灰度科技
HUIDU TECHNOLOGY

Product Specification

Splicing Processor

HD-VP8000M

V2.2

Document Description

Before using this product, please read this manual carefully and keep it properly for reference. Read the safety operation guide carefully. Note:  Danger、  Attention。

This manual is only used as an instruction for the user's operation, not for maintenance services. The deadline for the described functions is June 24, 2023. If the functions or related parameters are changed after this date, supplementary explanations will be made without prior notice. For details, please check with the dealers。

This manual takes the rendering of the 20x16 hybrid plug-in multi-image splicing processor as an example. The product pictures are for reference only, please refer to the actual product。

This document applies to the following types of Hybrid plug-in image splicing processors:

No.	Name	Chassis	Max input channels	Max output channels
1	8x12 Hybrid plug-in processor	2U	8	24
2	20x16 Hybrid plug-in processor	3U	20	32
3	36x36 Hybrid plug-in processor	6U	36	72

Safe Operation Guide

To ensure the reliable use of the equipment and the safety of personnel, please observe the following matters during installation, use and maintenance

Danger

- There are live parts in the device. Non-professionals are not allowed to disassemble the device without permission to avoid the risk of electric shock.
- Please do not disassemble the device when it is powered on or running to avoid the risk of electric shock.
- Do not operate with wet hands to avoid electric shock.
- It is strictly forbidden to place the product in an environment containing flammable substances, explosive gases or heat sources.

Attention

- It is strictly forbidden to spill any corrosive chemicals or liquids on or near the device.
- Do not block the heat dissipation holes, and keep the working environment well ventilated, so that the heat generated by the equipment can be discharged in time, so as to avoid damage to the equipment due to excessive temperature.
- Do not place the device on an unstable surface to avoid damage caused by falling of the device.
- In order to prevent the equipment from being damaged by strong vibration during transportation, it is recommended to use appropriate packaging or original packaging during transportation.
- Do not squeeze the power cord and device with heavy objects.
- The equipment must use a power supply with grounding.
- Please do not repair without permission, so as not to aggravate the damage to the device.
- When carrying the equipment, be careful not to drop the equipment to avoid personal injury or equipment damage.
- The main power of the device should be turned off when it is not in use for a long time in a humid environment.
- If the equipment is stored for a long time before use, it must be checked and tested before use.
- Before cleaning the device, the device must be powered off, and please use a dry cloth to clean the device.
- Discarded equipment should be treated as industrial waste, and incineration is strictly prohibited.

CONTENTS

1.Preface

1.1 SUMMARY

The Multi-image splicing processor is a hybrid plug-in intelligent image splicing processor, which can display multiple dynamic images on multiple screens to realize the function of multi-window splicing. This product can automatically detect and identify the signal cards type, support DVI, HDMI, Network port and other splicing signal cards, plug and play, and support video splicing, control third-party equipment and other functions.

Device controlled methods include: RS232 control and LAN client software control, and support serial port control of remote third-party devices. Using client control software, you can set up various ways of output screen splicing display, input signal OSD setting, scene saving, scene polling, etc.

The Multi-image splicing processor can be widely used in urban security monitoring, intelligent traffic management, video conferencing, large conference centers, large commercial plazas, military command centers, governments, etc.

1.2 Features

- Modular design, plug-in structure; using FPGA architecture, no embedded operating system, internal self-built core computing mechanism, excellent image processing performance;
- Support HDMI, DVI, DP, SDI, VGA, CVBS, IP decoding and other input cards, the highest resolution supported is 4Kx2K@60Hz, and arbitrary window opening is supported in a single input source;
- Supports any resolution output. maximum resolution of 1920x1200@60Hz,the maximum width supports 7680 pixels, and the maximum height supports 7680 pixels;
- Support 1-channel 4K30Hz / 2-channel 4K@24Hz / 4-channel 1080P@60Hz / 9-channel 1080P@25Hz / 16-channel 720P@25Hz / 32-channel D1 decoding network signal decoding on the wall, support PTZ control;
- Support audio built-in or embedded input, support audio output;
- Signal switching, signal preview, splicing setting, scene calling, scene saving, scene preview, resolution setting, restoring to factory settings, etc. can be realized through the client software;
- Support scene calling, scene polling switching, input and output query, Network port status query, version query, factory reset, brightness setting, fan control, etc through the touch screen;
- Supports arbitrary windowing, overlaying, roaming, zooming, stretching and other operations on the screen;
- Support high-definition base map display, dynamic subtitle function settings (advanced control card);
- Support input source signal preview and large screen echo function (advanced control card);
- Support multi-user control, the WEB side supports 64 users to control at the same time, the client supports 3 users to control at the same time (advanced control card);
- Support input signal source OSD custom character display function, you can set character font, size, color, transparency, position, etc.;
- Built-in WEB human-computer interaction interface control, humanized design, support computer, mobile phone, Pad and other system control devices, and compatible with a variety of browsers, more convenient operation (advanced control card);
- It can realize signal board connection detection, signal switching, scene calling, scene saving, scene polling,

factory reset, etc. (advanced control card) through the WEB user interface,;

- A single output display screen supports up to 8 window displays;
- 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;
- Support the duration of authorization equipment
- With power-off memory function;
- Supports quick replacement of custom front panels.
- Support 128 scenes to save and recall.

