



Multi-picture stitching processor

KS9000

user's manual



Beijing Kystar Technology Co., Ltd.

Safety Precautions



Danger

- There is high voltage in the equipment. Non-professional maintenance personnel must not open the back cover to avoid danger.



Warning

- This equipment is not waterproof, please do waterproof treatment in humid environment;
- The device must not be near fire or high temperature environment;
- If this device emits strange noise, smoke or strange smell, you should immediately unplug the power plug and contact your dealer;
- **It is strictly forbidden to plug and unplug VGA and DVI signal cables while power is on.**



Attention

1. Please read this manual carefully before use, and keep it for future use;
2. In the case of lightning or long-term use, please unplug the power plug;
3. This equipment is not suitable for non-professional operation and debugging, please use it under the guidance of professionals;
4. Do not insert any objects into the ventilation holes of this equipment, so as not to cause equipment damage or accidents;
5. It should not be used near water or other humid places;
6. It is not advisable to place the device in a heat sink or other high temperature places;
7. please properly organize and place the power cord to prevent damage;
8. If the following conditions exist, unplug the power plug of the device and entrust repair:
 - When liquid has been spilled into the device
 - When the device is dropped or the case is damaged
 - When the device appears to be malfunctioning or performance is significantly degrade

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1.Introduction

This product is the industry's first truly multi-window splicer. It is a professional video processing and control device. It is a splicing controller specially designed for large-screen, projection, LCD and other devices.

The multi-screen mosaic processor developed by our company adopts FPGA pure hardware architecture without any operating system. The entire system runs completely closed, with simple operation and high stability.

Widely used in monitoring, dispatching command center, video conference center, etc.

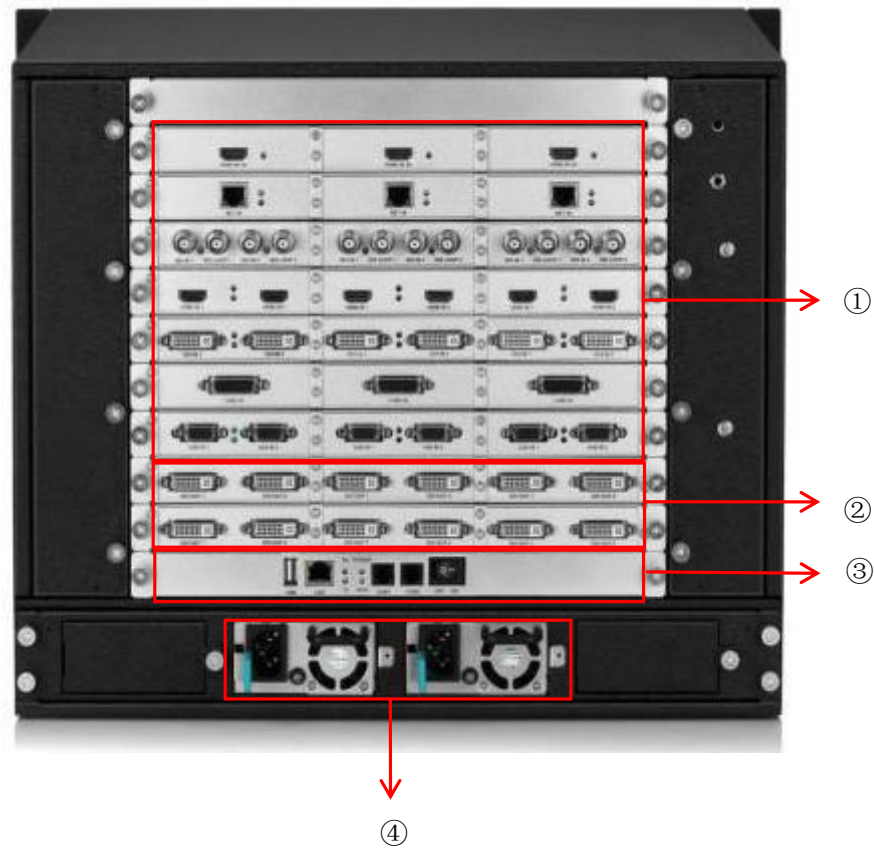
This software is management software designed for this platform. Users can set parameters and operate management of hardware devices through this software. All operation procedures are intuitive and convenient.

Suitable for Windows XP, Windows7, Windows8, Windows10 operating systems.

The following descriptions are all examples under the Window7 operating system.

2. Hardware introduction

1. Introduction of the rear panel



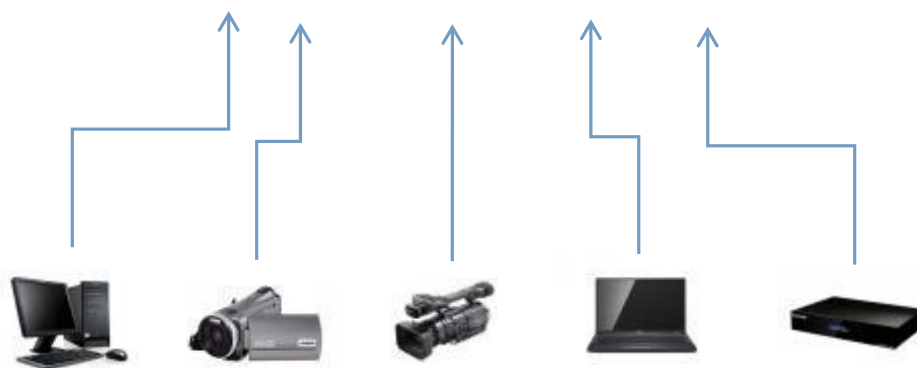
1. Input board: It can support DVI, VGA, CVBS, HDMI, SDI, IP stream, 4K and other signal inputs, and can expand up to 216 channels.

2. I/O board: full DVI-I output, supports up to 30 splicing outputs.

3. control board: including power switch, COM port, network port, USB.

