User Manual

Multi Picture Splicing Processor

Single card multi-channel hybrid plug-in card

2021V1.2

Preface

Read this user manual carefully before using the product. Pictures are shown in this manual for reference only. Different models and specifications are subject to real product.

This manual is only for operation instruction, please contact the local distributor for maintenance assistance. The functions described in this version were updated till July, 2021. In the constant effort to improve the product, we reserve the right to make functions or parameters changes without notice or obligation. Please refer to the dealers for the latest details.

This manual takes the effect drawing of 20x16 hybrid card processor as an example. The product pictures are for reference only. Please take the real object as the standard.

This article applies to the following types of hybrid card processors:

NO.	Name	Height	Max number of input channels	Max number of output channels
1	8x12 Hybrid card processor	2U	8	12
2	20x16 Hybrid card processor	3U	20	16
3	36x36 Hybrid card processor	6U	36	36

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

SAFETY PRECAUTIONS

To ensure the best performance from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment.
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

Contents

1 INTRODUCTION

1.1 Product Introduction

Multi picture splicing processoris a hybrid card type intelligent picture splicing Processoris, which can display multiple dynamic pictures on multiple screens and realize the function of multi window stitching. This product can automatically detect and identify the board type, support DVI, HDMI and other splicing boards, plug and play, and support video splicing, control third-party equipment and other functions.

The equipment control mode includes RS232 control and LAN client software control, and supports serial port control of remote third-party equipment. The client control software can be used to set various modes of output picture splicing display, input signal OSD setting, scene saving, scene polling.

Multi Picture Splicing Processor can be widely used in urban safety monitoring, intelligent traffic management, video conference, large conference center, large commercial square, military command center, government.

1.2 Features

- Modular design, plug-in structure; FPGA architecture, no embedded operating system, internal self built core operation mechanism, excellent image processing performance;
- Support any resolution output, with the maximum output resolution of 1920x1200 @ 60Hz;
- Support LCD and LED large screen splicing display; The output picture can realize arbitrary splicing display;
- Control mode: RS232 serial port and LAN network port;
- The client software can realize signal switching, signal preview, splicing setting, scene call, scene saving, scene preview, resolution setting, factory setting recovery,
- Support HD basemap display and dynamic caption function setting (advanced control card);
- Support input source signal preview and large screen echo function (advanced control card);
- Support OSD custom character display function of input signal source, and can set character font, size, color, transparency, position;
- Support any window opening, stacking, roaming, zooming, stretching and other operations on the screen;
- Built in WEB human-computer interaction interface control, humanized design, support computer, mobile phone, tablet and other system control equipment, and compatible with multiple browsers, more convenient operation (advanced control

card);

- Through the WEB user interface, it can realize signal board connection detection, signal switching, signal preview, scene call, scene saving, scene polling, online upgrade management, factory setting recovery (advanced control card);
- A single output display screen supports up to 4 windows;
- A single input source supports arbitrary windowing;
- Up to 4 groups of independent display output screens can be set through the client, and the resolution of each group of output screens can be customized;
- With power-off memory function;
- The I / O board supports hot plug;
- It supports 128 scene saving and calling.
- Support quick replacement of customized front panel.

1.3 Package List

- 1 x Multi picture splicing processor
- 4 x Foot pads
- 2 x Mounting ears with 8 Screws
- 2 x handles with 4 Screws
- 1 x Power Cord
- 1 x User Manual
- 1 x Certificate Warranty Card

🕮 ***Note:***

The machine is strictly packed before leaving the factory. Please confirm whether the ordered products and accessories are damaged, deformed or missing before using the products. If there is any damage, discrepancy or missing, please contact the product supplier.

2 Product Appearance

2.1 Front Panel

Figure 2-1 front panel

NO.	Name	Descriptive
①	ACT	● Normal working status: the green indicator flashes; ● Abnormal working state: the indicator light is off or always on.
②	PWR	● Normal state of host power on: normally on; ● Abnormal power on status of the host: the indicator is off.

2.2 Rear Panel

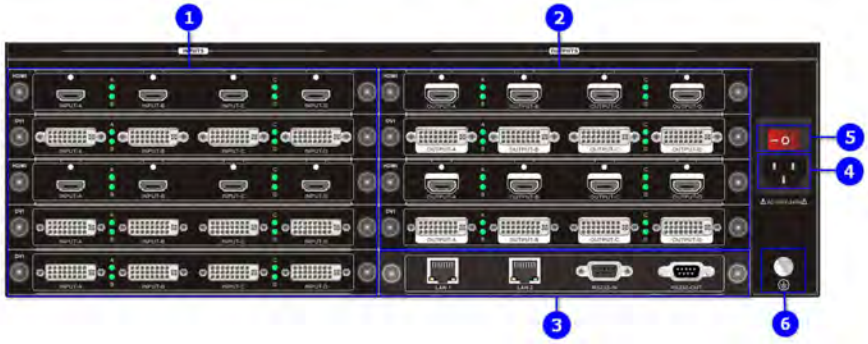


Figure 2-2 rear panel

NO.	Name	Descriptive

NO.	Name	Descriptive
①	Input Channel	● 08x12 hybrid processor: 8 fixed input board channels, up to 2 single cards and 4 spliced input boards can be configured ● 20x16 hybrid processor: 20 fixed input board channels, up to 5 single cards and 4 spliced input boards can be configured ● 36x36 hybrid processor: 36 fixed input board channels, up to 9 single cards and 4 spliced input boards can be configured
②	Output Channel	● 08x12 Hybrid processor: 12 fixed output board channels, up to 3 single cards and 4 output boards can be configured ● 20x16 Hybrid processor: 16 fixed output board channels, up to 4 single cards and 4 output boards can be configured ● 36x36 Hybrid processor: 36 fixed output board channels, up to 9 single cards and 4 output boards can be configured
③	Control module	Control board: ● LAN：1road or 2 road network interface, which controls the machine and is connected with the control equipment (such as PC), which can control the machine through the client software; ● RS232 IN：1 road channel serial port input, control the machine, connect with the control equipment, and send instructions to control the machine through the control equipment; ● RS232 OUT：1 road channel serial port output, control the third-party equipment, connect with the third-party equipment, and support the control of remote third-party equipment through the control equipment.
④	Power port	Connect with 100~240V AC outlet.
⑤	Power button	NO/OFF
⑥	Ground	Ground connection.

🕮 ***Note:***

- The cards inserted in the rear panel are for reference only;

- The product picture is for reference only, please take the real object as the standard;
- An ordinary control card has only one network port.

3 Signal Board

The Multi Picture Splicing Processor is compatible with HDMI, DVI and other input and output boards in various signal formats. The boards support hot plug, plug and play, and can be matched with different boards according to the use requirements of the system. The following is a summary of the signal boards supported :

Signal Board

Type	NO.	Signal Port
Single card four-way input board	DVI IN	4-way DVI input
	HDMI IN	4-way HDMI input
	SDI IN	4-way SDI input，4-way SDI loopout
	VGA IN	4-way VGA input
	CVBS IN	4-way CVBS input
Single card two-way input board	4K HDMI IN	2-way 4K HDMI input
	4K DP IN	2-way 4K DP input
Single card four-way output board	DVI OUT	4-way DVI output
	HDMI OUT	4-way HDMI output

Other board:

Type	Control port
Control cards	TCP/IP、RS232

3.1 Single card four-way input board

3.1.1 DVI input signal board

- Port: 4-way DVI input port;
- A. B, C and D green working status indicators: respectively represent the working status of four DVI ports. The indicator is always on after normal access to the signal source and normal operation;
- Support HDMI1.3,compatible with HDCP;
- Max input resolution 1920 x 1200 @ 60Hz;

- Support HDMI and DVI-D signal formats;
- Automatically identify the input signal format without manual setting;
- Single input signal supports arbitrary window opening;
- It supports the character superposition function of input signal, and the character related attributes can be changed through the client software. See the operation instructions of the client software for relevant operations;
- Have embedded EDID management technology and support DDC control;
- It has the function of power-off saving.

Figure 3- 1 DVI IN

Pin layout of the DVI connector (female)：

Pin	Function	Pin	Function
1	T.M.D.S.Data2-	**13**	T.M.D.S.Data3+
2	T.M.D.S.Data2+	**14**	+5V Power
3	T.M.D.S. Data 2/4 Shield	**15**	Ground (for +5V)
4	T.M.D.S. Data 4-	**16**	Hot Plug Detect
5	T.M.D.S. Data 4+	**17**	T.M.D.S. Data 0—
6	DDC Clock	**18**	T.M.D.S. Data 0+
7	DDC Data	**19**	T.M.D.S. Data 0/5 Shield
8	No Connect	**20**	T.M.D.S.Data5-
9	T.M.D.S.Data1-	**21**	T.M.D.S.Data5+
10	T.M.D.S.Data1+	**22**	T.M.D.S. Clock Shield
11	T.M.D.S.Data1/3 Shield	**23**	T.M.D. S. Clock+
12	T.M.D.S.Data3-	**24**	T.M.D.S .Clock-

3.1.2 HDMI input signal board

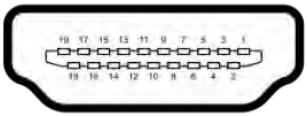
- Port: 4-way HDMI input port;
- A. B, C and D green working status indicators: respectively represent the working status of four HDMI ports. The indicator is always on after normal access to the

signal source and normal operation;

- Support HDMI,compatible with HDCP;
- Support HDMI and DVI-D signal formats;
- Max input resolution 1920 x 1200 @ 60Hz;
- Single input signal supports arbitrary window opening;
- It supports the character superposition function of input signal, and the character related attributes can be changed through the client software. See the operation instructions of the client software for relevant operations;
- Have embedded EDID management technology and support DDC control;
- It has the function of power-off saving.

Figure 3- 2 HDMI IN

Pin layout of the Type A connector (female):



Pin	Function	Pin	Function
1	TMDS Data 2+	11	TMDS Clock Shield
2	TMDS Data 2 Shield	12	TMDS Clock-
3	TMDS Data 2-	13	CEC
4	TMDS Data 1+	14	N.C.
5	TMDS Data 1 Shield	15	SCL
6	TMDS Data 1-	16	SDA
7	TMDS Data 0+	17	DDC/CEC Ground
8	TMDS Data 0 Shield	18	+5V Power
9	TMDS Data 0-	19	Hot Plug Detect
10	TMDS Clock+		

3.1.3 SDI input signal board

- Port: 4-way SDI input ports, with one SDI ring out for each input;
- SDI input supports ring out and local signal monitoring
- Support SDI signal formats;

- The max distance of input and output signal transmission is 100m;
- Max input resolution 1920 x 1080 @ 60Hz;
- Single input signal supports arbitrary window opening;
- It supports the character superposition function of input signal, and the character related attributes can be changed through the client software. See the operation instructions of the client software for relevant operations;
- Have embedded EDID management technology and support DDC control;
- It has the function of power-off saving.

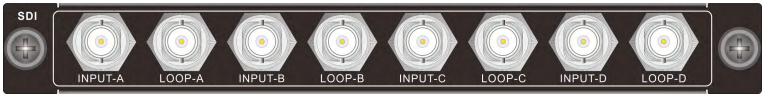


Figure 3- 3 SDI IN

3.1.4 CVBS input signal board

- Port: 4-way CVBS input port;
- A. B, C and D green working status indicators: respectively represent the working status of four CVBS ports. The indicator is always on after normal access to the signal source and normal operation;
- Support CVBS signal formats
- Adaptive PAL and NTSC systems;
- Support resolution PAL: 720x576i, NTSC: 720x480i;
- Single input signal supports arbitrary window opening;
- It supports the character superposition function of input signal, and the character related attributes can be changed through the client software. See the operation instructions of the client software for relevant operations;
- Have embedded EDID management technology and support DDC control;
- It has the function of power-off saving.

Figure 3- 4 CVBS IN

3.1.5 VGA input signal board

- Port: 4-way VGA input port;
- A. B, C and D green working status indicators: respectively represent the working status of four VGA ports. The indicator is always on after normal access to the

signal source and normal operation;

- Support VGA signal formats
- Max input resolution 1920 x 1080 @ 60Hz;
- Single input signal supports arbitrary window opening;
- It supports the character superposition function of input signal, and the character related attributes can be changed through the client software. See the operation instructions of the client software for relevant operations;
- Have embedded EDID management technology and support DDC control;
- It has the function of power-off saving.

