Solar Wall Management Software User Manual

(SW-Control)

Document No.   SD-MA-010
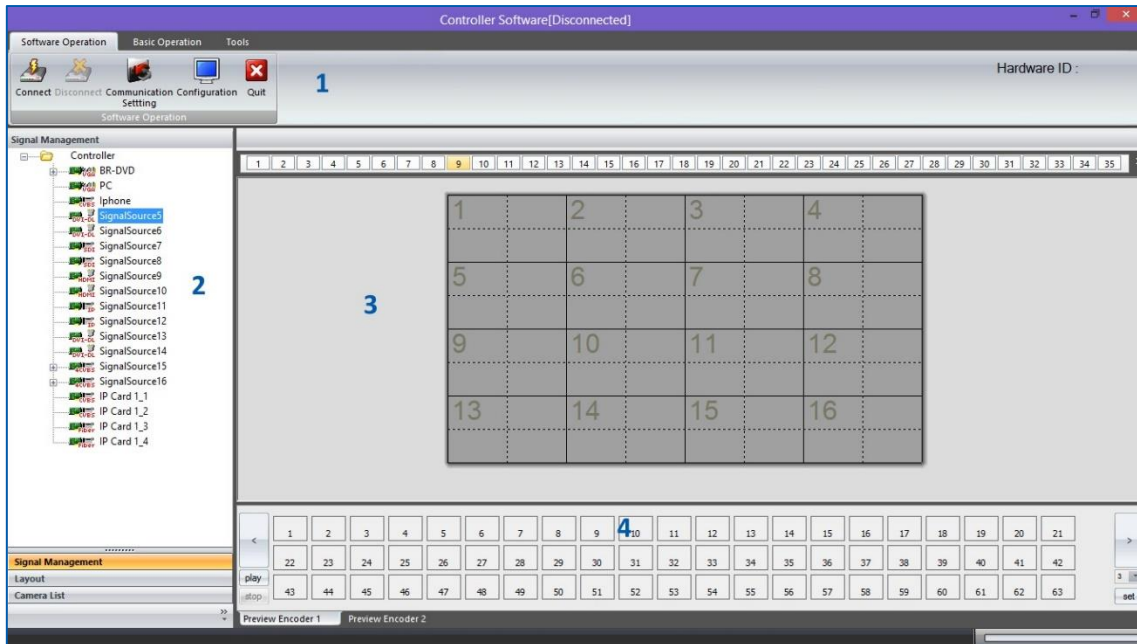Document Version: 04

Note:

Before starting to use this manual, it is recommended to follow the instructions in 'SolarWall Controller Quick Start Guide' to ensure the SW-Control software has been properly installed and the controller has been configured and connected to the control PC.

Contents

0. overview

SW-Control is a program that is used to control the SolarWall 2000 & 4000 video wall controllers. It provides a GUI in ribbon style for the users and enable users to interactively move, resize, position and crop any input capture windows. The whole GUI consists of four main parts:

1. Toolbar
2. Application Toolbar
3. Video Wall Display Area
4. Preview Toolbar

SW-Control enables users to create and save video wall layouts and load them whenever needed. Moreover, it also allows users to create a layout looping schedule to automatically switch between different layouts.

- Friendly user interface
- RS232 and Telnet
- Multi language support (English, Korean, Russian, Simplified Chinese, traditional Chinese)
- Create, copy, save and delete layouts
- Import or export layouts
- Short cuts for each layout
- Looping ability between layouts
- Text overlay on any input source
- Position, re-size and crop input windows
- Input signal preview
- Support Windows2000/XP/Vista/7/8.
- User authority management
- Drag and drop easy operation
- Multi video walls control (up to 4 video wall controlling simultaneously)

1. Toolbar

The ribbon style tool bar has three groups of tools**: software Operation**, **Basic Operation** and **Tools**.
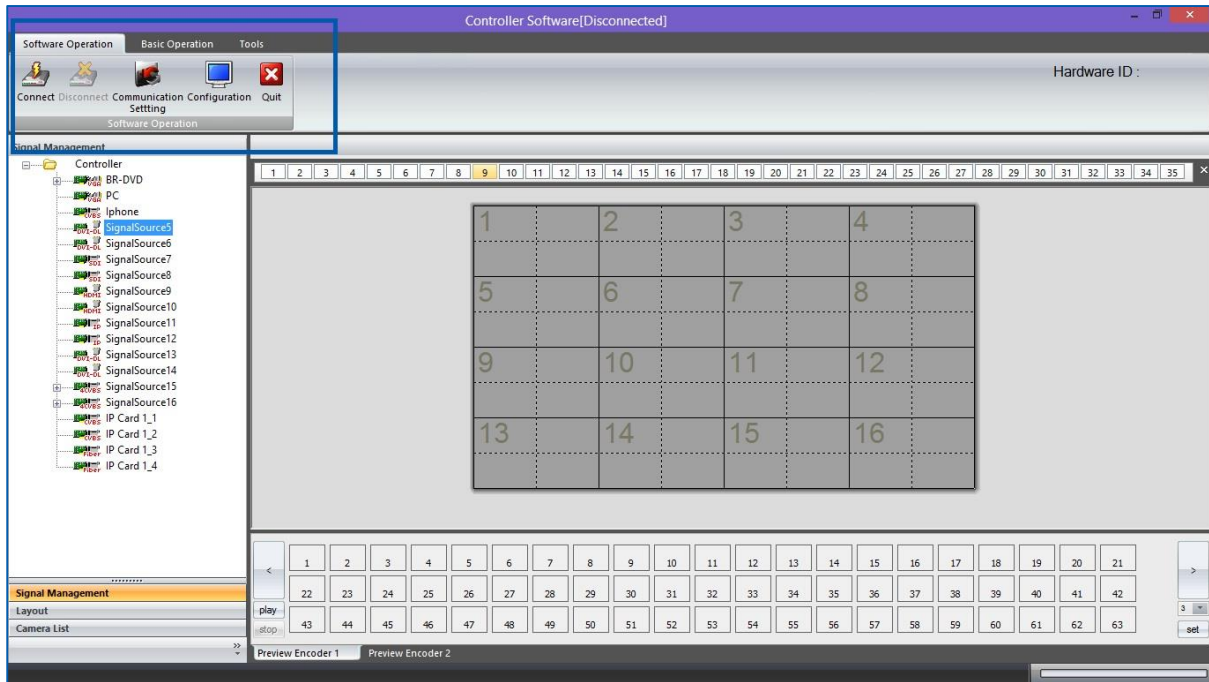
1.1.   Software Operation

All the tools in this module are used to set up the controller before use.

1.1.1. Connect

Press the **Connect** button to connect the controller with the control PC after the communication setting has been set up in 2.1.3
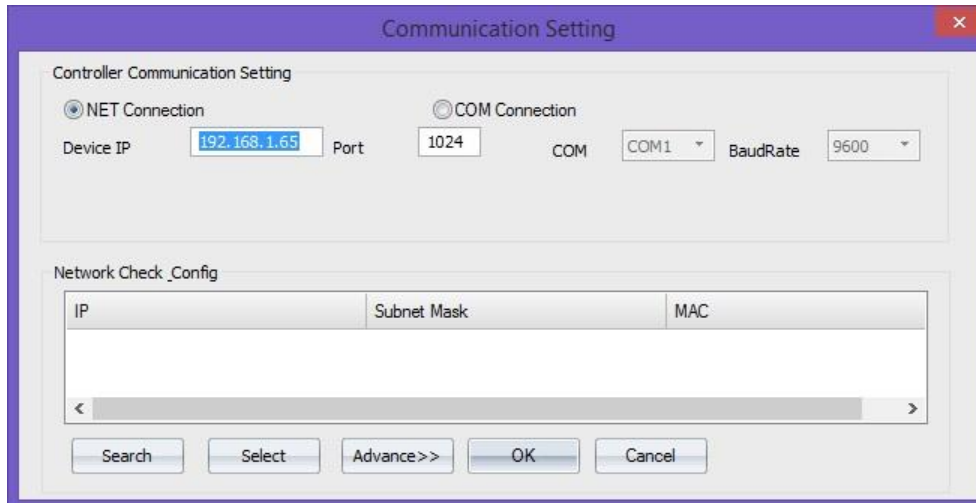
Please ensure the controller is fully on before trying to connect with the control PC. A beep sound from the controller a few seconds after it having been switched on indicates the controller is ready for connection.

1.1.2. Disconnect

The **Disconnect** button will be active if a controller is connected to the control PC. By clicking the **Disconnect** button, the controller will be able to work standalone without interference from control PC.

1.1.3. Communication setting

This section is used to set up the communication protocol between Control PC and SEADA Video Wall Controller.

Two connection modes are available for setting up the communication.

1) COM Connection

Choose **COM Connection** to enable RS232 serial port connection between Control PC and Video Wall Controller

- BaudRate:9600

2) NET Connection

Choose **NET Connection** to enable the Control PC to control the Video Wall Controller through the network

- The Video Wall Controller's default static IP address is **192.168.1.65**
- Port: 1024
- Once the connection setting having been done, click **OK** to save the change and exit.

For COM connection, no further setting is needed.

For NET connection, a change to the IP address of the Control PC is needed
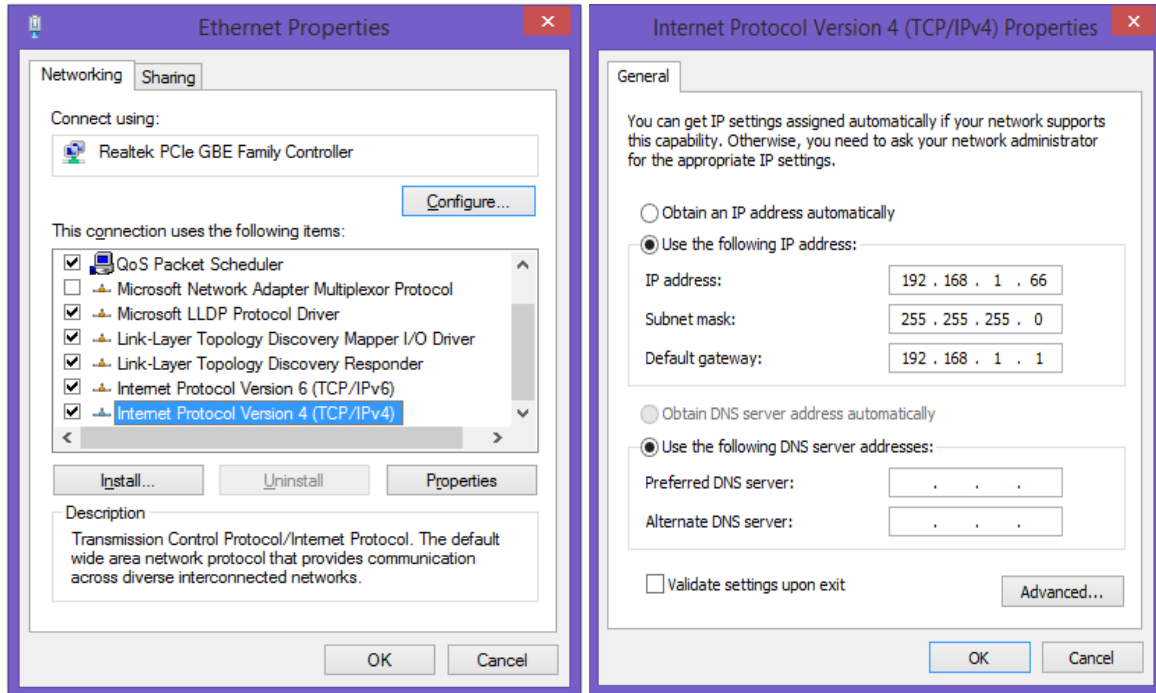
- Open the 'Ethernet Properties' windows on the Control PC
- Highlight the TCP/IPv4 in Networking and click the Properties button to open the TCP/IPv4 Properties window
- Change the 'Obtain an IP address automatically' to 'Use the following IP address to set up a static IP address
  - IP address: any address between **192.168.1.1** and **192.168.1.255** except the address which has been taken by the Video Wall Controller
  - Subnet mask: **255.255.255.0**

Default Gateway: **192.168.1.1.** Click **Connect** button (1.1.1.) to link the Video Wall Controller and Control PC together.

