

# iWall 360

## User Manual



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# 1. Overview

The iWall 360 supports one 4K HDMI input signal and four HDMI outputs. It also supports image cropping, any degree rotation, blending display and infinite device cascading.

# 2. Technical Index

## 1) Electrical index

Supply voltage: DC 12V

## 2) Environment index

Working temperature: 0°C - 40°C

Storage temperature: -10°C - 60°C

Storage environment: No solvent and corrosive gas, no dust, no interference of strong magnetic field;

## 3) Video input index

The device uses HDMI 1.4 standard input port supports resolutions including 3840 x 2160@30, 3840 x 2160@25, 2560 x 1600@60, 1920 x 1200@60 and compatible backwards, with audio input.

## 4) Video output index

The device uses HDMI 1.3 standard output port supports up to 1920 x 1200 resolution video output. The device also supports 3.5mm individual analog audio output.

## 5) Control methods

Using the software *SmartEditor* to communicate and control via RJ-45 connector (LAN 1);

The device includes 2 LAN ports (LAN 1 and LAN 2). The devices can cascade in series via connection from LAN 2 port of one device to LAN 1 port of the next.

**Note:** when there are no correct input signals, devices will display their IP addresses of LAN 1 on displays.

## 6) Mechanical index

Appearance size: 208 x 45 x 199mm (8.19 x 1.77 x 7.83 in)

# 3. Appearance Description

## 1) Front port

The front side of The iWall 360 is shown in figure 1, the interface detail as following table 1:

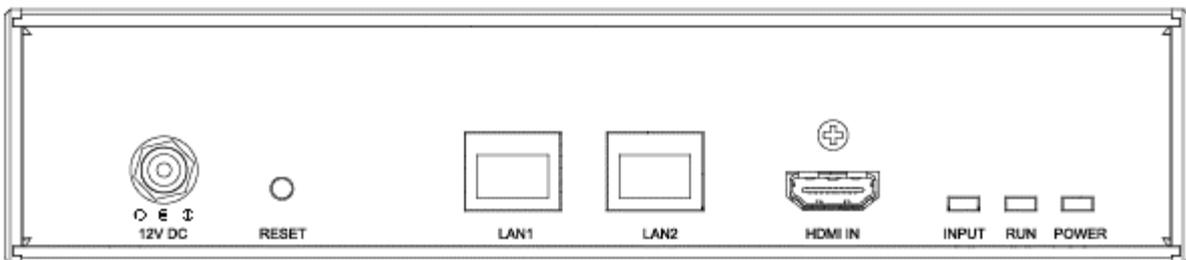


Figure 3-1 The iWall 360 device front view

Table 1 The iWall 360 processor front interface detail

| Connector | Description |
|-----------|-------------|
|-----------|-------------|

|  |  |
|--|--|
|  <p>12V DC</p>            | <p>12V power connector with lock</p>   |
|  <p>RESET</p>             | <p>Reset button, after 5s pf push, device IP will reset as 192.168.1.25;<br/>each individual window would be reset as full window display;</p>                         |
|  <p>LAN1</p>              | <p>LAN1, RJ-45 connector, controls device by connect PC or router;</p>   |
|  <p>LAN2</p>              | <p>LAN2 used for cascading of additional devices;</p>  |
|  <p>HDMI IN</p>          | <p>HDMI input;</p>   |
|  <p>INPUT RUN POWER</p> | <p>Status light:</p> <p>When power on, POWER lights on;</p> <p>When device is working normally, RUN light on;</p> <p>When signal input connected, INPUT lights on;</p> |

## 2) Rear port

The iWall 360 device back side, the interfaces as following:

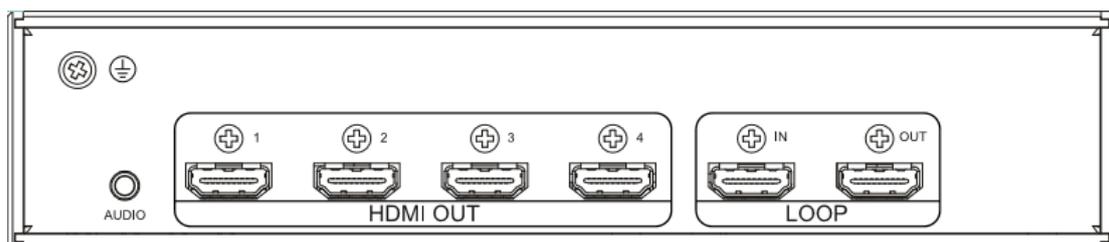
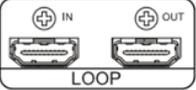


Figure 3-1 The iWall 360 device back view

Table 2 The iWall 360 device back side interface details

| Connector  | Description   |
|--|---|
|   | Ground  |
|   | 3.5mm audio analog connector  |
|   | 4 HDMI output ports   |
|  | Cascading interfaces:<br><br>IN for cascading input;<br><br>OUT for cascading output; |

## 4. Application Specification

### 1) Input configuration

Each individual device supports only one local input signal source, and each input signal source can open only one window on the whole output system.

### 2) Output configuration

(1) Each device has 4 HDMI output ports.

(2) Each output has image rotation function, allow to do any degree rotation.

(3) The output settings support any position and layout, namely, the display screen of the output terminals can support every moving, overlaying and other operations;

### 3) Cascading configuration

(1) The device hardware supports infinite number of device cascading.

(2) In one group of cascading devices, there must be only one master device and all of the rest devices must be slave devices, following single way cascading. The main purpose of device cascading is to put one input source on more outputs to make a larger and better display performance.

(3) When devices join in a cascading group, each device's output can only support one window, and the content depends on the device's cascading mode.

(4) The cascading device input sources include "Get local data; Transfer local data", "Get cascading data; Transfer local data", "Get local data; Transfer cascading data", and "Get cascading data; Transfer cascading data".

"Local data" is the input signals from device's input port; "Cascading data" is the signals from cascading ports of other devices. The cascading data could be different as the different device statuses in the system.

- a. • Get local data, transfer local data: This device will use the local input for video output and will send its local input to the next device.
- b. • Get cascading data, transfer local data: This device will use the signal from cascading input for video output and will send its local input to the next device.
- c. • Get local data, transfer cascading data: This device will use the local input for video output and will send the signal from cascading input to next device.
- d. • Get cascading data, transfer cascading data: This device will use the signal from cascading input for video output and send the signal from cascading input to the next device.

(4) In the group of cascading devices, there are only the devices which have embedded audio input would have audio output.

## 4) Scene configuration

The device can auto-save the last scene of the operation prior to power outage and load the scene after the power is back on. The device can save infinite number of scenes with software, but the scene can only be called out by software. The device hardware can save up to 4 scenes, and load by serial port command.

# 5. Operating instructions of upper computer

## 1) Introduction

This article introduces the methods of the software at the client side, including software installation and operation.

## 2) Software installation

(1) Run the installation file of SmartEditor-x.x.x.x.exe to start installation. The installation interface is shown in the following figure 5-1.

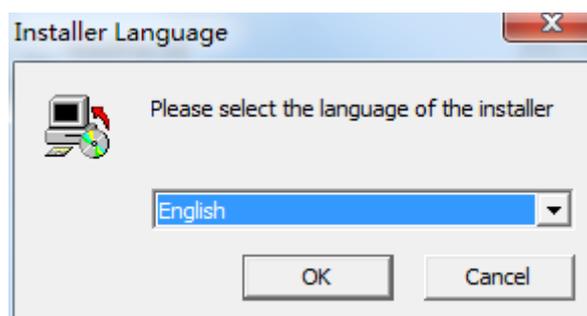


Figure 5-1

(2) Select the language and click OK to enter the next interface.