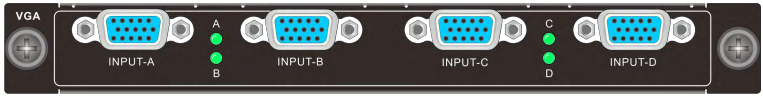


Figure 3- 5 VGA IN

3.2 Single card two-way input board

3.2.1 4K HDMI input signal board

- Port: 2 HDMI input ports (reserved function of B and D ports);
- A. B, C and D green working status indicators: respectively represent the working status of four HDMI ports. The indicator is always on after normal access to the signal source and normal operation;
- Support HDMI and DVI-D signal formats;
- Support HDMI, compatible with HDCP
- Max input resolution 3840x2160 @30Hz;
- Single input signal supports arbitrary window opening;
- It supports the character superposition function of input signal, and the character related attributes can be changed through the client software. See the operation instructions of the client software for relevant operations;
- Have embedded EDID management technology and support DDC control;
- It has the function of power-off saving.

Figure 3- 6 4K HDMI IN

3.2.2 4K DP input signal board

- Port: 2 DP input ports；
- A. B green working status indicators: respectively represent the working status of two DP ports. The indicator is always on after normal access to the signal source and normal operation;
- Support HDMI,compatible with HDCP
- Max input resolution 3840x2160 @30Hz;
- Single input signal supports arbitrary window opening;
- It supports the character superposition function of input signal, and the character related attributes can be changed through the client software. See the operation instructions of the client software for relevant operations;
- Have embedded EDID management technology and support DDC control;
- It has the function of power-off saving.

Figure 3- 7 4K DP IN

3.3 Single card four-way output board

3.3.1 DVI output signal board

- Output: 4-way DVI output port
- A. B C and D green working status indicators: respectively represent the working status of four DVI ports. The indicator are always on after the normal output signal display equipment is in normal operation;
- Max output resolution 1920x1200 @60Hz,

  And support custom output resolution;
- The output ports support DVI and HDMI signal formats
- The output picture supports splicing, segmentation, superposition, scaling, stretching, cutting, picture in picture, roaming and other formats;
- The output is externally connected to a single display screen, which supports the display of up to 4 windows;
- Specially, channel A and B or channel C and D need to be in the same grouping;
- It has the function of power-off saving.

Figure 3- 8 DVI OUT

3.3.2 HDMI output signal board

- Output: 4-way HDMI output port
- A. B C and D green working status indicators: respectively represent the working status of four HDMI ports. The indicator are always on after the normal output signal display equipment is in normal operation;
- Max output resolution 1920x1200 @60Hz,

  And support custom output resolution;
- The output ports support DVI and HDMI signal formats
- The output picture supports splicing, segmentation, superposition, scaling, stretching, cutting, picture in picture, roaming and other formats;
- The output is externally connected to a single display screen, which supports the display of up to 4 windows;
- Specially, channel A and B or channel C and D need to be in the same grouping;
- It has the function of power-off saving.

Figure 3- 9 HDMI OUT

3.4 General control card

- 1 LAN port and 2 RS232 ports;；
- Support client software control and serial port RS232 instruction control;
- Support the control of third-party devices through RS232 out port;
- Factory default equipment IP: 192.168.0.178; Port number: 4001;
- Baud rate: 115200.

Figure 3- 10 general control card

3.5 Advanced control card

- 2 LAN ports and 2 RS232 ports;;
- Support client software control and serial port RS232 instruction control;
- Support the control of third-party devices through RS232 out port;
- Support HD basemap display and dynamic caption function setting;
- Support input source signal preview and large screen echo function;
- Factory default equipment IP: 192.168.0.178; Port number: 4001;
- Baud rate: 115200.

Figure 3- 11 advanced control card

4 System connection

4.1 Precaution

1. The installation and use environment of the system shall be kept clean, proper temperature and humidity, and well ventilated;
2. All power switches, plugs, sockets and power lines of equipment in the system must ensure insulation safety;
3. Connect peripherals and finally power up the syste.

4.2 Connection configuration diagram

Taking 20x16 hybrid card processor as an example, the system connection diagram is as follows:

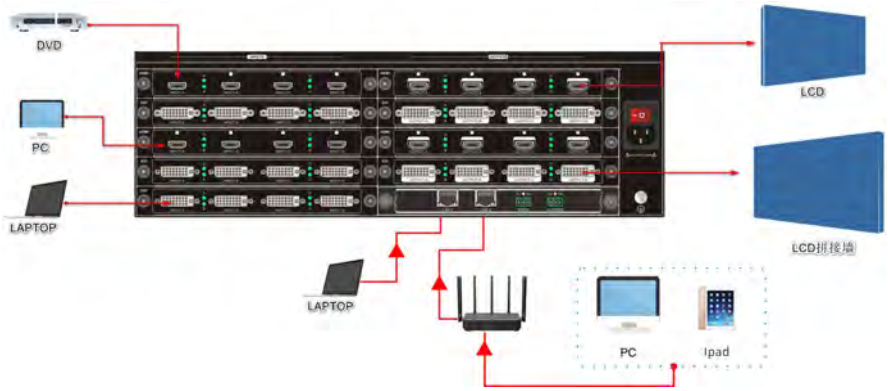


Figure 4- 1 Connection configuration diagram

The connection and configuration steps are as follows:

Step1. Correctly install the required board in the card slot at the back of the splicing processor equipment;

Step2. Connect the required input signal source equipment with the input port of the input board;

Step3. Connect the splicing screen with the video output port of the output board;

Step4. The splicing processor supports two control modes: RS232 serial port and LAN network port. Connect the serial port or network port of the control equipment (such as PC) with the "RS232 in" port or network port of the machine, and control the machine through the spell control client software or serial port instruction. For details, see 5 RS232 control and 6 client software control

Step5. Connect the power input port with 100V ~ 240V AC power supply, and connect the ground wire connection end;

Step6. Open the control software, select the control mode (network port or serial port control) in "communication settings" on the main interface, and return to the main interface to connect the equipment;

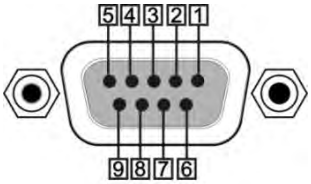
Step7. Enter the splicing setting and set the output parameters (number of groups, screen rows and columns, edge spacing, output resolution);

Step8. Enter the screen setting, map the output port to the corresponding group, and adjust the screen order.

🕮 ***Note:***

- *Serial port control mode: the control equipment PC must be connected to the "RS232 IN" port to control the machine or third-party equipment, and cannot be*

connected to the "RS232 OUT" port; The “RS232 IN” port of this machine is a 9pin female connector, and the pin description is as follows:



Pin	Name	Function
1	N/u	Null
2	Tx	Send
3	Rx	Receive
4	N/u	Null
5	Gnd	Ground
6	N/u	Null
7	N/u	Null.
8	N/u	Null
9	N/u	Null

- Network port control mode: The factory default IP address of this device is 192.168.0.178, and the port number is 4001. Ensure that the PC and this device are in the same network segment to control this device. Modify IP address of PC：“Network”→ “attribute” → “Local connect”→ “attribute” → “Internet protocol 4(TCP/IPv4)” → “Set the IP address to 192.168.0.xxx network segment” → Click “OK” button；

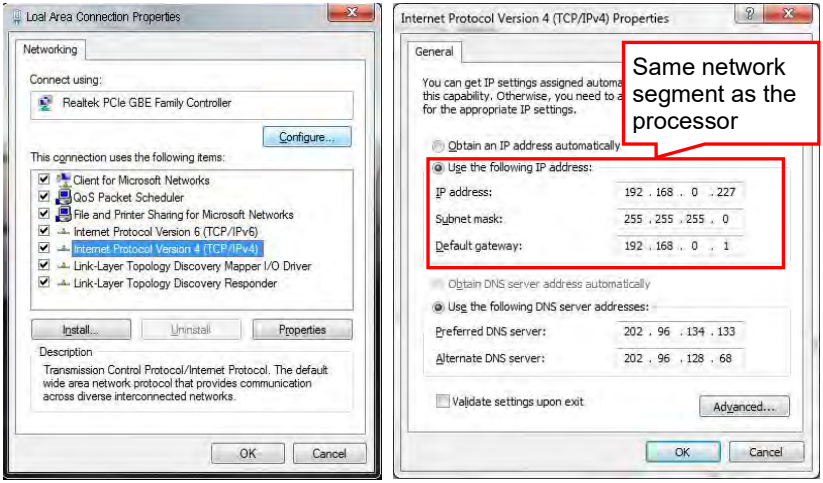


Figure 4-2 Change IP

- The system uses twisted pair. It is recommended to use t568b straight through twisted pair with shielding to reduce interference;

- After the equipment is powered on, the display screen is in standby state before the splicing screen mapping relationship is not set;
- This drawing is for reference only. Customers can build application systems according to actual needs.

4.3 Control of third-party equipment

Connect the serial port of the control device (such as PC) with the "RS232 IN" port of the splicing processor, or the network port of the control device with the "LAN" port of the splicing processor, and then use the RS232 serial port cable to connect the remote third-party device control serial port with the "RS232 OUT" port of the splicing processor. Open and connect the client control software, and send the third-party device control instruction through the client peripheral control interface to control the third-party device. The system connection diagram is shown in the figure below:

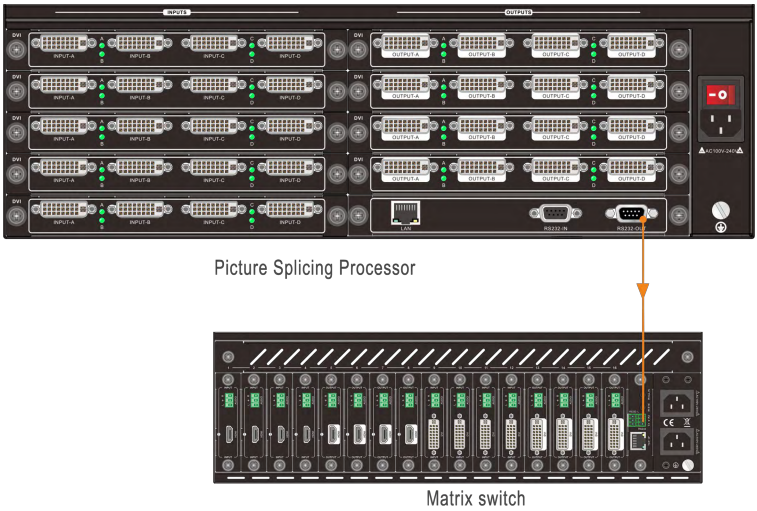


Figure 4- 3 Control equipment connection diagram

5 RS232 Control

Connect the control device (e.g. PC) to the RS232 port to control the processor by sending RS232 commands. This RS-232 communication port is a female 9- D connector.

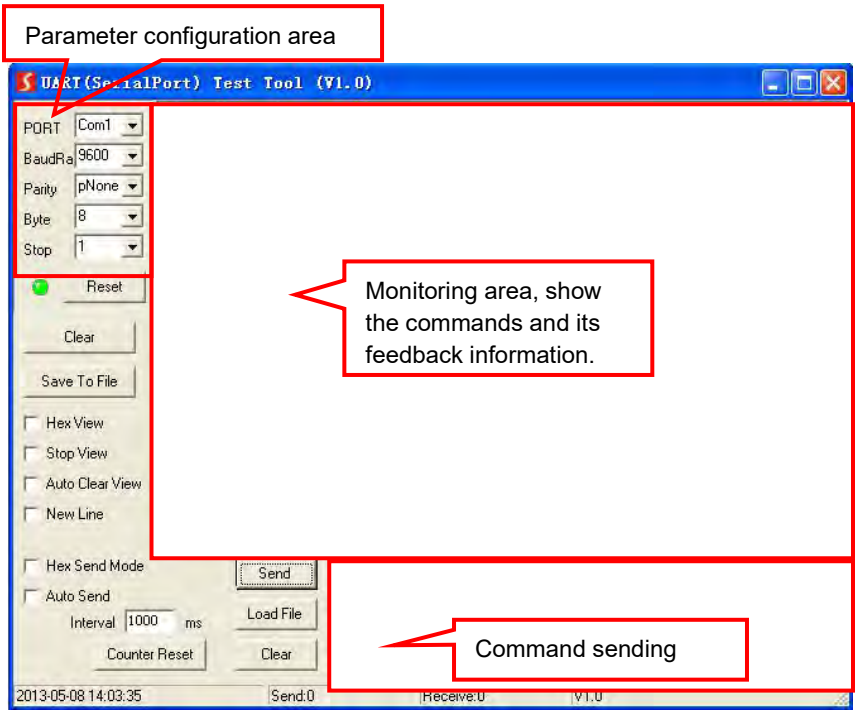
5.1 RS232 Control Software

When connect to the RS232 port of a computer with control software, users can

control it by that computer. To control the processor, users need to use RS232 control software.