1.1.4. Configuration
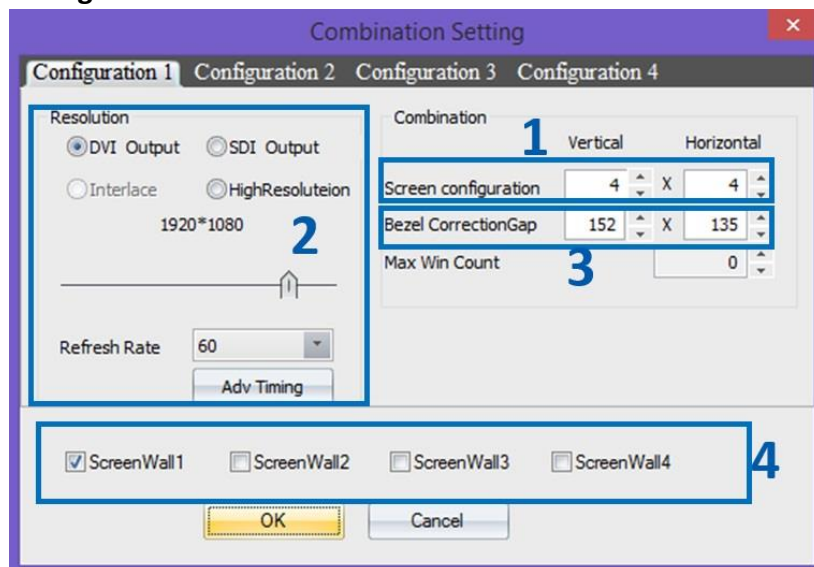
In **Configuration** the following setting can be changed for setting up the video wall displays

1) Screen configuration

The number of screens and the layout of the screens for the video wall can be set up here

2) Screen resolution

The signal format, resolution and frame rate can be set up in this section.

3) Screen bezel correction

In this section, screen bezel can be compensated to obtain accurate display of the image.

Bezel compensation calculation:

Unit: pixel, and assume the parameter as follow

Monitor Bezel width: left = a, right = b

Monitor Bezel width: top = c, bottom = d

Monitor dimension (exclude bezel) = L x H

Monitor resolution = x * y pixel (e.g. 1920 x 1080)

Vertical = $\frac{a+b}{L} * x$

Horizontal = $\frac{c+d}{H} * y$

4) Multi video walls setting

SEADA SolarWall video wall controllers are able to control up to four video walls independently within one system. Simply tick the number of video walls the system needs to control and then set up the video wall individually in each **Configuration**.

1.1.5. Quit

Use **Quit** button to exit the software

1.2. Basic Operation

All the tools in this module are used to create and manipulate the windows of inputs source on video walls. It consists of five groups of tools as following:

1.2.1. Setting

1) New Open

Click the **New Open** button to open a window for the highlighted input source onto the video wall. The system will automatically fit the new open window onto one of the displays on video wall.

Two other ways are able to open a new window of input source onto video wall as well by drag & drop and drawing in **Application Toolbar** and **Video Wall Display Area** respectively.

2) Close All

Clicking the **Close All** button will close all the existing windows on the video wall.

3) Lock

Clicking the **Lock** button will lock the current highlighted window in **Video Wall Display Area** for any change

4) Bottom

Clicking the **Bottom** button will send the current highlighted window to back of other windows in **Video Wall Display Area**

5) Top

Clicking the **Top** button will send the current highlighted window in front of other windows in **Video Wall Display Area.**

**6) Test**

This tool provides the ability to test the uniformity of brightness and contrast of the displays across the video wall. The left column and the right column enable user to choose different colour and pattern for test respectively.

7)   Input/Output Card

Clicking the **Input/Output Card** button will open the windows showing the configuration of inputs and outputs cards in the system.
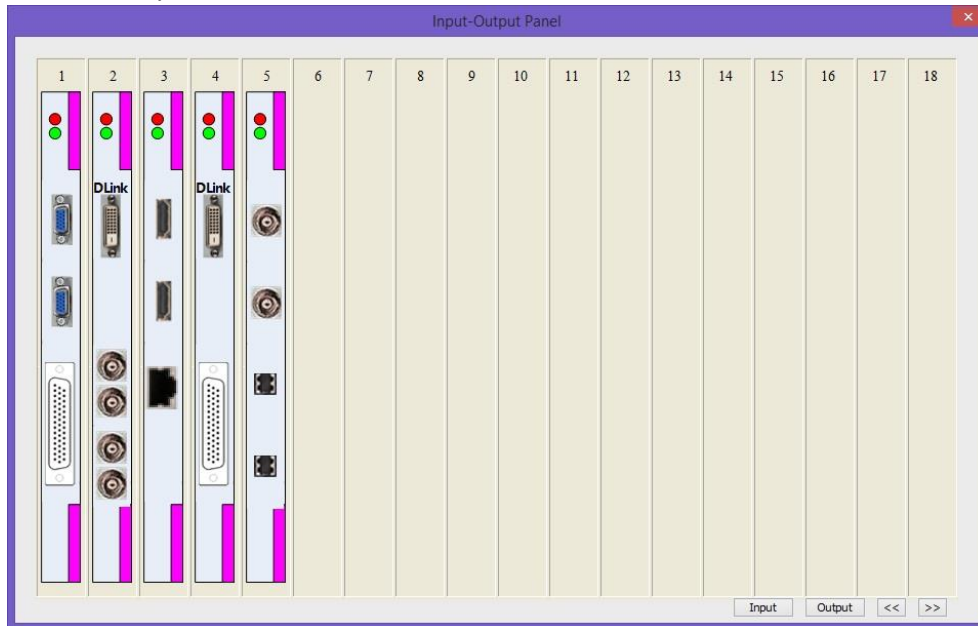

8)   Group

This function offers the chance to have correct channel mapping between outputs of controller and displays of video walls even when the physical channel mapping is incorrect. It offers up to 4 groups of settings. Each group responses to one video wall independently in multi video wall.

e.g. if the output 1&2 of controller accidently connect to display 2&1 of video wall, instead of going through rewiring, the correction can be simply done in **Group** by remapping the channel. In this case map the output 2 to 1 and output1 to 2.
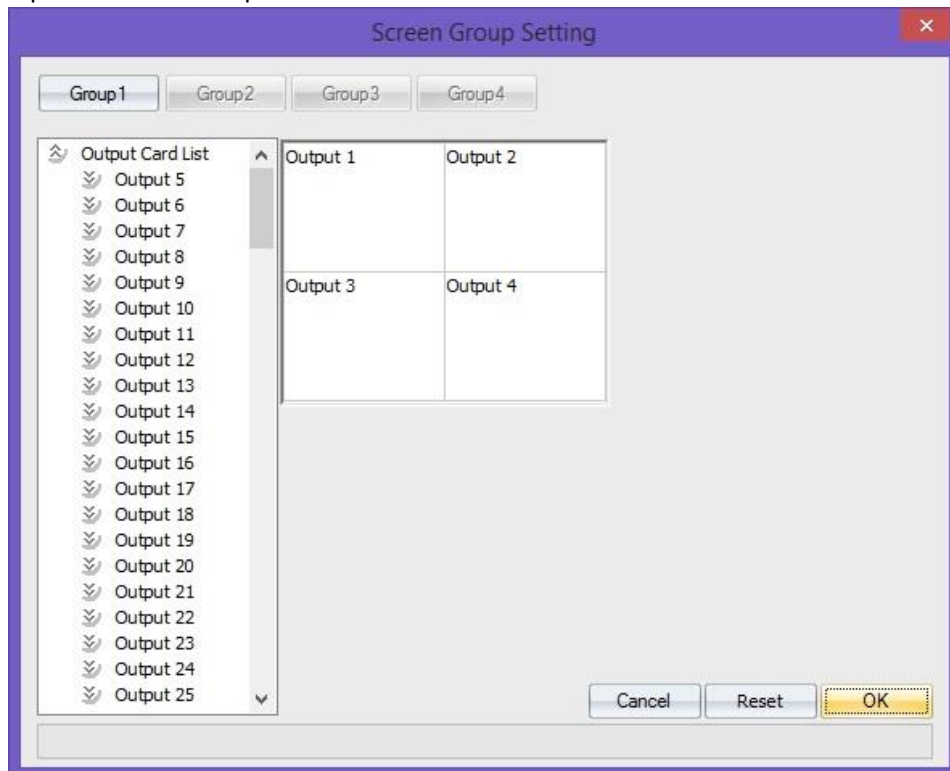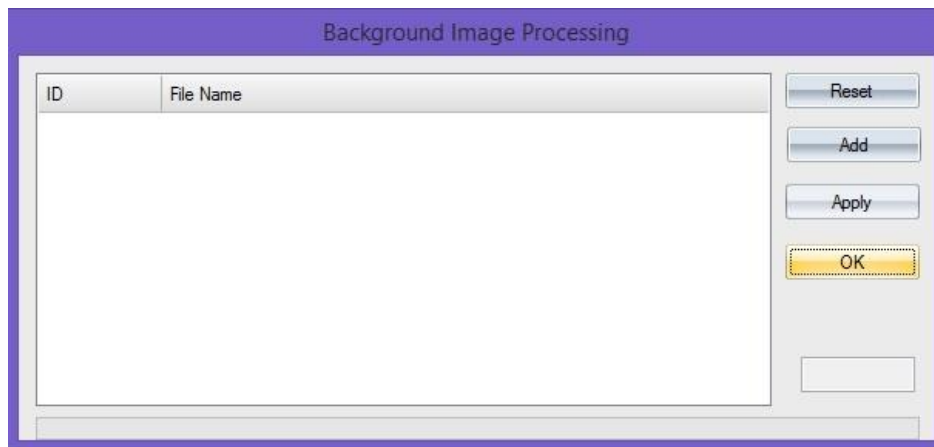
9) Background Picture