(3) select the "I Agree" to enter the next interface, as shown in the figure 5-2;

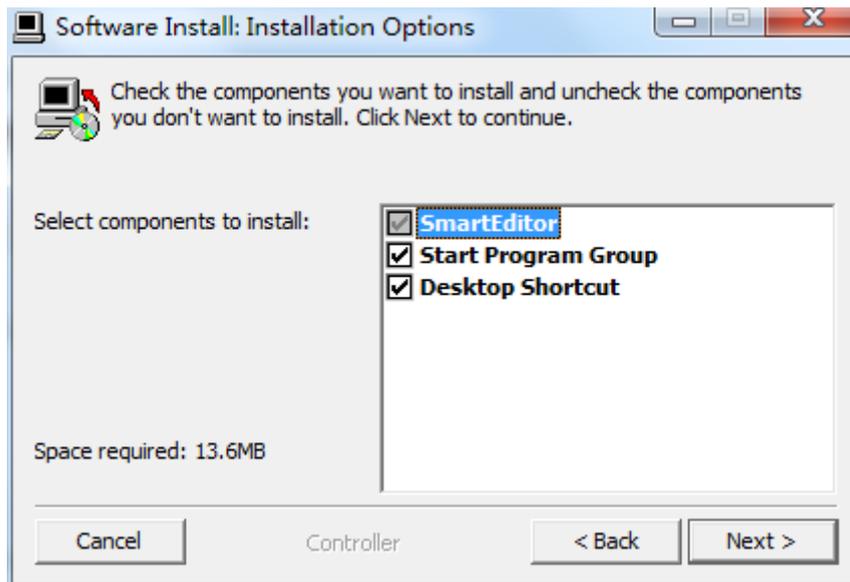


Figure 5-3

(4) Select the “Next” to enter the next interface, as shown in the figure 5-3;

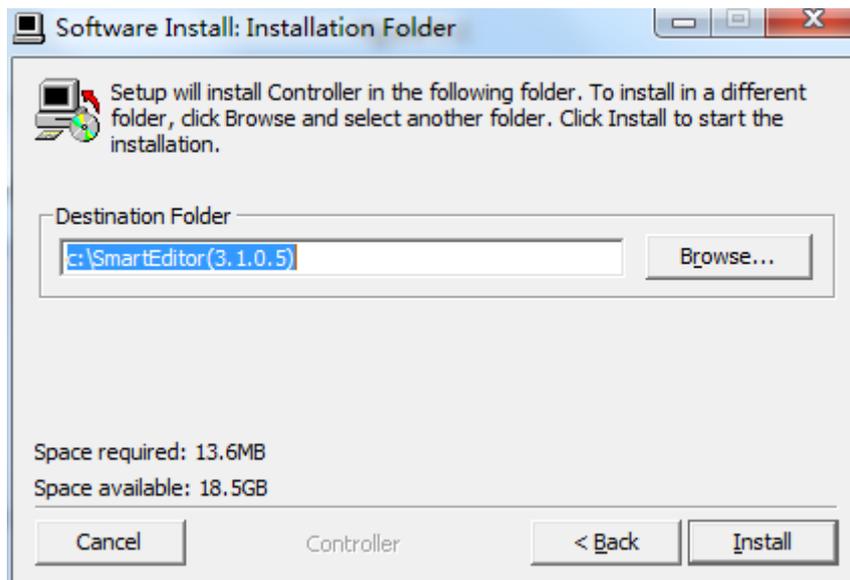


Figure 5-4

(5) Select the suitable installation root directory, and click the “Install”, as shown in the figure 5-4;

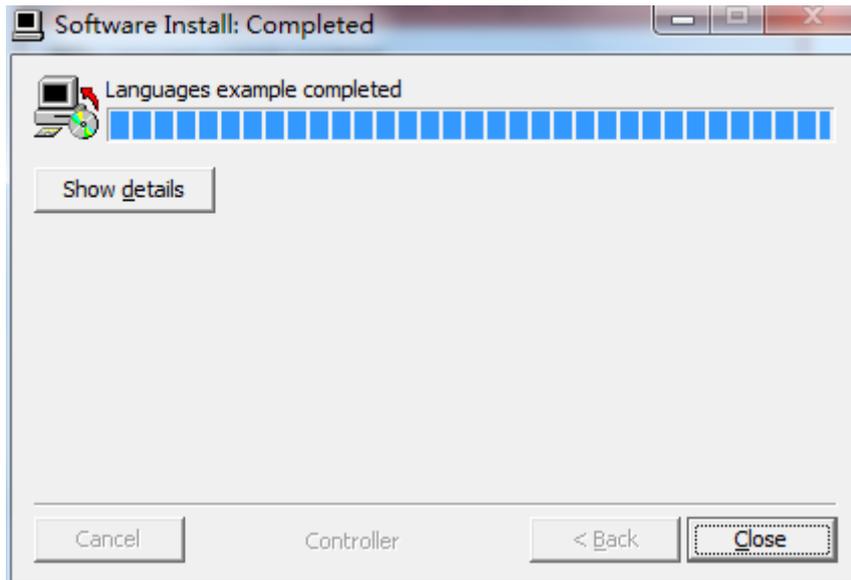


Figure 5-5

(6) If you have installed the software before, the tip of the following figure 5-5 will appear:

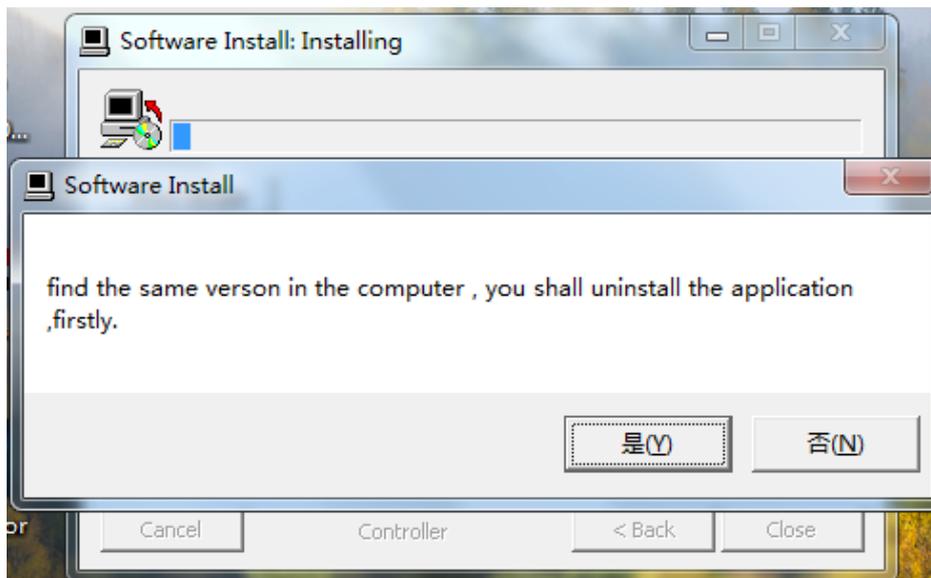


Figure 5-6

Click "Yes" (Y) to unload the installed software.

(7) After the progress bar completes loading, you should click "close" to complete the software installation.

Double click the shortcut of software, the main interface would pop up:

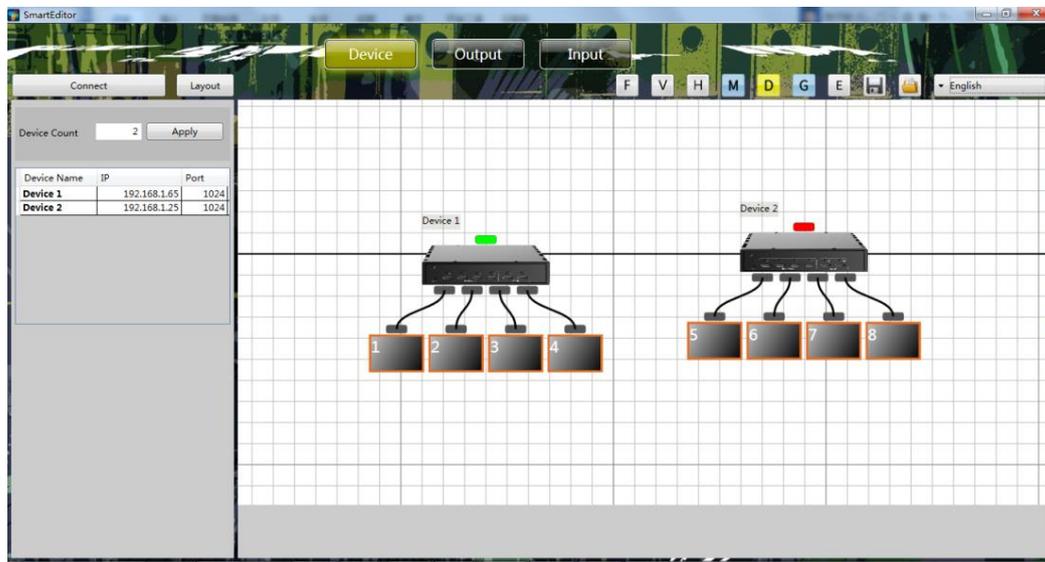


Figure 5-7

### 3) System login

#### (1) Connect to server

The number of the corresponding devices filled in the “device” - “the number of devices”. And click “apply”. The following list shows the information of the corresponding equipment:

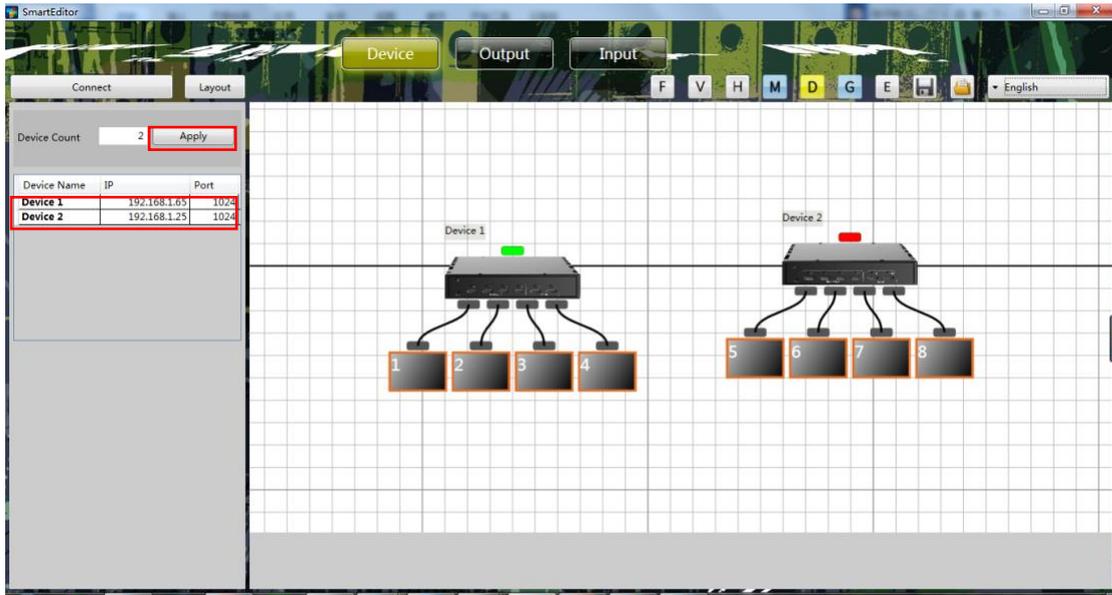


Figure: 5-8

Fill in the right device IP address and port. Clients can define the name of the device by themselves. After clicking “Connect”, the upper computer and the device communicate normally.

**Note: The IP of device default is 192.168.1.25, Port 1024;**

## (2) Disconnect to server

Click “Disconnect”, which would disconnect the computer and the device(s).

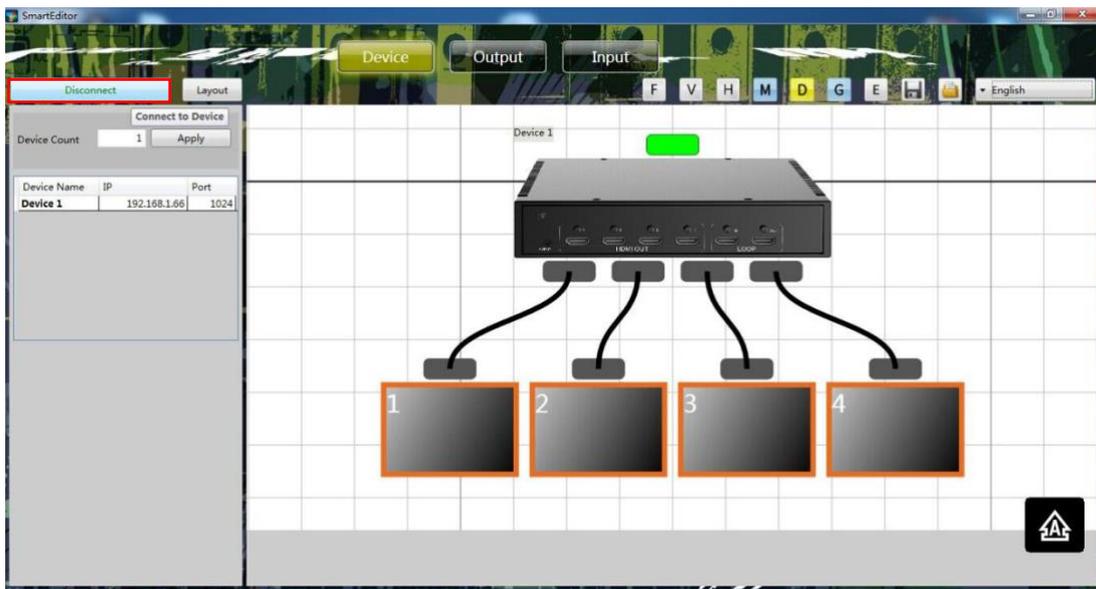


Figure 5-9

### (3) Modify IP

Right click the device list in the interface “device”, the dialog box of modifying IP would pop up:

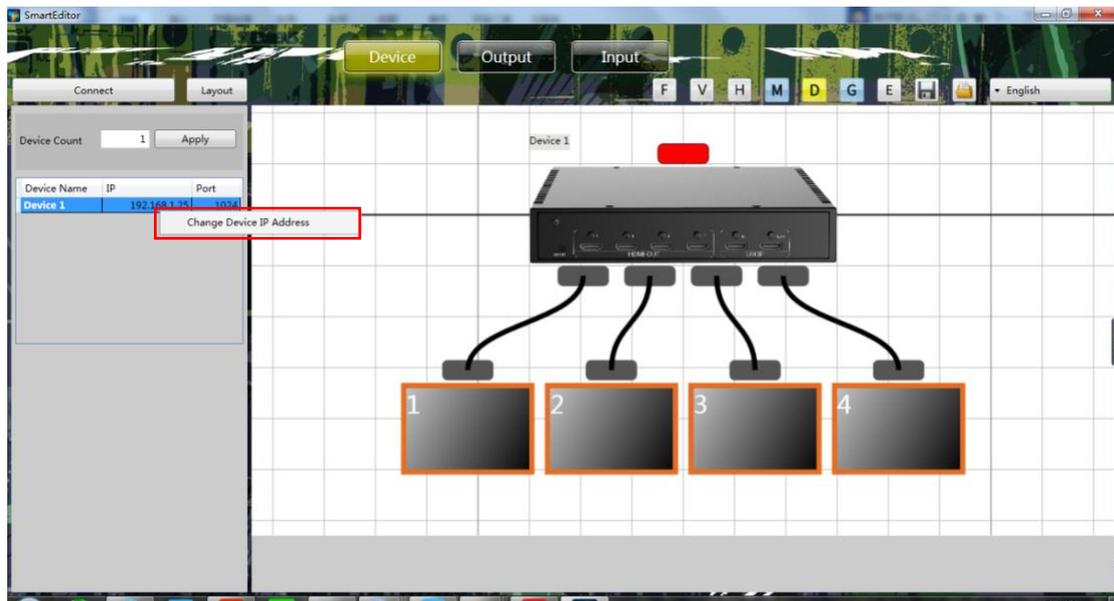


Figure 5-10

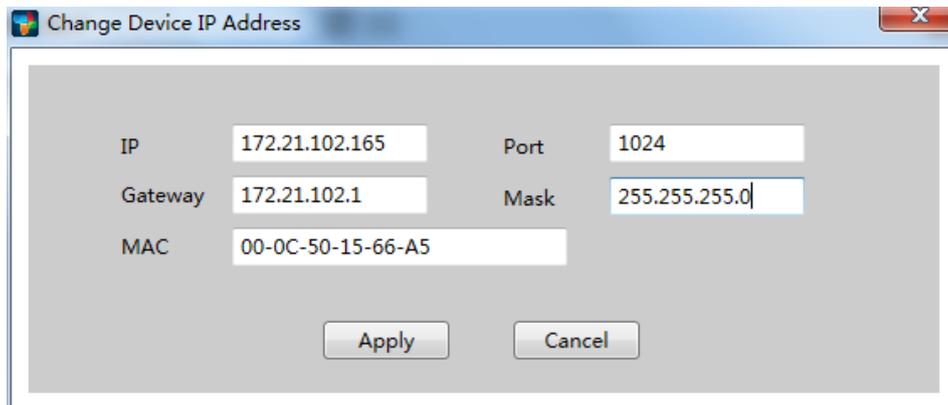


Figure 5-11

Modify the corresponding values, and click “confirmation”. After the device restarts automatically, the IP modifying is successful.

