

U6

Multi-window splicing processor

Version: v3.1

Release date: February 2022



Manual



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Professional Ultra HD Video Display
Control system integrated solution and service provider

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Certification Description

“CE” Certification

EN 55022: 2010

EN 55024: 2010

EN 61000-3-3: 2013

EN 61000-3-3: 2014

EN 0950-1: 2006+A11: 2009+A1: 2010+A12: 2011+A2:2013

“FCC” Certification

FCC Part 15

ANSI C63.4: 2014

“ROHS” Certification

EPA 3050B: 1996, EN1122:2001

EPA 3052: 1996, EPA 3060A

EPA 7196, EPA 3540C, EPA 8270C

Version Information

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SAFETY PRECAUTIONS

For your safety, please read this section carefully.

	<p>Power Power supply of the device for normal operation is 100-200V AC. Please make sure that the product is operated within the voltage range.</p>
	<p>High voltage High voltage devices are contained.</p>
	<p>Do not dismantle without professionals The device is not equipped with repair parts which aimed for maintenance by customer himself, so do not open chassis and operate by yourself which may lead to unrecoverable damage of the device. If maintenance is required, please contact after-sales service personnel.</p>
	<p>Assure sound grounding For your safety, please assure that power line is grounded soundly.</p>
	<p>Keep away from strong magnetic field, engine and transformer For normal operation of the device, please stay away from strong magnetic field, motor and transformer.</p>
	<p>Guard against damp Keep operational environment dry. If the device becomes damping inadvertently, do not power the device and use it after being dried.</p>
	<p>Keep away from explosives Please do not use the product in combustible or explosive environment.</p>



Prevent liquid or conductive fragments getting into the chassis

Liquid or metal fragments should be stopped from getting into the case. If so, the device should be powered off immediately and power supply can only be allowed after clearance of foreign bodies.

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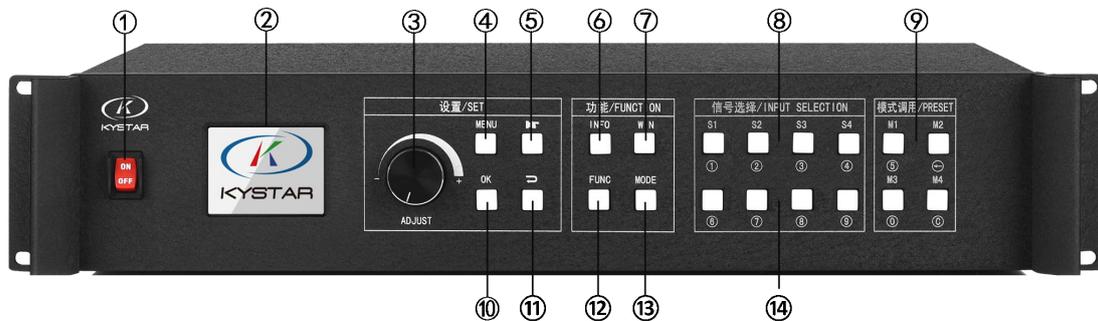
1. Product Introduction

Multi-screen splicing processor is a high-end video processing equipment developed and produced by our company for LCD large screen display, performance and rental, conference room, studio and other markets. The product enjoys the following features:

1. A maximum of 12 LCD or DLP screens can be joined together
2. 8 DVI-U inputs (DVI-U supports DVI/HDMI/VGA/CVBS)
3. 8 Arbitrary layout of the screen
4. The front panel has buttons and color display, which can be set quickly without software installation
5. Support signal echo, you can view input and output signals through software in real time, what you see is what you get
6. Full 60Hz image processing, smooth picture without tearing
7. Supports output port mapping to achieve blind insertion
8. Between any signal can realize fade-in and fade-out switch
9. 1.5U chassis, saving installation space
10. Support one-button black screen
11. Intercept and display any part of the signal source
12. Customize the EDID
13. Can pre-store 32 scene mode, one key call
14. Support straight cut and fade out, no black screen, stuck
15. The panel identifies the signal source status

2. Hardware Introduction

2.1 Front Panel



① **POWER:** AC 220V POWER switch; ON indicates that the power supply is ON, and OFF indicates that the power supply is OFF.

② **LCD color screen:** information display; Displays device and debugging information.

③ **ADJUST:** ADJUST knob; You can select the information in the color screen through the knob and quickly adjust various parameters, inverseClockwise to decrease, clockwise to increase, press OK.