Users can use this function to load a desktop background image onto the video wall. The image must be .bmp @ 24bit format.
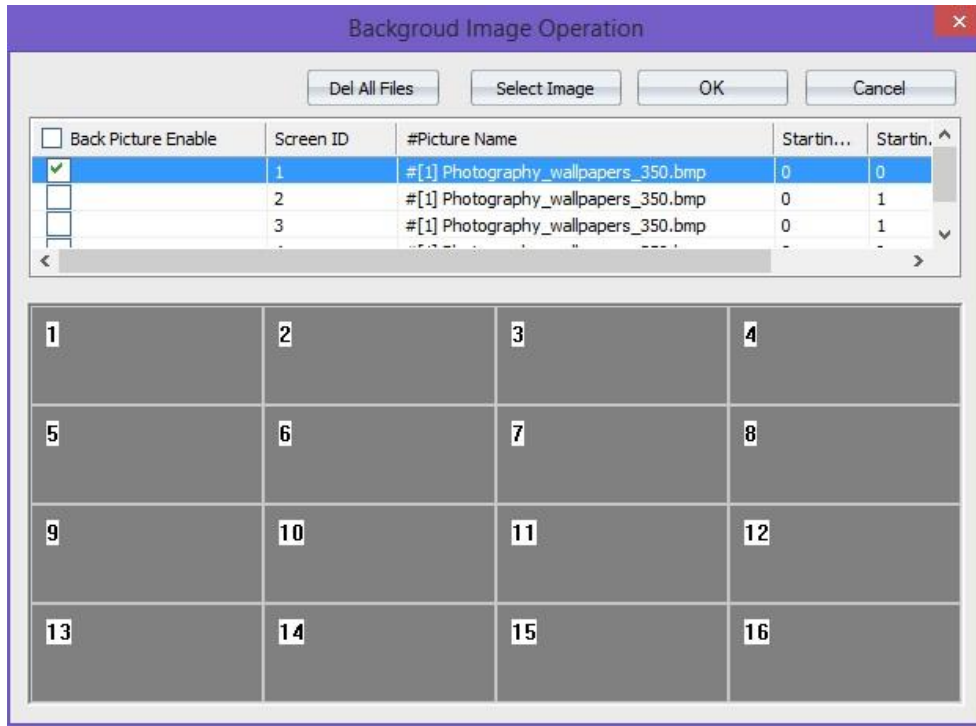
Users are able to load new images by clicking **Select Image** button and press **Add** button


1.2.2. Multi Screen Wall Operation

Once the multi video walls being set up in **configuration** (1.1.4), the number of video walls will be active here. By clicking from wall1 to wall 4 to control the different video walls using one system.
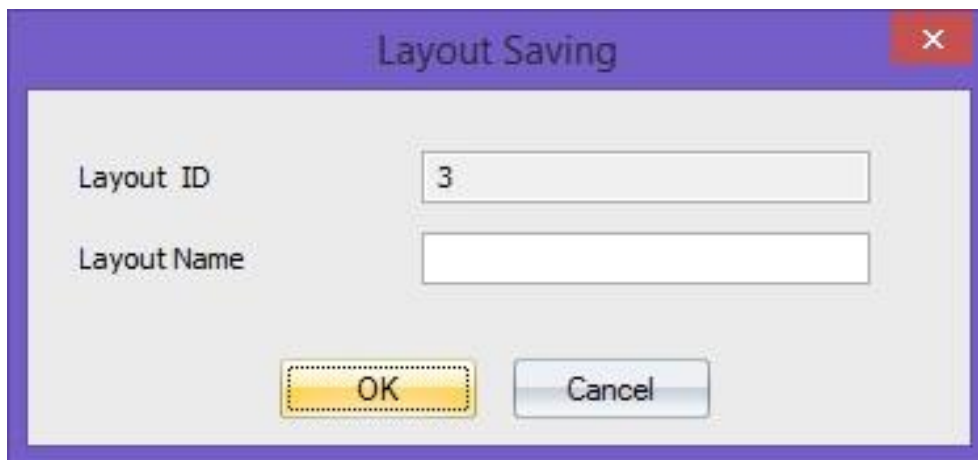
1.2.3. Layout File Backup

1) Open

It is used to open an existing layout from the control PC. It can also be done using layout in **Application Toolbar** or shortcut in **Video Wall Display Area**.
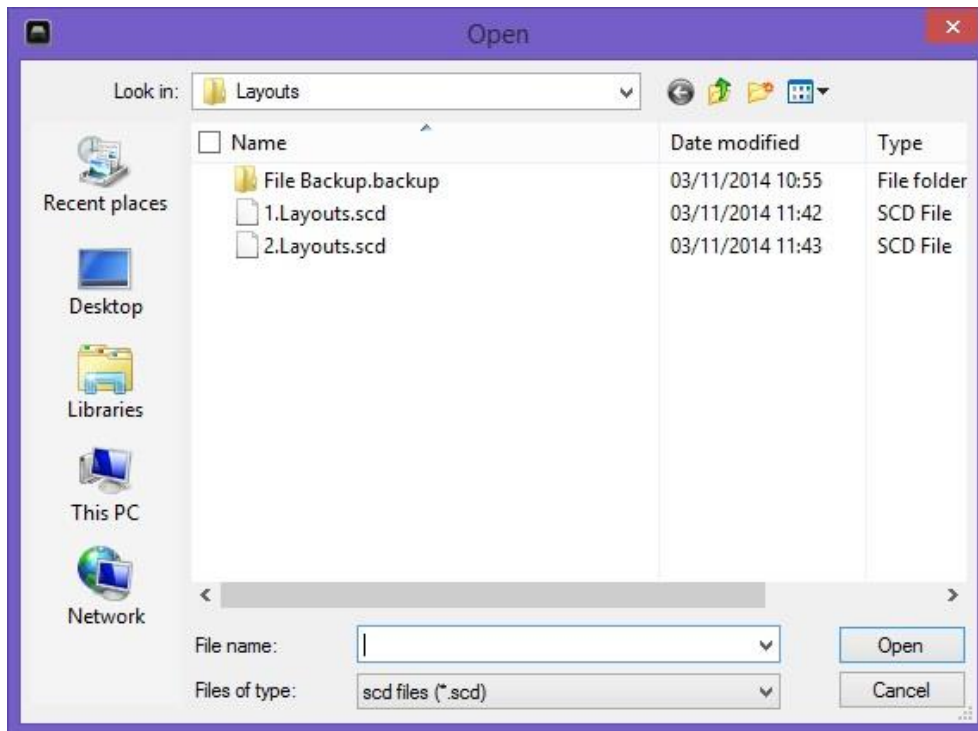
2)   Save

It saves a layout with a specific name from user.

3)   Loop

This offers the function to cycle through the pre-set layouts in a specific time interval automatically allowing users to view each layout in turn.

Click **Loop** to open Loop setting window to choose the pre-set layouts (Figure?-1) for the input contents looping. The time gap (Figure?-2) and sequence of the layouts (Figure?-3) can be set up in this window as well.
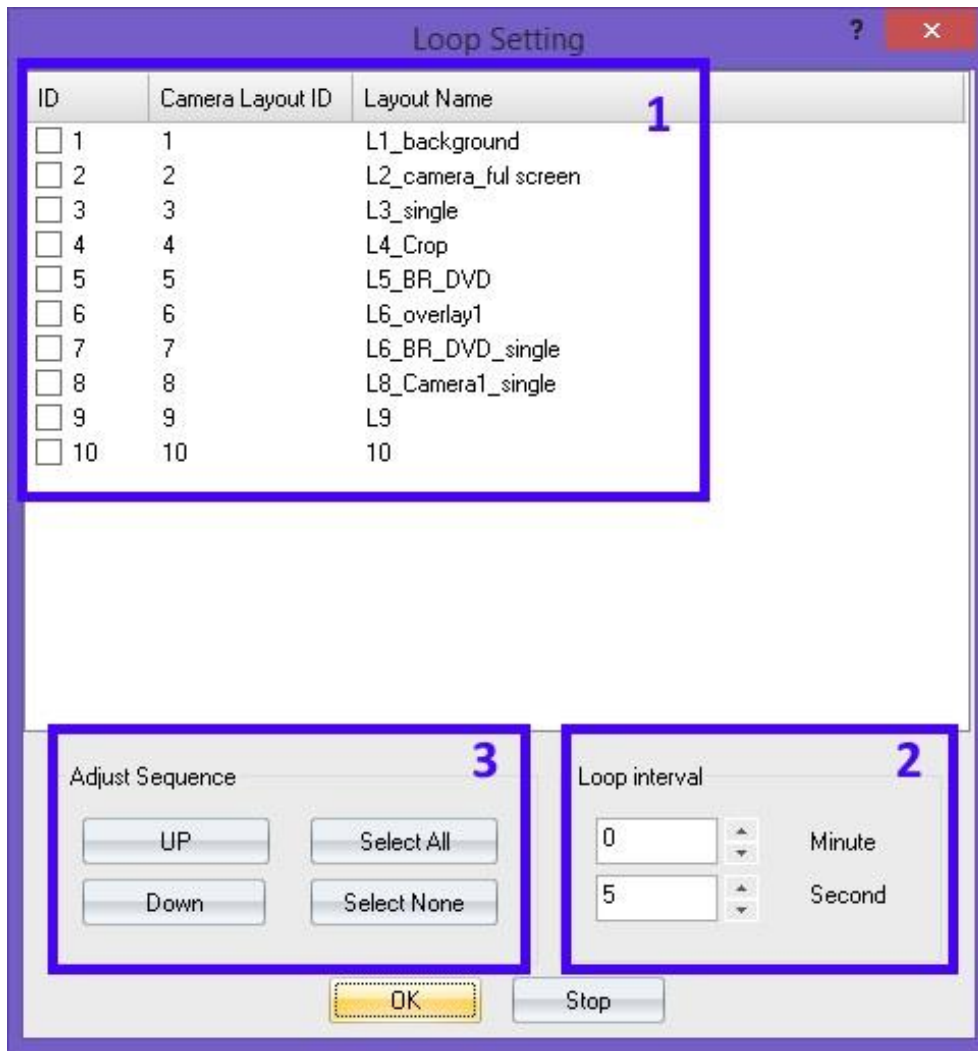
4)   Refresh

Refresh the looping

5)   Shortcut

To show or hide layout shortcut at the top of **Video Wall Display Area**.

1.2.4.   Preview

To show or hide **Preview Toolbar** shortcut at the bottom of **Video Wall Display Area**.

Note: In order to make **Preview** function work, a preview output card (P/N: SW-Preview) is needed for the system.

1.2.5.   Screen Control

The tools of this section offer users the ability to remote turn on /off the displays of video walls. SEADA has been working with our display supply partners to embed their products in our system. However it is not possible to include all the models of displays on market. So if users would like to use function, please contact our sales for further information.
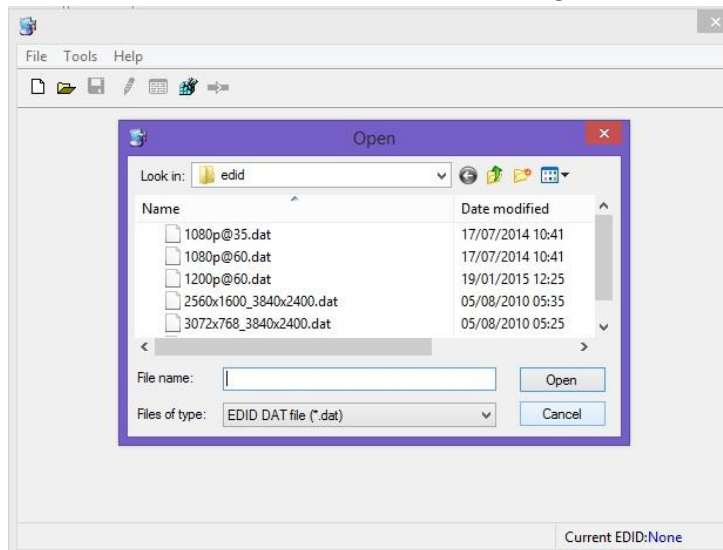
1.3.   Tools


1.3.1.   Management

1)   EDID

Press this button will open **EDID Editer** which enables user to create custom EDID file for updating video capture cards.

It is recommended to create a new EDID file from an existing EDID file.