## (4) Notes

If the device IP or the port number is incorrect, the upper computer will give a connection tip of failure:

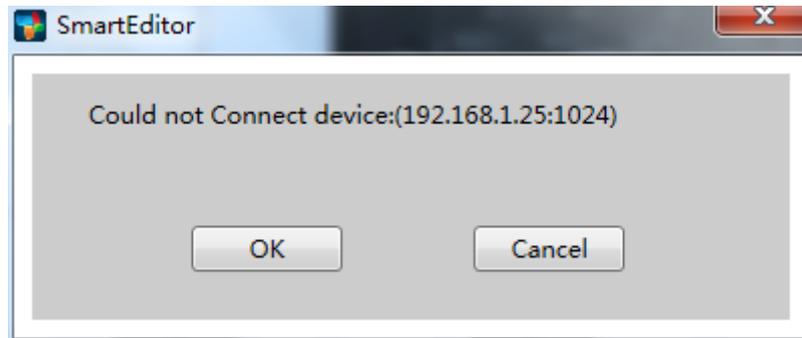


Figure 5-12

Please check the device IP, port, network cables, switches, etc. until the troubleshooting is complete.

## 4) Output settings

Click "output" menu to enter the output settings interface:

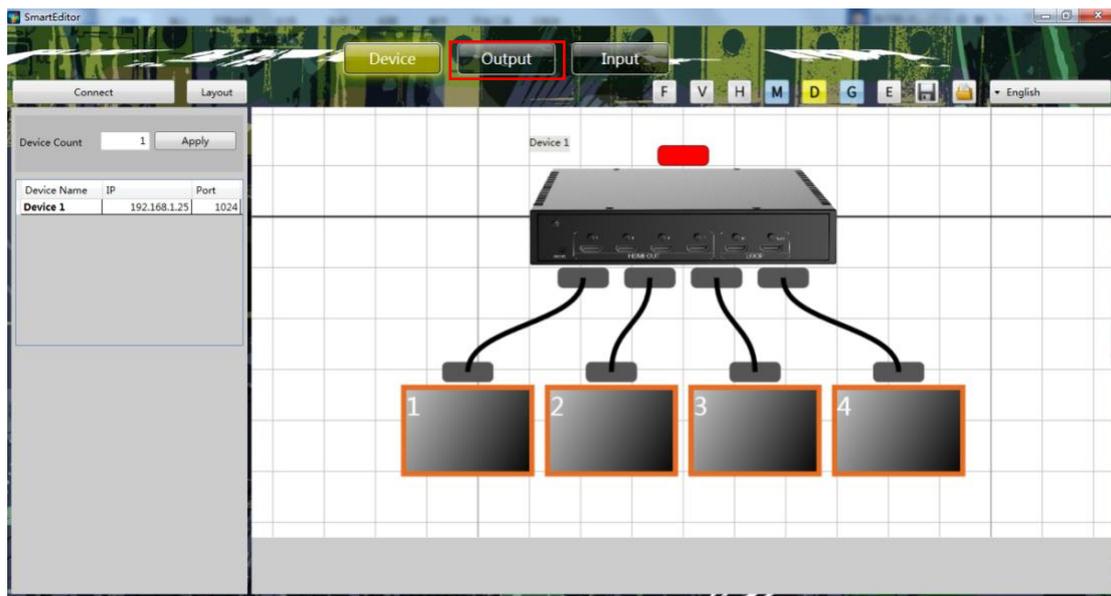


Figure 5-13

The device is flexible, and can be used in conventional splicing, abnormality splicing, etc.

The following contents will be introduced one by one.

## (1) Screen setup area

The red box area is the screen setup area as shown in the figure below:

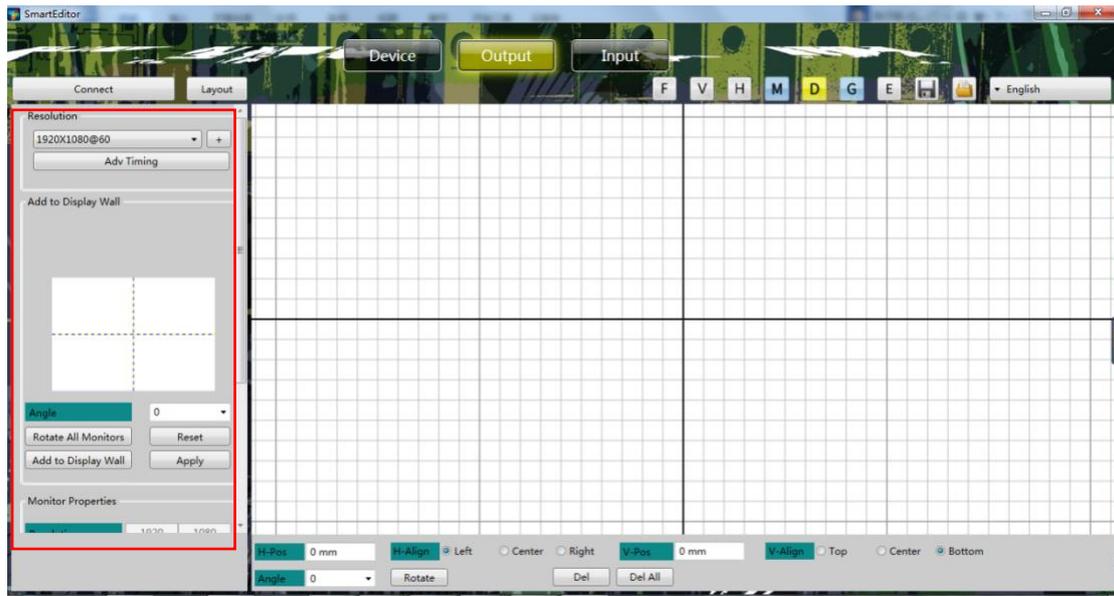


Figure 5-14

### (a) Resolution Setting

Now support 14 different resolutions, also support the customized “advanced timing”.