2.Appearance

2.1 Front View

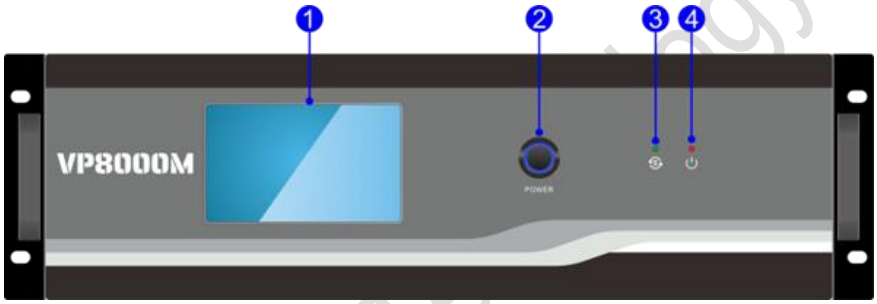


Figure 2-1 Front View

No.	Name	Description
①	Touch screen	● Control of Query device through the touch screen
②	Power switch button	● Power On/Off
③	ACT indicator light	● Normal working status: the green indicator light flashes; ● Abnormal working status: the indicator light is off or on.
④	Power Indicator	● The normal state of the host is powered on: always on; ● Abnormal state when the host is powered on: the indicator light is off.

2.2 Rear View

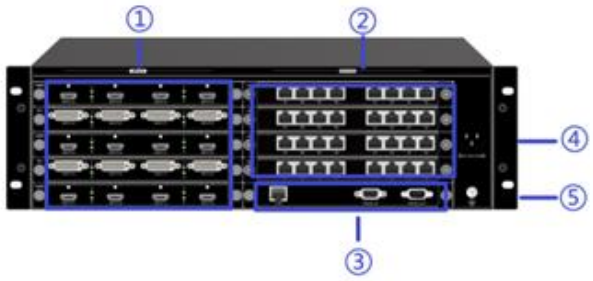


Figure 2-2 Rear View

No.	Name	Description
①	Input Channels	● 08x24 Hybrid plug-in processor: Max 8-channel signal input, up to 2 units of quad input cards can be configured ● 20x32 Hybrid plug-in processor: Max 20-channel signal input, up to 5 units of quad input cards can be configured ● 36x72 Hybrid plug-in processor: Max 36-channel signal input, up to 9 units of quad input cards can be configured
②	Output Channels	● 08x24 Hybrid plug-in processor: 24 RJ45 fixed output board channels, up to 3 single cards and 8 RJ45 output boards can be configured ● 20x32 Hybrid plug-in processor: 32 RJ45 fixed output board channels, up to 4 single cards and 8 RJ45 output boards can be configured ● 36x72 Hybrid plug-in processor: Max 72-channel signal output, up to 9 units of quad output cards can be configured
③	Control Module	Control Board: ● LAN：1-channel or 2-channel network port control processor, connected with control equipment (such as PC), the control of the processor can be realized through the client software ● RS232 IN：1-channel serial input control processor, which is connected with the control device, and can control the processor by sending instructions through the control device; ● RS232 OUT： 1-channel serial output, can control third-party devices, connect with third-party devices to support remote third-party devices through control devices
④	Power terminal	Connect 100-240V AC power supply.
⑤	Ground connection	Connect the ground wire.

No.	Name	Description
	terminal	

🕮 ***Explanation：***

- The signal boards inserted in the rear view is for reference only;
- Product pictures are for reference only, please refer to the actual product;
- Ordinary control card has only one network port.

3.Signal Input/output Boards Introduction

The device is compatible with input and output signal boards in HDMI, DVI and other signal formats. The signal cards support hot plugging, plug and play, and can be matched with different input/output signal boards according to the system usage requirements. The following is a summary of the supported cards:

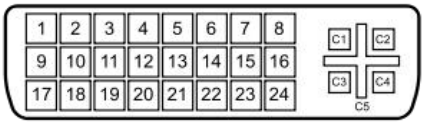
3.1 Quad Signal Input Board

3.1.1 DVI Signal Input Board

- Port:4 channels DVI input ports
- A,B,C,D Green working status indicator: Represents the working status of the four DVI ports, the indicator is always on after the signal source is connected normally and working normally;
- Support HDMI1.3, Compatible with HDCP;
- Maximum input resolution 1920 x 1200 @60Hz;
- Support HDMI、DVI-D signal formats;
- Automatically identify the input signal format, no need to set manually;
- Single input signal supports arbitrary windows;
- Support the input signal character superposition function, and change the character related attributes through the client software. See the client software operation instructions for related operations
- With embedded EDID management technology, support DDC control
- With power-off save function.