- **Installation:** Copy the control software file to the computer connected with the Transmitter.
- **Uninstallation:** Delete all the control software files in corresponding file path.
- **Basic Setting:** Connect the matrix to all input devices and output devices needed, then connect it to a PC which is installed with RS232 control software. Double-click the software icon to run this software. Please refer the software **CommWatch.exe** as example. The icon is shown as below:

The interface of the control software is showed as below:



Please set the parameters of COM number, bound rate, data bit, stop bit and the parity bit correctly, then the RS232 commands can be sent in Command sending area.

5.2 RS232 Communication Command

RS232 serial port parameters：

Baud rate：115200

Data bit：8

Stop bit：1

Parity bit：None

RS232 Command	Description	Sample： **Reture code：**
(info,dev)\r\n	Query device information.	(info,dev)\r\n "type": "LCD-8*12", "icard num": 2, "iport num": 4, "ocard num": 3, "oport num": 4, "layer num": 2, "fan speed": 1
(ip)\r\n	Query the IP address of the device.	(ip)\r\n "ip": "192.168.0.174", "mac": "00-00-00-00-01-03", "mask": "255.255.255.0", "gac": "192.168.0.1", "port": 4001
(mip,ip,)\r\n	Modify the IP address of the device. ip：IP address	(mip,192.168.0.173)\r\n "msg": "ok", "data": "(mip,192.168.0.173)\r\n"
(scene ,save , group,Id,scene_name)\r\n	Save scene. group：Group number to be saved(1~4) Id：Scene number(1~128) scene_name：Scene name, no more than 20 characters.	(scene,save,1,8,Scene88)\r\n "msg": "ok", "data": "(scene,save,1,8,Scene88)\r\n"
(scene,call,Id)\	Scene recall	(scene,call,1)\r\n

RS232 Command	Description	Sample： **Reture code：**
r\n	Id：Scene number(1~128)	"msg": "ok", "data": "(scene,call,1)\r\n"
(scene,rotate, group，en)\r\n	Turn scene polling on or off group：Group number to be polled (1~4) en：swith（1: on，0: off）	(scene,rotate,1,1)\r\n "msg": "ok", "data": "(scene,rotate,1,1)\r\n"
(args,rotate,group,period,s1, sn)\r\n	Set the time interval of scene polling. group：Group number to be polled (1~4) period：the time interval(5 ~ 120s) s1,…sn：scene nuber（Multiple scene numbers can be set for polling）	(args,rotate,1,7,9,10)\r\n "msg": "ok", "data": "(args,rotate,1,7,9,10)\r\n"
(wndichg,a,b,c)\r\n	Switch the input signal source of the specified window a to input b. a：Window ID b：input port c：Window clipping scheme, data saved by the host computer. 0：No clipping 1：Cutting plan 1 2：Cutting plan 2 3：Cutting plan 3 4：Cutting plan 4	(wnd,ichg,3,1,0)\r\n "msg": "ok", "data": "(wnd,ichg,3,1,0)\r\n"

6 Client software control

6.1 Login

The default initial software account is "admin" and the default password is "168". Select the default user name for login for the first time, as shown in the figure below. If the user name and password need to be modified, please refer to 6.6.4 user management.

Figure 6-1 login

6.2 Software main interface

After logging in and connecting, the software enters the main interface, as shown in the following figure:

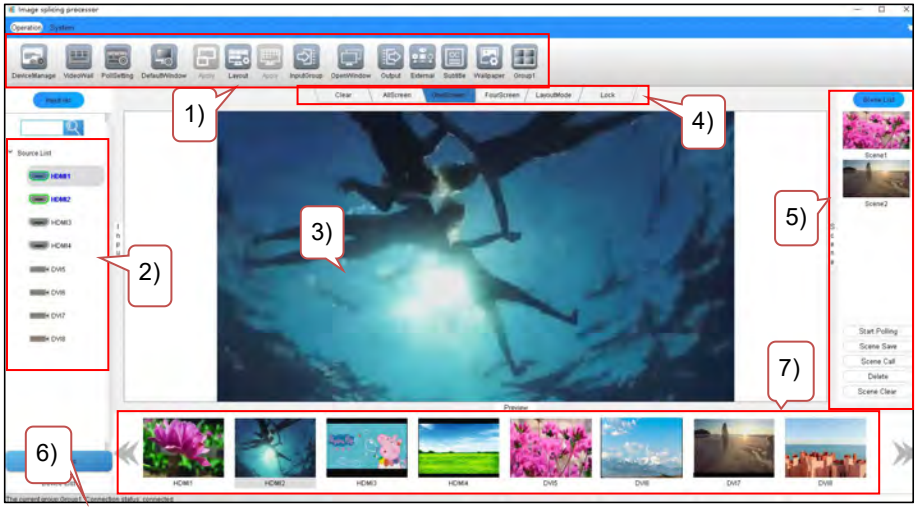


Figure 6-2 Control software interface

1) **Menu bar:** it mainly includes 14 submenus of "basic operation" module and 8 submenus of "system management" module;
2) **Input list area:** signal list of all input boards, supporting signal source search and real-time detection;
3) **Screen splicing operation area:** display a virtual large screen splicing image, which can be used for window opening, moving, splicing and other operations;
   - **Rename:** right click the virtual screen to support custom output port name, see the lower left corner of the virtual screen.
4) **Window operation area:** displays the window operation function
   a) **Clear window:** it means to clear all open windows on the screen with one key;
   b) **Full screen mode:** drag the source to the splicing wall to open a full screen window;
   c) **Single screen mode:** drag the source to the splicing wall to open a single screen window;
   d) **Quad screen mode:** drag the source to the splicing wall to open a 1 / 4 window on a single screen;
   e) **Lock mode:** it means that the screen is locked, and no operation can be performed on the splicing wall except clearing the window.
5) **Scene management area:** displays the currently saved scene and preview. Support to start polling, save, call, delete and empty scene operations;
6) **Status bar:** Operation tips, physical parameters and other information can be displayed.
7) **Video preview:** the input source preview screen can be displayed.

6.3 Input signal source setting

Input list area: when there is signal input, the device icon will be show and the light will be come on, otherwise it will be gray. When the mouse selects the input signal source, right-click it to support OSD setting, EDID setting, clipping, renaming and attribute.

6.3.1 OSD setting

Click "OSD settings" to enter the following interface:

- Subtitle content, font, display status, subtitle text and background color, background color transparency, position (taking the actual input resolution as the extreme value) can be set in the "OSD settings" interface as required;

- Subtitle text and background color can select system color, custom color or color at any position in the screen;
- The display state of subtitles can be selectively set. The blue background is the display state and the transparent is the non diplay state

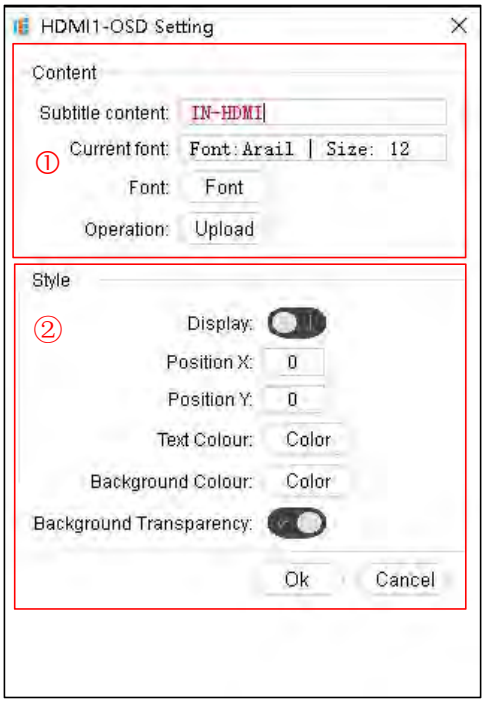


Figure 6- 3 OSD setting

6.3.2 EDID setting

The input board supports embedded EDID management technology and supports modifying the EDID data in the input board through the client software. Click the "EDID settings" button to enter the following interface:

Figure 6-4 EDID setting

6.3.3 Clip

When the output display is inappropriate, the signal source can be cropped to make the screen display meet the use of different scenes. A single input signal source can save four Clip schemes at the same time. Click the "Clip" button to enter the following interface:

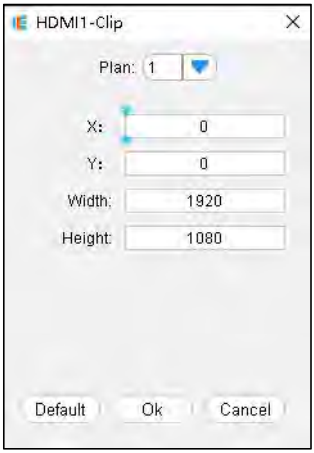


Figure 6-5 Input signal clip

Enter the description of the clipping method: "x and Y" are the starting points of the clipping coordinates, and the width and height are the size of the cropped window. For example, cut a signal window with a size of 1280 * 720 from X coordinate 120 and Y coordinate 100.

6.3.4 Rename

Rename refers to the custom input board name.

6.3.5 Attribute

Input board attribute query, which supports the query of input board name, type and signal source resolution attributes.

Figure 6- 6 Input signal attribute

6.4 Scene management

6.4.1 Start / stop polling

Start / stop polling is to start or stop the saved scene in the "polling settings" interface with clicked. See 6.5.6 polling setting for details of saving polling scenario data.

6.4.2 Scene save

Scene save is the data storage of the position, size, stacking order, signal source and other parameters of all input signal windows on the splicing setting window of the current screen. It is represented by scene name and scene number. The scene name is automatically named or customized from Scene 1, and the scene number is automatically or manually selected from Scene 1. Up to 128 groups of scenes can be saved.

Click "save scene" in the scene management column to enter the following interface. You can enter a user-defined name or select a scene number in the blank space as needed, and finally click "OK" to save the scene. When saving, if the scene number selection is the same as the previously saved scene, the previous scene will be automatically replaced.

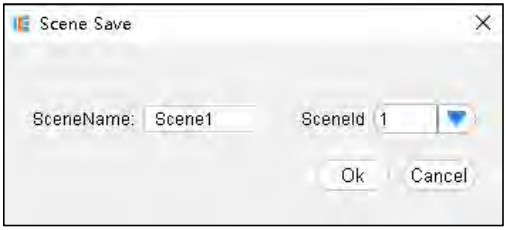


Figure 6-7 Scene save

Note:

- *Scene save is to store relevant data in the device.*
- *After saving the scene, a preview will be generated in the scene list bar on the right. After selecting the scene, click "Scene call" to call the scene.*

6.4.3 Scene call

Scene call is to call the selected scene with one key to facilitate field application operation.

6.4.4 Scene deletion

Scene deletion is to delete the selected scene.

6.4.5 Empty scene

Empty scene is to delete all saved scenes with one click.

6.5 Basic Operation

6.5.1 Device management

After logging in the software, you need to set the connection parameters to realize the connection between the splicing processor and the client software.

Click "device management" to enter the following interface to add equipment. Devices can be added through LAN network port or RS232 serial port.

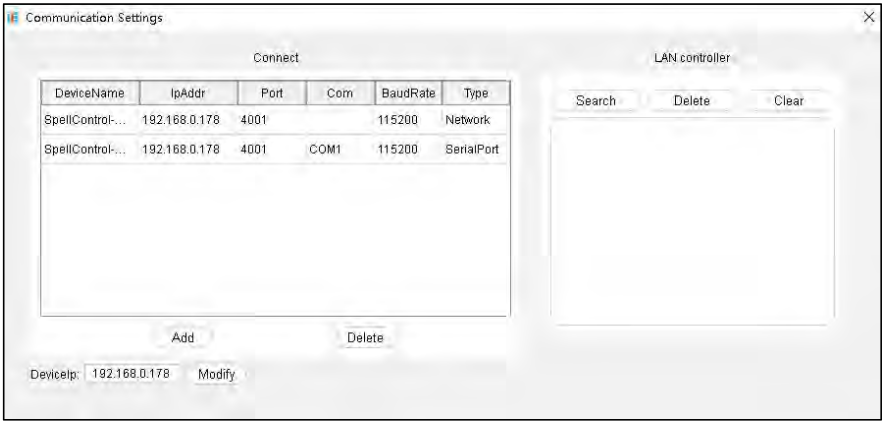


Figure 6- 8 Communication settings

Figure 6- 9 Serial port / network setting

1) RS232 Serial port control

The "RS232 IN" port of the control computer and the splicing processor is connected through the serial port line to realize the serial port connection communication. Add the device connection mode to the serial port of the client software, as shown in the above figure. The operation steps are as follows:

① Select and double-click the equipment "spell control - serial port" in the connection area to enter the serial port connection setting interface, as shown in Figure 6-8 communication setting interface above;

② Select the serial port number and baud rate of the splicing processor in the pop-up box, and click "OK" to save the parameters, as shown in Figure 6-9 serial port / network setting interface above;

③ Return to the main interface, click **"equipment list"**, select **"spell control - serial port"**, and double-click the connected equipment.

