Safety precautions

Danger

●High voltage exists in the device and non-professional maintenance personnel shall never open its back cover, lest risks happen.

Warning

●This is not a waterproof device, so appropriate waterproof measures shall be taken in a damp environment;

●Never have this device kept near any fire source or high temperature environment;

●If this device gives out strange noise, smoke or smell, unplug the battery socket immediately and contact with its dealer;

●Never plug/unplug any charged VGA or DVI signal cable.

Caution

1. Please read this Manual carefully before operation and keep it properly for future use;

2. In the case of lightning or long-term downtime, please unplug the power socket;

3. This device is not suitable for non-professional debugging or operation, so please use it under the guidance of professionals;

4. Never force anything into this device from its air vent, lest device damages or accidents happen;

5. This device should not be placed or used near water or wherever

wet;

6. This device should not be placed or used near cooling fins or wherever hot;

7. Please clear up and keep the power lines properly to prevent damages;

8. If the following situations occur, unplug the power socket of this device and contact for maintenance:

●When this device is contaminated with liquid;

●When this device is dropped or its framework is damaged;

●When this device suffers from significant dysfunction or obvious performance deterioration

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This product is the first truly multi-window splicer in the industry, and as a professional video processing and control equipment, it can act as a splicer controller specially targeting such equipment as oversized screens, projection and LCD.

The multi-window splicer processor researched and developed by our company uses a pure FPGA hardware architecture subject to no operating system and the whole system can work in a completely closed environment, so it features simple operation and high stability.

It has been widely used in monitoring/dispatching command centers and video conference centers, etc.

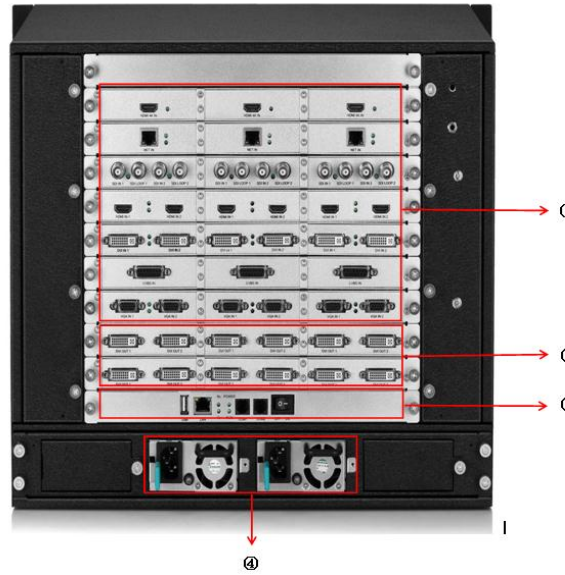
As the management software designed for this platform, the user can complete parameter settings and operation management of hardware equipment by means of this software and the whole operating process is completely intuitive and convenient.

It is applicable to such operating systems as Windows XP, Windows 7, Windows 8 and Windows 10.

The following instructions are all based on the operating system of Windows 7 as an example.

I. Hardware

1. Back panel



1. Input board/card: able to support input of such signals as DVI, VGA, CVBS, HDMI, SDI, IP stream and 4K and able to be extended to 216 channels at most.

2. I/O board/card: full DVI-I output, able to support 30 channels of splicer output at most

3. Control board/card: including power switch, COM port, Ethernet port and USB

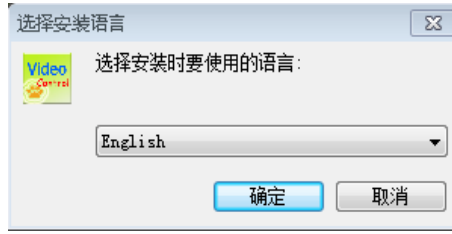
4. Power supply: at most four redundant power supply sources

2. Wiring diagram

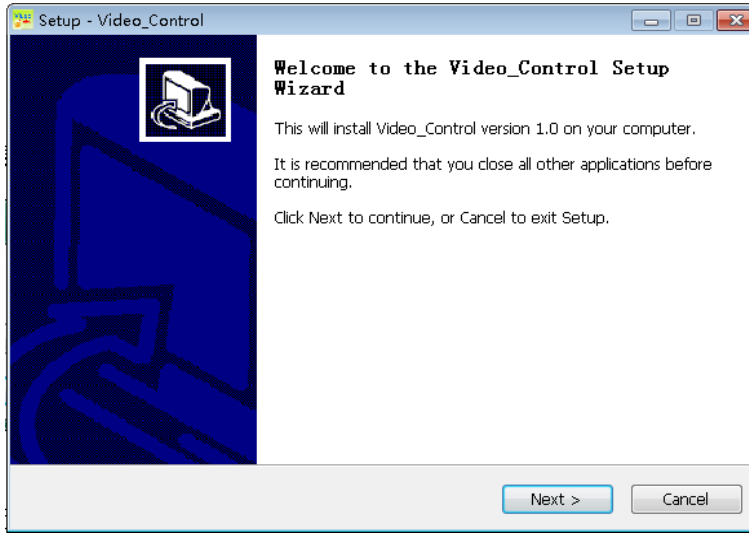
II. Software Installation

Insert the CD attached in the distribution box of this product into the CD driver and you can view the CD contents in the file manager.