Figure 3-1 DVI IN

DVI-I Female Port Pinout：



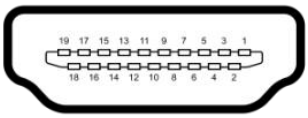
Pins	Function	Pins	Function
1	T.M.D.S.Data2-	**13**	No Connect
2	T.M.D.S.Data2+	**14**	+5V Power
3	T.M.D.S. Data 2 Shield	**15**	Ground (for +5V)
4	No Connect	**16**	Hot Plug Detect
5	No Connect	**17**	T.M.D.S. Data 0—
6	DDC Clock	**18**	T.M.D.S. Data 0+
7	DDC Data	**19**	T.M.D.S. Data 0 Shield
8	No Connect	**20**	No Connect
9	T.M.D.S.Data1-	**21**	No Connect
10	T.M.D.S.Data1+	**22**	T.M.D.S. Clock Shield
11	T.M.D.S.Data1Shield	**23**	T.M.D. S. Clock+
12	No Connect -	**24**	T.M.D.S .Clock-

3.1.2 HDMI Signal Input Board

- Port：4 channels HDMI input port；
- A,B,C,D Green working status indicator: Represents the working status of the four HDMI ports, the indicator is always on after the signal source is connected normally and working normally;
- Support HDMI、DVI-D signal formats；
- Support HDMI, Compatible with HDCP；
- Maximum input resolution 1920x1200 @60Hz；
- Single input signal supports arbitrary windows；
- Support the input signal character superposition function, and change the character related attributes through the client software. See the client software operation instructions for related operations
- With embedded EDID management technology, support DDC control
- With power-off save function.

Figure 3- 2 HDMI IN

Type A Female Connector Pin Description：



Pins	Signal name	Pins	Signal name
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 DVI Audio/Video Signal Input Board

- Port:4 channels DVI input ports, support HDMI format built-in audio input;
- A,B,C,D Green working status indicator: Represents the working status of the four DVI ports, the indicator is always on after the signal source is connected normally and working normally;
- Support HDMI1.3, Compatible with HDCP1.4;
- Maximum input resolution 1920 x 1200 @60Hz;
- Support HDMI、DVI-D signal formats;
- Automatically identify the input signal format, no need to set manually;
- Single input signal supports arbitrary windows;
- Support the input signal character superposition function, and change the character related attributes through the client software. See the client software operation instructions for related operations
- With embedded EDID management technology, support DDC control
- With power-off save function.

Figure 3-3 DVI IN

3.1.4 HDMI Audio/Video Signal Input Board

- Port:4 channels HDMI input ports, 4 channels 3pin audio input;
- A,B,C,D Green working status indicator: Represents the working status of the four DVI ports, the indicator is always on after the signal source is connected normally and working normally;

- Support HDMI、DVI-D signal formats;
- Support built-in audio input, support audio embedded input;
- Support HDMI1.3, Compatible with HDCP1.4;
- Maximum input resolution 1920 x 1200 @60Hz;
- Single input signal supports arbitrary windows;
- Support the input signal character superposition function, and change the character related attributes through the client software. See the client software operation instructions for related operations
- With embedded EDID management technology, support DDC control
- With power-off save function.

Figure 3-4 HDMI IN

3.1.5 SDI Signal Input Board

- Port：4 channels SDI input ports, Each channel has one SDI loop out；
- SDI input supports loop-out and local signal monitoring
- Support SDI signal format；
- Maximum input resolution 1920x1080P @60Hz；
- The maximum distance of input and output signal transmission is 100m；
- Support the input signal character superposition function, and change the character related attributes through the client software. See the client software operation instructions for related operations
- With embedded EDID management technology, support DDC control
- With power-off save function.

Figure 3-5 SDI IN

3.1.6 CVBS Signal Input Board

- Port：4 channels CVBS input ports；
- A,B,C,D Green working status indicator: Represents the working status of the four CVBS ports, the indicator is always on after the signal source is connected normally and working normally;
- Support CVBS signal format;

- Adaptive PAL and NTSC formats;
- Support Resolution PAL：720x576I，NTSC：720x480I；
- Single input signal supports arbitrary windows；
- Support the input signal character superposition function, and change the character related attributes through the client software. See the client software operation instructions for related operations
- With power-off save function.

Figure 3-6 CVBS IN

3.1.7 VGA Signal Input Board

- Port：4 channel VGA input ports；
- A,B,C,D Green working status indicator: Represents the working status of the four VGA ports, the indicator is always on after the signal source is connected normally and working normally;
- Support VGA signal format；
- Maximum input resolution 1920x1080P @60Hz；
- Single input signal supports arbitrary windows；
- Support the input signal character superposition function, and change the character related attributes through the client software. See the client software operation instructions for related operations
- With power-off save function.

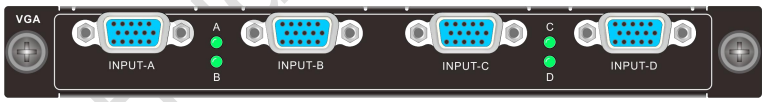


Figure 3-7 VGA IN

3.2 Dual Signal Input Board

3.2.1 4K@30Hz HDMI Signal input board

- Port：2 channels HDMI input ports;
- A,B Green working status indicator: Represents the working status of the two HDMI ports, the indicator is always on after the signal source is connected normally and working normally;
- Support HDMI、DVI-D signal format；
- Support HDMI, Compatible with HDCP；
- Maximum input resolution 3840x2160 @30Hz；
- Single input signal supports arbitrary windows；

- Support the input signal character superposition function, and change the character related attributes through the client software. See the client software operation instructions for related operations
- With embedded EDID management technology, support DDC control
- With power-off save function.

Figure 3-3 4K@30Hz HDMI IN

3.2.2 4K@30Hz DP Signal Input Board

- Port：2 channel DP input ports；
- A,B Green working status indicator: Represents the working status of the two DP ports, the indicator is always on after the signal source is connected normally and working normally;
- Support DP1.1, Compatible with HDCP；
- Maximum input resolution 3840x2160 @30Hz；
- Single input signal supports arbitrary windows；
- Support the input signal character superposition function, and change the character related attributes through the client software. See the client software operation instructions for related operations
- With embedded EDID management technology, support DDC control
- With power-off save function.