④ **MENU:** MENU button, you can enter the main MENU interface for device debugging.

⑤  : navigation buttons; Click to enter the navigation mode.

⑥ **INFO:** information query button; Example Query the real-time status of input signals.

⑦ **WIN:** Screen information button; Display screen signal source and switch screen signal source.

⑧ **S1-S4:** Signal source button; The input source behind the device is under the main menu screen, and the parameter input screen is a number1-4

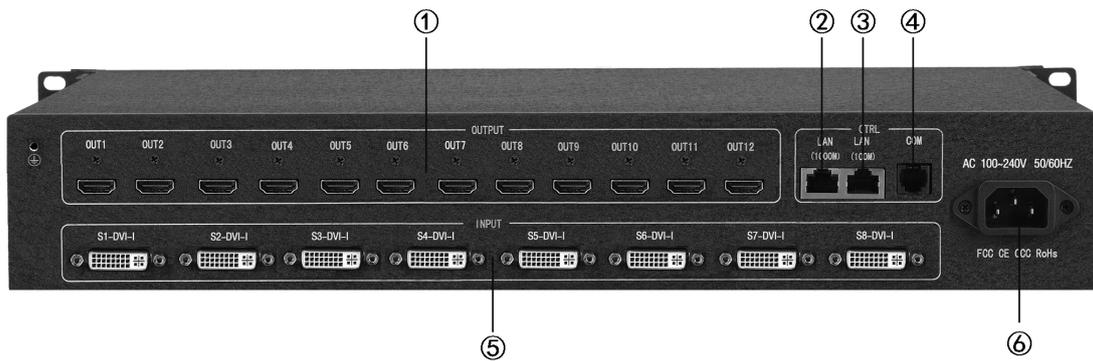
⑨ **M1-M4:** Shortcut mode call key; Under the main menu interface is the shortcut mode call button, under the parameter input interface respectively represents the number 5, delete, number 0, clear.

⑩ **OK:** Confirm button to confirm debugging information.

⑪  : Return or cancel the button.

- ⑫ **FUNC:** Common function buttons; Click to enter the interface of common functions.
- ⑬ **MODE:** Mode quick call key; Use this key to call mode quickly.
- ⑭ **S5-S8 :** Digital input button; Input sources are displayed under the main menu, and numbers 6-9 are displayed on the parameter input interface.

2.2 Back panel



- 1.**OUTPUT:** Output channel; Contains 12 channels of HDMI output.
- 2.**LAN1 :** 100 mbit/s network port, connected to the computer network port through the host computer software debugging equipment.
- 3.**LAN2 :** Gigabit network control port; You can debug the device and implement the echo function.
- 4.**COM:** RS232 control port; Connect with the serial port of the computer, debug the equipment through the upper computer software.
- 5.**INPUT:** Input channel; Includes 8 x DVI-U (supports DVI, HDMI, VGA, and CVBS).
- 6.**AC 100-220V:** It can be connected to ac power supply of 100-220V.

3. Device Debugging

3.1 Device Connection

Device connection could be divided into three parts: power connection, signal connection and control connection (used for software debugging).

Power connection: device power supply. Connection method: connect power cord to power plug.

Signal connection: the method transferring signal from signal source to LED large screen. Connection method: signal source (e.g.: computer)→Splicing Processor → Sending cards → Large screen.

Control connection: connect computer with device control port and debug device connection method. There are three connection methods

(1) Connect 100MB network control port with splicer LAN1 port, which can set device software.

(2) Connect computer gigabit network port with splicer LAN2 port, which can not only set device but also echo signal source image.

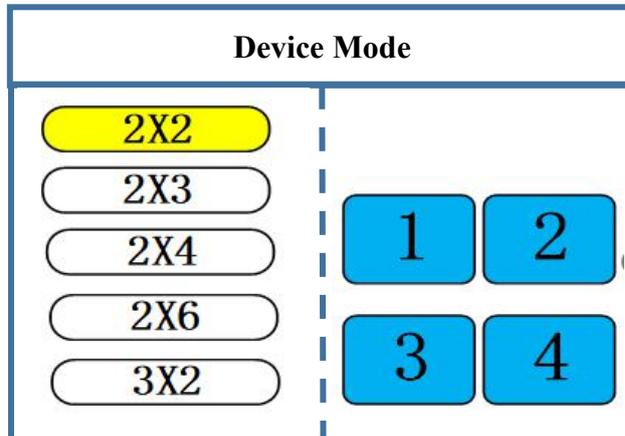
(3) Connect one crystal head of serial port line which is randomly donated by device with splicer COM port, and plug DB9 into computer serial port. Any kind of method among the three can realize device software control.