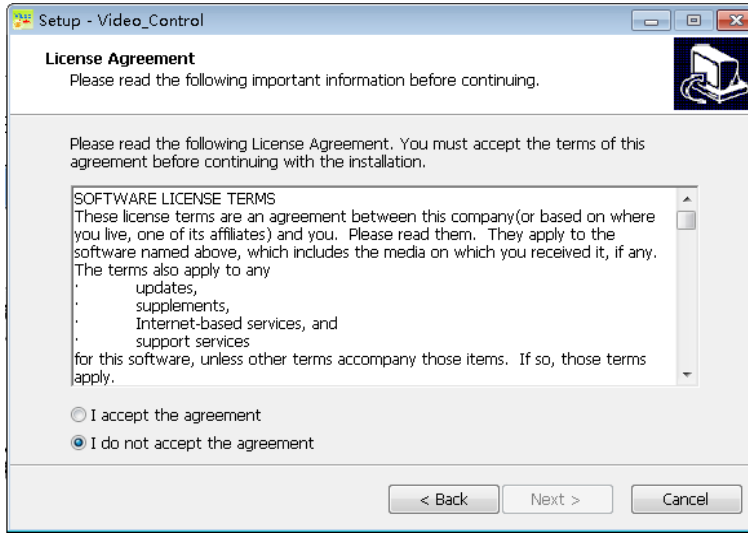
Double-click the “Software Installer” and it will pop up the following interface:



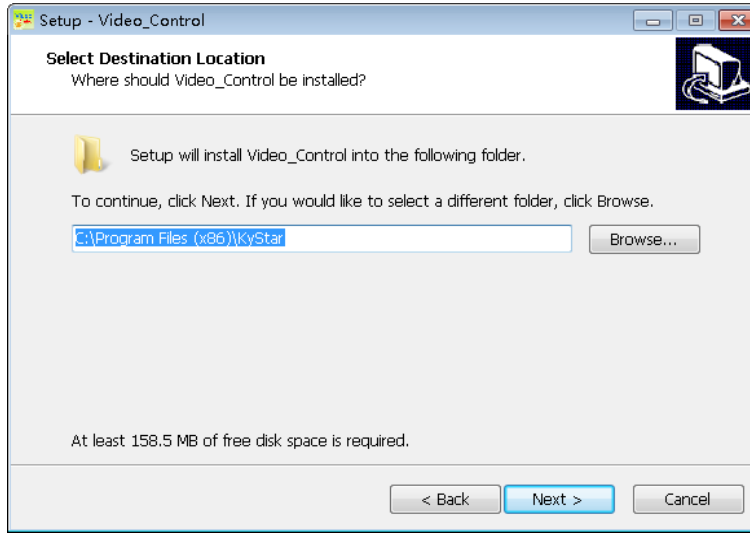
Select the installation language, click “OK” and it will enter such installation wizard as follows:



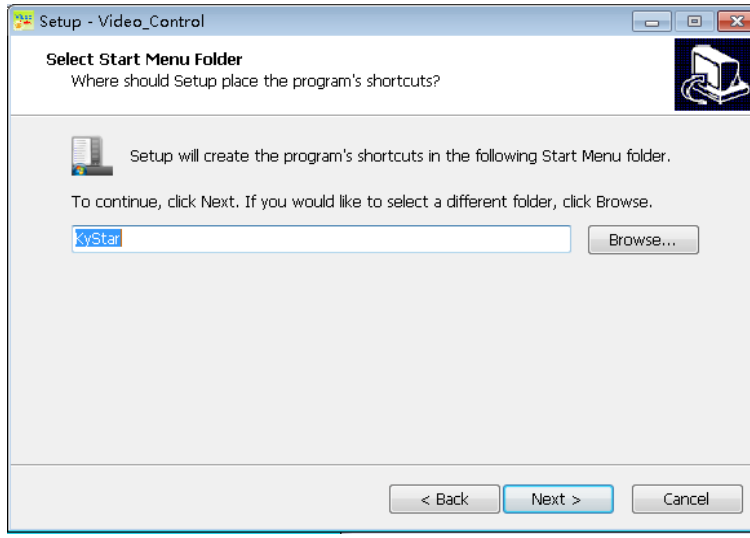
Click “Next” and it will pop up the interface as follows for you to read the installation license agreement:



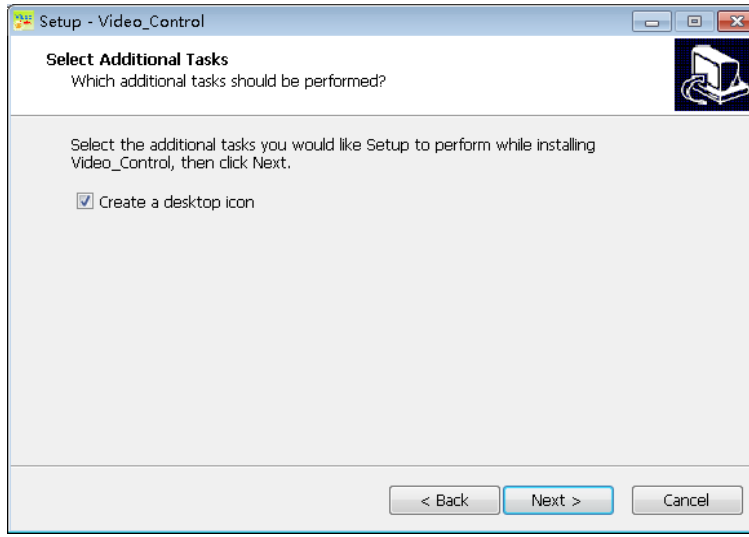
Please read the installation license agreement carefully; if you accept the agreement, please click on “I accept the agreement”, then click “Next” and it will pop up the destination position interface as follows:



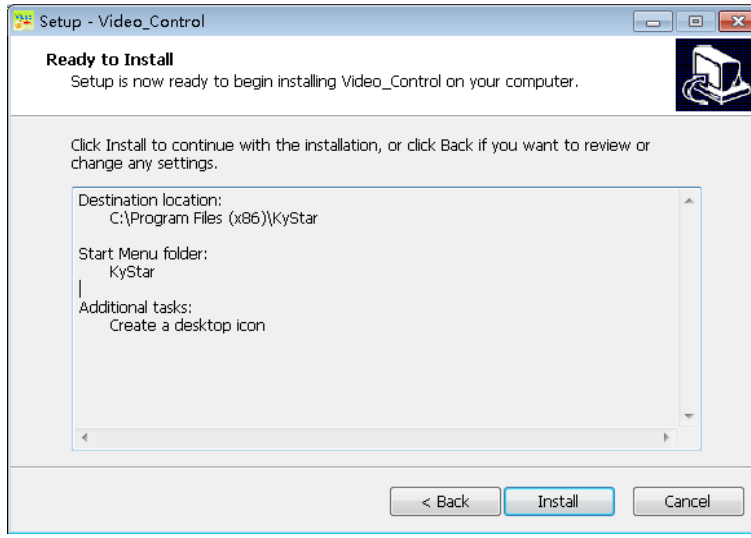
Select your desired installation path, click "Next" after confirmed and it will pop up the interface "Select Start Menu Folder" as follows:



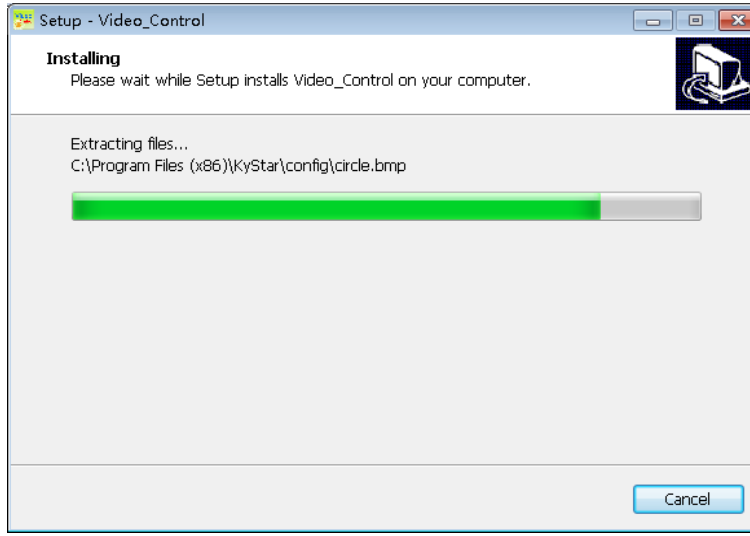
Select the shortcut path and click “Next” after confirmed.



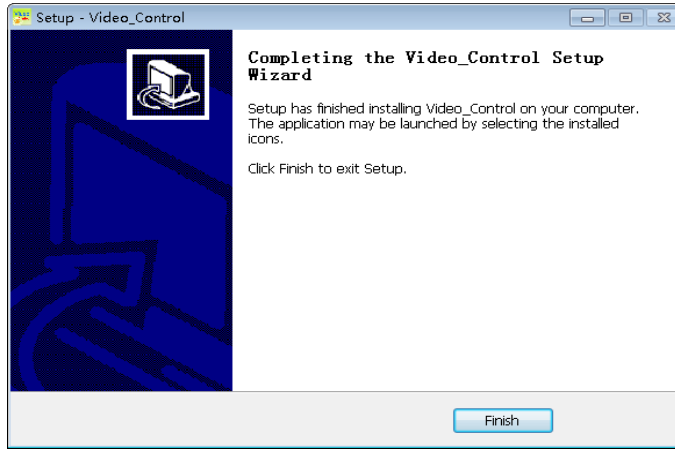
To continue, click “Next”



Confirm the installation information and click “Install” to start the installation process:



Wait until the system pops up the following information and it indicates that the installation is successful:



Till now, the software has been completely installed; double-click the software shortcut icon on the computer desktop to enter the software Settings interface.

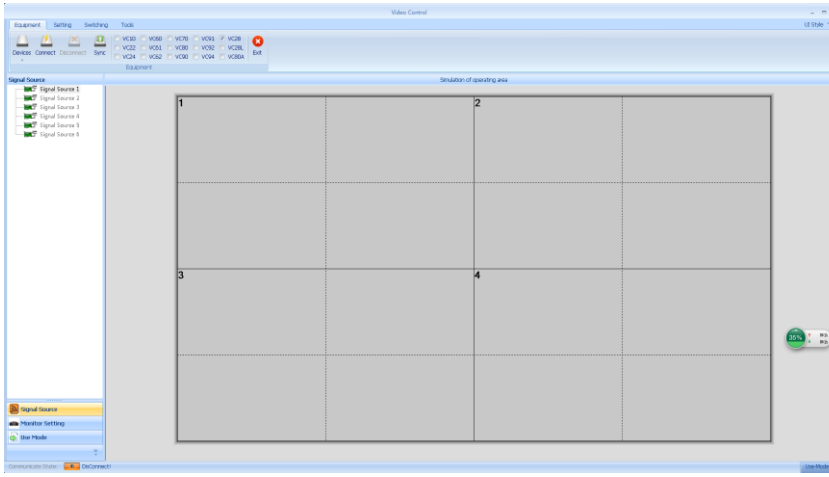
III. Equipment Connection

1. Software open

Double-click the software shortcut on the desktop to open the software and it will enter the software start page as shown in the figure below:

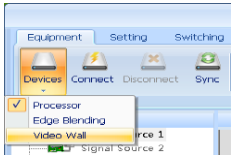
For the first use, there is no password so just click “OK” directly; if a user password has been set, the software control/setting will not be accessible unless the correct password has been entered.

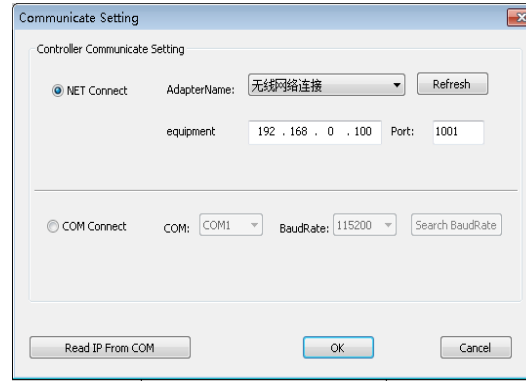
Click “OK” to enter the software main interface as shown in the figure below:



2. Software connect

Click “Equipment”, select “Video Wall”, then click “Equipment Connect” and it will pop up the “Communicate Setting” window as shown in the figure below:





This software has “Net Connect” and “COM Connect” available; when different “Connect” modes are selected, different preparations will be necessary.