Figure 3-9 4K@30Hz DP IN

3.2.3 4K@60Hz HDMI/DP Signal Input Board

- Port：1 channel HDMI input ports, 1 channel DP input port(Choose one of the two, simultaneously access priority HDMI);
- A,B Green working status indicator: Represents the working status of HDMI port and DP port respectively, the indicator is always on after the signal source is connected normally and working normally;
- Support HDMI2.0,SupportDP1.2, Compatible with HDCP；
- Maximum input resolution 3840x2160 @0Hz；
- Single input signal supports arbitrary windows；
- Support the input signal character superposition function, and change the character related attributes through the client software. See the client software operation instructions for related operations;

- With embedded EDID management technology, support DDC control;
- With power-off save function.

Figure 3- 10 4K@60Hz HDMI/DP IN

3.2.4 IP Decoding Signal Input Board

- Port：1 set of RJ45 stream input, 1 HDMI input port;
- Support 1 channel 4K30Hz / 2 channels 4K@24Hz / 4 channels 1080P@60Hz / 9 channels 1080P@25Hz / 16 channels 720P@25Hz / 32 channels D1 decoding network signal decoding to the wall;
- Support 1 HDMI input, the highest input resolution is 1920x1200 @60Hz;
- Support multiple screen split modes, 1 screen, 4 screens, 9 screens, 16 screens and custom splits;
- Support ONVIF, RTSP, H.264, H.265 and other network streaming media protocols;
- Support the control of the camera pan/tilt, and control the rotation direction of the network camera;
- Status of the IP port indicator light: red is the power indicator light, which is always on after power on; green is the running indicator light, which flashes when it is working normally;
- Support the access function of network cameras of mainstream manufacturers in the market (Hikvision, Dahua, etc.);
- With power-off save function.

Figure 3- 11 IP Decoding /HDMI IN

3.3 Signal Output Board

3.3.1 RJ45 output signal board

- Output 8 RJ45 output ports, directly connected to the receiving card of the LED screen through the network cable;
- A1, A2, A3, A4, B1, B2, B3, and B4 are the output network ports of large-scale transmission 1 and large-scale transmission 2 respectively, and USB-A and USB-B are the debugging interfaces of large-scale transmission 1 and large-scale transmission 2 respectively;
- Large-scale transmission 1(A1~A4) and large-scale transmission 2(B1~B4) support the maximum output resolution of 1920x1200 @60Hz respectively, and support customized output resolution;
- The output screen supports splicing, splitting, overlaying, zooming, stretching, cutting, picture-in-picture,

roaming and other formats;

- Output 8 RJ45 external single display screens to support the display of up to 8 windows;
- With power-off memory function.

Figure 3-12 RJ45 OUT

3.3.2 Audio output signal board

- Support 4-way PCM audio signal output;
- Support setting independent audio switching or setting binding video wall and video synchronous switching;
- With power-off memory function.

Figure 3-13 AUDIO OUT

3.3.3 4 - channel 2Kp60 DVI Output Board

- Output: 4 - channel DVI output port;
- A,B,C,D green working status indicator, respectively, on behalf of the 4 DVI port working status, the normal output signal display device and normal work after the indicator light is always on;
- The highest output resolution of 1920x1200 @60Hz, and supports customized output resolution;
- Output ports support DVI, HDMI signal format;
- Output screen support splicing, splitting, superposition, scaling, stretching, cutting, picture-in-picture, roaming and other formats;
- The output external single display supports the display of up to 8 windows;
- Specifically, when using four output ports at the same time, the A and B channels or C and D channels are bundled to exist in the same group output splicing screen;
- With power-off memory function.

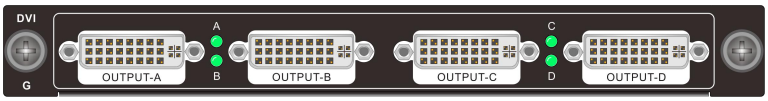


Figure 3-14 DVI OUT

3.3.4 4-channel 2Kp60 HDMI Output Board

- Output: 4-way HDMII output port;
- A,B,C,D green working status indicator, respectively, on behalf of the four HDMI port working status, normal output signal display device and normal operation after the indicator light is always on;
- The highest output resolution of 1920x1200 @60Hz, and supports customized output resolution;
- Output ports support DVI, HDMI signal format;
- Output screen support splicing, splitting, superposition, scaling, stretching, cutting, picture-in-picture, roaming and other formats;
- The output external single display supports the display of up to 8 windows;
- Specifically, when using 4 output ports at the same time, the A and B channels or C and D channels are bundled to exist in the same group output splicing screen;
- With power-off memory function.

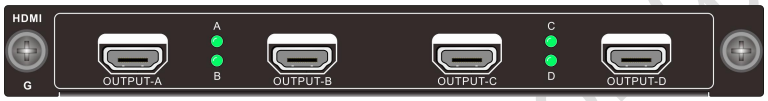


Figure 3- 15 2k@60 HDMI OUT

3.3.5 2 Channel 4Kp30 HDMI Output Board

- The card has 2 HDMI output outlets;
- The green A and B working status indicators represent the working status of the HDMI port, and the indicators are always on when the signals are normally output and functioning properly;
- Supports HDMI 1.4 and is compatible with DVI-D signal format;
- High output resolution of 4096x2160@30Hz;
- Output supports customized resolution;
- The output screen supports splicing, splitting, overlaying, scaling, stretching, cutting, picture-in-picture, roaming and other formats;
- The output external single display supports up to 4 windows;
- With power-off memory function.