Connection diagram is as follows:



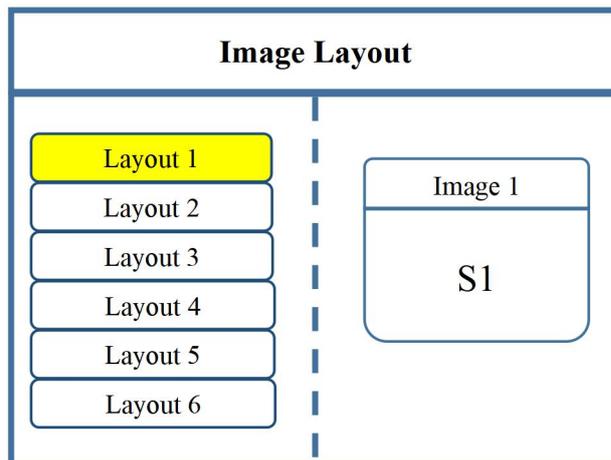
3.2 Debugging Steps

Step 1: Click "MENU" to enter the main MENU interface, select "Device Mode", and select the stitching mode of the device: 2X2, 2X3 and other modes.



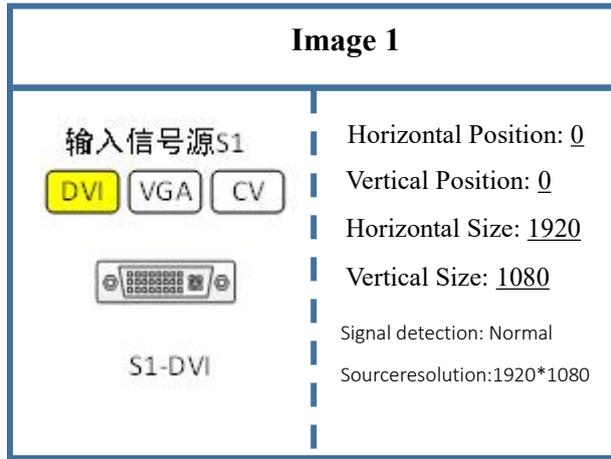
Note: Select the splicing mode corresponding to LCD display when splicing, and you can customize the splicing mode

Step 2: Return to the main menu interface, select "Screen Layout", enter the screen number selection interface, select the number of screens to be set.

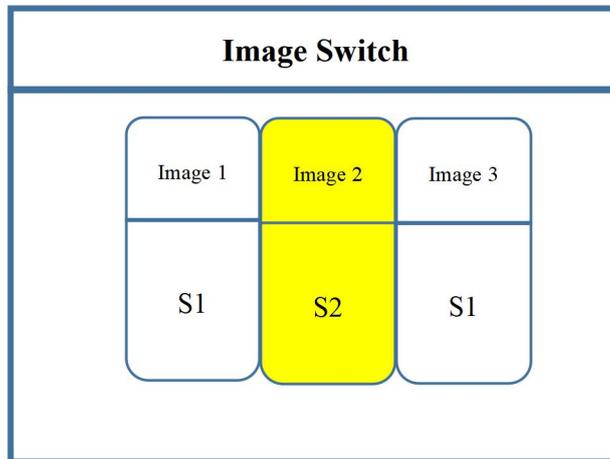


Note: this step can be skipped for single screen, as long as the number of screen and project requirements are consistent for multiple screen, inconsistent layout can be set through the following operations.

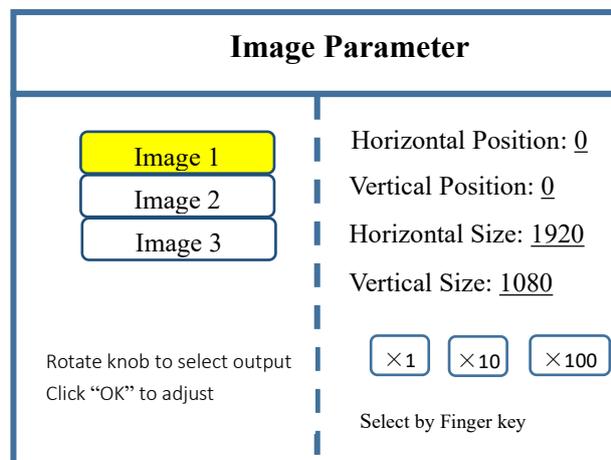
Step 3: Click "MENU" to return to the main MENU, click the corresponding signal source group on the front panel, select the corresponding signal and click "OK" to confirm.