(1) Select the “NET Connect”.

I. Wiring

Use a CAT5 network cable and connect its two ends to the processor LAN port and the PC network port respectively (or connect via a switchboard).

II. Change the local access IP

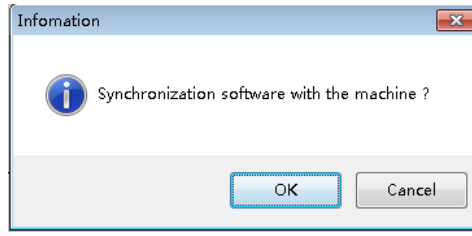
In the operating system of Windows 7, click “Start → Control Panel → View Network Tasks → Change Adapter Settings” to find out the LAN and you can right click it to select properties.

Double-click the Internet protocol version 4 (TCP/IPv4) to change corresponding data.

Note: If the equipment IP is segment 0 by default and the IPs of other equipment can be ensured within the same field and numbered differently, proper access is available. If you want to change the IP network segment, you need to change it in the current software settings.

III. Set up communications

During software communication, select the “NET Connect”, directly click “OK”, and if the connection is successful, it will pop up an information box as shown in the figure below; then just click “OK”.



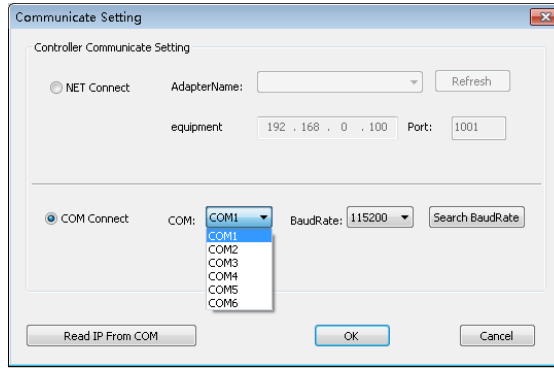
(2) Select “COM Connect”.

I. Wiring

Connect both ends of the RS230-RJ11 cable attached to the processor COM1 port and the PC serial port respectively (if there is no 9-pin serial port, a serial port-USB adapter shall be used to change it into a USB which can be connected to the PC USB port).

II. Change the COM port

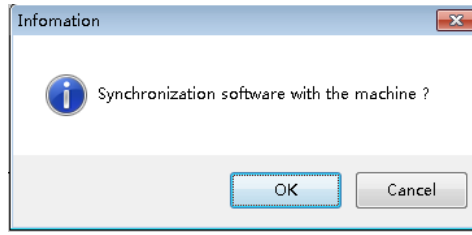
During software communication, select “COM Connect”:



In general, the software can identify the COM port automatically and the user can just click “OK” with no setting necessary. But in some cases, a PC may have several COM port working at the same time to result in software identification error; then, you need to select a COM port (Please try one by one).

III. Set up communications

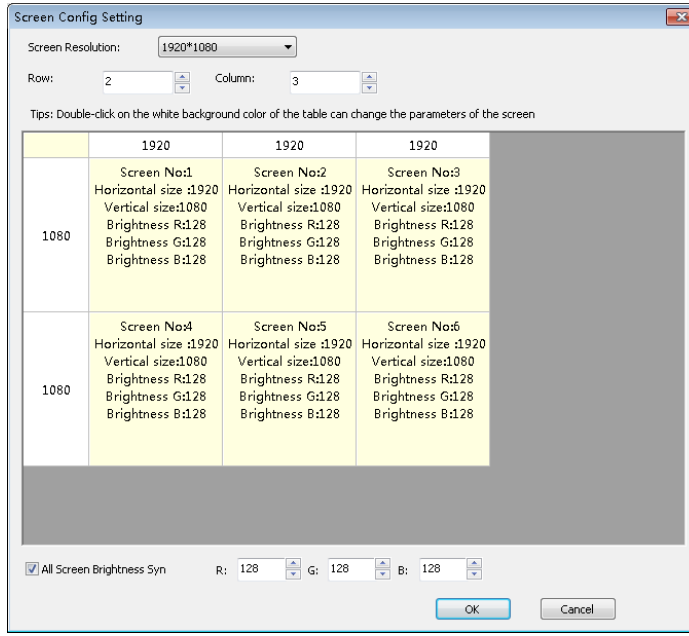
During software communication, select the “NET Connect”, directly click “OK”, and if the connection is successful, it will pop up an information box as shown in the figure below; then just click “OK”.



IV. Software Settings

1. Output port settings

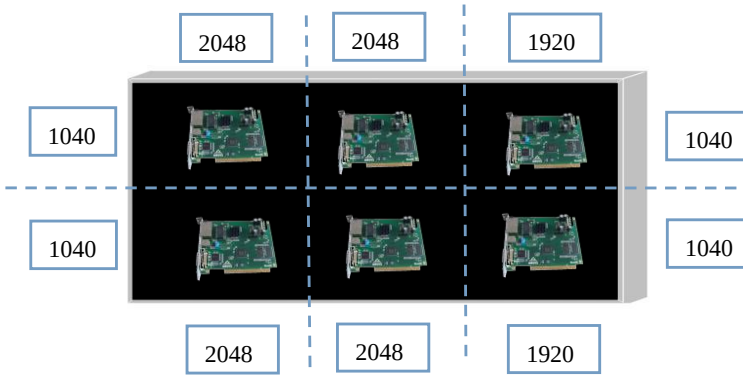
After the equipment is successfully connected, click on the “Screen Config Setting” in the “Main Functional Area” and it will pop up the “Screen Config Setting” interface; the six dotted boxes feature one-to-one correspondence to the equipment output ports (from left to right from the rear) and you can set the load of each output port and the arrangement modes of such output ports on this interface as shown in the figure below:



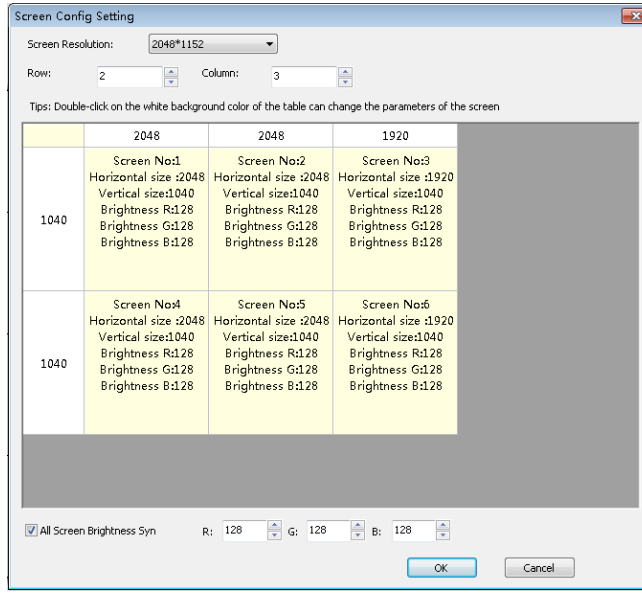
The “Screen Resolution” refers to the maximum resolution each port can output and is generally greater than or equal to the resolution of each transmitter card or display screen.

The “Row” and “Column” can be set as required, the “1920” and “1080” after “Screen Resolution” can be changed freely according to the actual loaded pixels, double-click such numerical values and you can change them.

For example: If the screen size is 6016 * 2080 with six transmitter cards loaded, then the loading scale and arrangement should be determined as shown in the figure below:



Then, you need to complete such settings as follows in the interface of “Screen Config Settings”:



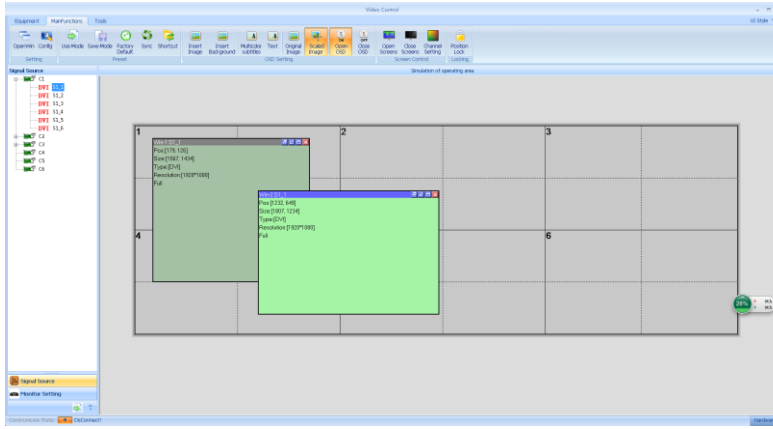
P: If “All Screen Brightness Syn” is checked, it indicates that the following modifications of the color values target all output ports but if not, you can adjust the color of a single output port.

Set the arrangement modes and loaded pixels of the output port and then click

"OK" to return to the operating area.

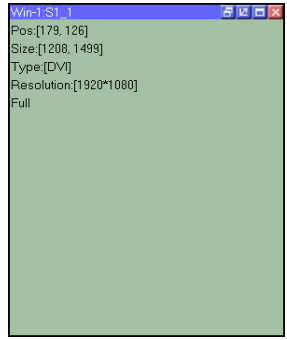
2. Window setup

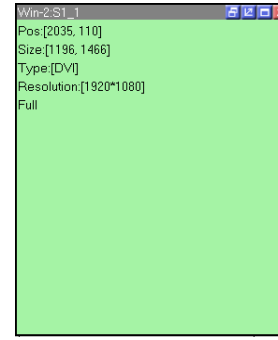
After the above-mentioned settings are completed, the whole large screen (the grey area) has been joined, but to achieve display on the large screen, a window needs to be set up; here we take 2 rows and 3 columns as examples to show how to set up a new window.



Hold the left mouse button to drag in the operating area, release it when a rectangle has been drawn and a new window will have been set up (or click "OpenWin").

The window top bar is gray and blue highlighted; when the window is blue, it indicates that this window is selected and direct operation is available; when the window is gray, it indicates that the window is not selected, and if operations are needed, you should left-click this top bar and then you can set the window parameters until the bar has become blue. The states of "Selected" and "Not Selected" are illustrated in the figure below:



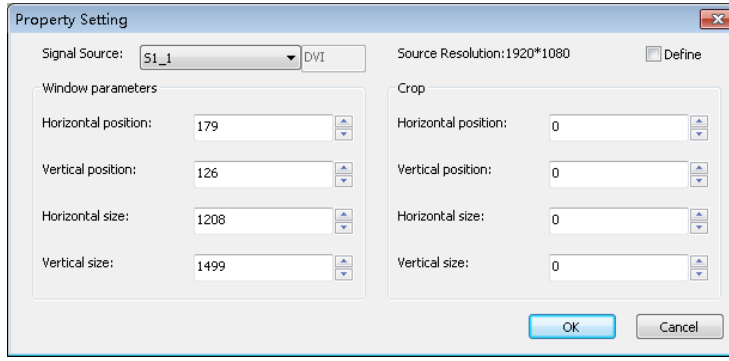


In the state of "Selected", right-click this window and you can see a series of function menus for this window:

Name	Functional descriptions
Save Settings	Save the parameter settings currently completed in a total of 200 storage spaces.
Top	Move the current window to the top layer.
Bottom	Move the current window to the bottom layer.
Property	Set the properties of the current window.
Full → Part	Switch between "Full" and "Part": The "Full" and "Part" mean the full and partial windows respectively of the input signal (You

	can change the input scale in the window properties to select the size and position of the partial image; if no setting has been made and the window size is smaller than the resolution of the input signal, then the partial window is identical to the window size by default with the starting point of 0, 0).
Full Screen	The current window covers the whole screen.
MaximumInunit	Suppose the operating area is divided into several sectors by dotted and solid lines, the current window may cover several sectors but not completely fill such sectors, operate this way to have the current window fill the sectors.
Restore	Restore the window size as it has not been adjusted (after the "Full Screen" and "MaximumInunit" operations)
Close	Close (Cancel) the current window.
Close All	Close all windows in the simulation operating area.