4. Power supply: up to four redundant power supplies.

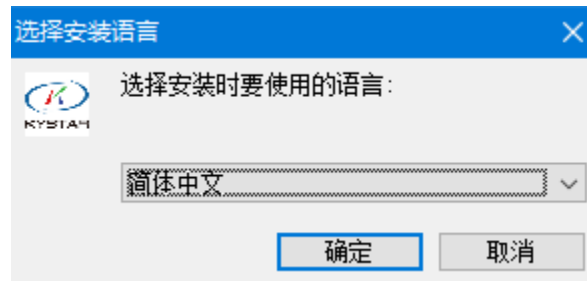
2. Connection diagram



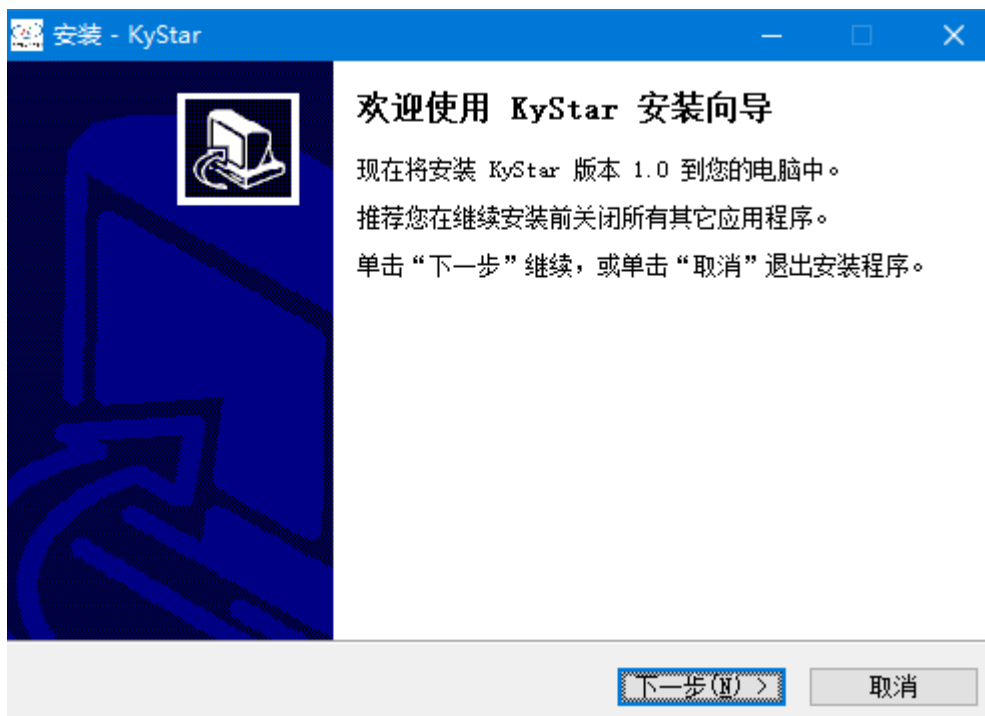
3. Software Installation

Insert the CD-ROM included in the product's junction box into the CD-ROM drive. You can view the contents of the CD-ROM in the file manager.

Double-click to enter the following installation interface:



After selecting the installation language, click OK to enter the installation wizard interface, as shown below:



Follow the wizard prompts to install until the installation wizard is complete and the software installation is complete.

4. Device connection

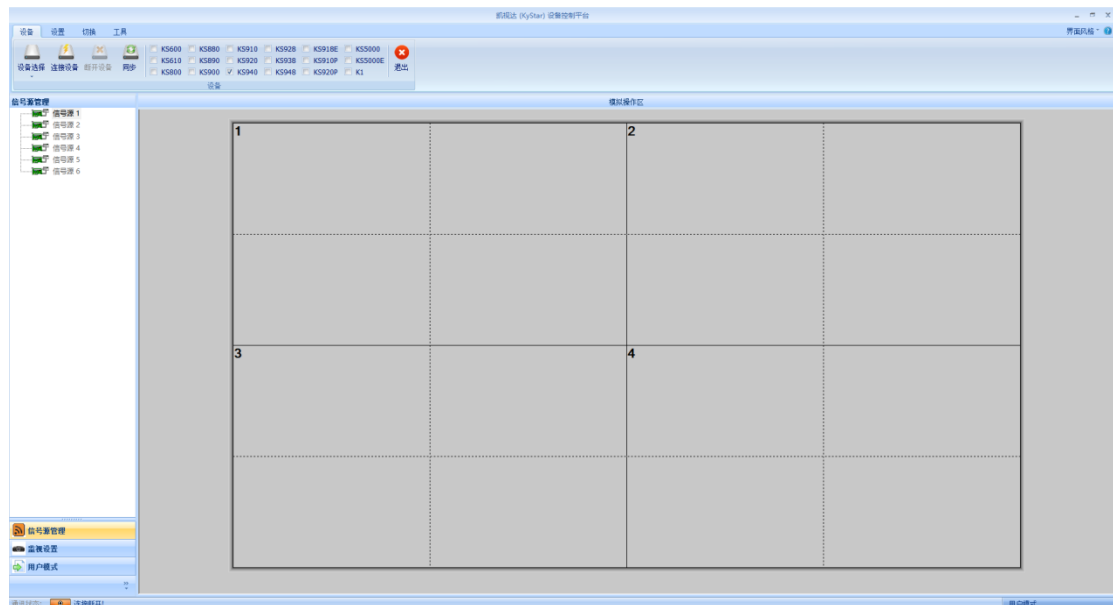
1.open the software

Double-click the software shortcut on the desktop to open the software and enter the software startup page, as shown in the figure below:

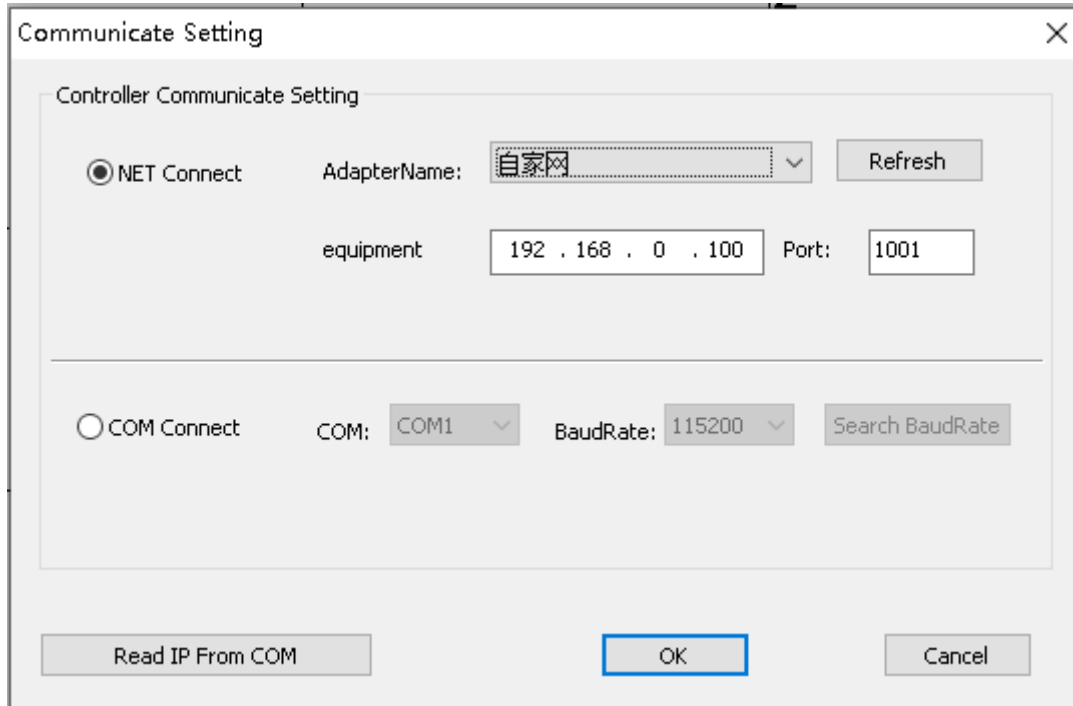


Just click OK without password for the first time. If you set a password, you need to enter the password correctly to enter the software.

Click "OK" to enter the software main interface, as shown below:



Click "Connect Device", the "Communication Settings" window pops up, as shown in the figure below:



This software can choose NET or COM two connection methods, choose different connection methods to prepare different work.