Then select the "WIN" button in front to enter the screen switching screen. Select the screen to switch and click the signal source button on the front panel



Step 4: Click "MENU" to return to the main MENU interface, select "Screen Parameters", enter the image parameter setting interface, set the size and position of each screen



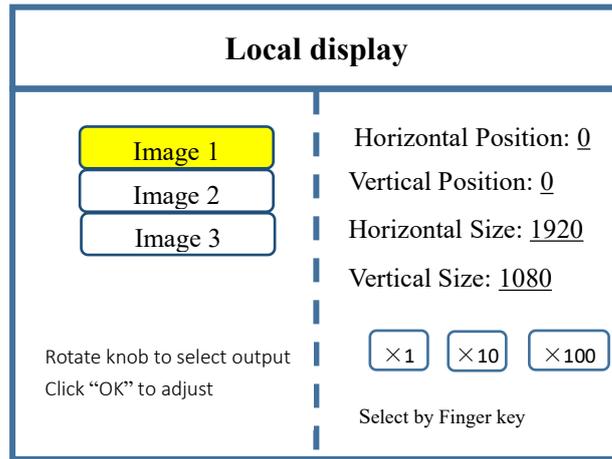
Note: There are two ways to input numbers:

(1) Adjust by rotating the knob. Adjust the step length by "x1", "x10" and "x100". For

example, "×100" means that the number of the knob is increased by 100 each time.

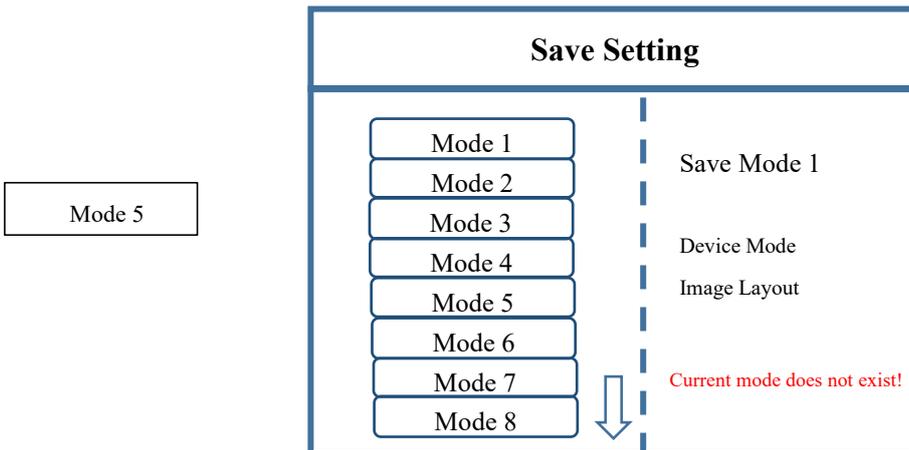
(2) Input through the number button on the front panel. For example, the number below S1 indicates 1.

Step 5: Click "MENU" to return to the main MENU interface, click "FUNC" button to select "Local display", enter the local display setting interface, set the size and position of each signal source.



Note: Skip this step if the signal source screen needs to be fully displayed on the large screen. If you only capture a signal source in multiple pictures, you only need to set the picture of the signal source. A horizontal or vertical size of 0 means no local interception in this direction.

Step 6: Click "MENU" to return to the main MENU interface, select "Save Settings" to enter the data saving interface, select any mode and click "OK" to save the above operation data.



Note: Mode 1 is the default startup data of the device. It is recommended to save the most commonly used or required mode to be displayed in mode 1.

At this point, the basic debugging of the device is completed. If you have other requirements, repeat the operation and save it in other mode.