Click "Property" and you can see:



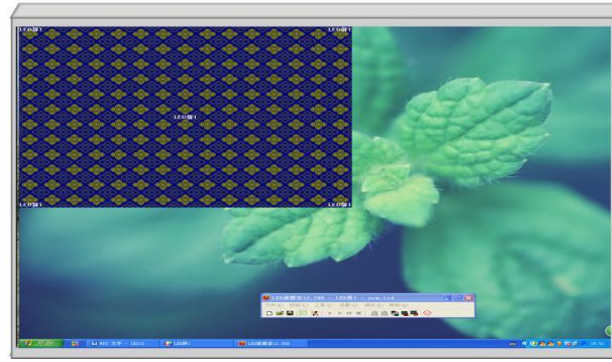
The "Property Setting" mainly includes the following three items: Signal Source, Window Parameters, Crop (partial display).

The "Signal Source" is provided for you to select the desired signal source of the current window and also you can directly click on the signal source in the left signal source column to switch signal sources.

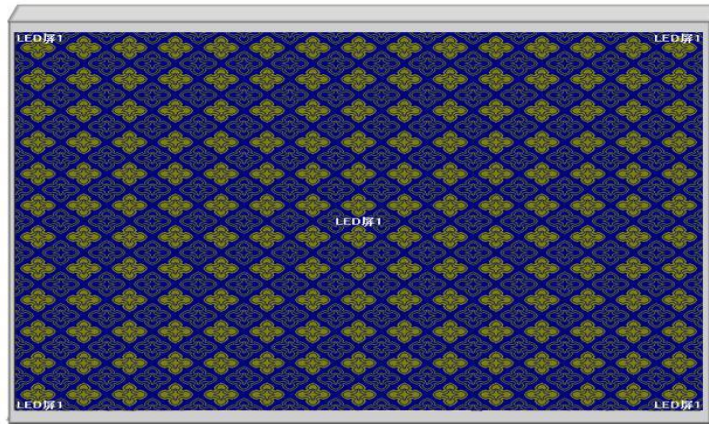
The “Window Parameter” is provided to set the size of the current window, and if the whole screen is to play a single window, just set the window size identical to the screen pixel size; if it is necessary to present the effect of multiple windows, adjustment should be made according to the actual situation.

The “Crop” parameters are used to specify the size and position of the input area, for example:

Position (0, 0)
Size (800*600)



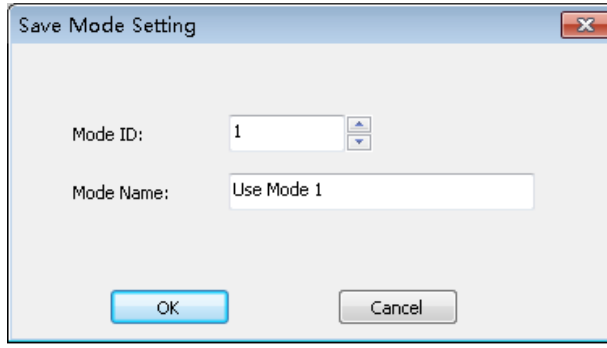
To intercept the blue cloth area and play it back in a certain window, you need to set the window scaling horizontal and vertical positions both as 0 and set the horizontal and vertical sizes as 800 and 600 respectively; if the size of this window is equal to the full screen, then the on-screen effect should be as follows:



3. Mode Save/Call

1. Mode Save

Click “Save Mode” in the main functional area and it will pop up the interface “Save Mode Setting” as shown in the figure below:

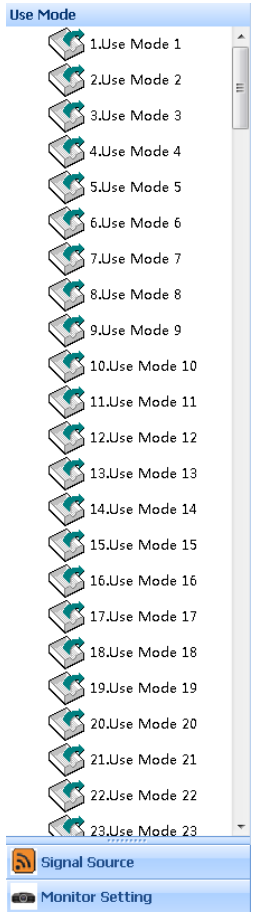


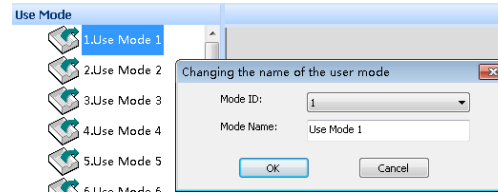
In this interface, you can change the “Mode ID” as needed, i.e. save to which mode, and also you can change the mode name according to your own demands (not including pre-monitoring and hot backup settings).

P: The “Mode 1” data will be enabled by default in time of startup, so it is recommended that you save the display mode data most commonly used in Mode 1.