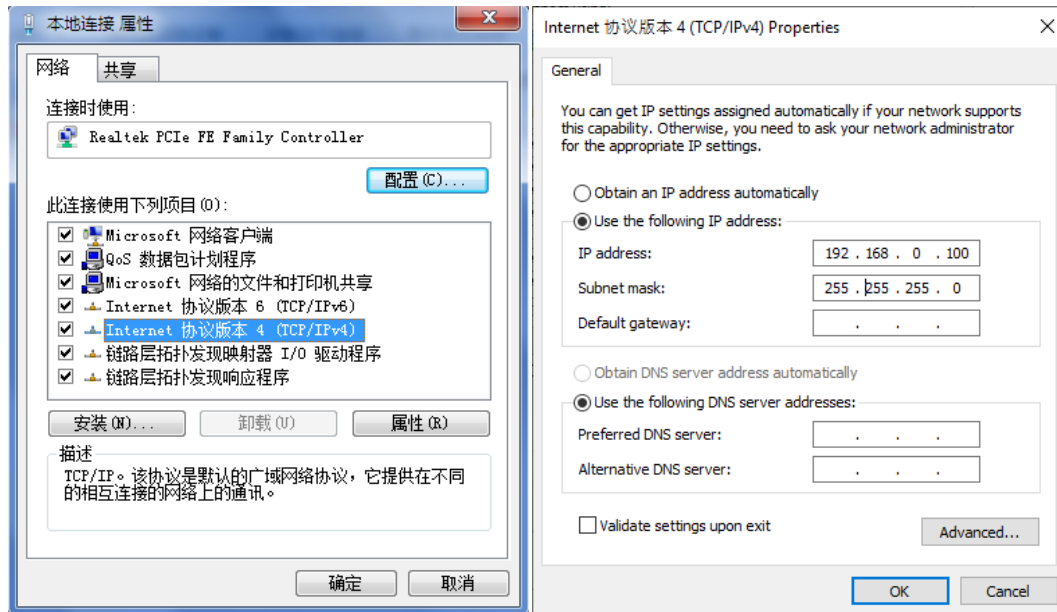
(1) Select NET connection

I. Wiring

Use a CAT5 network cable, with one end connected to the processor's LAN port and one end connected to the PC's network port (can also be connected through a switch).

II. Modify the IP of the local connection

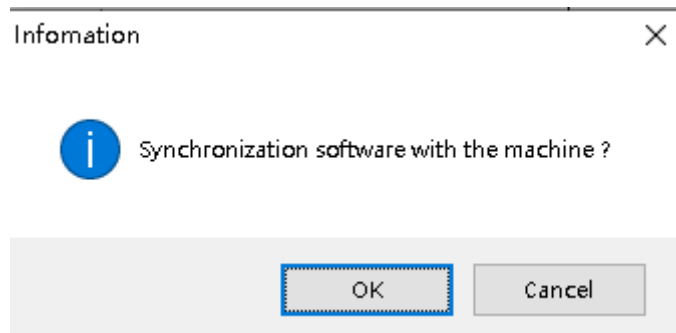
Under Windows 7 system, you can find the local connection through Start → Control Panel → View Network Tasks → Change adapter settings. Right-click the local connection and select Properties to bring up the dialog box below. Double-click Internet Protocol Version 4 (TCP / IPv4), and The data is modified as shown below:



Note: The IP address is any value other than the IP of the network segment 0. If you need to change the IP segment, you need to change it in the software settings.

III. Establish communication

During software communication, select "NET connection" and directly click "OK". If the connection is successful, a prompt box as shown in the figure below will pop up, and then click "OK".



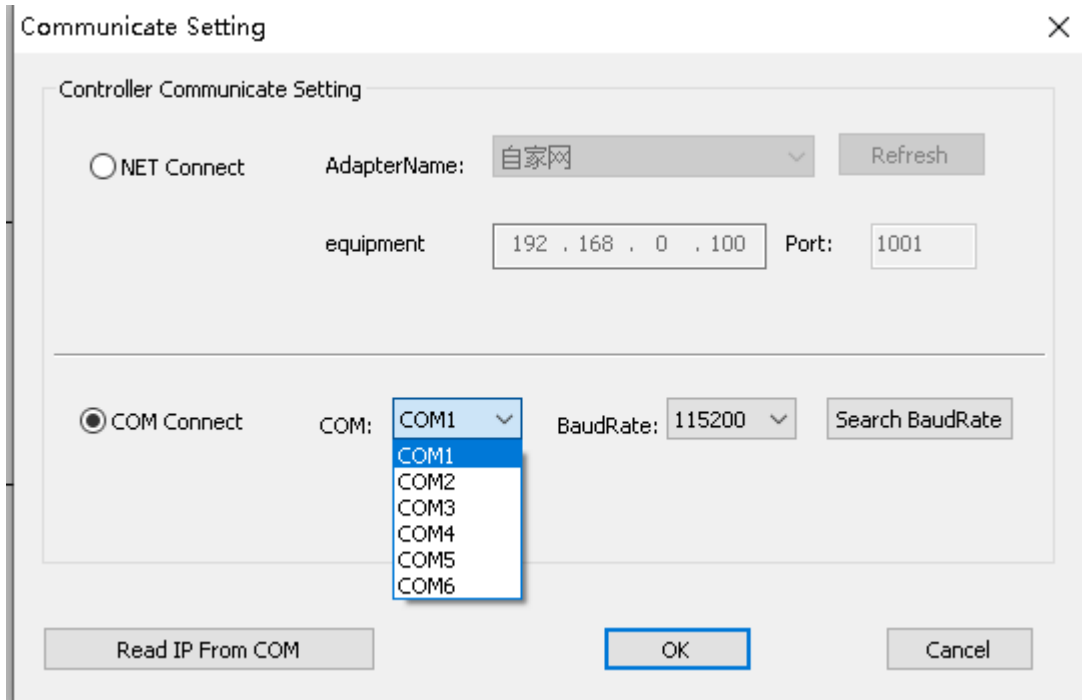
(2) COM Connection

I. Wiring

Use the supplied RS232-RJ11 connection cable. One end is connected to the COM1 port of the processor, and the other end is connected to the serial port of the PC (supports USB to nine-pin serial port).

II. Modify COM port

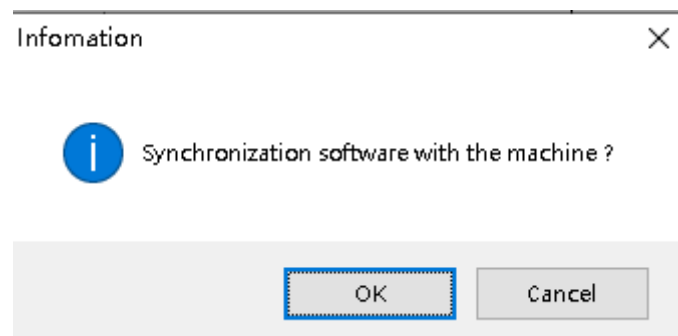
In software communication, "optional COM connection":



Under normal circumstances, the software will automatically recognize the COM port, users do not need to set it, just click OK. However, in some cases, the PC may have multiple COM ports at work, causing software recognition errors. At this time, you need to select the COM port (please try in order).