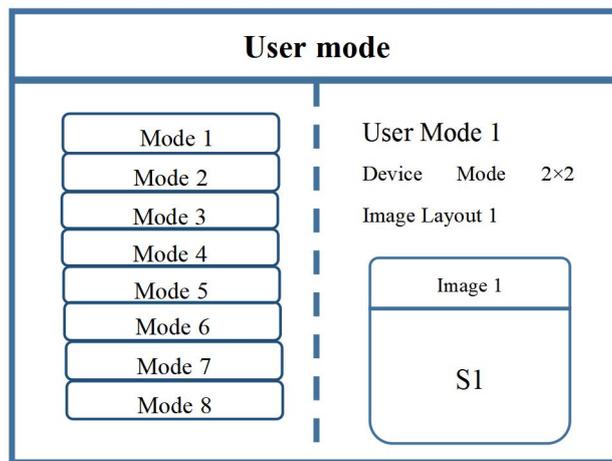
Equipment debugging, late use according to different scenarios, the saved data call out.

There are two types of data calls:

- (1) Call by shortcut key, just click "M1-M4" on the front panel. This method is convenient to use when there are few mode scenes.



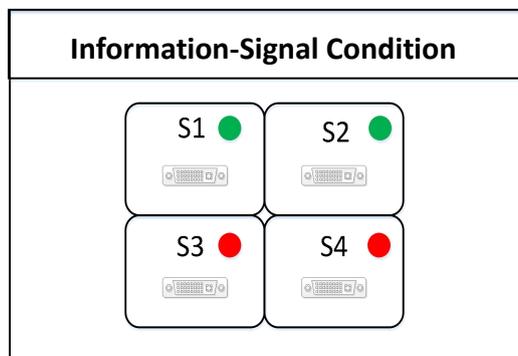
- (2) Through the user mode in the main menu. Click "MENU" and select "User Mode" to enter the user mode retrieval interface. Select the desired mode and click OK.



3.4 Function key:

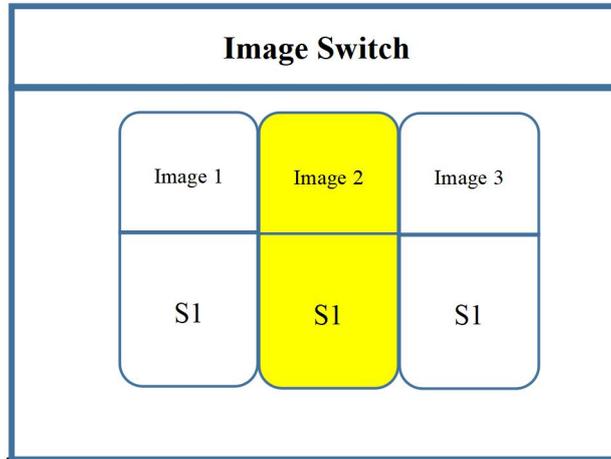
The following is a detailed explanation of the functional area keys:

INFO: information query button. Tap this button to enter the input information query interface, which displays whether the input of each signal source is normal. The interface is as follows: Red indicates signal loss, green indicates signal normal.



WIN: Screen button. Click this button to enter the screen information interface, under which you can select signal source for each screen. Click the "WIN" button to enter the screen switching

interface, and the current signal source of the three screens will be displayed respectively. To switch the signal source, rotate the knob to select the screen, and then click the button "S1-S8" on the front panel to switch



FUNC: function button. Click this button to enter the interface of common functions. Common functions include: brightness adjustment, color correction, output status, switching effects, effects time, VGA adjustment, IP Settings, partial display, partial panorama, picture still, full screen still, serial port Settings, output mapping. These common functions are explained in detail below.

1. Brightness adjustment

The device supports 0-255 order brightness adjustment, and the brightness of all screens can be adjusted synchronously to meet the requirements of users in different scenarios.

2. Color correction

Can set brightness or contrast color correction value.

3. Output status

Click this option to enter the output status control interface. There are three output status options: black screen, blue screen and Normal.

4. Switch effects

The device supports two switching modes: direct switching and fade in and out switching, ensuring no blank screen or blank screen during switching.

5. Special effects time

Adjust the time used for screen or mode switching.

6. VGA regulation

As VGA signal belongs to analog signal, it is easy to produce deviation in common

applications. This product has two ways for VGA correction, one is automatic correction, the other is manual correction.

7. IP Settings

The IP address of the device is used for software debugging.

8. Partial display

Sets the local display of relevant data.

9. Local global

To set the local or global display of any screen switch.

10. The picture is still

Set any screen to be still or active.

11. Full screen still

Set all screens to be still or active

12. Serial port Settings

Set the serial port parameters of the device, such as baud rate.

13. Output mapping

Set concatenation mode and outlet mapping.

14. Driver Settings

Set the output driver.

15. Phase setting

Set the output phase.