II. Mode Call

Click on the left “User Mode”, then click the corresponding mode and you can call its display; in addition, right click on the user mode and you can change its name, so that it could be more easily remembered and used, with the details as shown in the figure below:





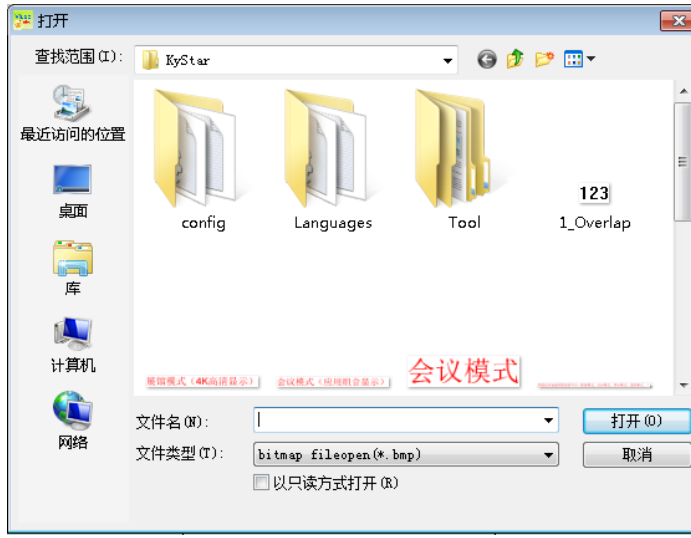
V. Characteristic Functions

OSD (On Screen Display) refers to a graphic subtitle overlay system, which can import graphic subtitles into the processor via this software and set up the corresponding properties of such subtitles.

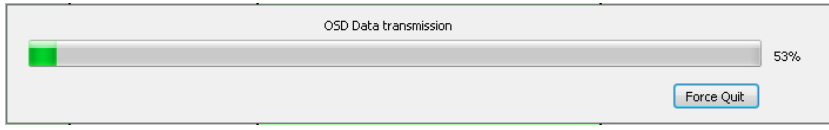
OSD Settings		
	Insert Background	Insert a high-resolution background image, which is covered by all open windows.
	Insert Image	Insert an image into the window.
	Original Image	In the simulation window, the image inserted will be displayed according to its actual size.
	Scaled Image	In the simulation window, the image inserted will be displayed according to the scale corresponding to the window resolution.
	Input Text	Edit and insert monochromatic subtitles in the window.
	Multicolor Subtitles	After an image is inserted, the system will remove its pure white background only with the texts left for adding multicolor subtitles.
ON	Open OSD	Enable the OSD function.
OFF	Close OSD	Disable the OSD function.

1. Insert Image

Click to insert an image:



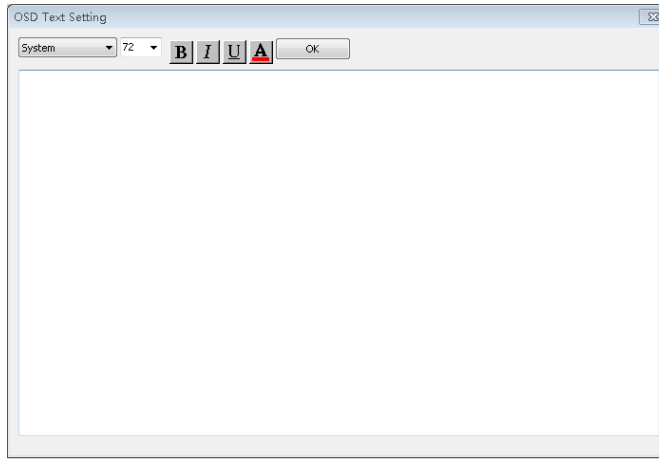
Select the image you want to import (BMP format, 24-bit color), click to open it and you can see the progress bar for image loading:



After an image has been loaded, you can see it in the software. At most two files can be loaded and the system will number the loaded files sequentially (1 or 2).

2. Insert Text

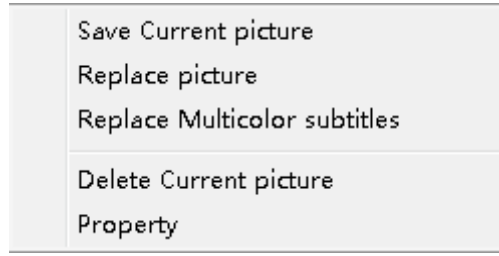
Click and you can completely timely text edition and input:



Edit a text directly in the text editor area and click “OK” to load it in the system.

3. OSD Text Setting

Press the mouse left key and drag it to change the position of the text on the screen, right-click on the text and you can see:



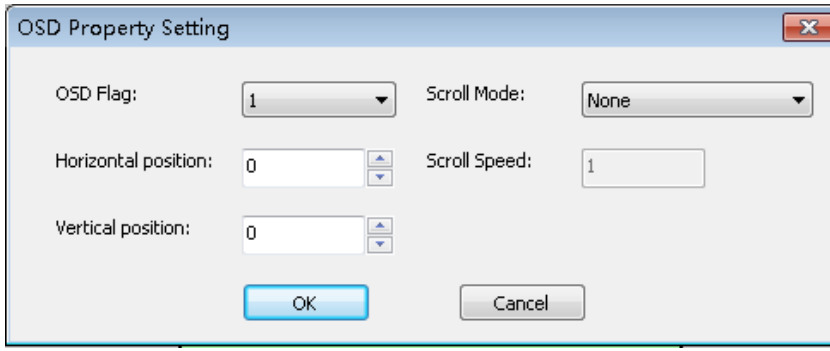
Click on “Save Current Picture” to save the current picture in the system.

Click on “Replace Picture” to reload other pictures.

Click on “Replace Multicolor Subtitles” to import another picture and transform it into a subtitle form.

Click on “Delete Current Picture” to remove a picture from the screen.