Figure 3- 16 4K@30 HDMI OUT

3.4 Multi-Function Output Board

- With 1 RS485, 1 RS232, 1 IR IN, 1 IR OUT, 2 IO interfaces, 1 RJ45 port, 1 RST reset button, 1 power

indicator light;

- Support RS485 and RS232 transceiver, the default baud rate is 9600, support 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200;
- Support 2 channels 5V I/O port.
- Support infrared learning and infrared emission;
- Support to reset the device by button, the factory default IP is 192.168.0.168, port number 4001;
- Through the host computer configuration, it has the functions of network to serial port, serial port to network, network to network, IO to network string, infrared control, infrared learning and so on.

Figure 3- 17 Multi-Function Output Board

3.5 Control Card

3.5.1 Ordinary Control Card

- 1 channel LAN port，2 channels RS232 ports；
- Support client software control and serial RS232 instruction control
- Supports control of third-party devices through RS232 OUT port
- Factory default device IP: 192.168.0.178; port number: 4001;
- Baud Rate：115200；

Figure 3- 18 Ordinary Control Card

3.5.2 Ordinary Control Card

- 2 channel LAN port，2 channels RS232 ports;
- Support client software control, Web page control and serial RS232 instruction control;
- Supports control of third-party devices through RS232 OUT port；
- Support high-definition base map display, dynamic subtitle function setting;
- Support input source signal preview, large screen image echo function;
- WEB human-computer interaction interface control;
- Support Multi-user control;
- Factory default device IP: 192.168.0.178; port number: 4001;
- Baud Rate：115200；

Figure 3- 19 Advanced Control Card

4.System Connection

4.1 Precautions

1. The system installation and use environment should be kept clean, with proper temperature and humidity, and well ventilated;
2. All power switches, plugs, sockets and power cords of equipment in the system must be insulated and safe;
3. Connect peripherals and finally power up the system.

4.2 Connection Configuration Diagram

This article takes the 20x16 hybrid card processor device as an example. The system connection diagram is as follows:

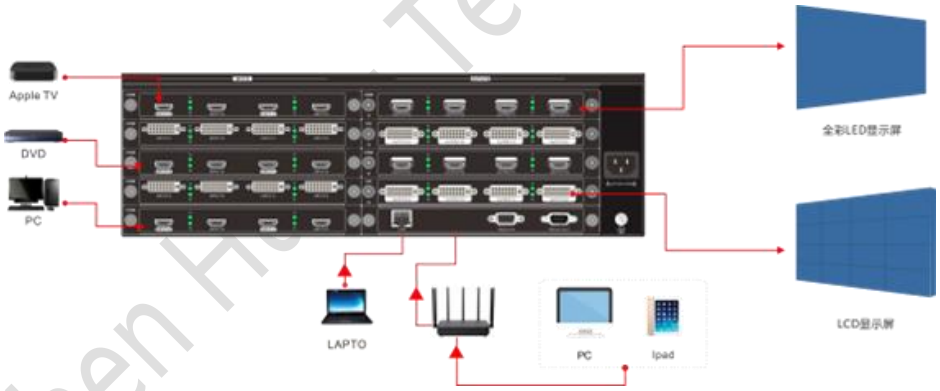


Figure 4- 1 System connection diagram

The first connection configuration steps are as follows:

Step1: Correctly install the required board in the back slot of the splicing processor device;

Step2: Connect the required input signal source device to the input port of the input board;

Step3: Connect the splicing screens to the video output port of the output board;

Step4: The splicing processor supports two control methods: RS232 serial port and LAN network port. Connect the serial port or network port of the control device (such as a PC) to the "RS232 IN" port or network port of the machine, and control the machine through splicing client software or serial port commands. For details, please refer to 5 RS232 Control and 6 Client terminal software control.

Step5：Connect the power input port to the 100V~240V AC power supply, and connect the ground wire connection end

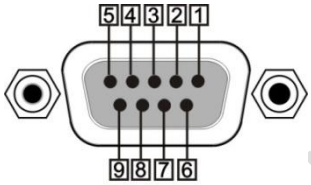
Step6：Open the control software, select the control method (network port or serial port control) in "Communication Settings" on the main interface, and return to the main interface to connect the device；

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

Step8：Enter the screen settings, map the output ports to the corresponding groups, and adjust the screen order.