3.4 Advanced Menu

1. Chinese /ENG

Set the device language to English or Chinese.

2. Output resolution

The resolution of a single output port can be customized, and the frame rate can be 30Hz, 50Hz, or 60Hz. The default output resolution is 1920 x 1080@60Hz.

3. Factory Settings

All data is cleared and restored to the default state.

4. Plan tasks

The equipment can be switched regularly, often used in unattended places, for example: the school large screen, every morning at eight o'clock to switch to the computer signal, play inspirational slogans, 7:30 p.m., the large screen regularly switch to the set-top box signal to play news broadcast.

5. Common functions

Equivalent to the "FUNC" button on the front panel. Common Settings are in there.

6. Keyboard lock

Lock the keys on the front panel to prevent misoperation by irrelevant personnel.

7. Mode deletion

Delete unwanted patterns.

8. Technical support

Example Query the version number and IP address of a device.

4. Technical Parameters

Input port		
Type	Quantity	specification
DVI-U	8	The maximum resolution is 1920 x 1200@60Hz, which is backward compatible Support the DVI/HDMI/VGA/CVBS Compatible with HDMI1.3 or later, EDID 1.3

Output port		
Type	Quantity	specification
HDMI	12	Supports common output resolutions ranging from 1024 x 768@60Hz to 1920 x 1080@60Hz Supports 60Hz/50Hz/30Hz output frame rate

Control port		
Type	Quantity	specification
RJ11 (RS-232)	1	The data transfer rate is 50、75、100、150、300、600、1200、2400、4800、9600、19200、38400、57600、115200 (BT)
RJ-45	1	100M
RJ-45	1	1000M, Support host software echo

Whole machine specification	
Input power	100-240V AC~50/60Hz 0.6A
Operating temperature	0-45°C
Dimensions	483×325×72mm (L×W×H)
net weight	7KG
Power consumption	100W

5. Q&A

Q1: DVI, HDMI, VGA and CV Port Definition.

A: DVI: Digital (HD) Video Signal, an interface standard jointly introduced by DDWG (Digital Display Working Group) combined by Silicon Image, Intel and etc. It has been optimized in speed, resolution, HDCP agreement and so on. Its signal source is often desktop and laptop.

HDMI: High Definition Multimedia Interface, a digital audio/video interface

technology. It's specialized digital interface and can send audio and video signal at the same time with the quickest data transmission of 5Gbps. Its signal source is usually camera, laptop and information publication system.

VGA: Analog Video Signal (Video Graphics Array), a video transmission standard introduced together by IBM in 1987 with PS/2 at the same time. VGA enjoys high resolution, rapid display rate, rich color and is widely applied among color displays. Its signal source is often desktop, laptop, VOD and Matrix.

CV: Composite video signal, also called composite video, which can pack all signals together and transfer it as a whole. Its signal source is usually camera, DVD, Cable Box, VOD and video matrix.

Q2: Please give a brief introduction of the connection method of graphics, splicer, transmitting card, receiving card and LED.

A: Connect graphics DVI (VGA) output port with splicer DVI-IN(VGA-IN) input---output splicer DVI-OUT to transmitting card---connect transmitting card with terminal receiving card of the back screen by network cable---connect receiving card with each screen body with control and cover whole screen by cascade.

Q3: What is output resolution?

A: Output resolution is pixel mode output by single port of splicer and the largest control range of splicer output. Regular resolutions are: 1024*768, 1280*1024, 1600*1200 and 1920*1080, which are set with the same resolution mode of transmitting card.

Q4: What is administrator password set in PC Software.

A: There is no password and it's allowed to enter into with just a click.

Q5: What are the reasons for failure of serial connection with the application of serial splicing processor?

A: Possible reasons are as follows:

1. Wrong selection of COM port. Just click "Confirm" and re-click "opening serial port" key.
2. Occupation of serial port. Two or more software windows are not allowed to be open simultaneously.
3. Failure of serial port line connection or damage of the line.

4. Damage of COM drive of the board or serial port.

If suggestions above fail to solve your problems at last, please contact with our customer service in time. We will assist you to solve your problems as soon as possible.

Q6: What are the possible reasons for network overtime with network splicing processor?

A: Possible reasons are as follows:

1. IP address of local connection is not in the same field with splicer.
2. Failure of network line or damage of the line.
3. Damage of network port of signal source.

If suggestions above fail to solve your problems at last, please contact with our customer service in time. We will assist you to solve your problems as soon as possible.