2) Network port control

Connect the spliced processor network port with the control computer through

twisted pair to realize network port connection communication. The connection mode of adding equipment to the client software network port is shown in the figure above. The operation steps are as follows:

① Set the same network segment of the control computer. See 4.2 connection configuration diagram;

② When the device IP address is unknown, select controller in LAN, click search device IP, double-click the searched device IP address, and then click "**OK**" in the network connection bar to save the modification;

③ When the IP address of the device is known, double-click "**spell control - Network**" in the connection area, select the connection type "**network**" in the pop-up box, enter the device IP, and click "**OK**" to save the parameters;

④ Return to the main interface, click **"equipment list"**, select "**spell control - Network"**, and double-click the connected equipment.

🕮 ***Note：***

- *When the network interface is connected, it supports cross network segment search for devices, but does not support cross network segment connection, that is, it is not the same network segment as the control device and cannot be connected.*

1) **Change IP**

After connecting the device through the network port / serial port, you can modify the device IP address. The operation steps are as follows:

a) Connect equipment through network port / serial port;

b) Fill in the **"change IP"** address in the **"change IP"** box;

c) Click the "**change**" button to modify successfully.

6.5.2 Splice settings

Click "**splicing setting**" in the basic operation module to enter the splicing setting interface. You can select to set screen grouping, large screen type, arrangement mode of physical screen, edge width, logical sub screen, output resolution, output resolution customization, screen mapping and screen coordinate settings. It also supports the setting of software function authorization.

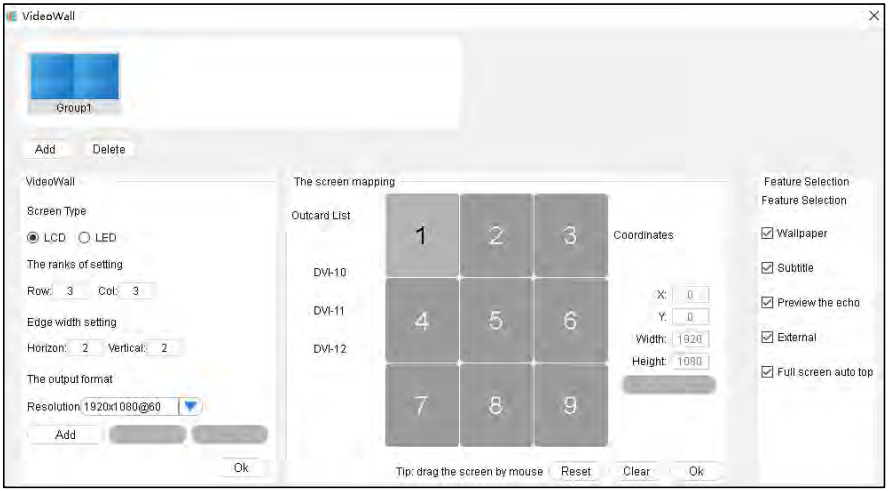


Figure 6- 10 splicing settings

1) “Screen grouping": four groups of screen grouping are supported. Each grouping parameter and name can be customized. Double click to modify the grouping name;

2) “Large screen type ": LCD and led settings are supported. Setting led types can customize pixels;

3) “Row and column setting ": the actual combination format of large screen display. This software can support 72 x 72 combination format splicing at most. Combined with the output channel of application equipment and application needs, the splicing combination format can be customized;

4) “Edge width setting ": the value is 0-99. When the display device is LCD, the black edge between screens will make the image have the vision of being cut, and the display effect is poor. Therefore, the frame compensation function is required. The "edge width setting" of the software can realize this function;

5) “Output format resolution: the system has a conventional output resolution. You can also click the "add" button to create a new resolution for the screen, and the new resolution will be automatically added to the "resolution" list;

6) “Screen mapping ": set the output display screen so that the physical screen corresponds to the actual output display screen. See 6.5.3 screen mapping for details;

7) “Function selection: that is function authorization,Including "**Basemap setting**", "**Peripheral control**", **"Subtitle settings**", “**Preview echo**” and **"Automatic top setting"** functions:

   A. **Basemap setting：** After this function is enabled, the "**basemap setting**"

submenu will be added in the basic operation module. Select the corresponding group to enter this function and upload basemaps for different groups. As shown 6.5.15 basemap setting;

B. **Subtitle settings：** After this function is enabled, the "subtitle setting" submenu will be added in the basic operation module. Through this interface, you can upload subtitles, set font size, color, display position, subtitle static, scroll, subtitle switch.. As shown 6.5.14 Subtitle settings;

C. **Preview echo：** after this function is enabled, the video preview bar is displayed at the bottom of the main interface, and 8 echo images are displayed;

D. **Peripheral control：** after this function is enabled, the "**peripheral control**" submenu will be added in the basic operation module. Through this interface, the instructions will be sent to the third-party equipment through the "**RS232 OUT**" port;

E. **Automatic topping：** after this function is enabled, when the window is set to full screen, it will be displayed automatically to ensure that the full screen window screen is displayed first.

Combined with the splicing processor output channel, this paper briefly introduces the arrangement mode of setting the physical screen to 3 x 3. The setting effect is as follows:

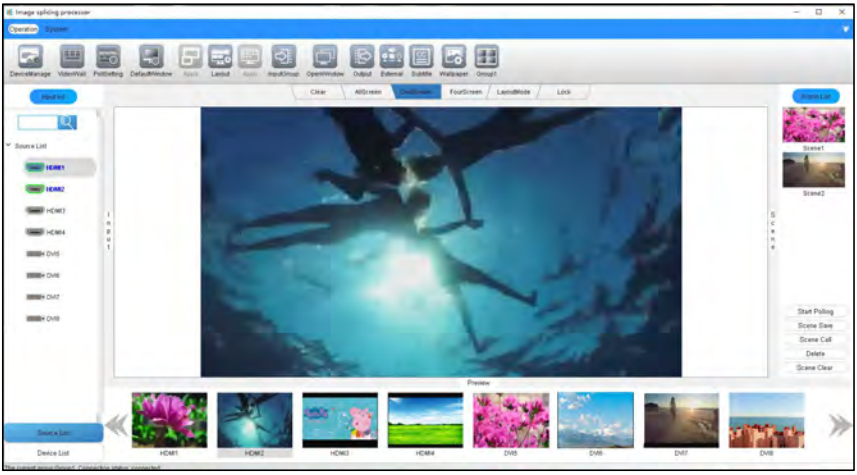


Figure 6- 11 Screen arrangement（3 x 3）

Note：

- *The output resolution parameters of the software system cannot be modified or deleted, and the user-defined output resolution can be modified or deleted as needed. The user-defined resolution setting interface is as follows, and parameters*

can be set according to requirements:

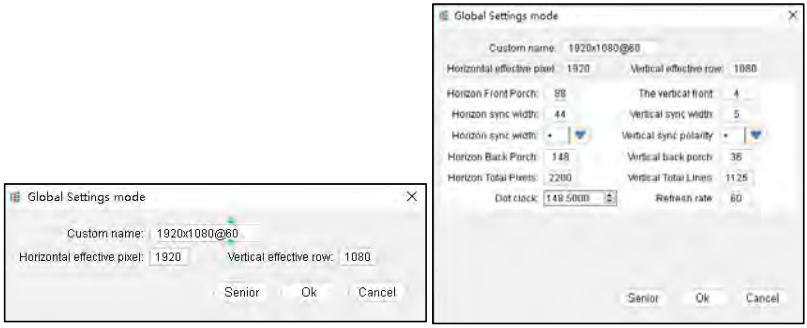


Figure 6- 12 Resolution setting

6.5.3 Screen mapping

In the "screen mapping" interface of the "splicing setting" module, the output display screen can be set so that the physical screen corresponds to the actual output display screen.

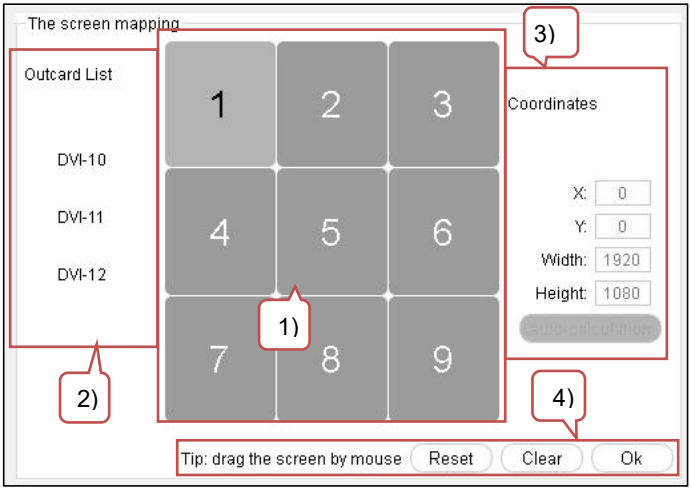


Figure 6- 12 Screen order

1) **Screen mapping**: output signal card corresponding to the screen.
2) **Output list**: the system automatically identifies the output board.
3) **Screen coordinate setting:** screen horizontal starting point, vertical starting point, screen width and screen height shall be set with LED screen.
4) Dragging the mouse to change the position of the screen has the following functions:

a) **Reset:** set the output signal corresponding to each screen by default;

b) **Clear:** cancel all screen output signals set in the current group;

c) **OK**: save the setting, and the set output signal can be displayed in the actual screen.

🕮 ***Note:***

- “After the "reset current" or "cancel current" settings are completed, click the "confirm" button to save and take effect the set parameters;

When some screen positions do not correspond to the output card port, select the corresponding screen in the interface as shown in Figure 6-14 below. At this time, click the output card and the corresponding display will light up. Drag the output card to the lighting window with the mouse to adjust the display screen to achieve the correct display of the screen, as shown in Figure 6-15 below.

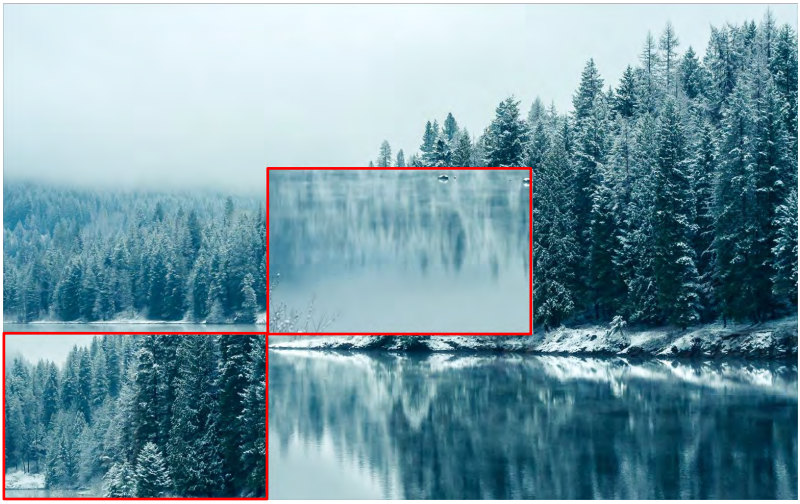


Figure 6- 14

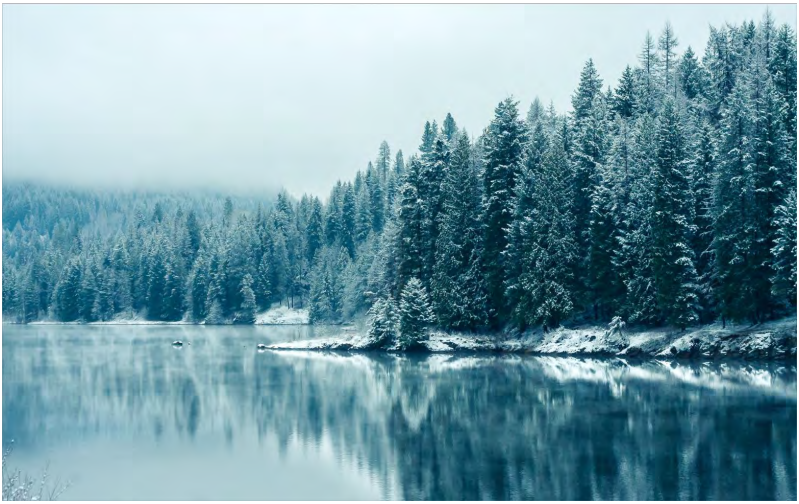


Figure 6- 15

When the output card list is more than the number of screen display windows, click the output card in the "output card list" on the left to put it into the output window on the right, and try to display the screen in the actual output display screen in turn.