Click “Properties” and you can see:



VI. Product specifications

Video Input Signals		
Type	**Qty.**	**Description**
DVI-D（24+1）	HD 54max SD 216max	·Support 2048*1152@60Hz max, user-defined resolution is available. ·Compatible with HDMI1.3 and lower version
Dual Link DVI（24+5）		·Support 4096*1152@60hz or 4096*2160@30hz max. user-defined resolution is available ·Compatible with HDMI1.3 and lower version
HDMI（Type A）		.1.4a version, support 4096*1152@60hz or 4096*2160@30hz max. user-defined resolution is available .Lower versions support 2048*1152@60Hz max. user-defined resolution is available
VGA (D-Sub)		·Max resolution supported is 1920*1200@60hz(UXGA) - Signal level: R.G.B.Hsync.Vsync:0 to 1 Vpp+-3dB(0.7V Video+0.3v Sync) 75ohm; Black level:300Mv Sync-tip:0V
CVBS (BNC)		·NTSC/PAL Adaptive, support 3D comb filter. - Increase 2 channels
SDI (BNC)		·Support standards: ·SMPTE 259M SD-SDI 270 Mbit/s 480i, 576i SMPTE 292M HD-SDI 1.485 Gbit/s 720p, 1080i SMPTE 424M 3G-SDI 2.970 Gbit/s 1080p
IP		·IP decoding card supports RTSP/RTP protocol, accommodates ONVIF standard and supports IPC equipment by mainstream manufacturers
Video Output Signals		
Type	**Qty.**	**Description**
DVI-I（24+1）	30	·Single port supports 2048*1152@60Hz resolution max. User-defined resolution allowed.
Function Parameters		
Multi-image display	Single output channel supports display of up to 72 HD pictures and 288 SD pictures simultaneously. Picture size and position are adjustable. Cross screen, overlay, rambling and zoom in are supportable.	
CrossInt Splicing	Optimize the small pixel LED display; guarantee the splicing is smooth, uniform and synchronous.	
4K Input	Support Dual Link DVI and HDMI1.4a input, the resolution can be up to 4096*1152@60hz or 4096*2160@30hz	
HD Base Map	Super resolution picture can be preserved as background	
Image-text and caption	Preserved pictures or editable characters can be overlaid on the entire picture.	
Character overlay	Set characters overlay for input signal, the overlaid characters will go with signal switch	
Mode call	One click for the preserved plan of display layouts	
Seamless switch	No blank screen, glimmer, stuck during the signal switch or mode call.	
EDID management	Set the input and output resolution to adapt different environments by changing EDID info of the device	
Scheduled Task	Specify the device to perform an operation at a certain time	
Others		
PC Control	RS232, Ethernet, WiFi	Size	5U, 8U
Weight (Kg)	10--15kg	Input Power	100-240VAC，47-63Hz
Environment	Temp.0-40℃; Humid 0-95%	Warranty	Free repair within 2 years ,lifelong maintenance

VII. FAQ

Q1. DVI, HDMI, VGA and CV port definitions

A: DVI: Digital (HD) Video Signal Interface – As an interface standard launched in 1999 by DDWG (Digital Display Working Group) founded by Silicon Image, Intel and other relevant companies, it has offered sufficient optimization in terms of speed, definition and HDCP protocol, etc. Its signal sources generally refer to desktops and laptops, etc;

HDMI: High-Definition Multimedia Interface - As a kind of digital video/audio interface technology and a special digital interface suitable for video transmission, it can transmit video and audio signals at the same time with the maximum data transfer rate up to 5Gbps. Its signal sources usually refer to video cameras, notebooks and information release systems, etc.

VGA: Video Graphics Array (analog video signal) – As a video transmission standard launched by IBM in 1987 together with its PS/2 computer, it has been widely used in the field of color display by virtue of its such advantages as high resolution, fast display and rich color. Its signal sources generally refer to desktops, notebooks, jukeboxes and matrixes, etc.;

CV: Composite Video (also called as Composite Video Signal) – It is a kind of signals with all relevant signals packaged as a whole during transmission. Its signal sources usually refer to video cameras, DVD, TV boxes, jukeboxes, video matrixes and other relevant devices.

Q2: Briefly introduce how to connect the graphics card, video processor, transmitter card, receiver card and LED screen body.

A: Connect the DVI (VGA) output port of the graphics card to the video processor DVI-IN (VGA-IN) – The DVI-OUT of the video processor outputs to the transmitter card – The transmitter card is connected with the terminal receiver card at the back of the screen body by means of a cable – The receiver card is connected with the screen body individually controlled and filled the whole screen by means of cascading.

Q3: What does the output resolution mean?

A: The output resolution refers to the pixel-based mode for single port output of a splicer and its maximum control range; the conventional resolutions include 1024*768, 1280*1024, 1600*1200 and 1920*1080, which are generally set identically to the transmitter card.

Q4: What is the administrator password in the host PC software settings?

A: No password is provided and you can just click “OK” to get access directly.

Q5: When a serial port is used to connect the processor, what possible reasons if it can not be connected?

A: If connection has failed, the reasons may be as follows.

① COM Select Error – You need to click “OK” and click on the “Serial Port Enable” button;

② Serial Port Occupied - Two or more software windows can not be opened at the same time;

③ The serial port line is damaged or not firmly connected;

④ The mainboard COM driver or the serial port is damaged.

If the above suggestions are not helpful, please contact our company’s customer service staff in a timely manner. We will help you solve the problem as quickly as possible.

Q6: When an Ethernet port is used to connect the processor, what possible reasons if it shows network timeout?

A: If connection has failed, the reasons may be as follows.

① The IP address of the LAN has not been adjusted in the same field as the splicer;

② The Ethernet port line is damaged or not firmly connected;

③ The signal source has its network interface damaged.

If the above suggestions are not helpful, please contact our company's customer service staff in a timely manner. We will help you solve the problem as quickly as possible.