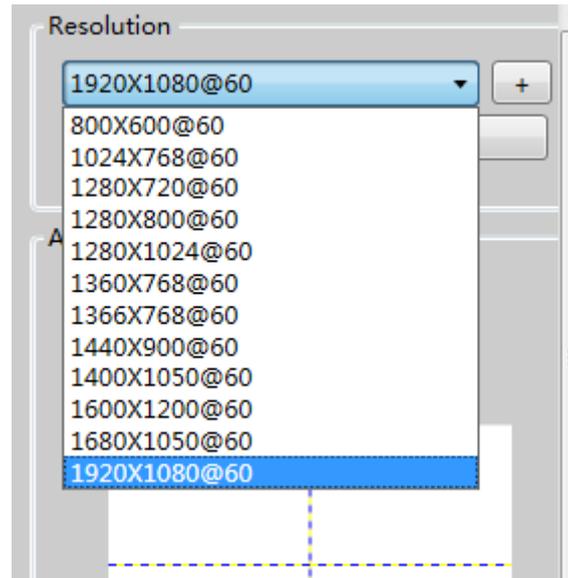


Figure 5-15

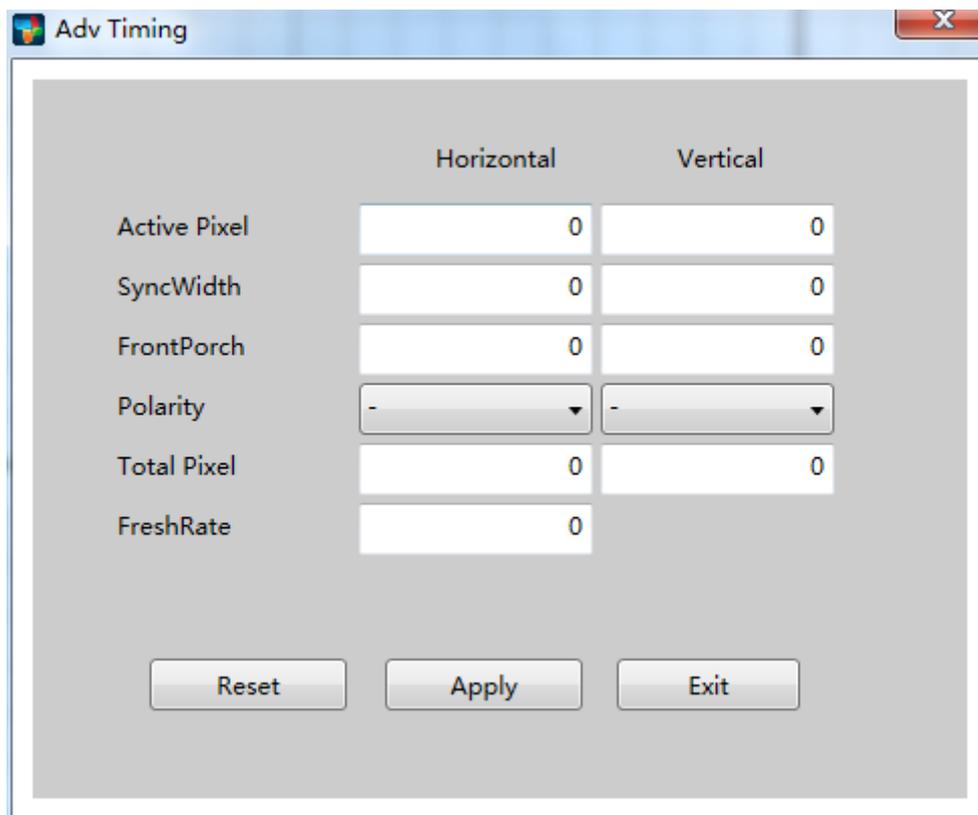


Figure 5-16

Effect immediately after selecting the output resolution;

The client can also modify the existing resolution parameters and clicks the "+" on the right of the resolution to enter the modified interface:

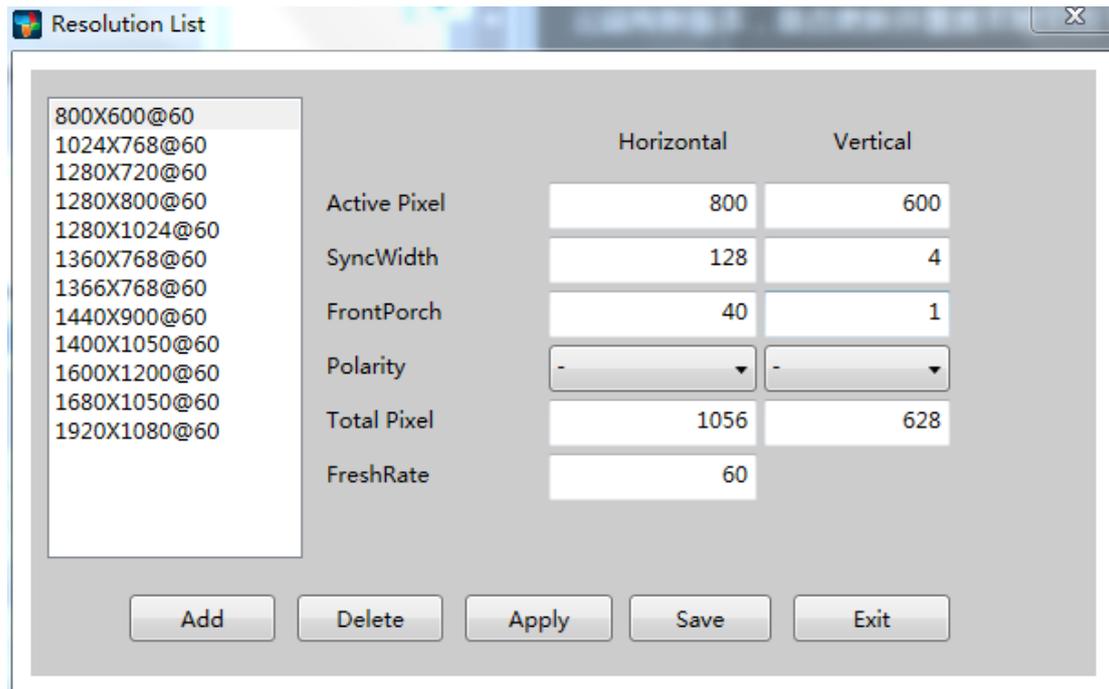


Figure 5-17

**When defining a resolution, only set it by the "+" key, and modifying it via advanced timing is not correct.**

**(b) The setting of display arrangements**

Set up display arrangements according to the actual placement position of the output screen:

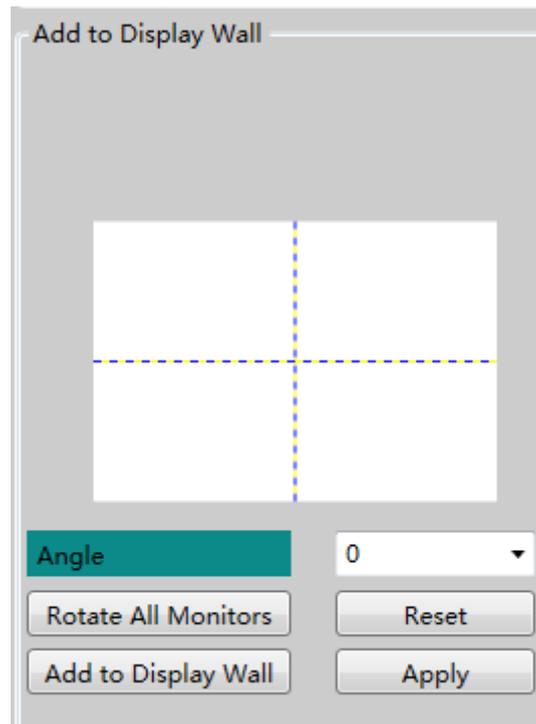


Figure 5-18

The detail steps are as follow:

<1> Click to select the screen of the corresponding position in the four regions. After the screen is selected, it turns black;

<2> Select the required rotating angle in the drop-down menu of the “rotating angle” (can choose four angles);

<3>Click “adding the output screen to the wall”. Observe the setting conditions in the area on the right of “screen setting area I ”;

<4>Clicking “reset” can delete the previous setting;

<5> Clicking “application”, the settings take effect;

For example:



Figure 5-19

**(c) The settings of screen pixel pitch, border width**

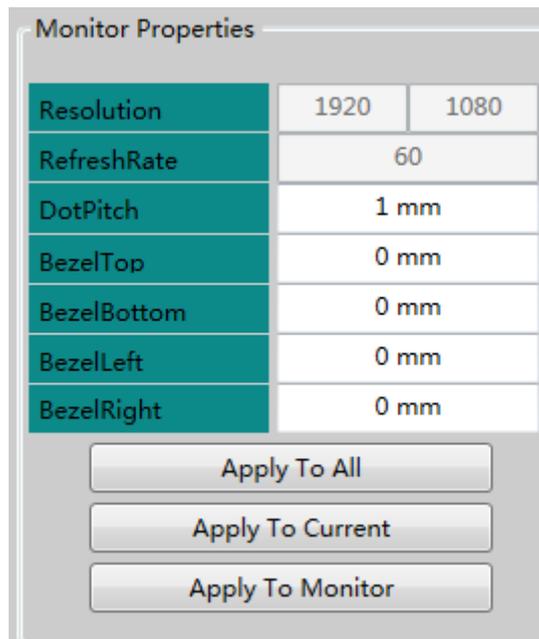


Figure 5-20

Modify screen “DotPitch”, “BezelTop” parameters, click on the “Apply To All” or “Apply To Current” or “Apply To Monitor”, parameters saved successfully.

“Apply To All”: The screen of all equipment uses the parameters filled in.

“Apply To Current”: The currently selected device uses the parameters filled in.

“Apply To Monitor”: The current selected output channel uses the parameters filled in.