III.Establish communication

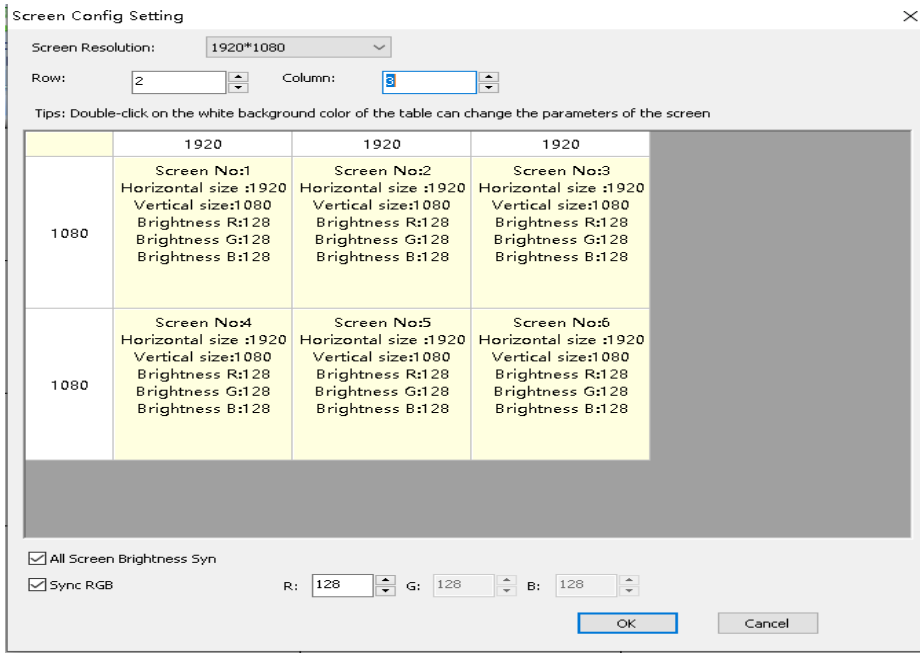
During software communication, select "COM connection" and click "OK" directly. If the connection is successful, a prompt box as shown in the figure below will pop up, and click "OK".



5.Software Settings

1.Output settings

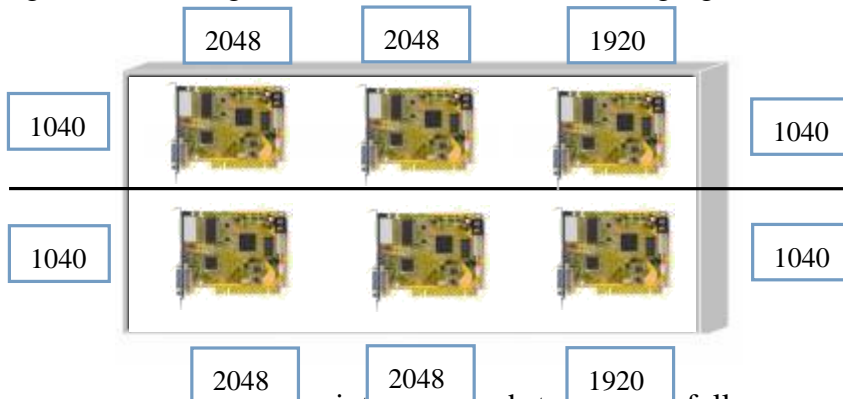
After the device is successfully connected, click "Screen Configuration" under the "Main Function Area" to pop up the screen parameter setting interface. The six dotted field boxes in the operation area correspond to the device output ports (from left to right as seen from the back). The loading of each output port and the arrangement of output ports are set under this interface. As shown below:



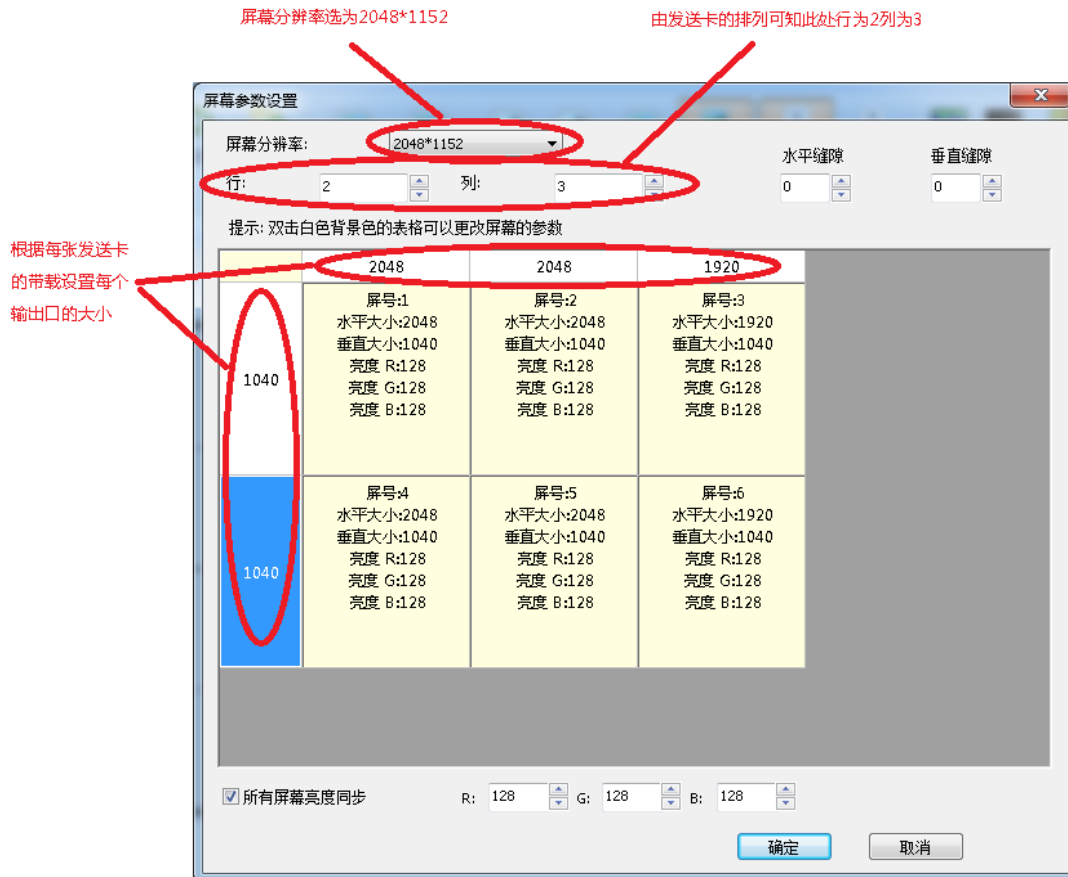
The "screen resolution" is the maximum resolution that can be output by each output port, and is generally greater than or equal to the resolution of each sending card or each display.

The "row" and "column" can be set as required. The "1920" above the layout and the "1080" on the left can be modified according to the actual number of loaded points. Double-clicking the value can modify it.

For example, the screen size is 6016 * 2080, and it is loaded with six sending cards. The loading size and arrangement are shown in the following figure:



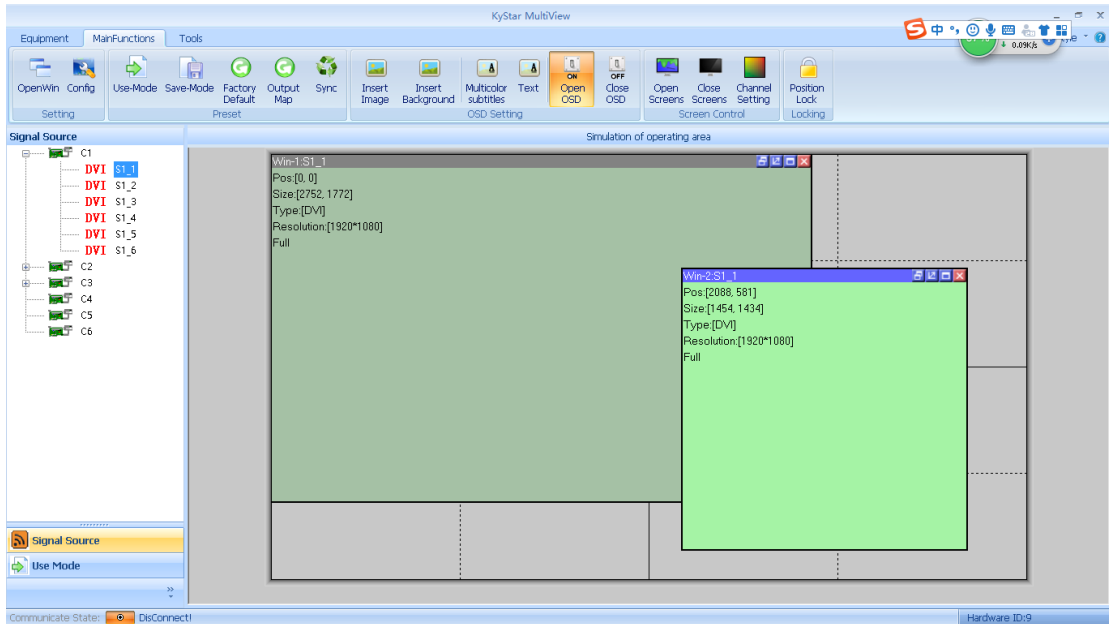
Then, the screen parameter setting interface needs to be set as follows:



P: "Synchronize all screen brightness" This option is marked with a check mark to indicate that the modified color value is for all output ports. Remove the check mark to adjust the color for a single output port. After setting the output port layout and loading points, click OK to return to the operation area.

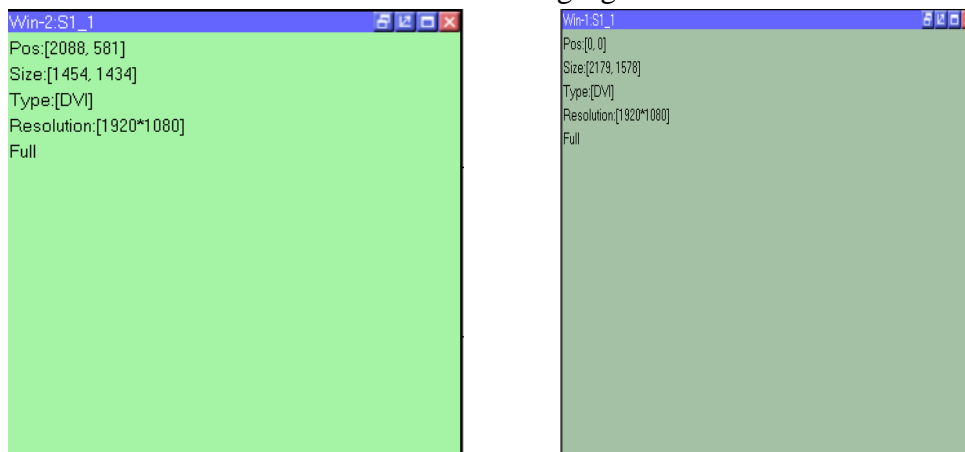
2、Establishment of paintings

With the above settings, the entire large screen has been stitched together. The gray area represents the entire large screen. How to display it on the large screen requires the creation of a picture. Here is an example of how to create a picture with 2 rows and 2 examples.



Hold down the left mouse button and drag it in the operation area. When you draw a rectangle, release the left button, and a window will be created (or click "New window").

The top bar of the window is displayed in gray and blue. When the window is blue, it indicates that the window is selected and you can perform direct operations. When the window is gray, it indicates that the window is unselected. To do this, left-click the top bar of the window. The top bar turns blue to set the window. The selected and unselected states are shown in the following figure:

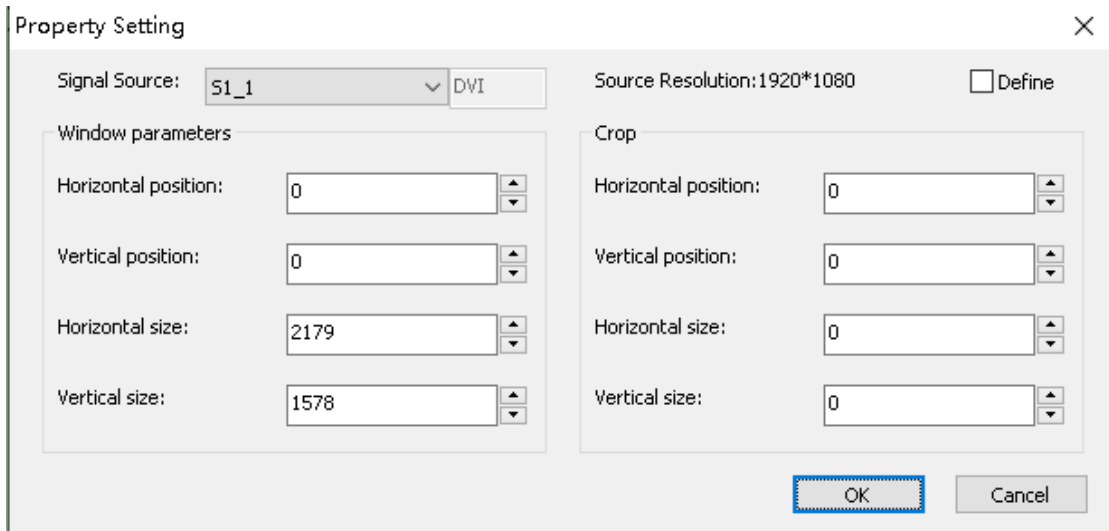


Right-click the window in the selected state, you can see a list of function menus for this window:



| classification | Function description |
|----------------------------|--|
| Save settings | Archive the currently set parameters, a total of 12 gears |
| Sticky | Bring the current window to the top |
| Set at the end | Bring the current window to the bottom |
| Attributes | Set the properties of the current window |
| Panorama → Partial | Switch between panorama and partial mode: panorama is the entire picture of the input signal, and partial is the partial picture of the input signal (select the size and position of the partial picture by changing the input zoom in the window properties; if not set, and the window size is smaller than the input Signal resolution, the default partial screen size is the same as the window size, starting point is 0,0) |
| full screen | Cover the entire screen of the current window |
| Intra-unit maximization | The simulation operation area is divided into several areas by dashed lines and solid lines. The current window may span multiple areas but is not completely filled with these areas. Through this operation, the current window can be filled with the spanned areas. |
| reduction | Restore window size before adjustment (for full screen or in-cell maximize operation) |
| close | Close (delete) the current window |
| All close | Close all windows in the simulated operating area |

Among them, click "Properties" to see:

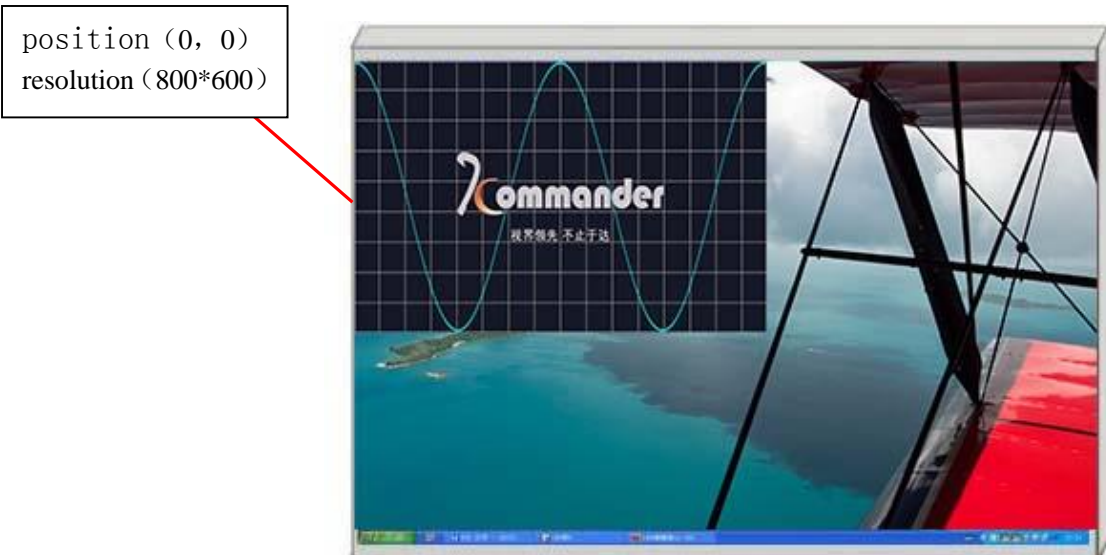


The property settings mainly include the following three items: signal source selection, picture parameters, and partial display.