🕮 ***Explanation***：

- Serial port control method: the control device PC must be connected to the "**RS232 IN**" port to control the machine or third-party devices, but not the "**RS232 OUT**" port; the RS232 port of the 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	Receiver
4	N/u	null
5	Gnd	Gnd
6	N/u	null
7	N/u	null
8	N/u	null
9	N/u	null

- Network port control method: The factory default IP address of the splicing processor is: 192.168.0.178, and the port number is 4001. Make sure that the PC and the device are in the same network segment, and then the device can be controlled. Modify the method of controlling the PC network segment: "Network" → "Properties" → "Local Area Connection" → "Properties" → "Internet Protocol Version 4 (TCP/IP4)" → "Set IP Address to "0" Network Segment (as shown in the figure) " → "Save"；

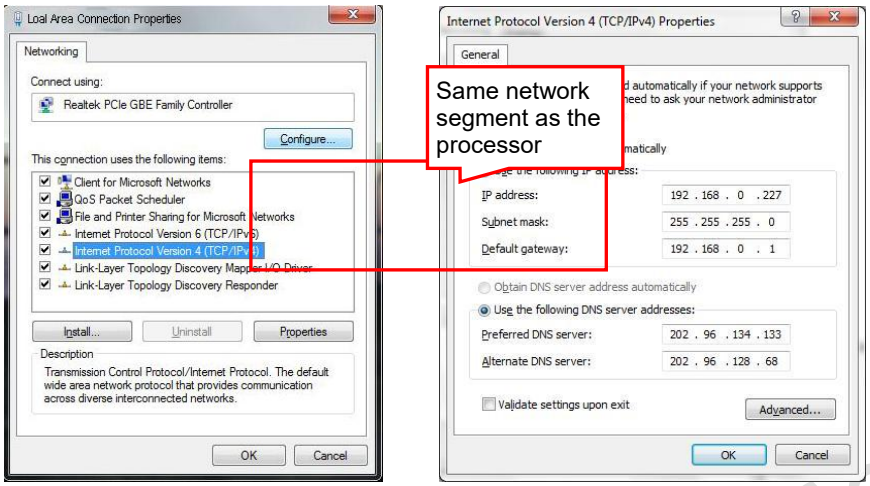


Figure4- 2 Change IP

- The system uses twisted pair, it is recommended to use the shielded universal T568B straight-through twisted pair to reduce interference；
- After the device is powered on, the display is in the standby state before the splicing screen mapping relationship is not set；
- This picture is for reference only, customers can build the application system according to actual needs.

4.3 Controlling Third-Party Devices

Connect the serial port of the control device (such as a PC) to the "**RS232 IN**" port of the splicing processor or connect the network port of the control device to the "**LAN**" port of the splicing processor, and then use the RS232 serial cable to connect the remote third-party The device control serial port is connected to the "**RS232 OUT**" port of the splicing processor. Open and connect the client control software, and send third-party device control commands through the client peripheral control interface to control third-party devices. The system connection diagram is as follows：

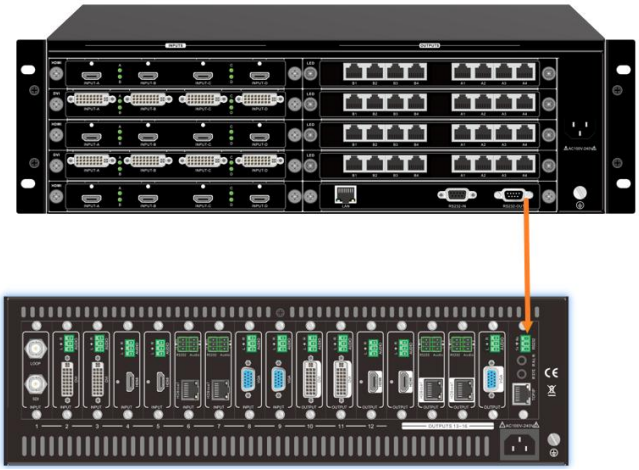


Figure4- 3 Controlling Third-Party Device Connection Diagram

5.Touch Screen Control

This machine adopts 5-inch capacitive touch screen, which provides users with the most convenient, intuitive and natural human-computer interaction operation, including equipment information monitoring interface, scene call menu interface, scene information menu interface, and equipment information menu interface. Users can Control or query the machine through the touch screen menu.

5.1 Home Menu

After the device is powered on, the touch screen automatically enters the "Home Menu". Supports screen lock, device IP display, device name remarks, and various function interface jumps. As shown below:

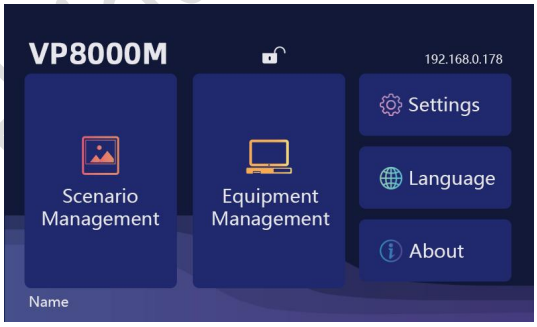


Figure 5- 1 Home Menu

Screen lock: Click to lock the screen to avoid accidental touch;

Screen unlock: click the unlock button three times within 3 seconds;

IP address: display the current device IP address;

Device name: Click to customize the input device information;

Scene management: click to jump to the scene management interface;

Device management: click to jump to the device management interface;

Port Status: Click to jump to the Port Status screen;

Settings: click to jump to the settings interface;

Language: Click to jump to the language switching interface;

About: Click to jump to the about interface.