Ensure the **Designer** is on modify mode by clicking the in tool bar. Users can change the **H Active Pxl** and **V Active Lines** in **Block 1** of **Detailed Timings** to set up new resolution for EDID
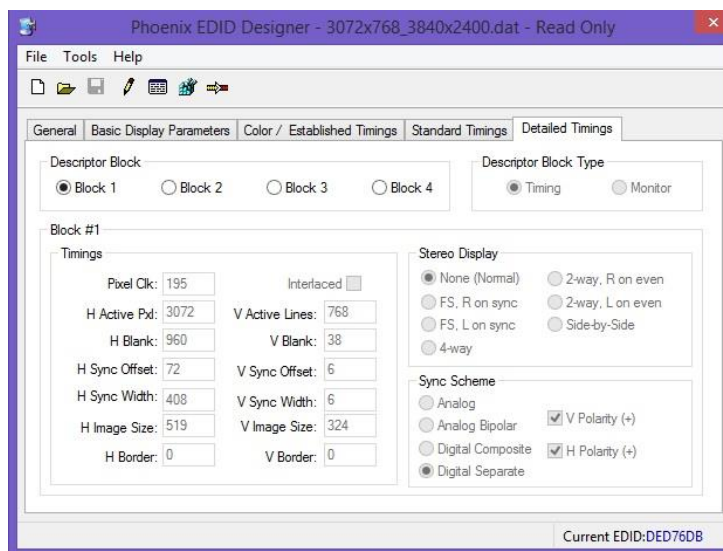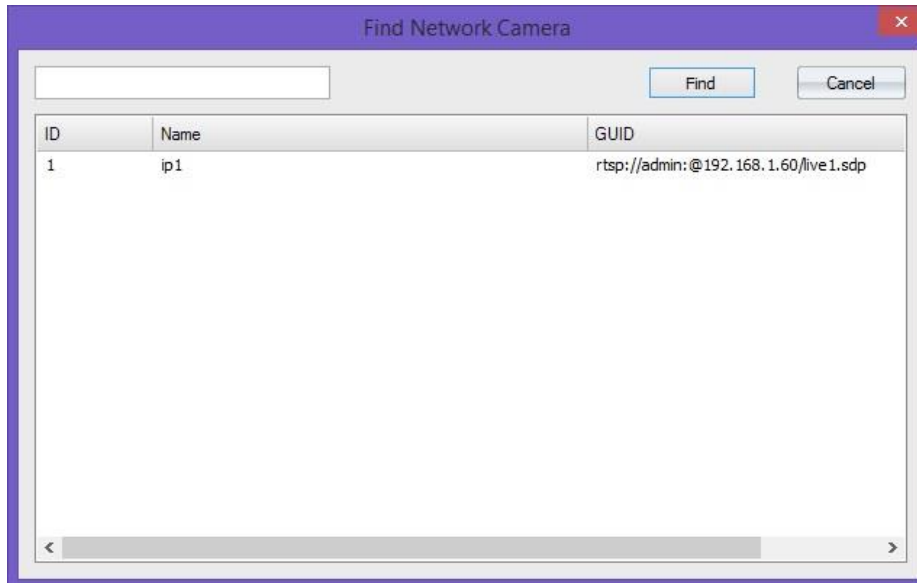
2)   Users

User authority can be managed here. Three different levels of access authority can be set up here.

- Admin level
- Advanced Users
- Users
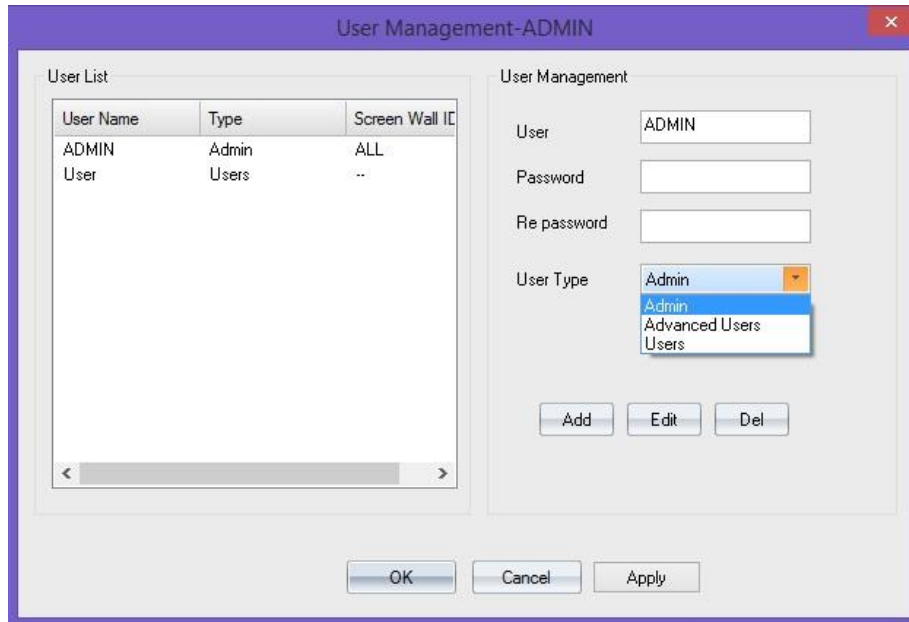
3)   Find Camera

This function allows users to find all the IP cameras connected to the system.

1.3.2.   Layout File Backup

1)   Export

This function enables users to export all the pre-set layouts for future reference.

2)   Import

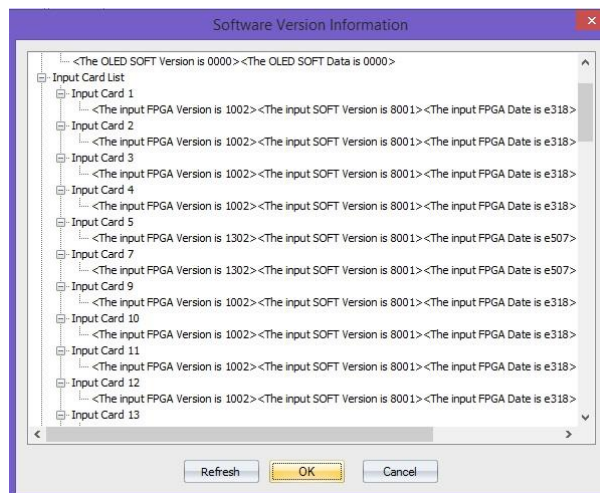This function enables users to import the pre-set layout file from previous control PC.

1.3.3.   Language

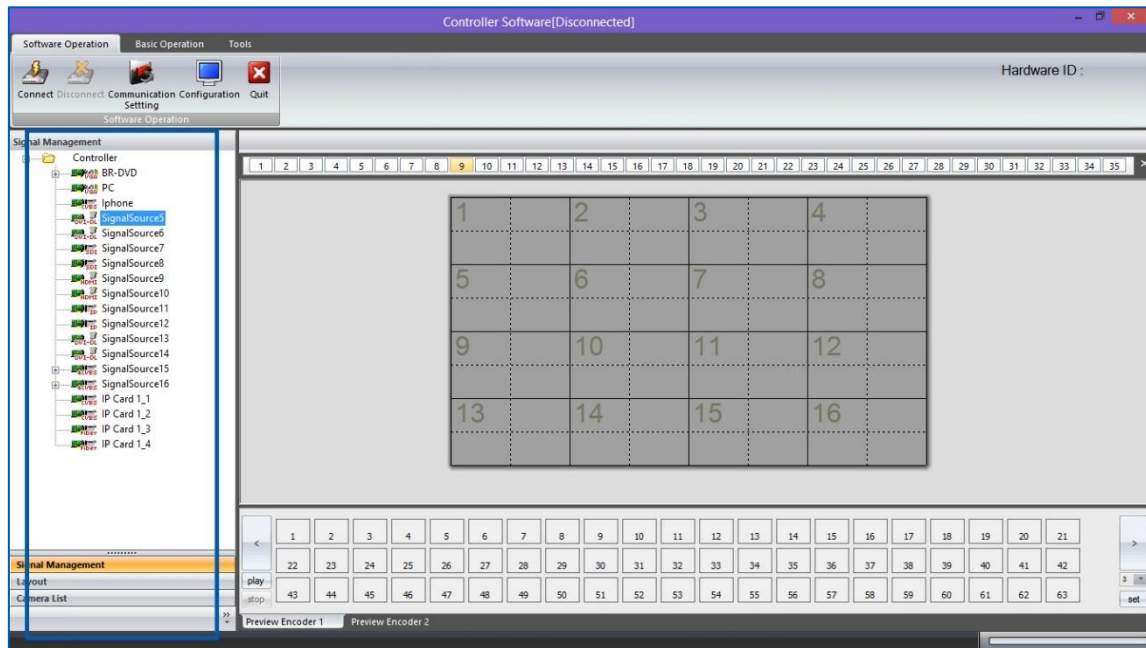Use the drop down list to select the preferred language rather than English

1.3.4.   Version

It shows the version information for the control software and firmware of the cards in the system.
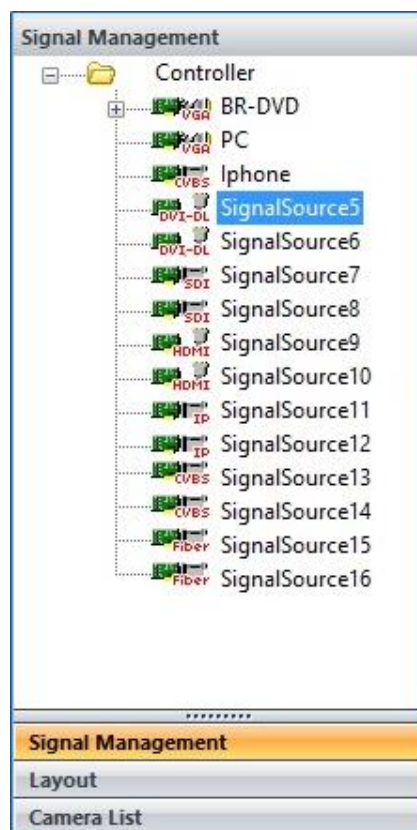
2. Application Toolbar

2.1. Signal Management

The **Signal Management** window displays a list of input content windows that can be displayed onto the video wall. The system will automatically identify the type of source and display it under the PCB Icon for each input

2.1.1. Open a window

Use the mouse to select the required input and then drag & drop to a preferred position on the **Video Wall Display Area.** The system will automatically fit the new open window onto one of the displays on video wall.

Or select the required input and then click the **New Open** button in **Basic Operation** module on Toolbar.

Or select the required input and then draw a window on the **Video Wall Display Area**.
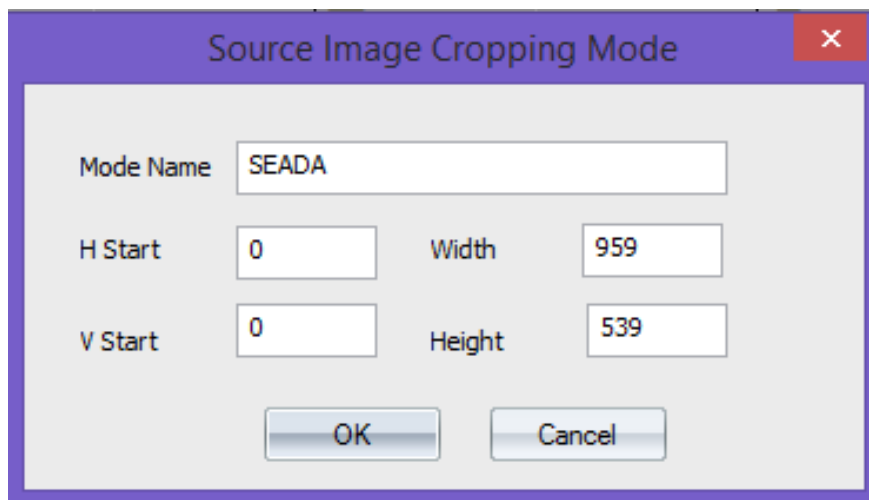
2.1.2. Cropping

This function allows user to display a specific area of the input signal content onto the video walls.