Signal source selection is to select the desired signal source for the current window, or you can directly click the signal source in the signal source column on the left to switch the signal.

The picture parameter is to set the current window size. If the entire screen is required, a picture is played. The size of the window can be set to the screen pixel size. If the effect of multiple pictures is required, adjust it according to the actual situation.

Local display parameters are used to specify the size and position of the input area, for example:



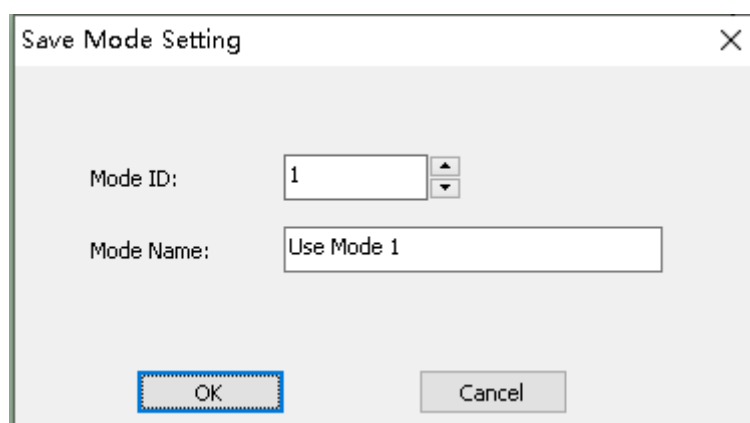
If you need to capture the blue flower area into a window and play it, you need to set the horizontal and vertical positions of the input scale of the window to 0, the horizontal size to 800, and the vertical size to 600. If the window is full screen, The effect on the screen is:



3. Mode saving and recall

I. Model save

Click the save mode in the main function area, and the save mode setting window pops up, as shown in the figure below:



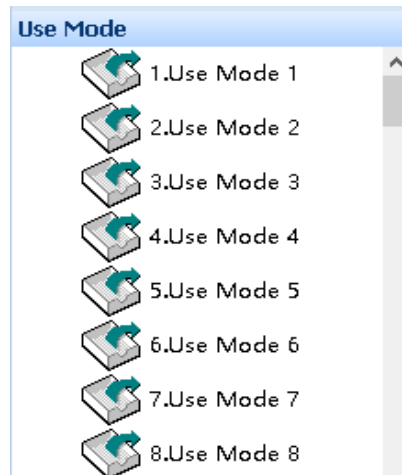
In this interface, you can change the mode ID according to your needs, that is, the mode you want to save to, or you can change the mode name according to your needs. (Excluding preview and hot backup settings).

P: The device defaults to the data of the first startup mode, so it is recommended to save the data of the most commonly used display mode in the mode "1".

II. Mode call

Click the left side of the software interface, and double-click the corresponding mode to invoke the mode.







P: Right-click the user mode to modify the name of this mode, which is more intimate and convenient.




6、 Special function

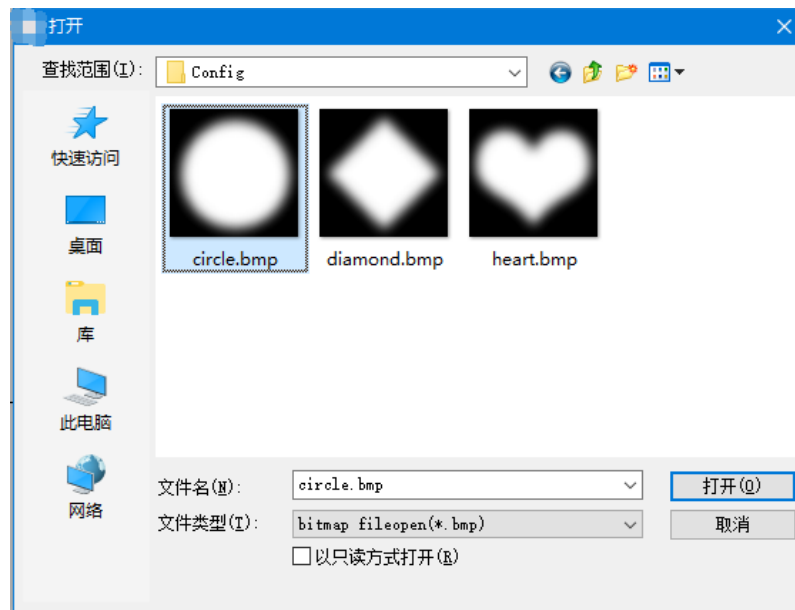
OSD refers to the graphic subtitle overlay system. This software can import graphic subtitles to the processor and set the corresponding attributes of the graphic subtitles.



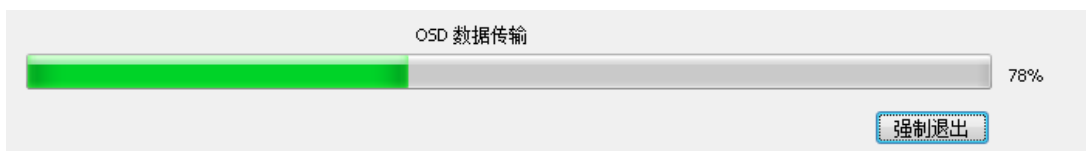
| OSD 设置 | | |
|---|----------------------|---|
|  | Insert background | Insert a high-resolution bottom image with all open windows over it |
|  | Insert image | Insert picture into screen |
|  | Text | Edit and insert monochrome subtitles in the picture |
|  | Multicolor subtitles | After inserting the picture, the system will remove the pure white background of the picture, leaving only the text part, and adding color subtitle |
|  | Open OSD | Enable OSD function |
|  | Close OSD | Disable OSD function |

1、 Insert image

Click  to insert image:




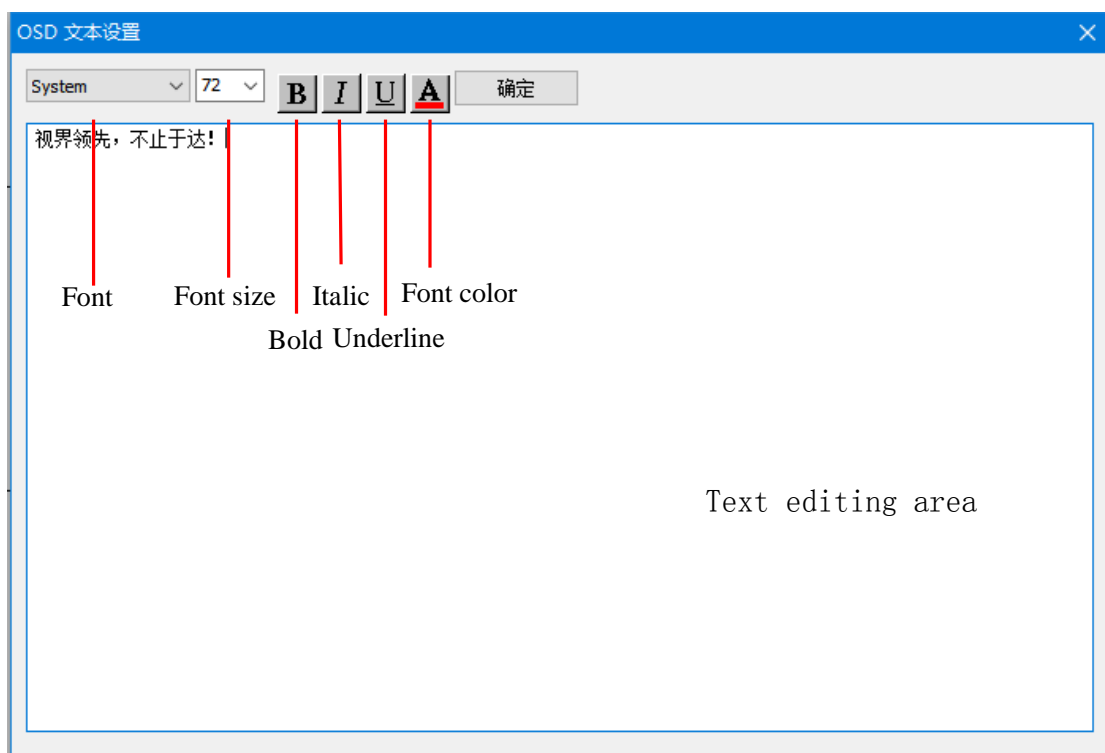
Select the picture you want to import (BMP format, 24-bit color), and click Open to see the progress bar of image loading:



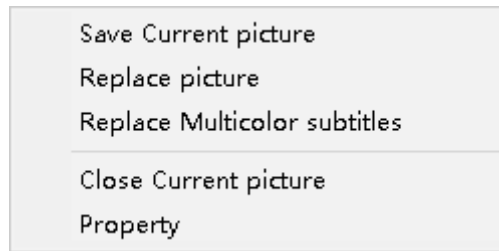
After loading, you can see the pictures you added in the software. You can load up to two files, and the system numbers the loaded files in order (1 or 2).

2、Insert text

Click  to insert text, Text edit input possible:



Drag the left mouse button to change the position of the graphic on the screen.
Right-click the graphic to see:



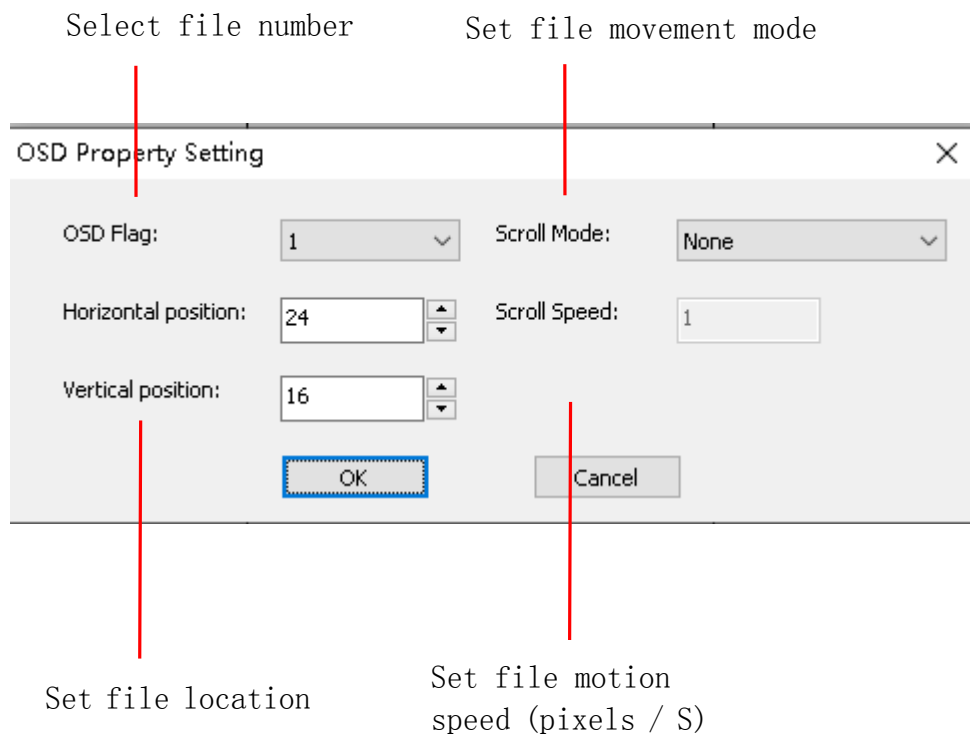
Click Save Current Picture to save the current picture to the system.

Click Replace picture to reload other pictures.

Click to replace the color subtitles, you can reimport an image and convert it into a subtitle form.

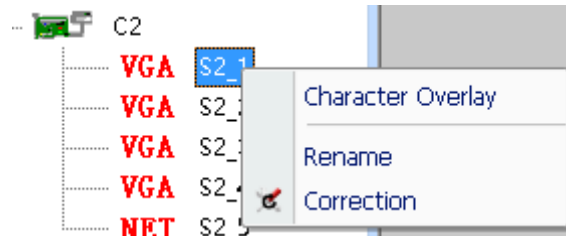
Click Delete current picture to remove the picture from the screen.

Click on properties to see:

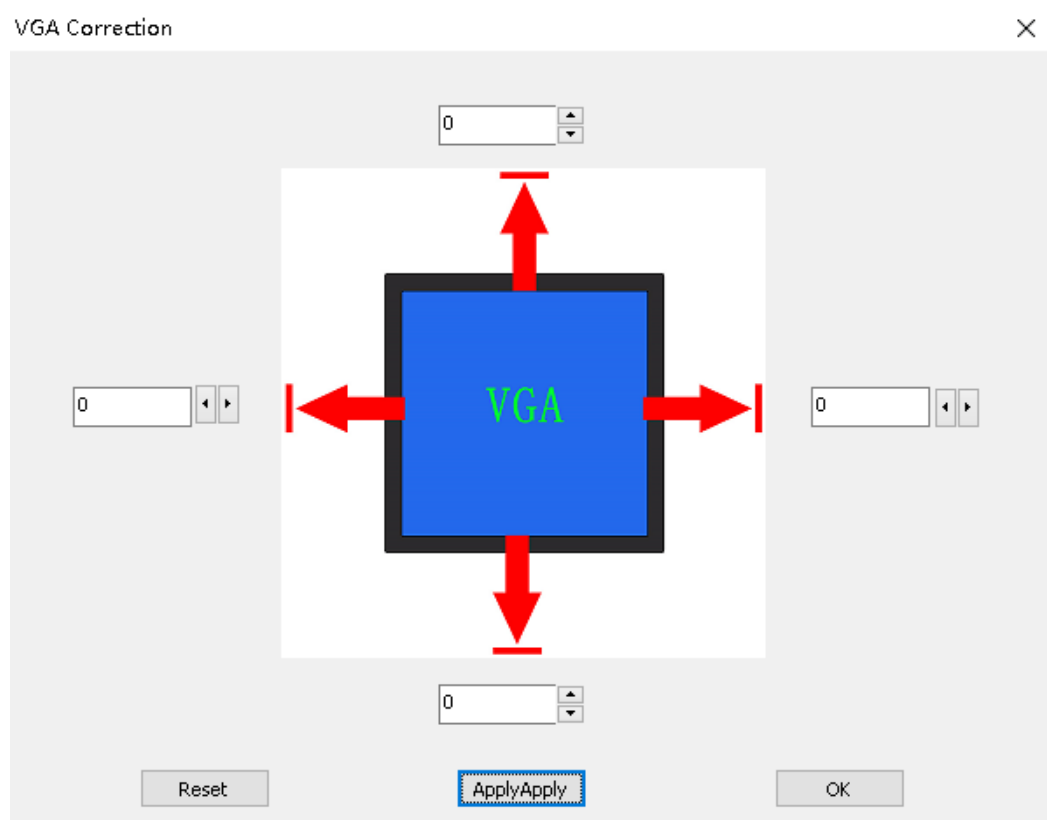


7、VGA correction

VGA signal drift often occurs in engineering. For this situation, you can use the VGA correction function:



Right-click on the selected VGA source and click on the VGA correction option, you can see:

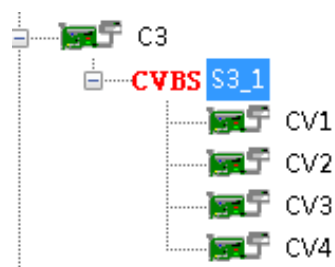


Click the upper, lower, left and right number boxes to adjust the edge of the VGA image. The situation of each VGA offset is different, so debug based on the actual site effect. After setting, click Apply.

8、 Selection of CV signals, character overlay for signals

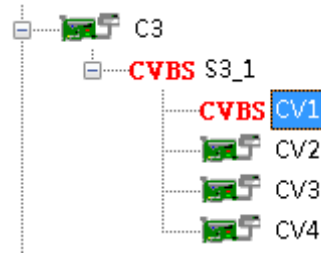


After docking DA15 to 8BNC, the choice of single-window CV signals has become diverse, as follows:



Double-click S3-1 to select the current four-channel CV signals to be displayed in a field arrangement and fill the current window:

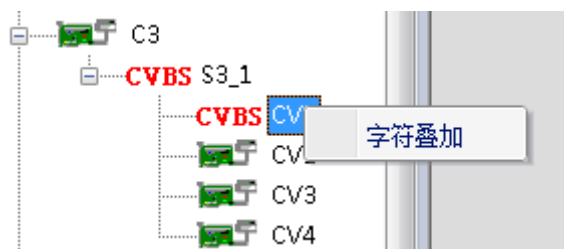




Double-click CV1 to select only CV1 to display and fill the current window:



No matter which signal we choose, the signal has a character identifier. This effect can be achieved by right-clicking on a single signal and selecting character overlay:



9.Frequently asked questions

Q1 : DVI, HDMI, VGA, CV, USB Port definition

A:

DVI: Digital (high-definition) video signal is an interface standard introduced by Silicon Image, Intel and other companies in DDWG (Digital Display Working Group) in 1999. It has done a good job in terms of speed, definition and HDCP protocol optimization. The signal source is generally a desktop computer, a notebook, etc .;

HDMI: High-definition multimedia interface is a digital video / audio interface technology. It is a dedicated digital interface suitable for image transmission. It can transmit audio and video signals at the same time. Signal sources are generally cameras, notebooks, information distribution systems, and so on.

VGA: Analog video signal (video graphics array) is a video transmission standard introduced by IBM with the PS / 2 machine in 1987. It has the advantages of high resolution, fast display rate, and rich colors. It has been widely used in the field of color displays. application. The signal source is generally desktop, notebook, karaoke machine, matrix, etc .;

CV: Composite video signal, also known as composite video signal (composite video signal) is a signal that packs all signals into a whole for transmission. The signal source is generally a camera, DVD, TV box, karaoke machine, video matrix and other equipment;

USB: Universal Serial Bus is an external bus standard used to regulate the connection and communication between computers and external devices. It is an interface technology applied in the field of PC. USB was jointly proposed by Intel, Compaq, IBM, Microsoft and other companies in 1994. The signal source is generally U disk, SD card, etc.

Q2 : Briefly describe the connection method of graphics card, splicing platform, sending card, receiving card and LED large screen body.

A: The DVI (VGA) output of the graphics card is connected to the DVI-IN (VGA-IN) input of the video processor-the DVI-OUT of the video processor is output to the sending card-the sending card is received through the network cable and the terminal behind the screen Card connection-The receiving card connection controls the respective screens and cascades the entire large screen.

Q3 : What does the output resolution mean? Can you set it in advance?

A: The output resolution is the maximum range of the processor's output, as long as this value is larger than the actual pixels of your LED display. It will automatically change when adjusting the image parameters, and basically does not need to be set in advance.

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

A: No password, just click OK to enter

Q5 : What are the possible reasons why the processor software shows that the serial port is not connected? What is the connection normal flag?

A: The trial computer needs to connect its command transmission line to control the video processor. That is the serial line.

Failure to connect may be caused by the following conditions.

- ① The COM port is incorrectly selected, just click OK and then click the "Open Serial Port" button again;
- ② The serial port is occupied, and two or more software windows cannot be opened at the same time;
- ③ The serial cable is not connected well or the cable is damaged;
- ④ The COM driver of the motherboard is damaged or the serial port is damaged.

If the above suggestions do not finally solve your problem, please contact our customer service staff in time. We will assist you in solving the problem as soon as possible.

Normal connection sign: The "Software and Device Synchronization" dialog box pops up. Click OK at this time.

Q6 : The large screen of the graphics card directly connected to the sending card is normal, and the screen will be black after connecting to the video processor.

A: Observe whether the sending card indicates that the green light is blinking normally. If it is normal to prove that there is a signal from the processor output port, the possible reasons are:

① Problems with the signal source. When connecting the computer graphics card, you need to set the copy mode of the graphics card. If you do not set it, there is no data output from the DVI port of the graphics card. Setting steps: Turn off the power of the video processor-re-plug the video card to the video processor-ATI video card automatically reads the copy mode, NVIDIA video card needs to enter the video card control center, set multiple monitors + dual screen copy mode.

② Problems with the cables. When the signal cable interface has poor contact or there is a problem inside the cable, the large screen
There will be abnormal phenomena such as color bars and flower screens. Carefully check whether the pins in the signal cable are pinched or skewed and replace the signal cable;

If the above suggestions do not finally solve your problem, please contact our customer service staff in time. We will assist you in solving the problem as soon as possible.

Attachment: Settings for graphics card copy mode and extended mode

1、AMD graphic card (XP system)

Right-click on a blank space on the desktop → Properties → Settings → Advanced → Enter the graphics driver control panel → Monitor management → Right-click → Copy / Extend.





2、NVIDIA graphic card (XP system)

Right-click on the blank space on the desktop → Properties → Settings → Advanced → Enter the graphics driver control panel → Set “Multiple Monitors” → Select Copy / Extended Mode.





3、Win7、Win8 system

Right click on the computer desktop-screen resolution-multiple monitors-check the copy / horizontal pan mode.



Note: Please make sure that the graphics card driver is installed properly. The graphics card driver can be downloaded from the official website of the graphics card or use a third-party software update, such as: driver wizard)