## (2) Screen adjusting area

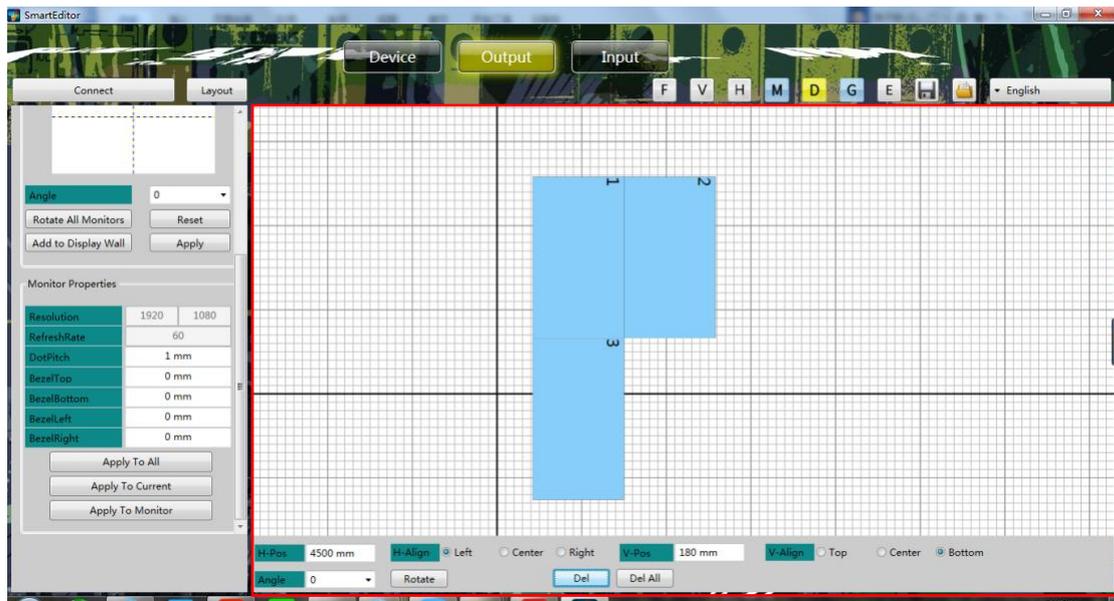


Figure 5-21

The red box area in the figure is the screen adjustment area.

Basic introduction:

<1>Selecting a certain screen, you can see a coordinate axis with blue and red at the edge of the screen. This coordinate axis is used for the screen positioning. Select the position of the coordinate axis below the screen adjustment area.

<2>The mouse can be used for dragging the screen.

<3>Each screen can be rotated at any Angle.

### (a) Screen Position Setting

Method 1:

Use the mouse to drag the screen, and observe the coordinate of the screen below the area.

Method 2:

Select a certain screen, adjust the position of the coordinate axis, and fill in the horizontal and vertical position of the coordinate axis.

### (b) Screen rotation

Click the “Rotate” box below to fill in the desired rotation angle. The screen can be selected at any Angle. The contents of the display will rotate according to the rotation angle.

### (c) Coordinate axis

The position of the coordinate axis can be adjusted by choosing “Left,” “Center” or “Right”.

### (d) Deleting Screen

Select a single screen and click “Del” to display the black screen. Click “Del All” and close all displays.

### (e) The screen sets the auxiliary function

Select a screen, right click, pop-up menu:

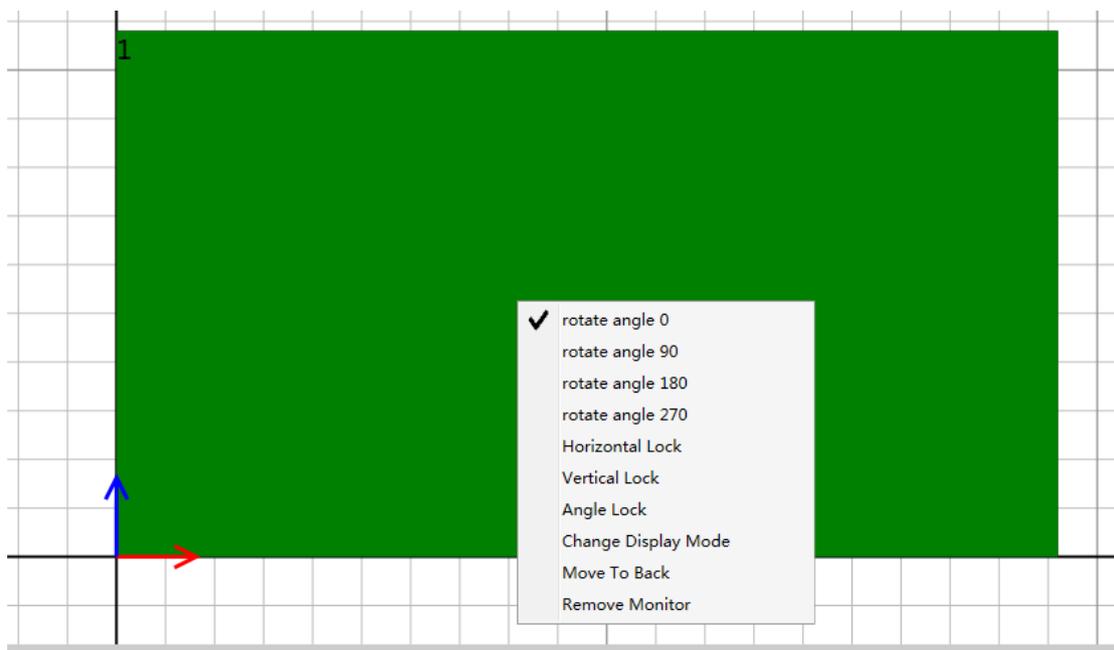


Figure 5-22

Menu introduction:

Quick modification Angle, there are 4 angles to choose from, 0, 90, 180, 270.

“Horizontal Lock”: the output can only move vertically and rotate;

“Vertical Lock”: output can only move horizontally and rotate.

“Angle lock”: Rotation is locked, output can move in any direction.

“Change display mode”: changes the output signal type (DVI/HDMI).

“Move to Back”: the output is placed at the background.

“Remove Monitor”: delete this window.

**Single output can be set up separately, and multiple (press Ctrl) output can be selected at the same time.**

**This function is only used as an auxiliary function to interact with the device. The lock function fails after the client reconnects the device.**

### (3) Auxiliary tools area

There is a sequence of icons on the top right of the “output” interface. This area is the auxiliary tools area.

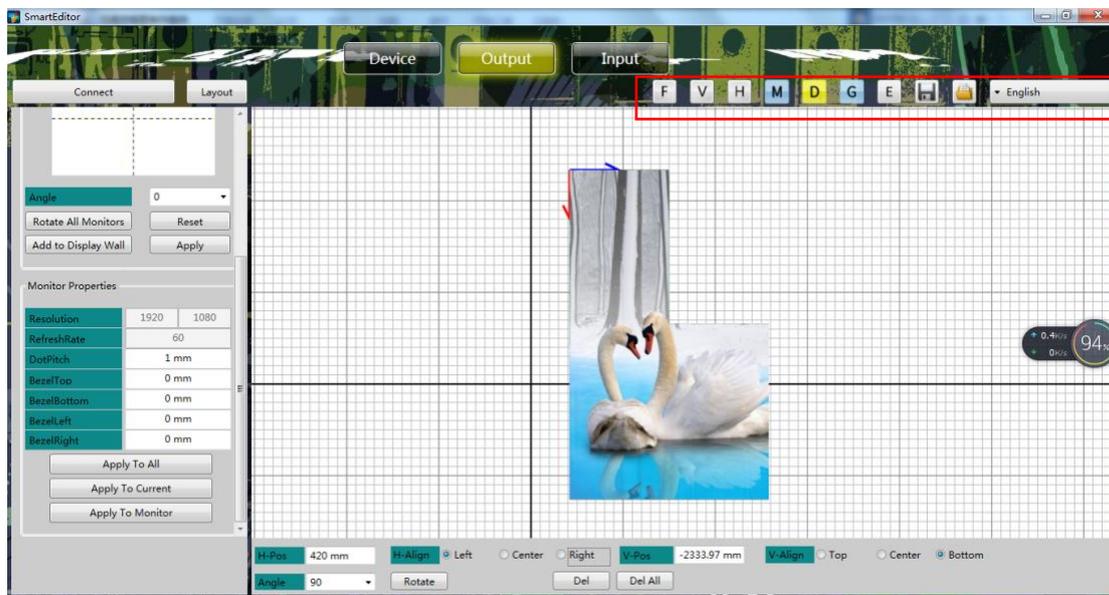


Figure 5-23

Icon introduction:

From left to right, the key will be ordered, which will be labeled "F", "V", "H", "M", "D", "G", "E", "Save", "Call" and "Language" button.

Key "F": upgrade hardware device.

Key "V": check for version information.

Key "H": center display. After clicking this button, the Mosaic screen is automatically centered;

Key "M": display value. After clicking this button, the screen adjustment area shows the parameter;

Key "D": align the output screen. By clicking this button, the edge of the screen automatically snaps together. Click the button again to cancel this feature.