1) Highlight the input signal and right click to open the drop down menu
2) Choose **Add Mode** in the list to open the **cropping window**
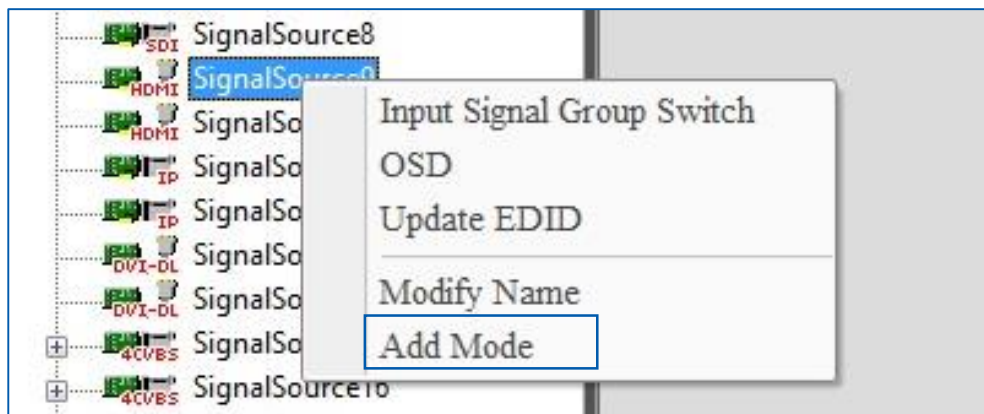
3) In **cropping window**, there are five parameters for users to define the cropped window

    a. Mode Name: ensure unique name for each cropped window
    b. H Start: Pixel location of start point for horizontal axis
    c. V Start: Pixel location of start point for vertical axis
    d. Width: the width of cropped window (unit: Pixel)
    e. Height: the height of cropped window (unit: Pixel)

4) Once the parameters having been set up, press **OK** to create the cropped window
5) The created cropped windows will be displayed under the parent window
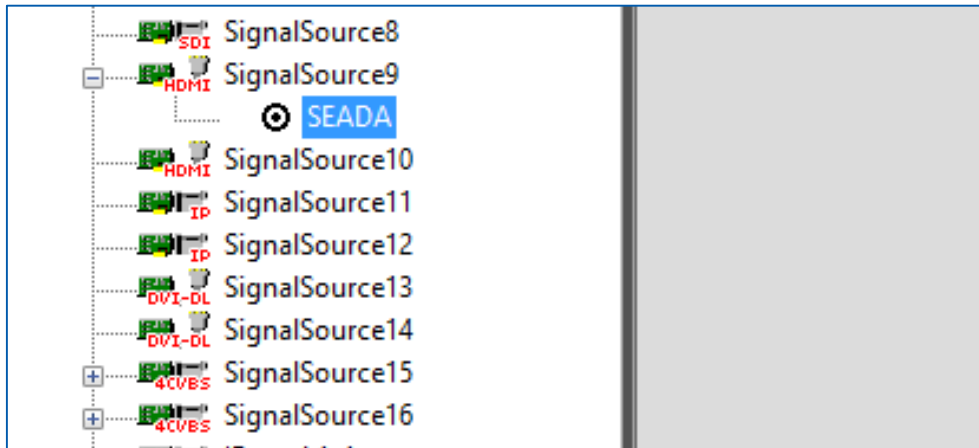
2.1.3. On Screen Display (OSD)

This function will enable users to display an on screen dialogue for each window on video wall.

1) Right click the input window in Signal Management and then choose OSD in drop down menu to open the **Screen OSD Information** window.
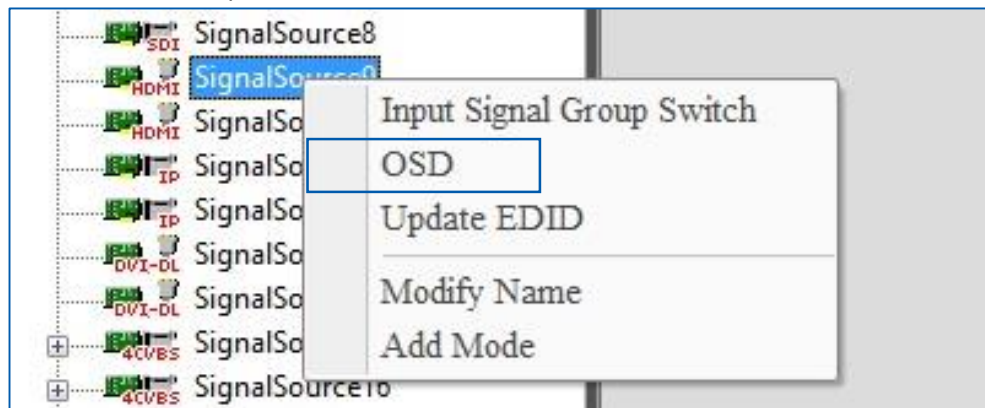

2) In **Screen OSD Information**, users are able to create the OSD in specific format
    a. Input Information: Enter the message here for OSD text
    b. Font Height: Size of the OSD text
    c. Font: Determine the characteristics of the font for OSD text
    d. Front Color: Colour of the Text
    e. Back Color: OSD text background colour
    f. H-Position: Define the horizontal position of OSD (unit: pixel)
    g. V-Position: Define the Vertical position of OSD (unit: pixel)
    h. OSD Mode:
        I.   OSD Mode1   No OSD shown on screen
        II. OSD Mode2   OSD without background
   III. OSD Mode3   OSD with background
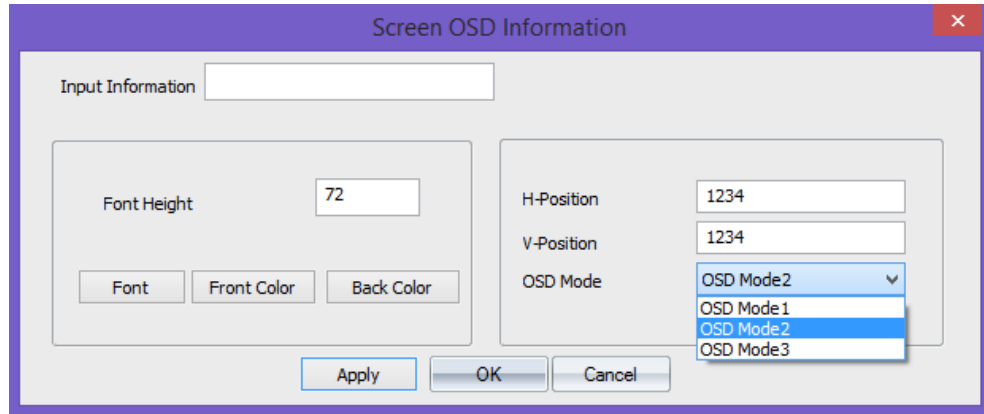
2.1.4. Change the display name of input source

This function will enable users to customize the input signal window name in **signal management window.**

1) Right click the input window in Signal Management and then choose **Modify Name** in drop down menu to open the **Modify Signal Name** window.
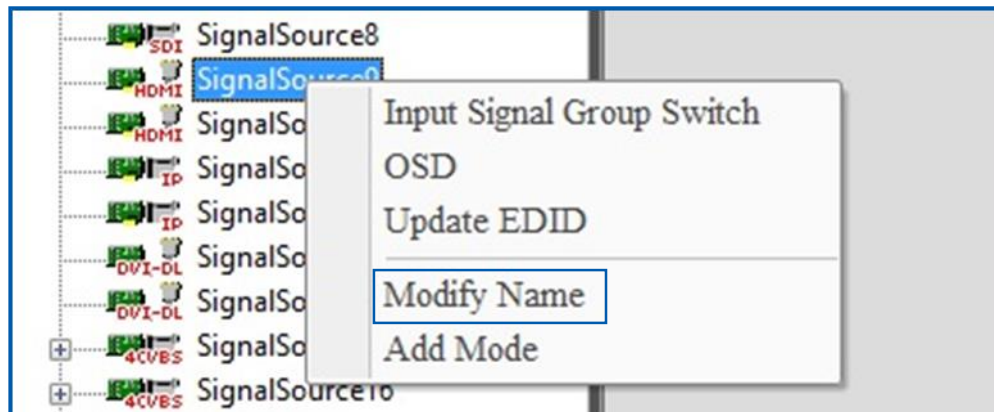

2) The default name for each input signal is 'SignalSource' with unique number. The users are able to re-define the name of each input signal for future reference
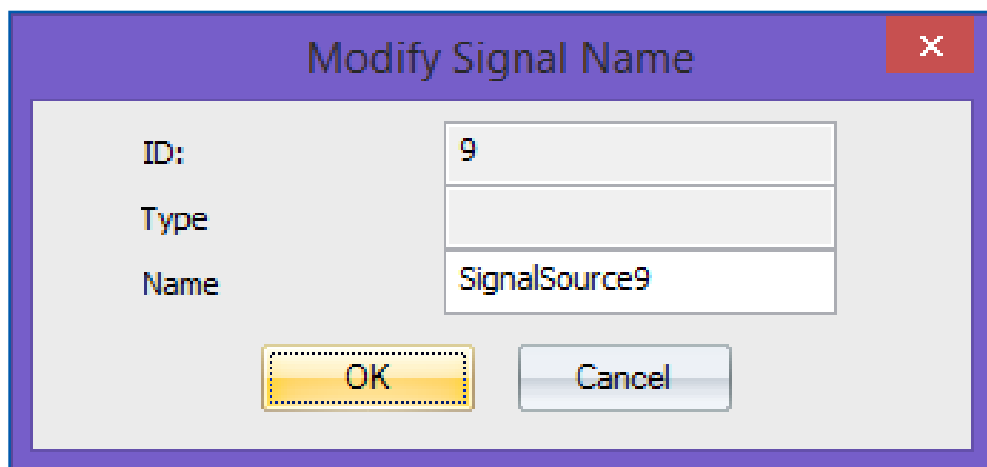

2.1.5. Change EDID on video capture cards

This feature allows users to update the EDID on input cards to a pre-set EDID to obtain a specific resolution and ratio input signal.