6.5.4 Splicing window

Windows of any size and position can be set in the picture splicing setting area, and the windows opened on the picture splicing setting window will be displayed one by one on the actual output display screen. The software can open a new window in the following two forms:

1) Click on the input card list on the left to select the input signal to be displayed, then press and hold the left mouse button at any position in the screen splicing setting window, drag to the bottom-right, release the mouse after reaching the appropriate position, and then open a new window with the current input source as the content at the corresponding position of the large screen.

2) You can drag the signal source directly to the screen splicing setting window from the input card list on the left. When you release the mouse, a new corresponding window will be opened on the physical screen where the mouse is located.

Directly drag the window to adjust the screen output size. The window introduction and drawing effect are as follows:

Figure 6- 16 Window introduction

Right click on the window to pop up a dialog box. This window can be adjusted in the dialog box, including: top, bottom, up, down, close, select video source, window zoom in, window zoom out, lock, full screen display and properties;

a) **Top:** move the current window to the top display;

b) **Bottom setting**: move the current window to the lowest display;

c) **Close:** close the window, which is equivalent to the second button in the upper right corner of the window;

d) **Select video source:** select signal source, which is equivalent to directly dragging the signal source in the input card list on the left to the corresponding window;

e) **Window zoom in**: zoom in to the occupied logic sub screen for full screen display;

f) **Window zoom Out:** the enlarged window returns to its original size;

g) **Lock position:** the size and position of the lock window and the lock window screen are displayed preferentially;

h) **Full screen:** enlarge the window to the whole screen for full screen display. Equivalent to the first button in the upper right corner of the window, or double-click the blue title area;

i) **Property:** set window title display status, window title content, window position and window size information.

Figure 6- 17 Window attribute

🕮 ***Note:***

- *Double click the blue title area to display or restore the window size in full screen;*
- *Double click the window body area to enlarge or shrink the window. The function is the same as window enlargement and window reduction;*
- *In the picture splicing setting window, the window in gray status is not displayed.*

6.5.5 Picture splicing

The machine supports picture in picture display, image overlay display, multi screen 1 screen display, single screen multi screen display and splicing screen.

1) Multiple screens can be spliced to display one Picture, for example, 9 screens and 1 Picture

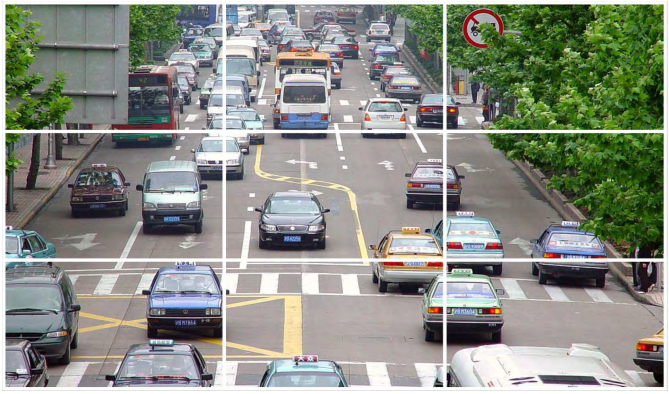


Figure 6- 18 Multi screen 1 picture setting

2) Different screens can display different pictures separately, for example: 3

screens and 3 pictures

Figure 6- 19 3 screens 3-pictures setting

3) A single screen can display up to 4 pictures, for: 1 screen and 2 pictures

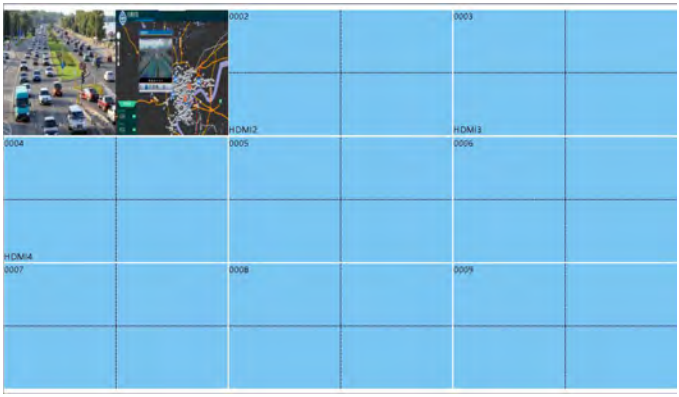


Figure 6- 20 1 screens 2-pictures setting

4) Picture in picture: multiple pictures can be displayed simultaneously on the same screen, as shown below:

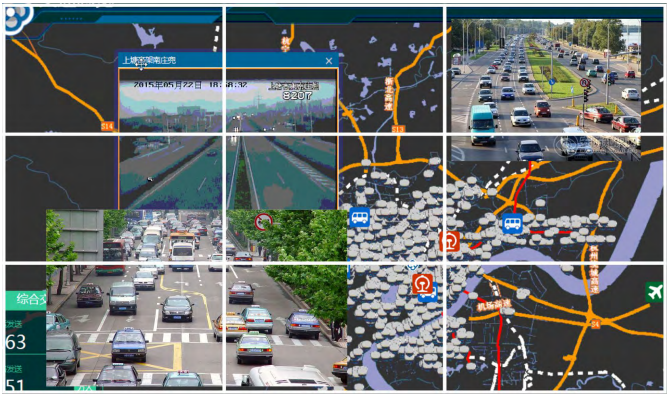


Figure 6-21 Picture in picture setting

6.5.6 Polling settings

"**Polling setting**" means that the saved scene will be specified and called automatically in a loop. When in use, add the scene in the scene list on the left to the polling list on the right, set the polling time interval, and click start. Select "**polling setting**" in the basic operation module to enter the polling setting interface, as follows:

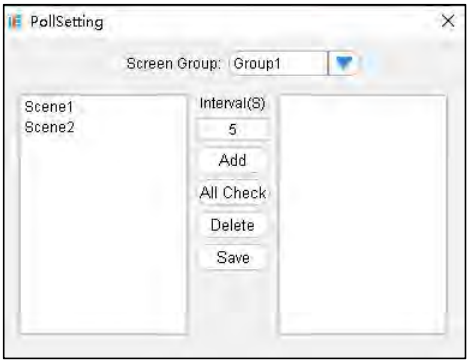


Figure 6-22 Polling settings

1) **Time interval:** that is, the scene call time interval, with a minimum of 5S;
2) **Add:** add a scene from the scene list to the polling list;
3) **Select all:** add all scenes from the scene list to the polling list;
4) **Delete:** deletes the scene from the polling list;
5) **Save:** save polling parameters, including time interval and polling list.

🕮 ***Note:***

- *Deleting is only to return the scene from the polling list to the scene list, not to*

delete the scene;

- *During polling, any operation related to the window is prohibited in the polling packet, but it does not affect other packets;*
- *Start or stop polling scenarios and operate in the scenario list of the main interface.*

6.5.7 Preset window open and Application

"**Preset window open**" refers to simulating a window operation interface on the client, and the window layout can be opened on it. When you want to display on the large screen, click "apply" for one click application operation; To cancel, click "**preset cancel**" to exit the preset window.

6.5.8 Pre layout and Application

Pre layout refers to presetting a window opening mode in the splicing wall. When in use, switch the "**pre layout mode**" in the window operation area, drag the signal source to the preset window, that is, the preset window will be covered automatically. The operation method is as follows:

1) Click pre layout to open windows freely in the splicing wall, and then click "apply layout" to save this window opening mode;
2) b.Switch the "pre layout mode" in the window operation area, and drag the signal source to the preset window.

🕮 ***Note:***

pre layout mode cannot be selected for window opening mode when pre layout is set.

6.5.9 Input grouping

Input grouping refers to adding free grouping for input sources and classifying input sources. The operation methods are as follows:

1) Click "add" to create a new group. The group name can be customized;
2) Select a group, drag the source from the signal source list to the group source list on the right, and click OK to save the operation on the source group;
3) In the signal source list in the main interface, you can view the added groups.

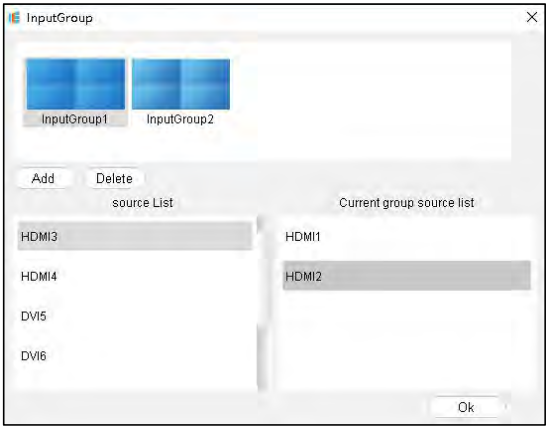


Figure 6- 23 Input grouping

6.5.10 Click window

Click one button to open the window, and the single screen 4 window can be opened with one button in the current grouping splicing wall.

6.5.11 Terminal output

Terminal output, that is, all current input ports are mapped to the corresponding output ports one by one, and the window opening sequence is given from left to right and from top to bottom.

6.5.12 Peripheral control

It mainly controls the third-party equipment. This interface can be made according to customer needs.

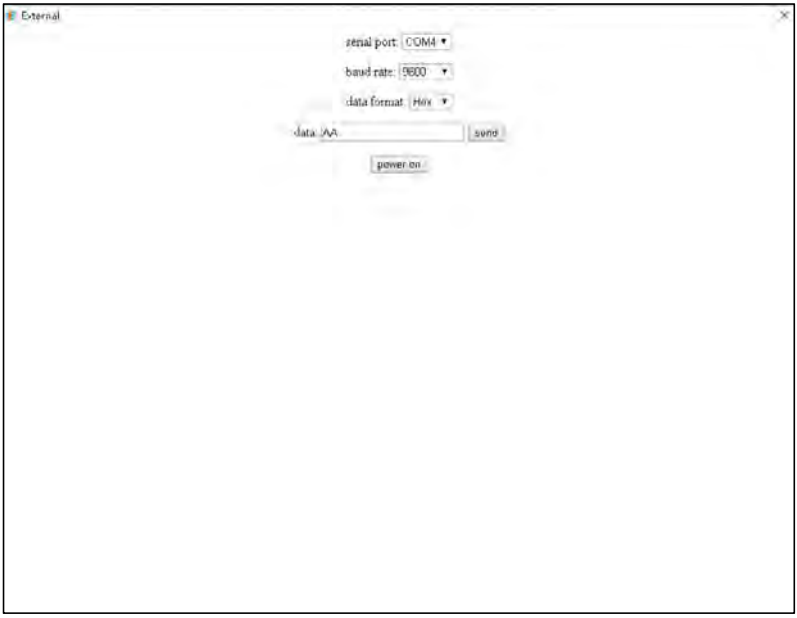


Figure 6- 24 Peripheral control

6.5.13 preview echo

The preview echo function can preview the accessed source and echo the large screen.

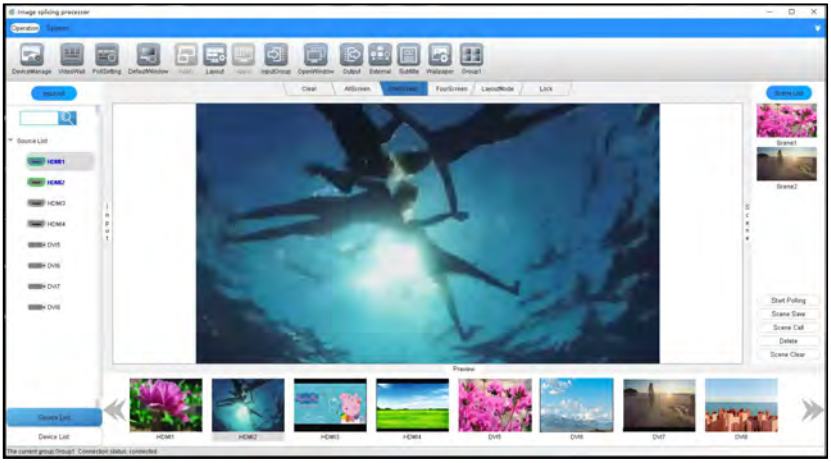


Figure 6- 25 preview echo

1. When the echo preview function is enabled, the echo interface is as shown in the figure above.
2. It supports the echo of 8 channels of images at the same time. When the echo function is turned on for the first time, the device needs to be reconnected to echo the image.