5.2 Scenario Management Menu

Click the " Scenario Management " menu on the homepage to enter the scene management page, which supports 32 groups of scene calls and scene polling switches. As shown below:

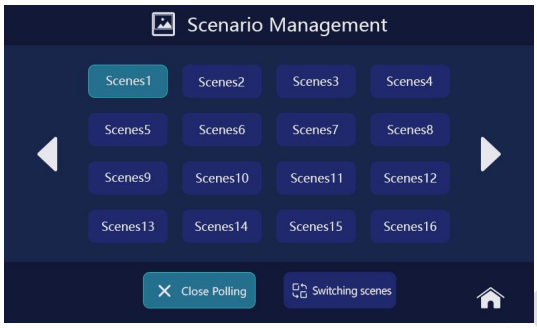


Figure 5-2 Scenario Management

Scene caling: select the scene to be switched, and click the "Switch Scene" button to realize scene call;

Scene polling/closing polling: After saving the scene polling parameters through the client software, click "Start polling" to start polling, and click "Close polling" to stop polling;

Scene name: The scene name can be modified when saving the scene through the client. The touch screen supports displaying up to 8 characters (4 Chinese characters).

5.3 Equipment Management Menu

Click the " Equipment Management" menu on the home page to enter the device management page, which supports monitoring of device input and output status. As shown below:

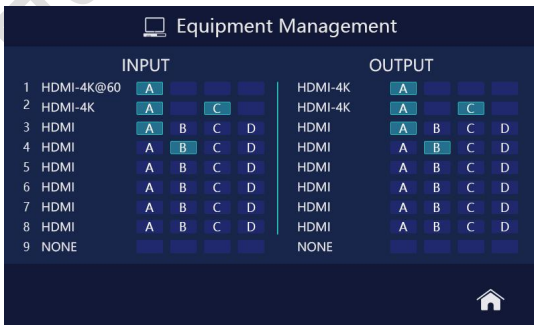


Figure 5-3 Equipment Management

Input status monitoring: Real-time monitoring of the connection status of the input device, when the corresponding icon of the channel lights up, it indicates that the channel has a normal signal input;

Output status monitoring: monitor the output mapping status in real time, when the corresponding icon of the channel lights up, it indicates that the channel is enabled, and the mapping output is sent to the display;

5.4 Settings

Click the "Settings" menu on the home page to enter the system setting page, which supports setting touch screen brightness adjustment, fan speed adjustment, touch screen buzzer switch and factory reset. As shown below:

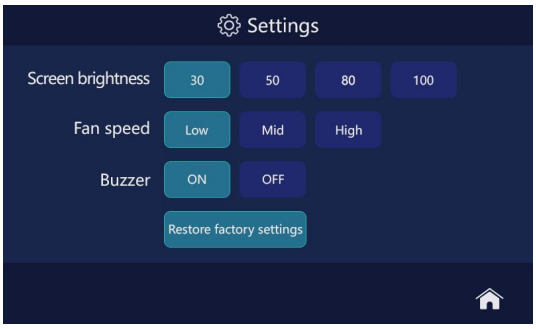


Figure5-4 Settinmg

Screen brightness: set the touch screen brightness to 30/50/80/100 scale adjustment;

Fan speed: set the fan speed gear of the device;

Buzzer: Set the button sound of the touch screen. When it is set to "on", there will be a sound prompt when operating the touch screen; when it is set to "off", there will be no sound prompt when operating the touch screen;

Restore factory settings: restore the device to the factory state; after restoring the factory settings, all operating data will be cleared, and the device IP address will be restored to the default 192.168.0.178.

5.5 Language

Click the "Language" menu on the home page to enter the language setting page, as shown in the figure below, which supports setting the Chinese/English language mode.

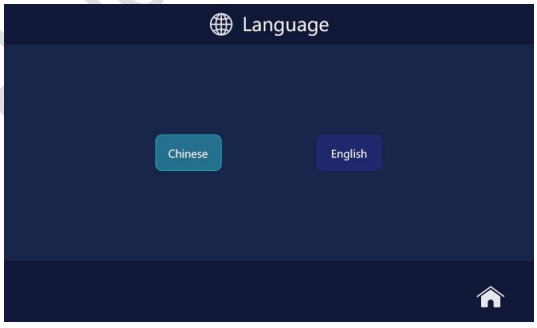


Figure 5-5 Language

5.6 About

Click the "About" menu on the home page to enter the about page, which supports querying device version information, as shown below:

Figure 5-6 About

5.7 Port Status

Click the "About" menu on the home page to enter the About page, which supports querying the device version information, as shown below.

Figure 5-7 Port Status

6.Specifications

6.1 Host parameters

Control	
RS232 Control	DB9
TCP/IP Control	RJ45，Compliant with TCP/IP protocol
Normal	
Chassis structure	08x12 Hybrid Plug-In Processor：2 input channel card slots; 3 output channel card slots 20x16 Hybrid Plug-In Processor：5 input channel card slots; 4 output channel card slots 36x36 Hybrid Plug-In Processor：9 input channel card slots; 9 output channel card slots
Power supply	100V～240V AC,50/60Hz
No-load power	08x12 Hybrid Plug-In Processor：9.6W(Normal control card), 16W(Advanced control card) 20x16 Hybrid Plug-In Processor：10.4W(Normal control card)，22W(Advanced control card) 36x36 Hybrid Plug-In Processor：37.2W(Normal control card)，42W(Advanced control card)

Operating temperature	0℃～+45℃
Relative humidity	10%～90%
Chassis size (excluding hanging ears)	08x12 Hybrid Plug-In Processor：W436.6mm x H88.0m x D320mm 20x16 Hybrid Plug-In Processor：W436.6mm x H136.0mm x D320mm 36x36 Hybrid Plug-In Processor：W436.6mm x H269.0mm x D320mm
Weight (kg)(excluding signal boards)	08x12 Hybrid Plug-In Processor：6.3kg 20x16 Hybrid Plug-In Processor：7kg 36x36 Hybrid Plug-In Processor：12kg
Packing size	08x24 Hybrid Plug-In Processor：W 570mm x H 405mm x D 245mm； 20x32Hybrid Plug-In Processor：W 570mm x H 405mm x D 245mm； 36x72Hybrid Plug-In Processor：W 570mm x H 420mm x D 375mm。

🕮 **Explanation：**

- The chassis size and weight are approximate, please refer to the actual product.