1) Right click the input window in Signal Management and then choose **Update EDID** in drop down menu to open the window showing the list of available EDID setting in system.
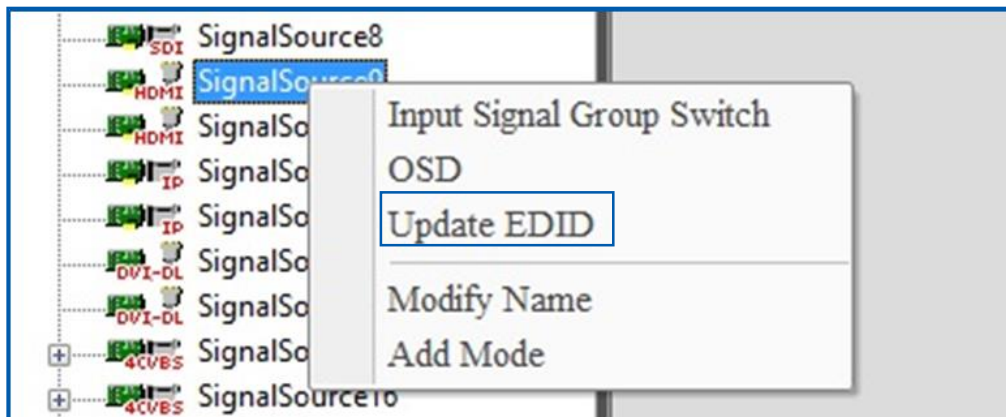

2) All the pre-set EDID will be displayed in the windows. Customized EDID is able to be obtained by using **Phoenix EDID Designer** in **Tools** (1.3.1)
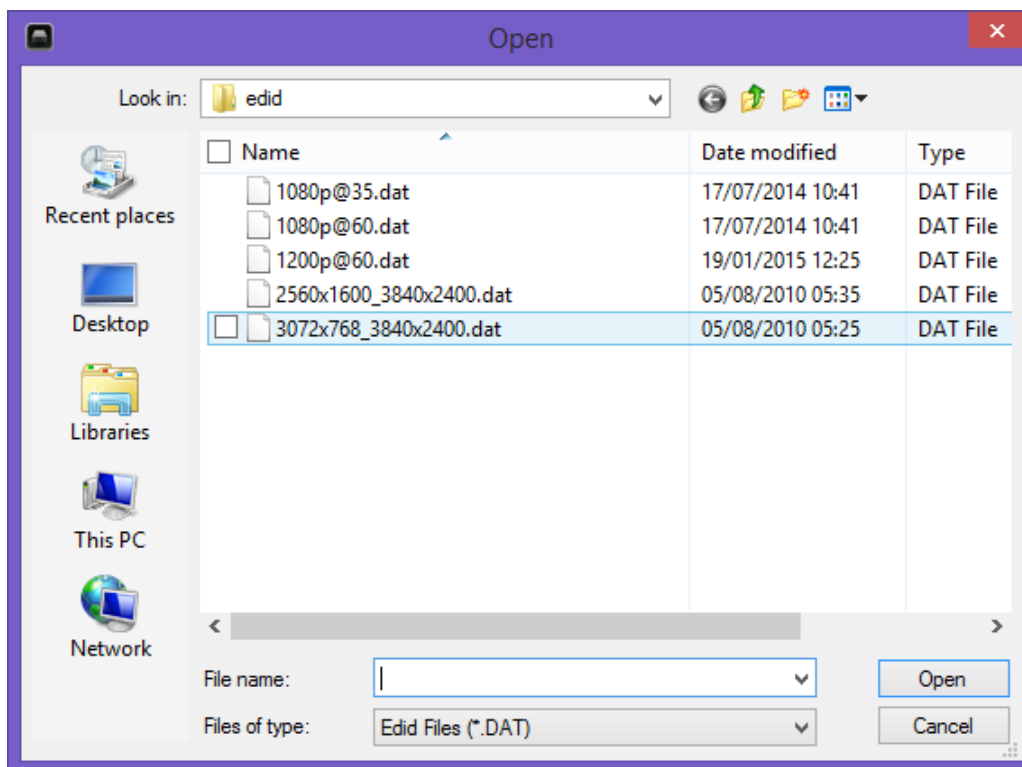
3) Open the EDID file to update the EDID of the video capture channel. A dialog window will be shown to indicate that the EDID update is succeeded.

4) Unplug and plug the signal cable to enable the capture source read the new EDID.

2.2.   Layout

In layout, it lists all the pre-set layouts of the video walls for users to manipulate from.
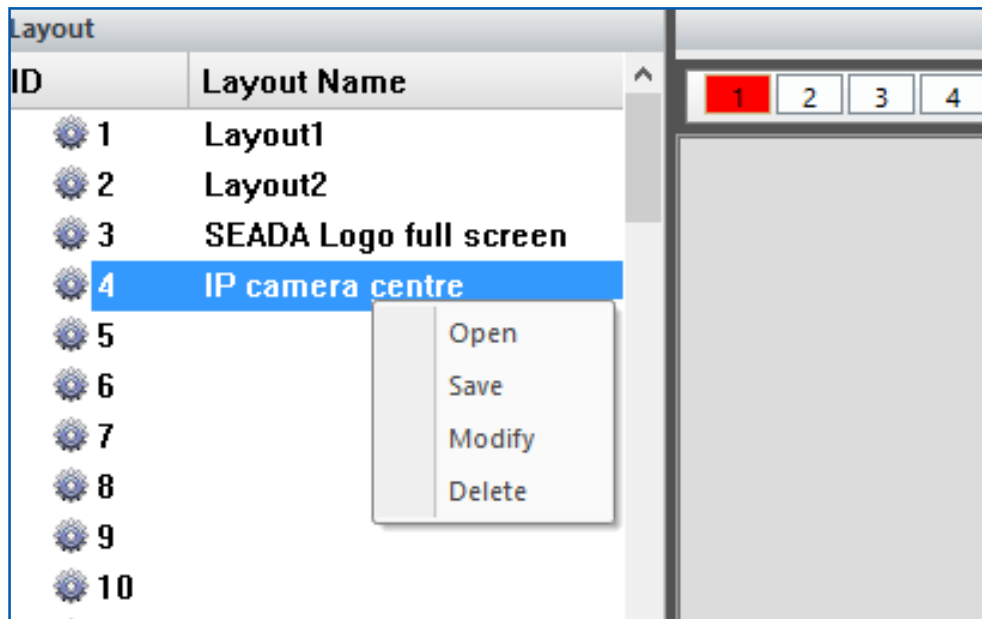
2.2.1. Open a layout

There are two ways to open a pre-set layout in **Layout**

    1)   Use mouse to double click the layout using mouse left button

    2)   Right click the mouse onto the layout and choose **Open** in drop down menu

2.2.2. Save a layout

This allows user to save a modified a layout over an existing layout or save it as new layout. Right click the mouse onto the layout and choose **Save** in drop down menu.

2.2.3. Modify a layout

This feature allows users to modify the name of existing layouts only

2.2.4. Delete a layout

This feature allows users to delete the existing layouts

2.3.   Camera List

In this section users are able to set up the entire IP input source for system to decode and capture RTSP IP signals. SEADA IP-IN-IP8 IP decoder card is able to decode & capture up to 8 channels of 1080P or 16 channels of 720p or 36 channels of D1 IP sources.
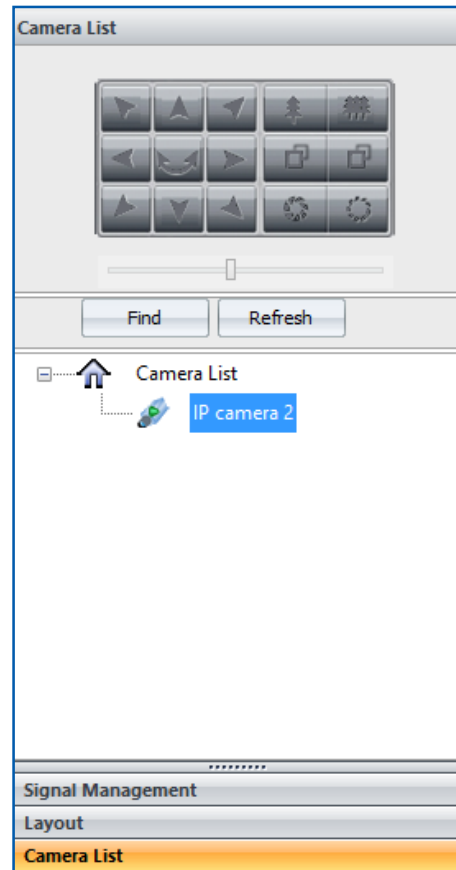
2.3.1. Set up the IP input signals

Before going any further, ensure the RTSP address of the IP signal has been obtained either through IP camera manual or suppliers.

For example: D-Link-2230 has the RTSP address of **rtsp://x.x.x.x/live1.sdp** where the **x.x.x.x** represents the IP address of the camera. Therefore the RTSP address for SolarWall video wall controller is **rtsp://a:b@x.x.x.x/video1.sdp** where **a** represents username and **b** represents password for the camera. If there is no password, please leave **b** empty.

Note: if the rtsp address for SolarWall system does not include username and password, the system will ask for username and password every time when the IP camera being used.

1) Using the software coming with the device to set up the IP address of each device to match the IP group of SolarWall Controllers (the default IP address for SW controller is: **192.168.1.65**). Ensure each input has a unique IP address in the system.

2) Use free download software of VLC media player to test the RTSP address of devices to ensure the RTSP address is valid. Ensure the cameras connect to control PC and IP cards at the same time through Ethernet switch, not connect to IP cards port directly.

Assume the IP address of D-Link-2230 is **192.168.1.60** and the username is **admin** without password, the RTSP address for this IP camera is **rtsp://admin:@192.168.1.60/live1.sdp**
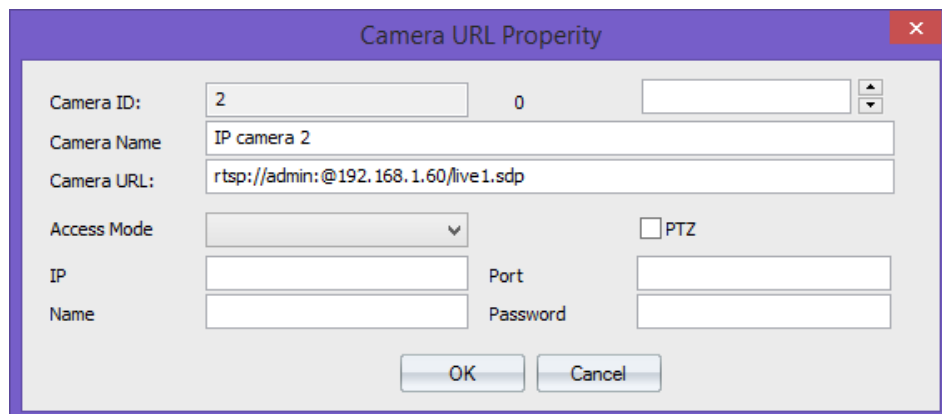
The below setting will open the IP streaming from this D-Link-2230 IP camera
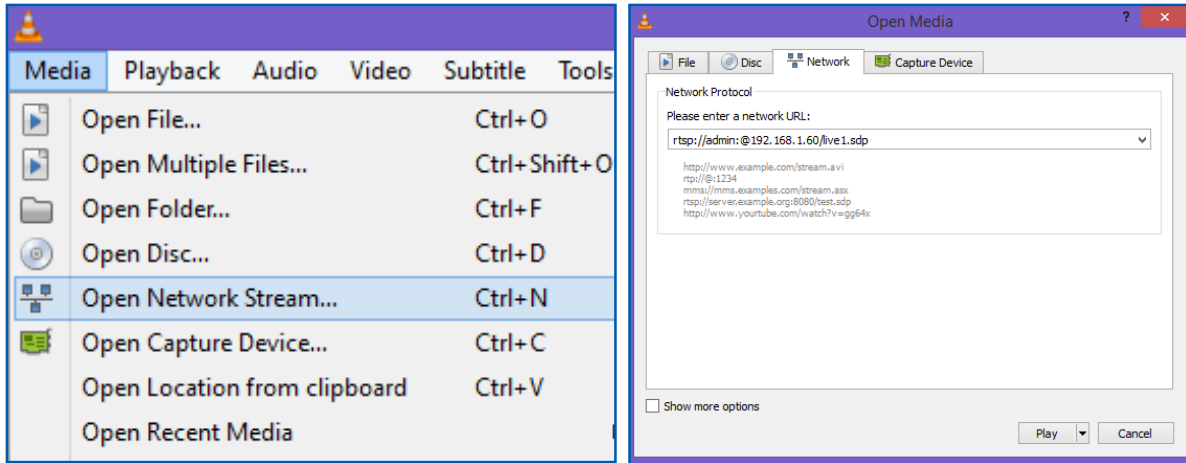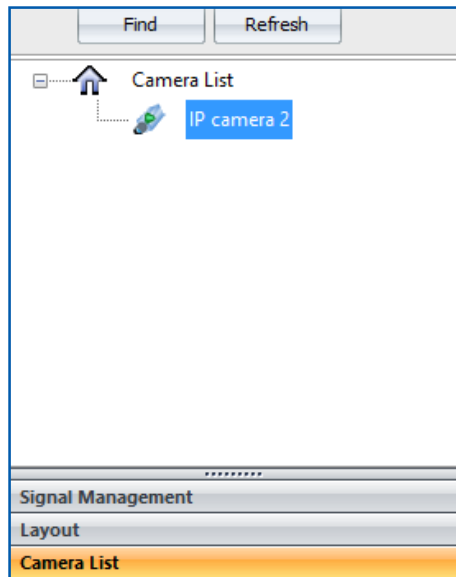
3) Right click the **Camera List** and choose **Add Camera** to open a **Camera URL Property** dialog window**.**
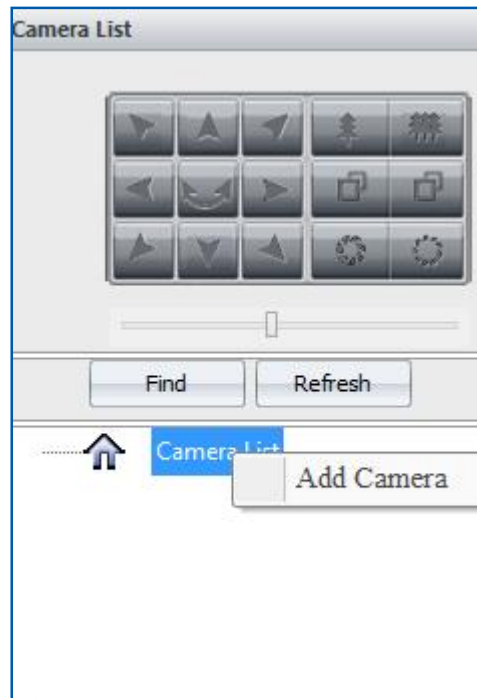
4) In **Camera URL Property** dialog window, user defines the unique name for each camera in **Camera Name** and enter the RTSP address for the camera