🕮 ***Note:***

The echo screen only supports enabling when the network is connected.

6.5.14 Subtitle setting

Subtitle setting "refers to the display of subtitle content in the splicing wall, and supports the setting of font size, color, display position, subtitle rolling speed, subtitle switch and other functions.

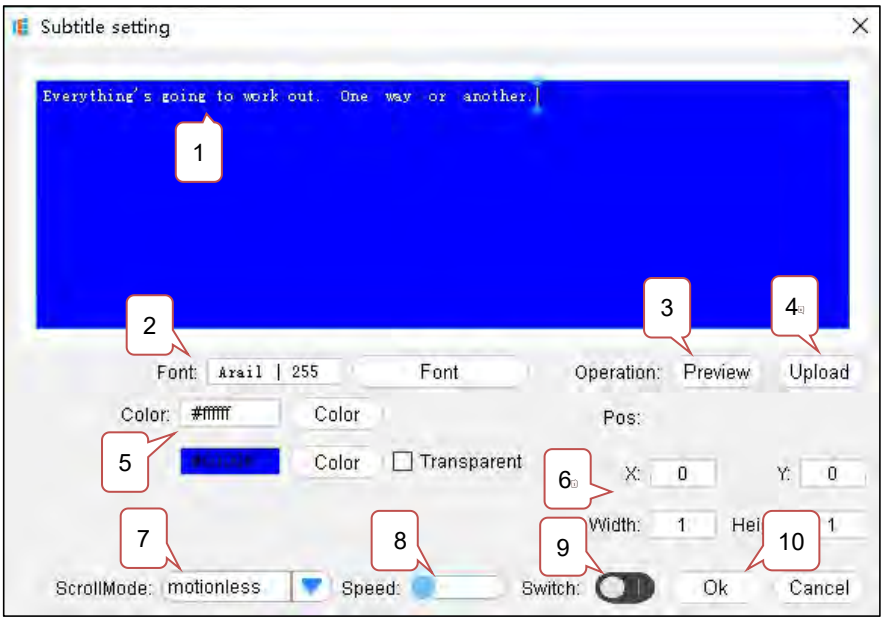


Figure 6- 26 Subtitle setting

When the subtitle function is enabled, the subtitle setting interface is as follows:

Subtitle input box: input character content. Subtitles support a display width of 1792x16 and a display height of 1080;

- When the LED mode is set, the caption display height cannot exceed the actual pixel height of the current LED screen.

1. **Font setting**: set the font, style, size, effect and writing system language of subtitle

content, and the maximum size of 512 font can be set; Note: if the font size exceeds 255, it needs to be entered manually;

2. **Font setting:** set the font, style, size, effect and writing system language of subtitle content, and the maximum size of 512 font can be set; Note: if the font size exceeds 255, it needs to be
3. **Preview**: after setting the subtitle content, click preview to view the subtitle display effect in the main interface;
4. **Upload subtitle**: upload subtitle content and setting parameters, and click "upload subtitle" after setting to display;
5. **Text and background color**: including subtitle content and background color settings. You can select system color, custom color or color at any position on the screen;
6. **Display position / display size**: set the display position of subtitle starting point / set the size of subtitle display area. Note: the maximum width and height of display position and display size shall not exceed the width and height of subtitle content itself;
7. **Scroll mode**: set the caption scroll mode. Currently, three scroll modes are supported: static, left scroll and right scroll;
8. **Scroll speed**: set the caption movement speed. The leftmost speed is the minimum scroll speed, and the rightmost speed is the system default maximum scroll speed;
9. **Subtitle switch**: set subtitle display status to  display status and  not display status;
10. **Confirm / cancel:** save / exit the setting interface.

🕮 ***Note:***

- *After modifying the subtitle color, position or size, you need to click "confirm" to display the modified effect in the corresponding display screen.*
- *Subtitles support setting in the first group; It supports setting at any position in the first row of splicing.*

6.5.15 Basemap setting

The "basemap setting" function can display high-definition basemap images in the splicing wall, support the rapid switching of uploading multiple basemaps, and support the simultaneous display of basemap images in multiple groups.

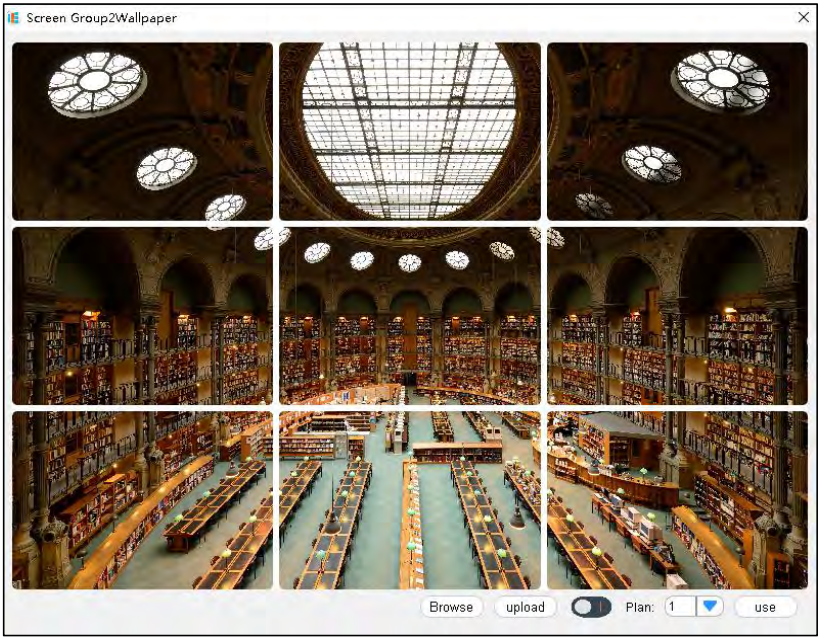


Figure 6-27 basemap setting

When the basemap function is enabled, the basemap setting interface is as follows:

1. **Browse**: select to preview the pictures in a folder and preview the display in the setting interface;
2. **Upload**: upload the selected preview picture and display it as a full screen basemap;
   - Select scheme 1, 2, 3 and 4 to upload 4 basemaps, and support multiple groups to upload basemaps.
3. **Basemap switch**: set the basemap display status to display status and not display status;
4. **Scheme and application**: when uploading multiple basemaps, you can quickly switch basemaps by switching schemes and applications.

🕮 ***Note：***

- *After uploading the basemap, when the device starts up, the basemap will be loaded first and then the image will be loaded. The startup time will be slower than that without basemap.*
- *The start-up time is related to the current number of splices and the number of base maps uploaded. Under 2x4 splicing, the start-up time for uploading a base map is about 1 minute; It takes about 3 minutes to upload 4 basemaps.*

6.5.16 Screen grouping

The device supports setting up to 4 packets, and each packet is controlled independently and switched arbitrarily. See 6.5.2 splicing settings.

6.6 System management

6.6.1 Language selection

The system language setting supports two languages: Simplified Chinese (system default) and English. Click "**language selection**" in the system management module to enter the language setting interface, as follows:

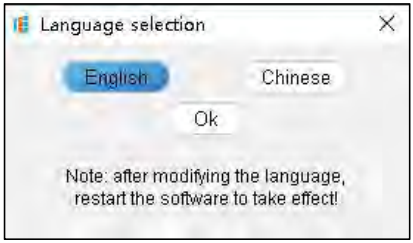


Figure 6- 28 language selection

Note:

- *the system language switching can take effect only after the software is restarted.*

6.6.2 Import configuration

Importing configuration refers to re importing the exported configuration file into the device. Click "import configuration" in the system management module, and then select the backed up configuration file to import the parameters saved in the backup file.

6.6.3 Export configuration

Export configuration refers to exporting the currently saved data to generate a backup file. The exported parameters include scene data, mapping data, grouping data, output resolution, network data, etc. Click "export configuration" in the system management module, and then select the corresponding folder to generate the device configuration file.

6.6.4 User management

User management is used to add, modify or delete user information. The default

user list of this control software is divided into administrator and ordinary user. The default administrator account is "admin" (the initial password is 168). Click "user management" in the system management

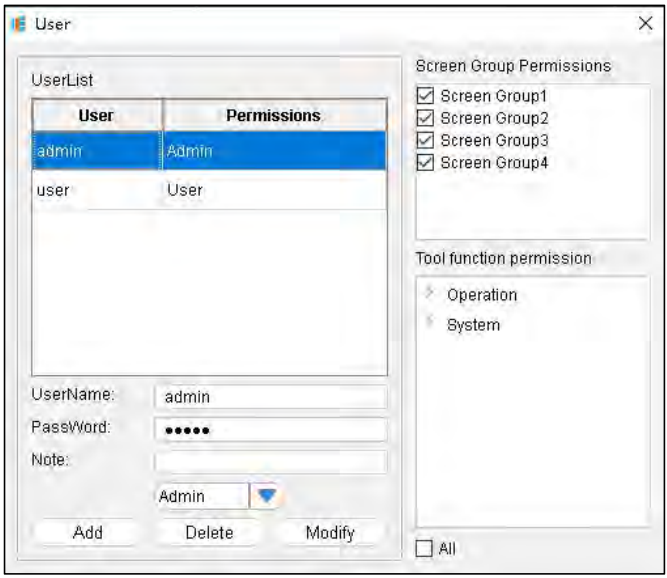


Figure 6- 28 User management

🕮 ***Note：***

- *Only administrator users can access the user management interface.*

6.6.5 Firmware upgrade

Firmware upgrade supports software program update of device control board card, input card and output card. The upgrade documents can be obtained from the technical or sales personnel of the company.

Upgrade method: select and click " **System upgrade**" in the system management module to enter the following interface, select the corresponding program mode of the equipment to be upgraded, then import the corresponding upgrade file, and click "**upgrade**".

Figure 6- 30 System upgrade

1) **Control card:** list of control cards;
2) **Input card**: input card list;
3) **Output card**: list of output cards;
4) **MCU & FPGA&Hisillicon**: upgrade the program of the corresponding chip;
5) **Type**: after "type" is checked, batch upgrade of common type board chip programs is supported.

🕮 ***Note：***

- *after the upgrade, power off and restart the host equipment.*

6.6.6 Device configuration

The device configuration includes restoring factory settings, fan adjustment and brightness adjustment. Click "device configuration" in the system management module to enter the following device configuration interface, as follows

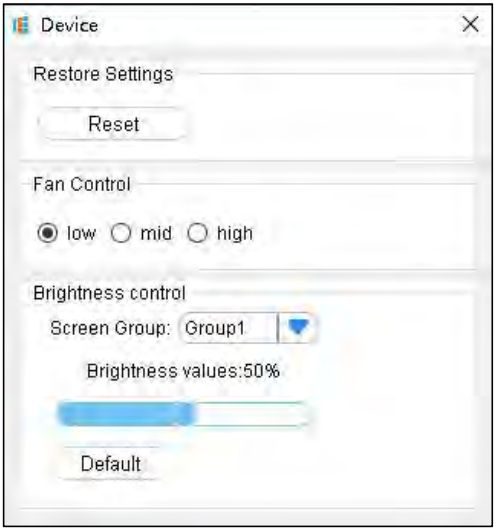


Figure 6- 31 device configuration

1) **Restore factory settings**: restore the equipment to the factory state. After restoring the factory settings, all operation data will be cleared and the device IP address will be restored to 192.168.0.178.
2) **Fan regulation**: when the equipment or the operating ambient temperature of the equipment is too high, the rotating speed of the equipment can be adjusted according to the demand: low, medium and high.
3) **Brightness adjustment**: set the output brightness of each group: 0 ~ 100%, and the default state is 50%.

6.6.7 About

Click "about" in the system management module to enter the device information interface, which mainly displays the board version information and upper computer version information.