Key "G": align to grid. Click this button to align the left border of the screen to the background grid. Click again to cancel.

Key "E": EDID key. Click this button to open the EDID dialog box, and you can write and load EDID files.

Key "Save": scene Save button. Click this button to open the scene save interface.

Key "Call": scene adjustment key. Click this button to open the saved scene interface.

Key "Language": this option can be used to select the client Language.

## 5) Window operation

### (1) Open window

Enter the input interface, select the signal source, and click the open window button.



Figure 5-24

**Tip:**

(1) If there is already a window open, you can still click the "open window" button, then close the original window and open a full screen window at the same time.

(2) When there are multiple devices, if the device is set to "Change Device" mode, whichever signal source is selected, the window will be opened by the signal source of the main equipment.

## (2) Close window

In the input interface, click the "close window" button.

## (3) Zoom window

Method 1: Place the mouse pointer at the window edge on the non "output" interface. After the pointer changes, you should drag the mouse to change the size of the window.

Method 2: Fill in the corresponding length and width at the bottom of "device" interface. After filling in, press the ENTER button to take effect.

## (4) Scroll window

Method 1: Click to select a certain window on the non “output” interface, press the left button to move the window to the target place.

Method 2: Fill in the corresponding the left value and upper value at the bottom of the “device” interface. After filling in, press the ENTER button to take effect.

## (5) Window animation

In the "input" interface, select different "test mode" and the client window presents different preset animations.

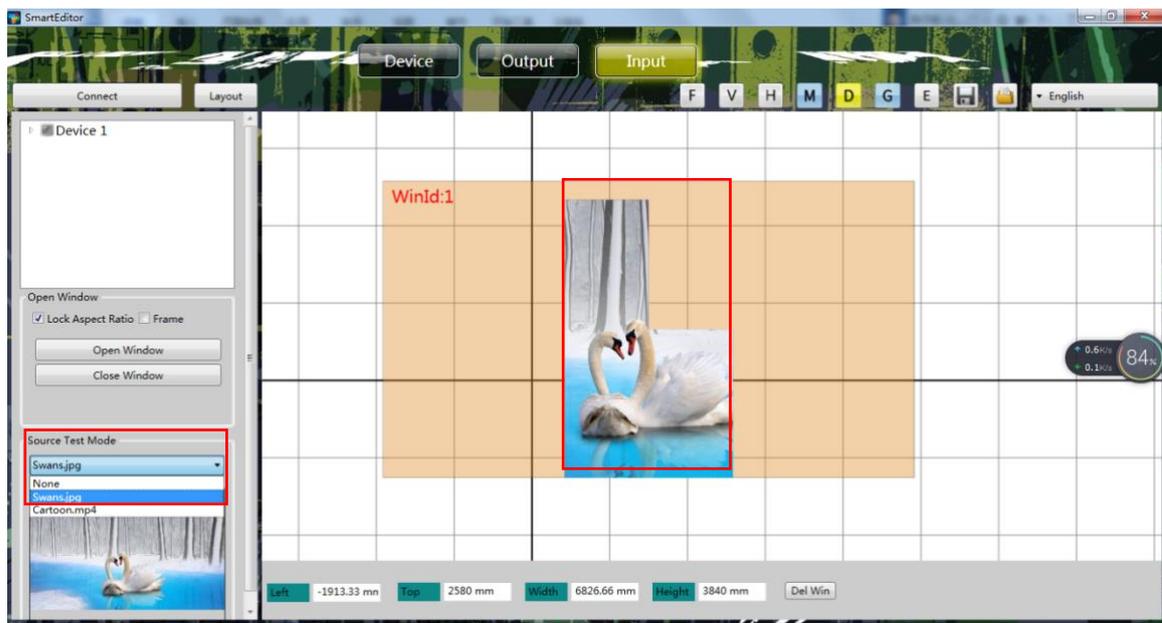


Figure 5-25

## 6) Update EDID

In the list of devices in the "input" menu, click select a device name, and right click:

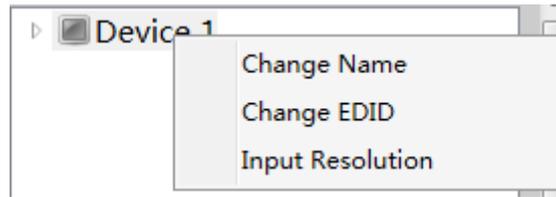


Figure 5-26

Select "Change EDID", pop-up dialog box:

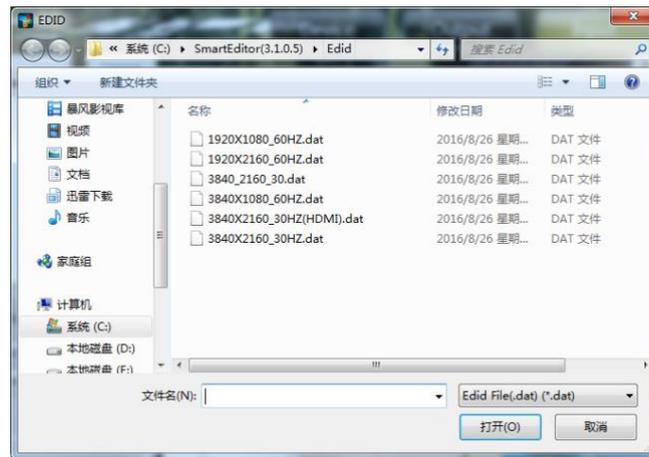


Figure 5-27

Select the correct EDID file and click open.

If the update is successful, the program will give the following tip:

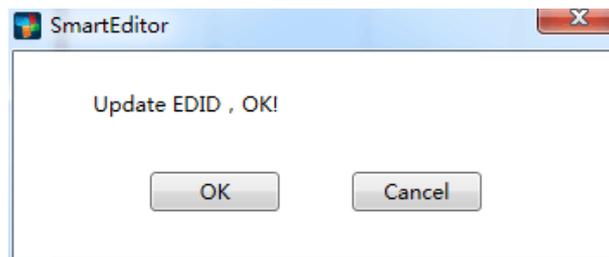


Figure 5-28

If the update fails, the program will give the following tip:

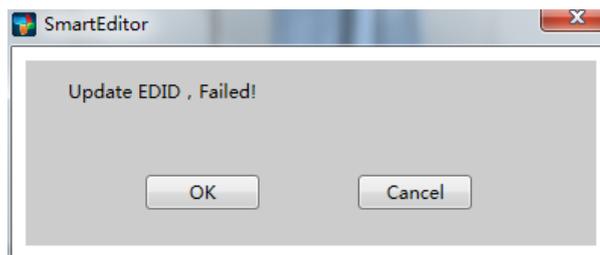


Figure 5-29

Check in detail until the troubleshooting completes.

## 7) Change Mode

When the device connected, enter the "device" interface; double-click the device to pop up the dialog box.