5) Click **OK** to add the IP camera into the list. Do the same procedure for the other IP source to add them into the camera list

2.3.2. Set up the IP Decoder Cards

1) After all the IP cameras having been added into Camera List, users need to go to **Signal Management** window to link the IP camera with IP capture channel accordingly.

   a. SEADA Technology IP decoder card has **two** physical RJ45 connectors and each connect shows **two** inputs channels in **Signal Management** window. Each channel is able to decode & capture up to 2 1080P or 4 720P or 9 D1 IP sources

2) Right click on the SignalSource where the IP camera is connected to and choose **Decode Property** to open **Network Decoder Property** dialog window.
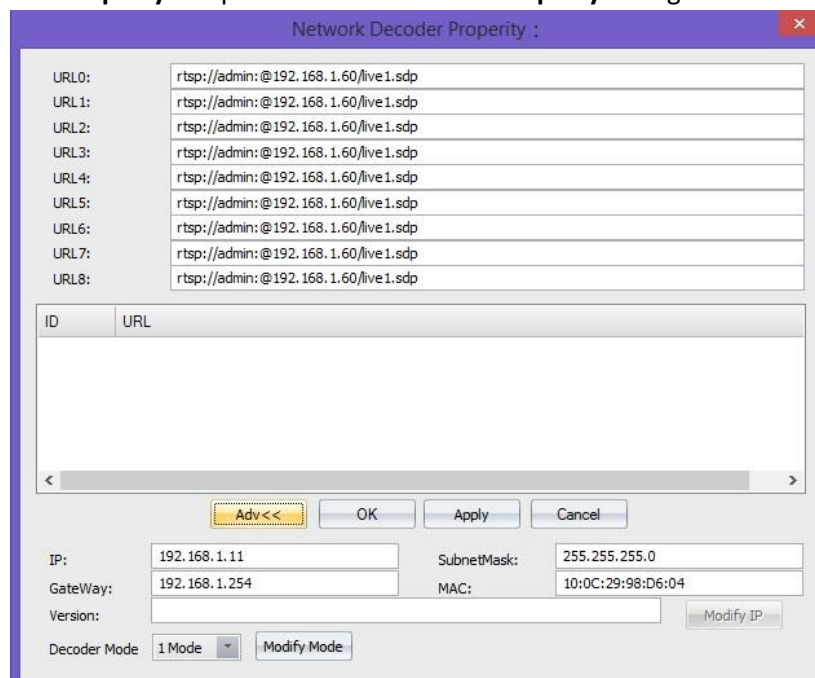
3) Click **Adv<<** button to set up the IP address for each IP decoder card to match the IP group of IP cameras. (e.g. IP address of camera is **192.168.1.60**)
   a. IP: 192.168.1.x   x represents a number between 1 and 255 which has not been used by any other device in the system
   b. SubnetMask: 255.255.255.0
   c. GateWay: 192.168.1.1
   d. MAC: obtain automatically

   Please note: each SEADA IP decode card needs two unique IP addresses and one for each physical RJ45 connector respectively.

   After having entered the IP address for each card, press **Modify IP** button to change the IP address.

4) Choose the Decode Mode
   1 Mode each channel capture **1** IP source up to 1080p
   2 Mode each channel capture **2** IP source up to 1080p
   4 Mode each channel capture **4** IP source up to 720p
   9 Mode each channel capture **9** IP source up to D1

   - Users are able to choose the decode mode in **Adv<<** of **Network Decoder Property**
   - Or users are also able to choose the decode mode by right clicking the IP window in **Video Wall Display Area** to choose the mode in **IP Decoder Mode** in drop down menu Right click the IP window in **Video Wall Display Area** to choose the mode in **IP Decoder Mode** in drop down menu
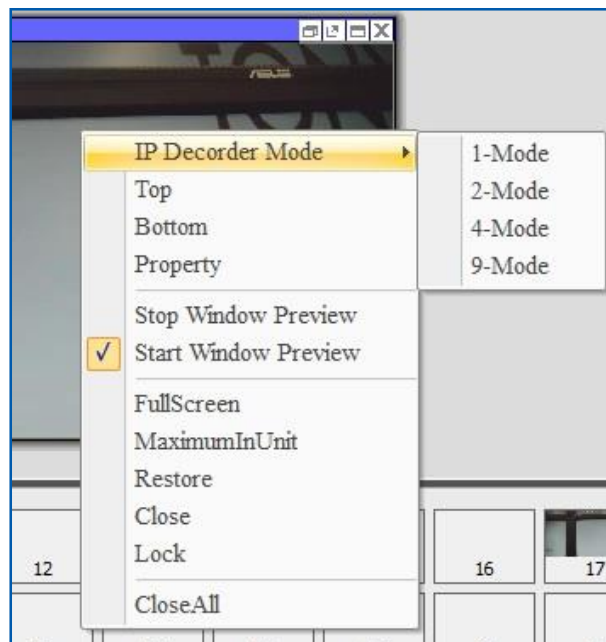

5) Once the IP address and decode mode has been set, the IP decoder card is ready to be linked to IP cameras accordingly. There are two ways to link them together
   a. Drag and drop
      I. Open one IP window from Signal Management to **Video Wall Display Area**. It will be a black window since there is no IP camera input on this channel.
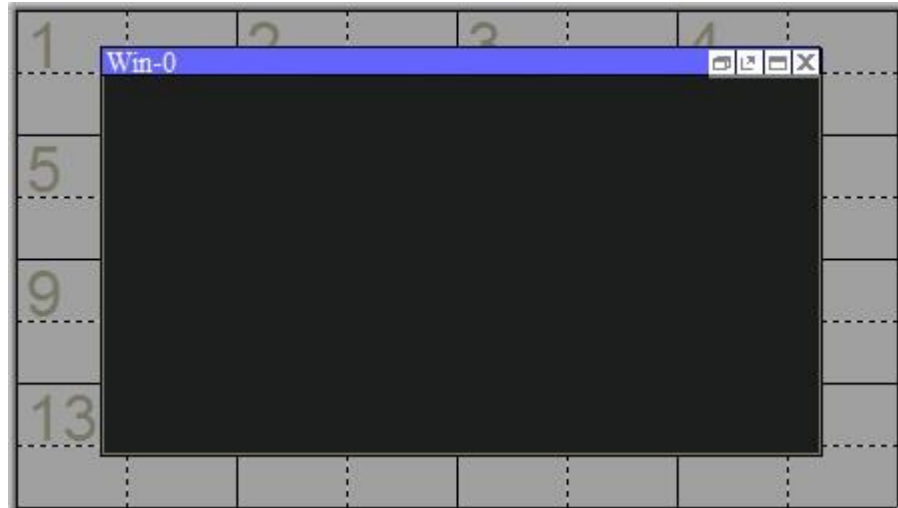
II. And then go to camera list to drag the IP camera and drop into the window to form a link.
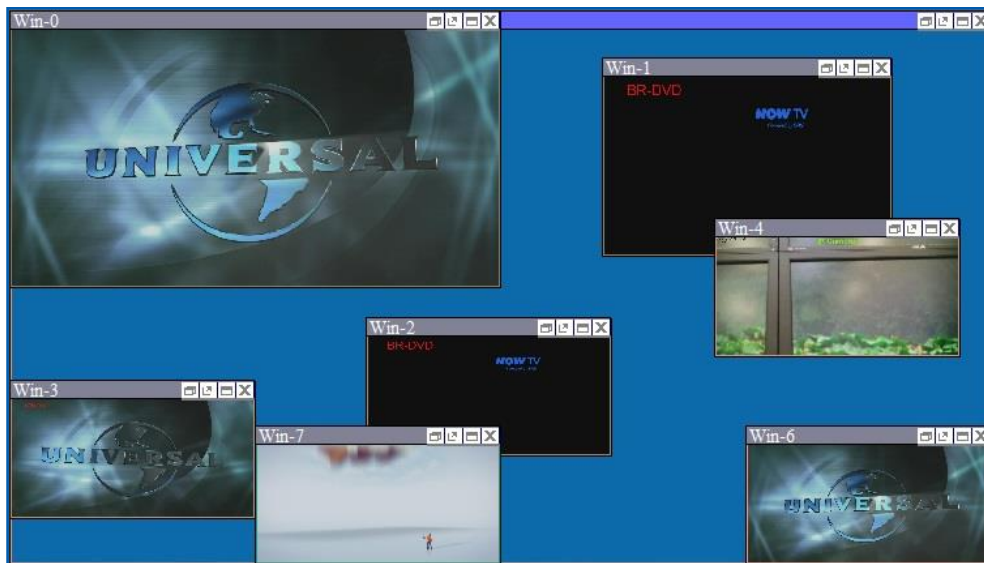
b. Enter rtsp address
   Enter the rtsp address of IP cameras in **Network Decoder Property** accordingly
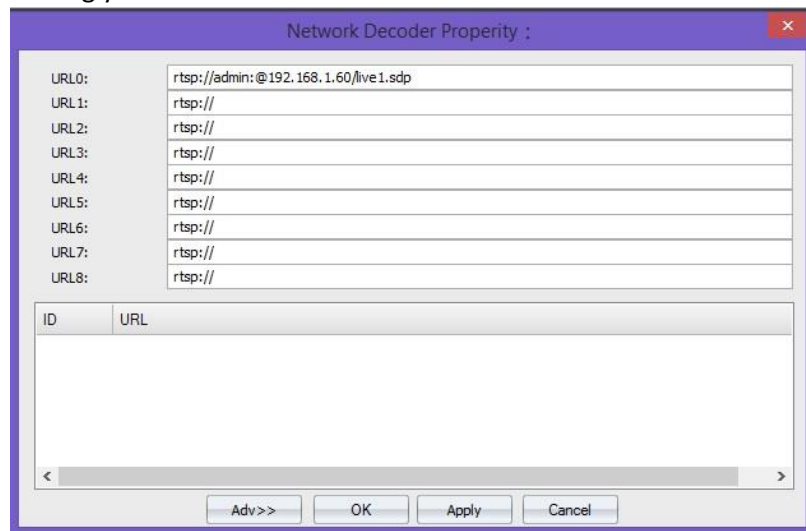
3. Video Wall Display Area

In **Video Wall Display Area**, users are able to manipulate the windows on video walls.