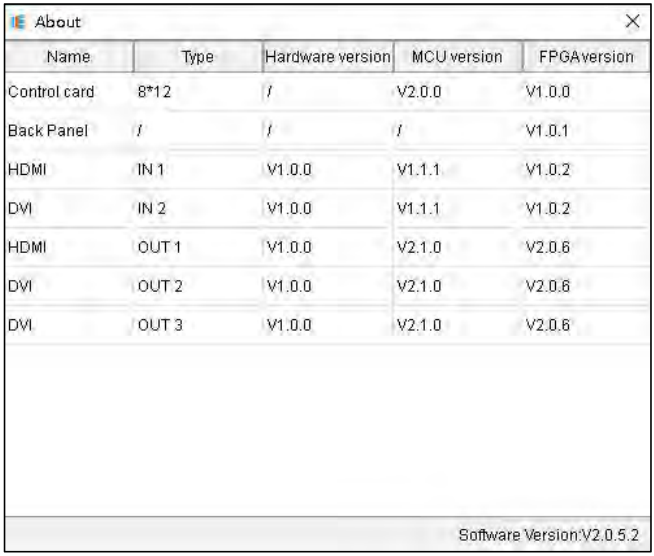


Figure 6- 32 device information

7 WEB Interactive interface control

Open the browser and log in to the web through the computer / tablet to control the product, such as opening windows, saving scenes, upgrading, configuration, user settings, mapping settings, etc. Support windows, IOS, Android and other systems to log in and access the web.

🕮 ***Note：***

- *To support the web access operation function, you need to contact the technical personnel for version confirmation.*

7.1 login method

Enter IP: 192.168.0.178 on the browser side (IE browser is not supported) to enter the splicing processor login interface. The initial account is "admin", and the default password is "123456". Select the default user name for login for the first time, as shown in the following figure:

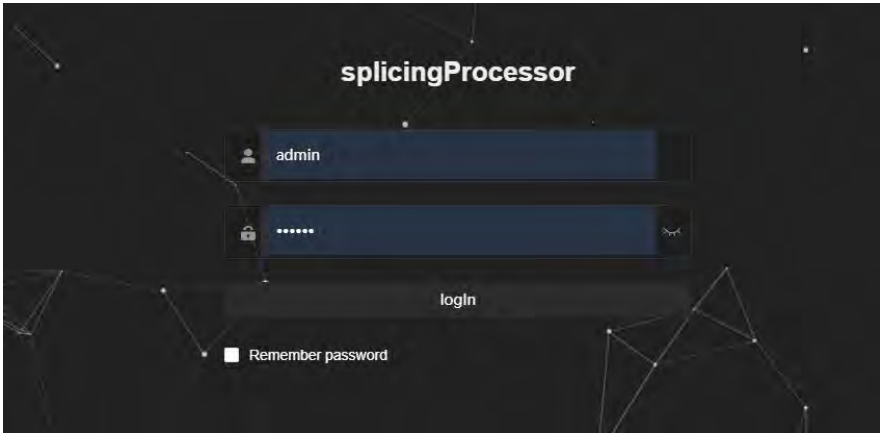


Figure 7-1 login

7.2 WEB Introduction to main interface

After logging in and connecting, the browser enters the main WEB interface of the splicing processor, which supports WEB windowing, as shown in the following figure:

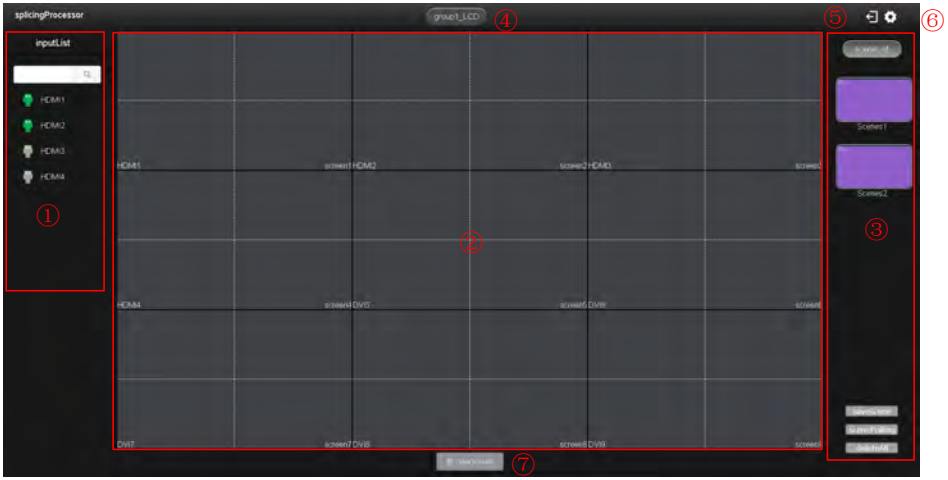


Figure 7-2 WEB main interface

①	Input list display, showing all input channels
②	Window display area, set window opening and display window opening

	status, and edit window
③	Scene list display area, including the functions of saving scene, scene polling, deleting al
④	Group display
⑤	Exit WEB
⑥	Enter the setting interface
⑦	emptying screen window

7.3 Setting interface

Click the setting icon in the main interface to enter the setting interface, as shown in the following figure:

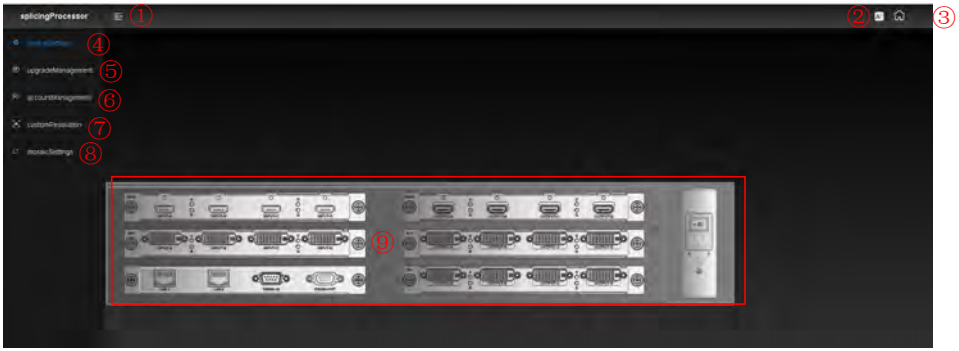


Figure 7- 3 setting interface

①	Collapse the left sidebar
②	Switch the display language to Chinese / English
③	Return to the main WEB interface
④	Enter the equipment setting interface, see 7.3.1 for details
⑤	Enter the upgrade management interface, see 7.3.2 for details
⑥	Enter the account setting interface, see 7.3.3 for details
⑦	Enter the user-defined resolution setting interface, see 7.3.4 for details
⑧	Enter the splicing setting interface, see 7.3.5 for details

7.3.1 Device setting interface

Set the device I / O card configuration, as shown in the following figure:

Figure 7-4 Device setting interface

①	In the device display area, click the corresponding board or channel, and the configuration interface is displayed in the right column
②	Setting and reading parameters in the right column

7.3.1.1 Device input port configuration

Equipment input port configuration: click any channel of the input board, and the input channel setting interface will pop up in the right column. You can set the input channel EDID, OSD setting, OSD switch setting, input channel name editing, display board input resolution, display software and hardware version.

Figure 7-5 Device input port configuration

7.3.1.2 Device output port configuration

Device output port configuration: set the name of the output channel and display the software and hardware version of the output channel.

Figure 7- 6 Device output port configuration

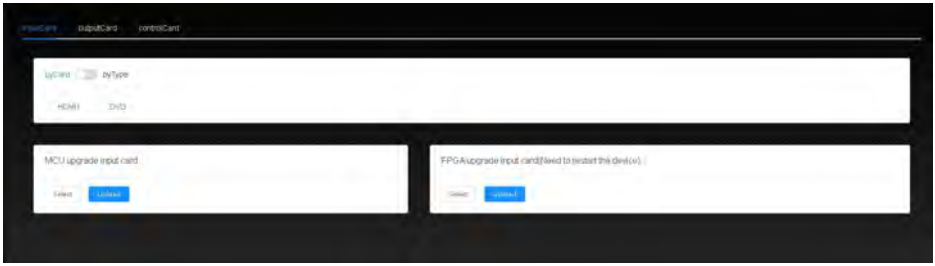
7.3.1.3 Control card configuration

Device control card configuration: set control card IP, reset operation, fan gear setting, brightness setting, display control card software version.

Figure 7- 7 Control card configuration

7.3.2 Upgrade management

The input / output board and control board can be upgraded online



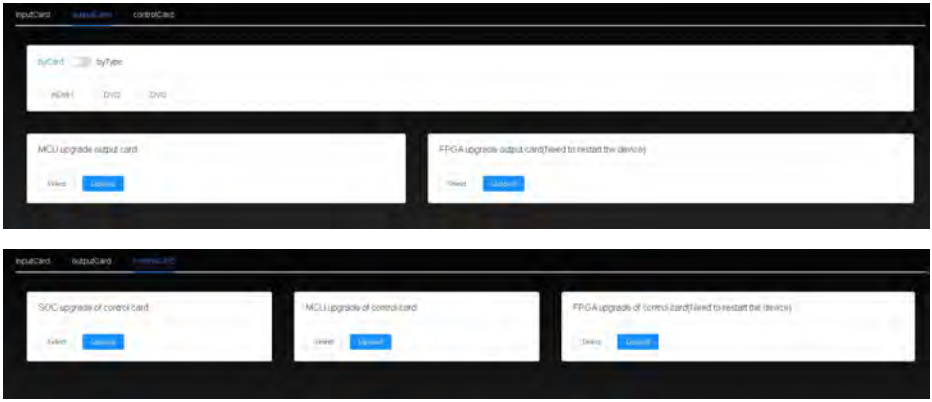


Figure 7- 8 Upgrade management

7.3.3 Account setting

In the account setting interface, users can be edited and added.

Figure 7- 9 account setting

Note：

- *The sub account does not have permission to enter the account setting interface.*

7.3.4 User defined resolution

User defined resolution interface, you can add, edit and delete user-defined output resolution.

Figure 7- 10 User defined resolution

7.3.5 Splicing setting

The splicing setting interface can set grouping, grouping type, video wall row and column, output resolution, screen setting, and read the output list.

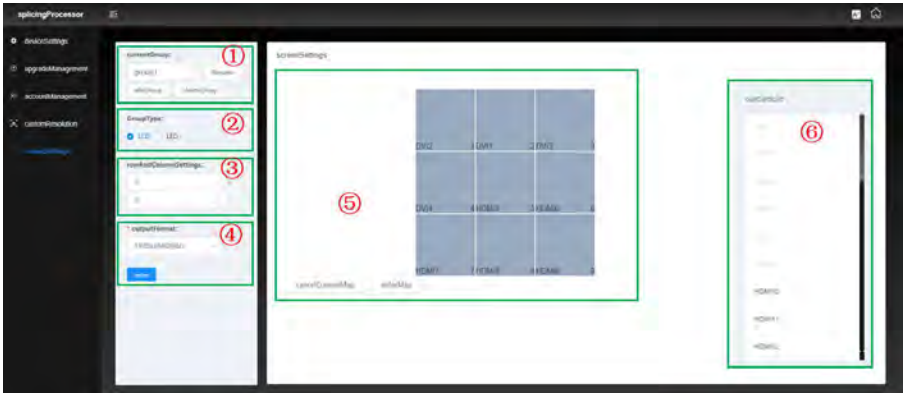


Figure 7- 11 splicing setting

①	Current group: select current group, edit and rename group, add group, delete group and other settings
②	Group type: set the group type to LED / LCD
③	Row / column setting: set the number of windows and row,column
④	Output format: set the output resolution and press enter to confirm the setting
⑤	Screen setting: set window position and output port mapping
⑥	Output card port list: display all output ports of the machine, select any output port, drag the mouse to the window position set on the screen, and set the mapping

8 Specification parameters

8.1 Host parameters

Control	
RS232 Control	DB9
TCP/IP Control	RJ45，Accord with TCP/IP
Routine	

Chassis structure	08x12 Hybrid processor：Card slots for 2 input channels; Card slot for 3 output channels 20x16 Hybrid processor：Card slots for 5 input channels; Card slot for 4 output channels 36x36 Hybrid processor：Card slots for 9 input channels; Card slot for 9 output channels
Power	100V～240V AC,50/60Hz
No-load power	08x12 Hybrid processor：6.6W 20x16 Hybrid processor：7.1W 36x36 Hybrid processor：34.2W
Operating emperature	0℃～+50℃
Relative humidity	10%～90%
Chassis size (excluding lugs)	08x12 Hybrid processor：W436.6mm x H88.0m x D320mm 20x16 Hybrid processor：W436.6mm x H136.0mm x D320mm 36x36 Hybrid processor：W436.6mm x H269.0mm x D320mm：
Weight (kg) (excluding board)	08x12 Hybrid processor：5.8kg 20x16 Hybrid processor：6.7kg 36x36 Hybrid processor：11.27KG
Chassis material	Iron bending