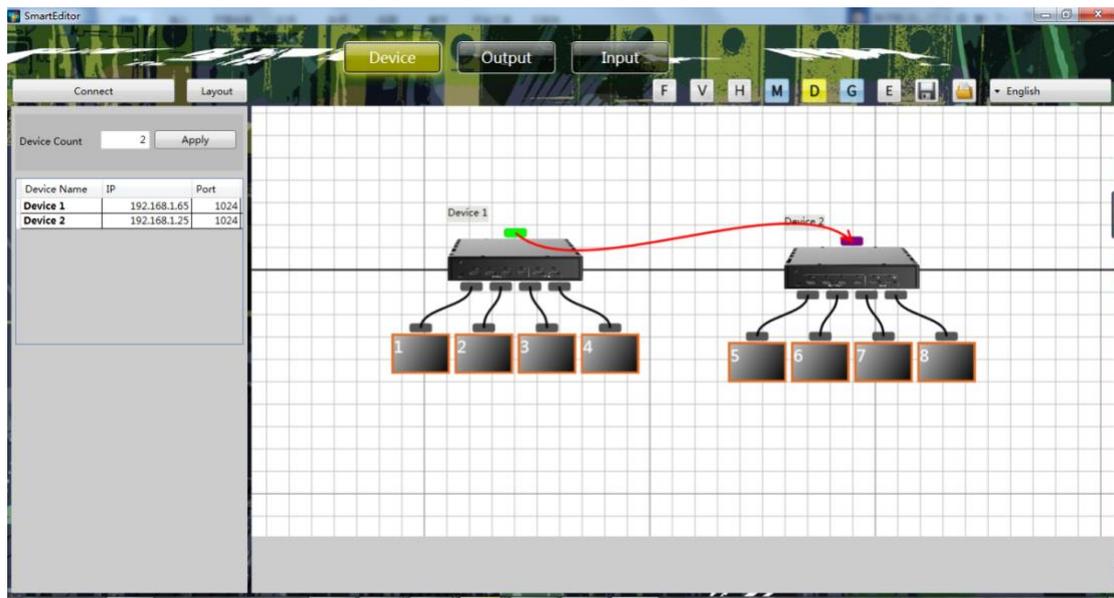


Figure 5-30

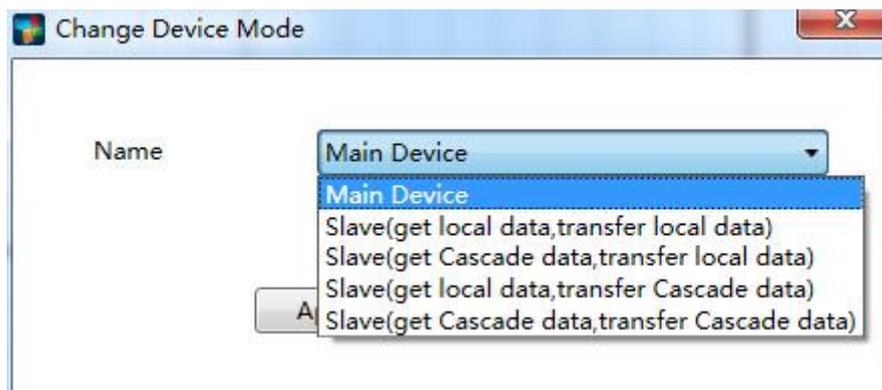


Figure 5-31

**Note:**

A primary device must exist at the device level, and the IP address of the device needs to be filled in the first line.

The sequence in the device list corresponds to the IP filling sequence in the "device".

## (1) Select the mode

The definition of each mode:

- Main Device: The main device of the cascading system,
- Slave (get local data, transfer local data): This device will use the local input for video output, and will send its local input to the next device.
- Slave (get cascading data, transfer local data): This device will use the signal from cascading input for video output, and will send its local input to the next device.
- Slave (get local data, transfer cascading data): This device will use the local input for video output, and will send the signal from cascading input to the next device.
- Slave (get cascading data, transfer cascading data): This device will use the signal from cascading input for video output, and send the signal from cascading input to the next device.

## (2) Cascade set

In one group of cascading devices, there can only be one host device. According to the connection and IP, find the device and set it as "main device". Set the rest as "Slave device , get xxx,transfer xxx".

Case 1:

Selected Device-1 as main device. Set the rest as slave (get cascading data, transfer cascading data).

At this case, the image from Device-1 local input source can be displayed on all the windows, which achieves the cascading function.

Case 2:

Selected Device -1 as main device. Select Device-2 as slave device (get cascading data, transfer local data. Set the rest as slave device (get cascading data, transfer cascading data).

In this case, Device-1 and Device-2 will display as the input of Device-1, the rest of devices display as the Device-2's input. The input from Device-1 cannot be displayed on the rest devices except device-1 and device-2.

### (3) The limitation of open the window

In the cascade state, the open window has restricted conditions and follow a principle: **“One device can only have one window”**.

For example, there are windows in any outlet of Device-1, and no other windows are allowed to appear on any of the four outlets.

The device can be used as signal source to open windows, regardless of the device owner and setting, as long as the device is set as “take the local source”. If the device is set as “take the cascade source”, the signal source of the opened window is its main device.

### 8) Modify device name

In the "input" interface, right-click on the device list, select "change name", and modify the device name.

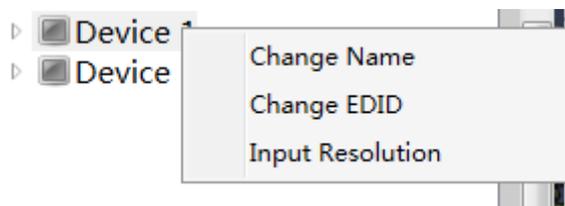


Figure 5-32

### 9) Query input resolution

In the "input" interface, right-click on the device list, select "input resolution", and modify the input resolution of the device.

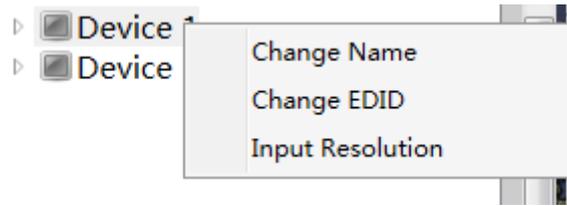


Figure 5-33

## 10) Version of the query

Click the "version" above the client, from the pop-up dialog to view the client and the software version number.



Figure 5-34

## 6. Online upgrade

The iWall 360 supports network upgrade for mainboard firmware through the upper computer program;

Right click on the upper computer software icon, select "open file location" and select "UpdateUtil. Exe" from the folder "UpdateUtil".

**Note:** the program is automatically closed after this application is opened.

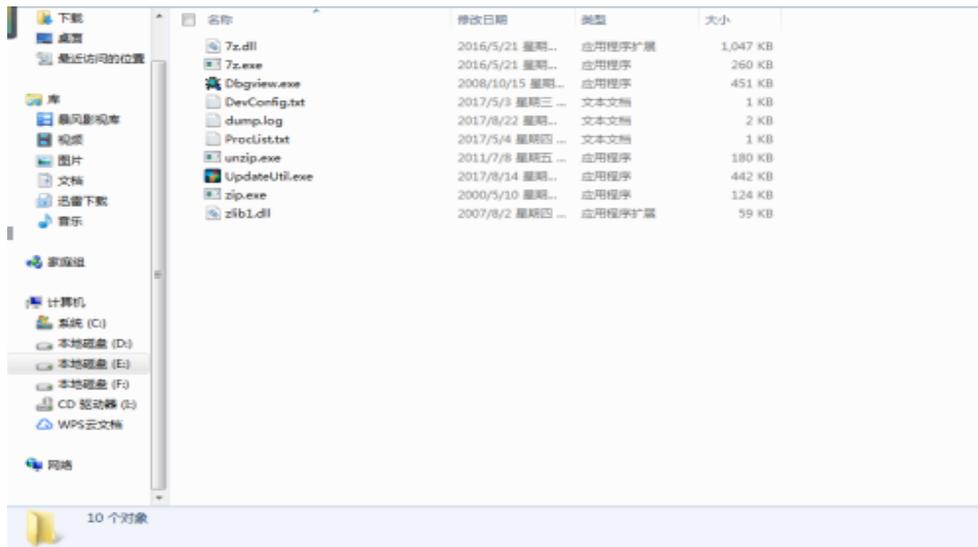


Figure 5-35

Open the upgrade tool, then enter the IP address and port of the upgrade device, click the Select button to select the upgrade file, and then click Update to upgrade.

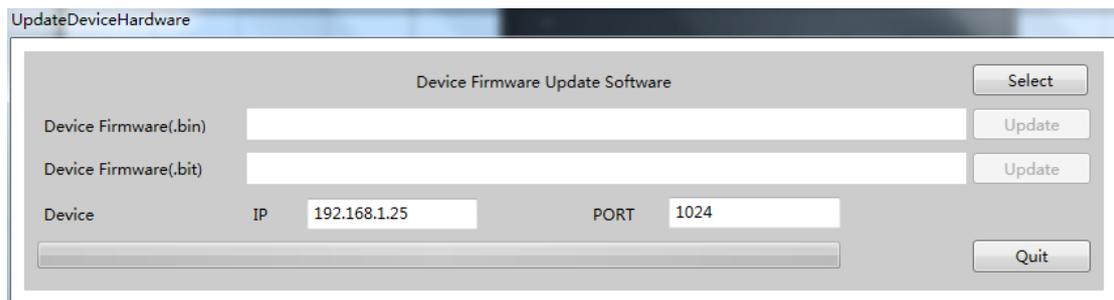


Figure 5-36

After the MCU upgrade is completed, the equipment will restart automatically, and the FPGA upgrade will need to be restarted manually.

When the upgrade is completed, the prompt box will pop up and wait for the countdown to complete before the power can be off again.