to the device (DB-RC4 hardware) and the configuration will take effect.

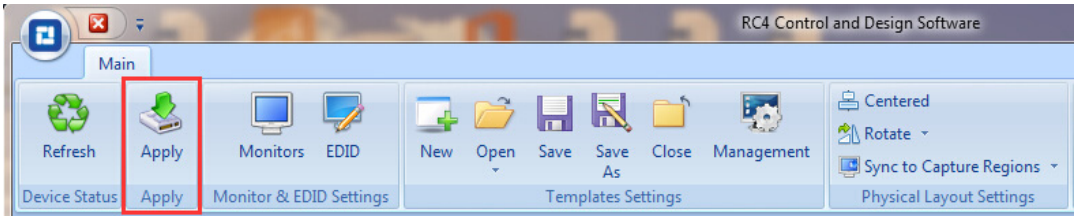

Figure 5.8 Apply

5.9 Refresh

Click the Refresh icon in the Toolbar to check the resolution of the connected input source. The software will detect whether the input resolution that the user set up matches the resolution of the connected input source. If it is not a match, the software will give notices to remind the user to adjust the input resolutions.

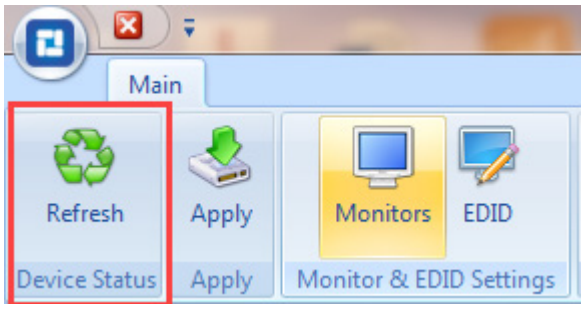

Figure 5.9 Refresh

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5.10 Configuration Template Management

The configuration template of the video wall, including the position of the monitors, rotation of the monitors, input resolution, etc., can be stored as non-volatile memory so that you can recall them at any time without fear of losing them due to power failure.

The operation of the Configuration Template includes New, Open, Save, Save As, Close and Management, as shown below:

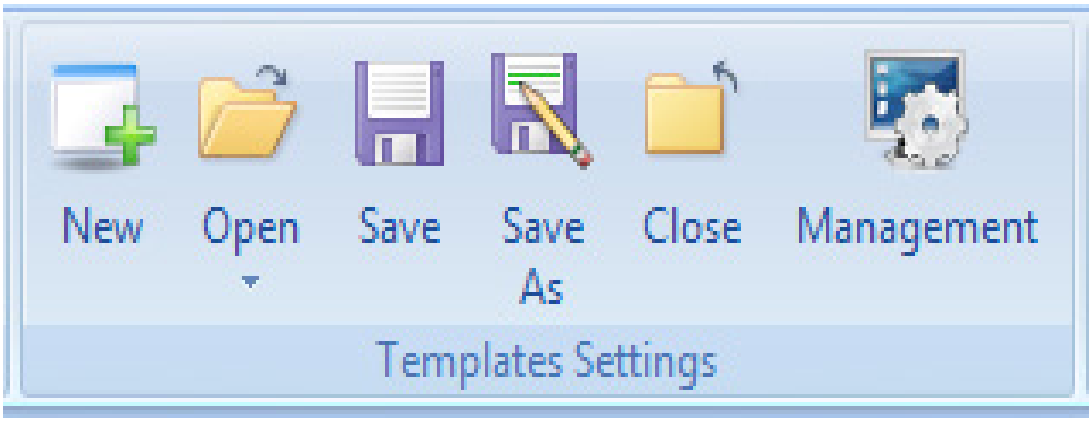

Figure 5.10 Templates Settings

5.11 EDID Management

The software supports EDID management by enabling the user to read the input EDID information and the output EDID information (Display side), and save the output EDID to the DB-RC4 or perform a 'Save As', saving the EDID information to file.

Timing: Used to display the manufacturer information like model name, pixel clock, horizontal active count, vertical active count, horizontal front porch, horizontal blanking count, vertical blanking count, horizontal sync pulse width, vertical front porch, vertical sync pulse width, etc.

5.11.1 Read EDID

Select Input or Output source and click "Read EDID". The EDID (Extended Display Identification Data) properties will be displayed in the Timings box. See the example below:

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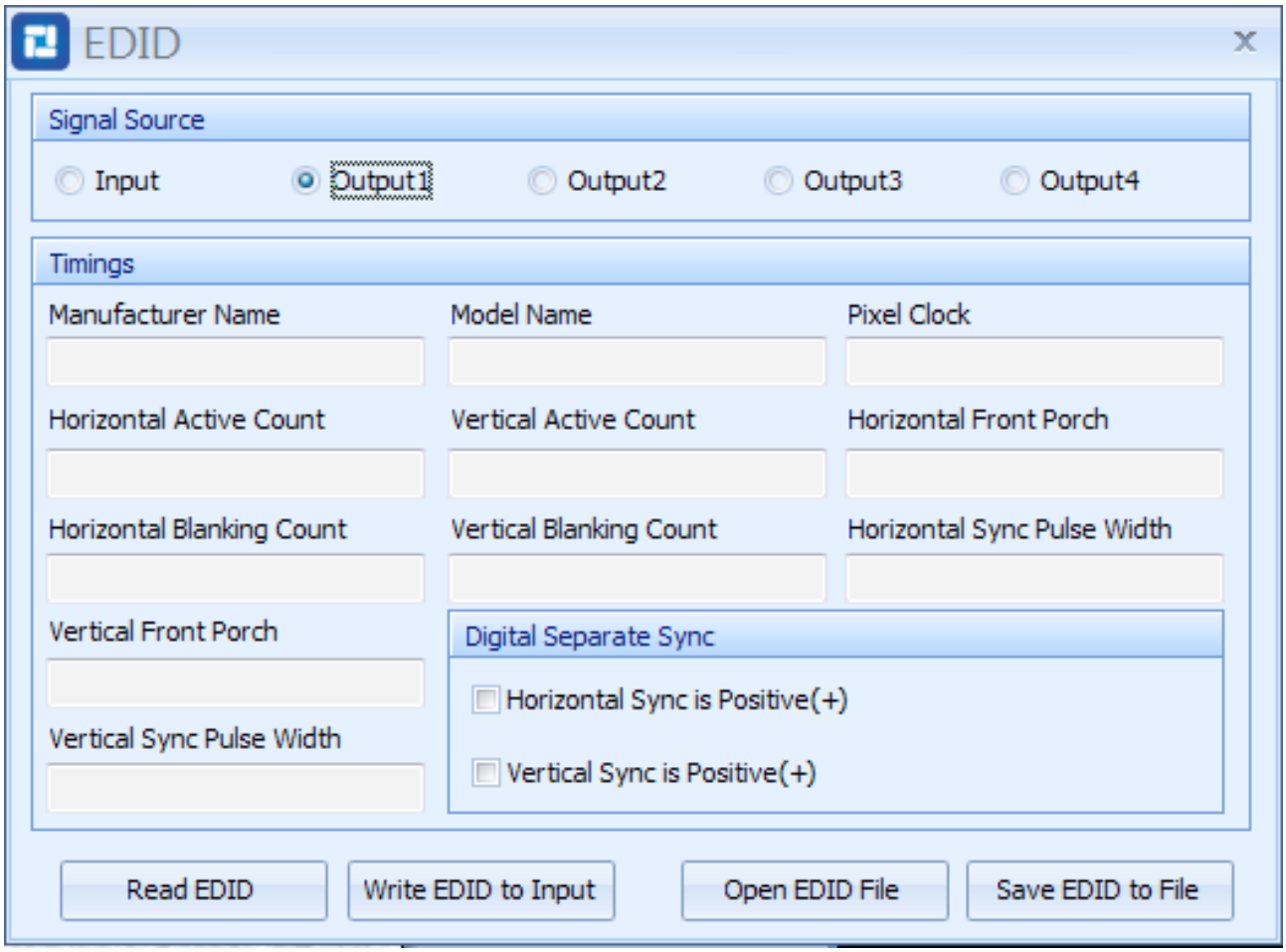

Figure 5.11.1 Read EDID

5.11.2 Write EDID to Input

The software supports the writing of EDID information to the input. The user needs to click the "Read EDID" button prior to writing the EDID to the input.

5.11.3 Open EDID File

Press "Open EDID File" to import the user-saved EDID file.

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5.12 Test

Use the Test Pattern to display color bars or grid in the monitors for testing signals, as shown in the following figure:

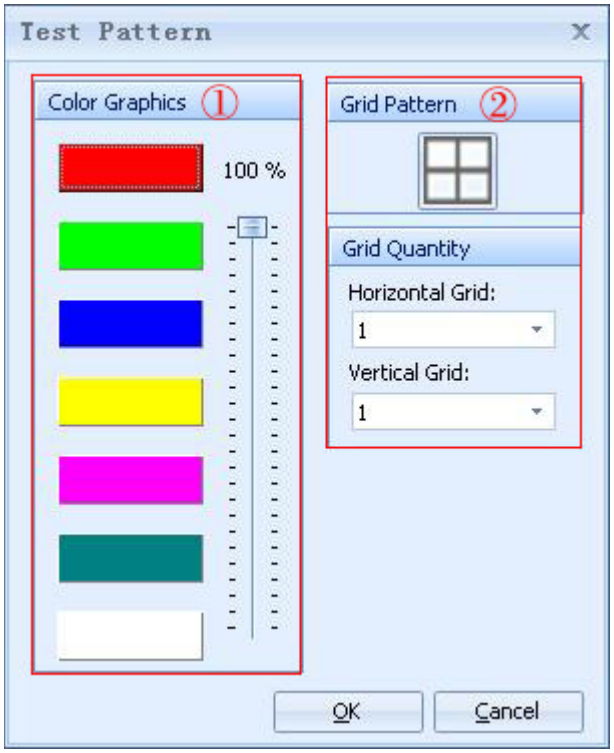

Figure 5.12 B: Test pattern

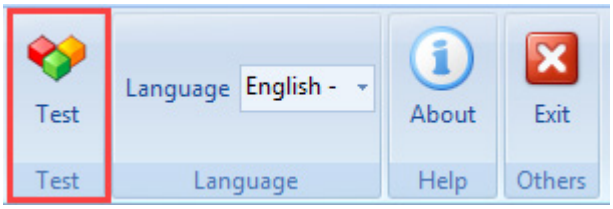

Figure 5.12 A: Test

5.13 Language

The software is multilingual, currently supporting English, Chinese Simplified and Chinese Traditional.

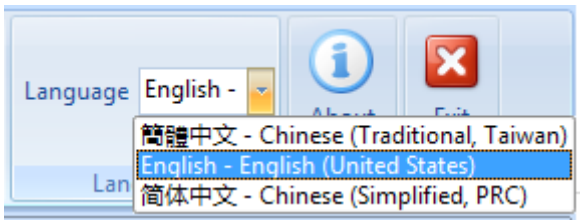

Figure 5.13 Language Selection

5.14 About

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