🕮 ***Note***：

- *The size and weight of the chassis are approximate. Please refer to the real object.*

8.2 Input signal board parameters

8.2.1 DVI input signal card

DVI input card	
Signal	4×DVI input signals
Connector	Female terminal of DVI-I
Normal operating power consumption	7.8W
Weight (g)	286g
Routine	

Video signal format	DVI and HDMI compatible
Standard	HDCP
Input resolution	Highest support 1920x1200 @60Hz
Operating emperature	0℃～+50℃
Relative humidity	10%～90%
Power	Host power supply

8.2.2 HDMI input signal card

HDMI input card	
Signal	4×HDMI input signals
Connector	Female terminal of Type A 19 PIN
Normal operating power consumption	7.8W
Weight (g)	260g
Routine	
Video signal format	compatible HDMI、DVI-D
Standard	compatible HDCP,and support HDMI1.3
Input resolution	Highest support 1920x1200 @60Hz
Operating emperature	0℃～+50℃
Relative humidity	10%～90%
Power	Host power supply

8.2.3 SDI input signal card

SDI input card	
Signal	4×SDI input signals,4×SDI ring out signals
Connector	BNC Connector
Normal operating power consumption	6.5W
Weight (g)	390g
Routine	
Video signal format	SDI
Working distance	1080P≤100m（please use high-quality cable）
Input resolution	Highest support 1920x1080P @60Hz
Operating emperature	0℃～+50℃
Relative humidity	10%～90%

Power	Host power supply

8.2.4 CVBS input signal card

CVBS input card	
Signal	4×CVBS input signals
Connector	BNC Connector
Normal operating power consumption	9.5W
Weight (g)	320g
Routine	
Video signal format	CVBS
Input resolution	PAL：720x576I，NTSC：720x480I
Operating emperature	0℃～+50℃
Relative humidity	10%～90%
Power	Host power supply

8.2.5 VGA input signal card

VGA input card	
Signal	4×VGA input signals
Connector	Female port of 15 pin HD
Normal operating power consumption	7.1W
Weight (g)	270g
Routine	
Video signal format	VGA
Input / output resolution	Highest support 1920x1080P @60Hz
Operating emperature	0℃～+50℃
Relative humidity	10%～90%
Power	Host power supply

8.2.6 4K HDMI input signal card

4K HDMI input card	
Signal	2×HDMI input signals
Connector	Female terminal of Type A 19 PIN
Normal operating power consumption	7.8W

Weight (g)	260g
Routine	
Video signal format	HDMI
Standard	compatible HDCP,and support HDMI1.4
Input resolution	Highest support 3840x2160 @30Hz
Operating emperature	0℃～+50℃
Relative humidity	10%～90%
Power	Host power supply

8.2.7 4K DP input signal card

4K DP input card	
Signal	2×DP input signals
Connector	Display Port
Normal operating power consumption	5W
Weight (g)	240g
Routine	
Standard	support DP1.1
Input resolution	Highest support 3840x2160 @30Hz
Operating emperature	0℃～+50℃
Relative humidity	10%～90%
Power	Host power supply

8.3 Single card 4-way output signal board

8.3.1 DVI output signal card

DVI output card	
Signal	4×DVI output signals
Connector	Female terminal of DVI-I
Normal operating power consumption	8.8W
Weight (g)	370g
Video signal format	DVI and HDMI compatible
Output resolution	Highest support 1920x1200@60Hz
Operating emperature	0℃～+50℃

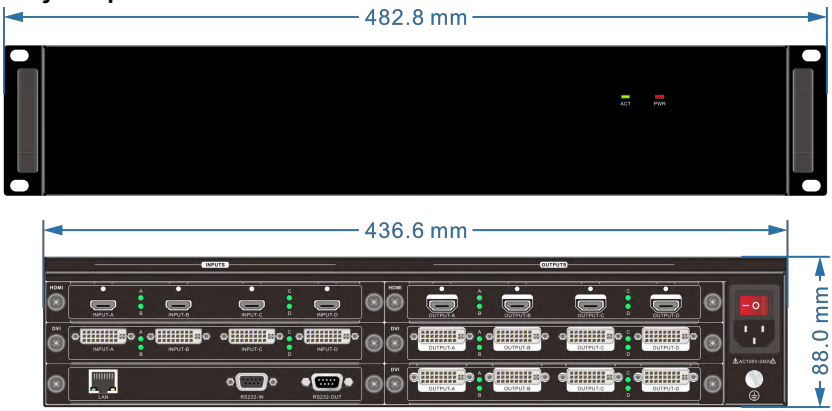
Relative humidity	10%～90%
Power	Host power supply

8.3.2 HDMI output signal card

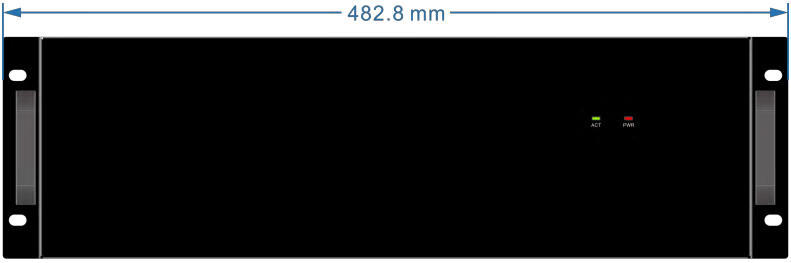
HDMI output card	
Signal	4×HDMI output signals
Connector	Female terminal of Type A 19 PIN
Normal operating power consumption	8.8W
Weight (g)	300g
Video signal format	compatible HDMI、DVI-D
Standard	support HDMI1.3
Output resolution	Highest support 1920x1200@60Hz
Operating emperature	0℃～+50℃
Relative humidity	10%～90%
Power	Host power supply

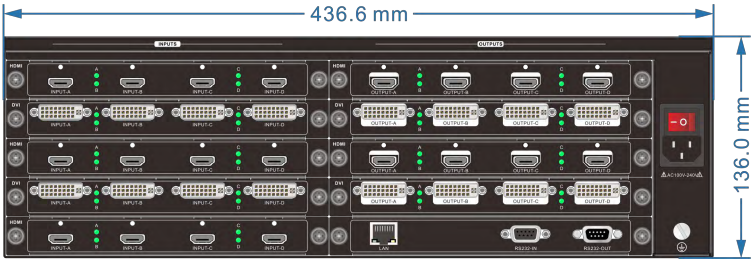
9 Dimensions

08x12 Hybrid processor：W436.6mm x H88.0m x D320mm：

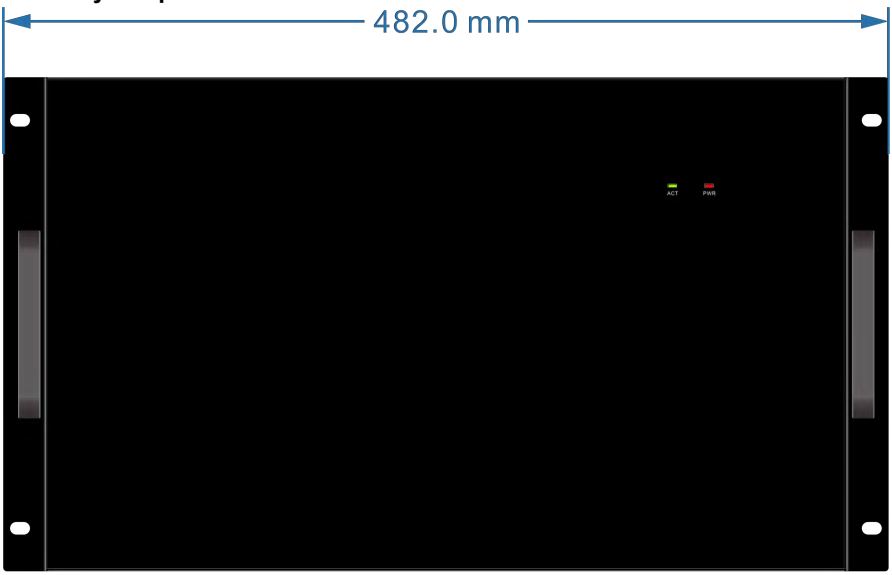


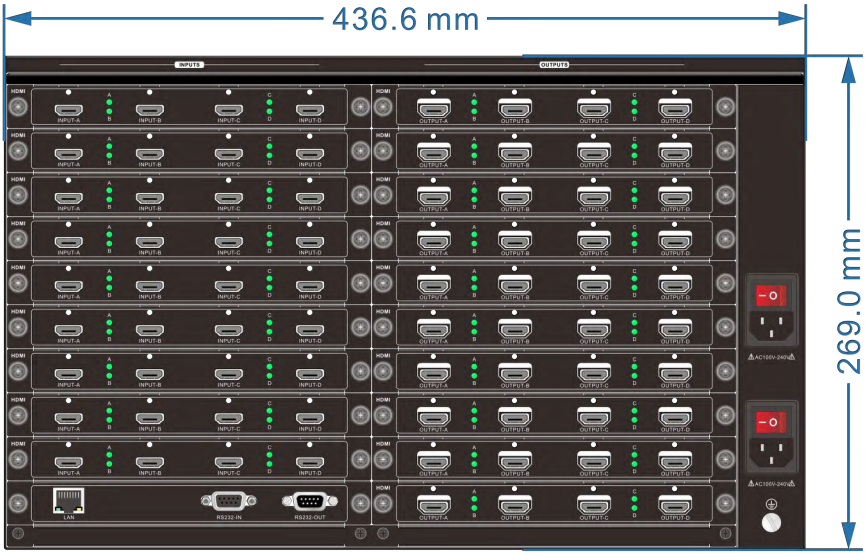
20x16 Hybrid processor：W436.6mm x H136.0mm x D320mm：


482.8 mm
ACT
PWR


436.6 mm
136.0 mm

36x36 Hybrid processor：W436.6mm x H269.0mm x D320.0mm：





10 Troubleshooting & Maintenance

Problems	Potential Causes	Solutions
The power indicator is not on and there is no response to operation	Not connected to power supply	Check the power supply and make sure it is on
	Poor contact of power input	Check the power interface and ensure that it is in good contact, and connect it with another power input terminal
There is no corresponding image output during signal switching	The signal source or splicer is not turned on	Check that the signal source and splicer are on
	Poor connection of video signal port	Check and ensure that the corresponding video signal port is connected normally
The output image is disturbed	Poor contact of connecting wires between input and output devices	Connect the equipment correctly and make good contact
	The quality of input and output connecting wires is not up to standard or damaged	Replace regular standard cable
	The distance of wire used is too long	Replace the high-quality cable with the length of the transmission distance range supported by the system
The plug-in video interface has obvious static electricity	Splicing processor equipment is not well grounded	Ground the ground connection terminal of splicing processor well
The LAN port cannot control the splicing processor	The control device network segment is inconsistent with the splicing processor network segment	Change the control device network segment to be consistent with the splicing processor
	The spliced processor network segment is inconsistent with the connected LAN network segment	Change the splicing processor network segment to be consistent with the LAN network segment
The host cannot be used	Internal damage of host	Send to professional maintenance point for maintenance

11 Sales service

1） If you use this product in an abnormal situation, during the product warranty period, the company will be responsible for providing free maintenance for any failure caused by the quality problem of the product under normal use without disassembly and repair.

2） The company provides one-year warranty service for this product. The warranty period starts on:

- Product delivery date;
- If the above date cannot be obtained, the product production date in the company's Sn code shall prevail.

3） Under any of the following circumstances, warranty service will not be implemented, and the cost of repair parts will be reasonably charged:

- Damage caused by improper use, storage and maintenance of consumers;
- Artificial damage to appearance and parts;
- Damage caused by changing configuration or modifying products without authorization of the company;
- Damage caused by force majeure.

4） The company has the right to refuse to provide maintenance services or charge maintenance services under any of the following circumstances:

- There is no warranty certificate and valid invoice, and the product has no Sn code;
- The fuselage is fragile and the label is damaged (except authorized by the company), and the content of the product label is altered or blurred and cannot be recognized;
- Damage caused by assembly, disassembly and maintenance not authorized by the company;
- There is no sales voucher or the sales voucher is inconsistent with the maintenance product model;
- Products not produced and sold by the company.

5） You can directly contact the after-sales service department of our company by letter or phone. Please tell us the following:

- The model and name of your product;
- Fault phenomenon (as detailed as possible);
- The process before and after the fault occurs.