3.1.   Resize a window

1) Use the mouse to highlight the window and move the mouse to the border of the window. The cursor will be changed to a resize cursor.
2) Press and hold the left mouse button and drag the border to resize the window to required size
3) Click the **fit in** ⬀ button on title bar to automatically resize the window to fit the grid area (each window is divided into 4 even grids) where the window was in.

3.2.   Restore a window

1) Either click the **Restore** ▭ button on the title bar to restore the window
2) Or right click the window and then choose restore in the drop down menu
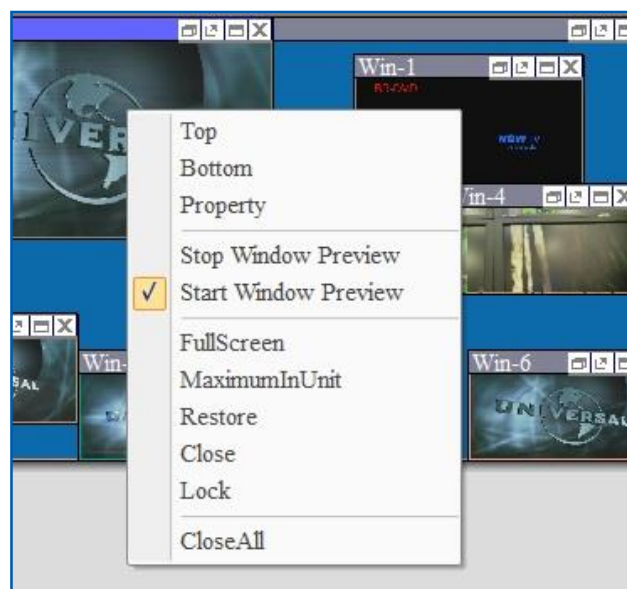
3.3. Move a window

1) Use the mouse to highlight the window and position the cursor on the window
2) Press and hold the left mouse button and drag the window to the required position, and release the mouse button

3.4. Full Screen

1) Either click the Full Screen button on the title bar
2) Or right click the window and then choose FullScreen in the drop down menu
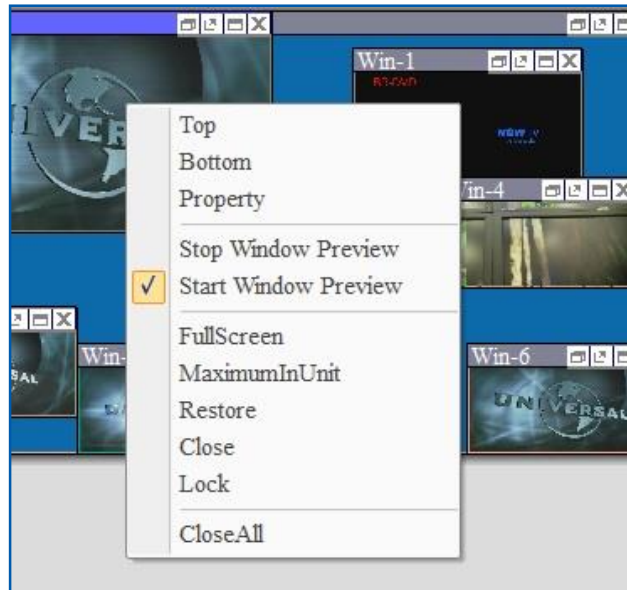

3.5. Pre-set layout shortcut bar

This is the shortcut of layout in **application ToolBar**. It shows the first 40 pre-set layouts having been saved by users. The numbers in the bar are the ID of each pre-set layout. Left click each number will load the layout under that ID number.
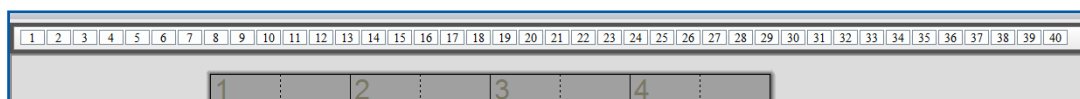
4. Preview Toolbar

Preview Toolbar is able to display up to 128 input signal preview windows to enable users to check the input source before putting them onto the video wall by using a preview card (SW-Preview). The preview card is also able to capture the video wall screen and display it on SW-Control software
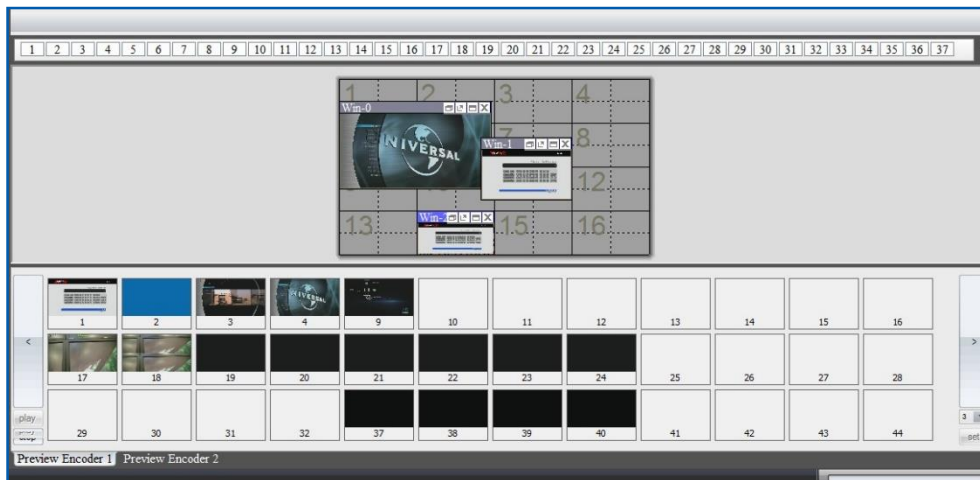

4.1.   Set up Preview
4.1.1. Set up the connection of preview card

A preview card is connected and managed by control PC via IP. The default IP address for preview card is 192.168.1.85. Ensure the IP address does not conflict with other IP addresses in the same system.
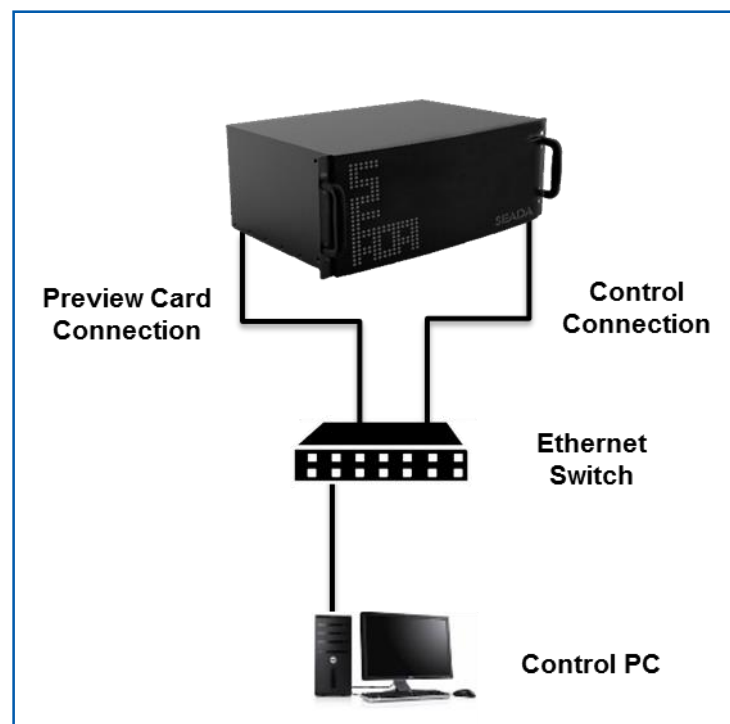
Connect the SW-Control software with the controller through Ethernet Switch and then press **Play** button at the left corner to get all the preview images of all input signals.
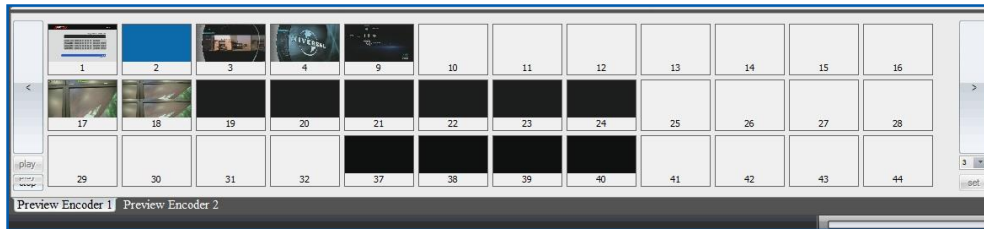

4.1.2. Preview window function

1) Double click each preview window to open a larger single window to enable users to observe more detail

2) Users are able to drag and drop to open the windows in Video Wall Display Area from Preview window

4.2. Change the Preview setting

Press the **set** button at the bottom of right corner to open the setting dialog window. Users are able to change the IP setting and the resolution of the preview image.

Please be noted that the **set** is only available when the preview is on **stop**.
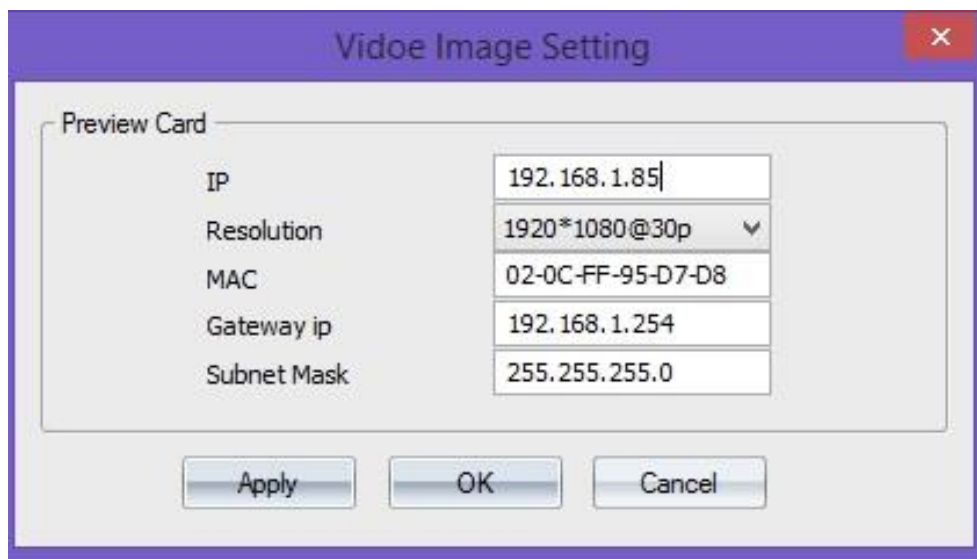
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