6.2 Signal Input Board Parameters

6.2.1 DVI Signal Input Board

DVI signal input board	
Signal	4 channel DVI signal input
Connector	DVI-I female port
Normal power consumption	8.8W
Weight(g)	286g
General	
Video signal format	DVI compatible with HDMI
Standard	HDCP standard
Input resolution	Maximum support 1920x1200 @60Hz
Operating temperature	0℃～+45℃
Relative humidity	10%～90%
Power supply	Powered by the host

6.2.2 HDMI Signal Input Board

HDMI signal input board	
Signal	4 channel HDMI signal input

Connector	Type A 19 Pin female
Normal power consumption	8.8W
Weight(g)	260g
General	
Video signal format	Compatible with HDMI、DVI-D
Standard	Support HDMI1.3,compatible with HDCP
Input resolution	Maximum support 1920x1200 @60Hz
Operating temperature	0℃～+45℃
Relative humidity	10%～90%
Power supply	Powered by the host

6.2.3 DVI Audio signal input card

Signal input board	
Signal	4 channel DVI signal input
Connector	DVI-I female port
Normal power consumption	7.4W
Weight(g)	286g
General	
Video signal format	DVI compatible with HDMI
Standard	HDCP Standard
Input resolution	Maximum support 1920x1200 @60Hz
Audio format	Input built-in audio supports PCM and Dobly Digital formats
Audio sampling rate	32K，44.1K，48K，88.2K，96K
Operating temperature	0℃～+45℃
Relative humidity	10%～90%
Power supply	Powered by the host

6.2.4 HDMI Audio signal input card

Input card	
Signal	4 channel HDMI signal input，4 channel Audio signal input
Connector	Type A 19 Pin female，3pin Phoenix
Normal power consumption	8.8W

Weight(g)	260g
General	
Video signal format	Compatible with HDMI、DVI-D
Standard	Support HDMI1.3, compatible with HDCP
Input resolution	Maximum support 1920x1200 @60Hz
Audio format	Input built-in audio supports PCM and Dobly Digital formats
Audio sampling rate	32K，44.1K，48K，88.2K，96K
Operating temperature	0℃～+45℃
Relative humidity	10%～90%
Power supply	Powered by the host

6.2.5 SDI Signal Input Board

SDI Signal input board	
Signal	4 channels SDI signal input，4 channels SDI loop out signal
Connector	BNC connector
Normal power consumption	6.5W
Weight(g)	390g
General	
Video signal format	SDI
Working distance	1080P≤100m (Please use high-quality wire)
Input resolution	Maximum support 1920x1080P @60Hz
Operating temperature	0℃～+45℃
Relative humidity	10%～90%
Power supply	Powered by the host

6.2.6 CVBS Signal input board

CVBS signal input	
Signal	4 channel CVBS signal input
Connector	BNC Connector
Normal power consumption	9.5W
Weight(g)	320g
General	

Video signal format	CVBS
Input resolution	PAL：720x576I，NTSC：720x480I
Operating temperature	0℃～+45℃
Relative humidity	10%～90%
Power Supply	Powered by the host

6.2.7 VGA Signal Input Board

VGA signal input board	
Signal	4 channels VGA signal input
Connector	15Pin HD female port
Normal power consumption	7.1W
Weight (g)	270g
General	
Video signal format	VGA
Input/ Output resolution	Maximum support 1920x1080P @60Hz
Operating temperature	0℃～+45℃
Relative humidity	10%～90%
Power supply	Powered by the host

6.3 Single-card Two Signal Input Board parameters

6.3.1 4K@30Hz HDMI Signal input Board

4K HDMI Signal input	
Signal	2 channel HDMI Signal input
Connector	Type A 19 Pin female
Normal power consumption	7.8W
Weight(g)	260g
General	
Video signal format	HDMI
Standard	Support HDMI1.4, compatible with HDCP
Input resolution	Maximum support 3840x2160 @30Hz
Operating temperature	0℃～+45℃
Relative humidity	10%～90%

Power Supply	Powered by the host

6.3.2 DP Signal Input Board

4K@30Hz DP Signal input board	
Signal	2 channels DP input signals
Connector	Display Port
Normal power consumption	9.2W
Weight (g)	240g
General	
Standard	Support DP1.1
Output resolution	Maximum support 3840x2160@60Hz
Operating temperature	0℃～+45℃
Relative humidity	10%～90%
Power Supply	Powered by the host

6.3.3 4K@60Hz Signal Input Board

4K@60Hz Signal Input Board	
Signal	1 channel HDMI input signal，1 channel DP input signal(pick one of two)
Connector	Type A 19 pin female，Display Port
Normal power consumption	10W
Weight (g)	250g
General	
Standard	Support HDMI2.0，compatible with HDCP，support DP1.2，
Output resolution	Maximum support 3840x2160@60Hz
Operating temperature	0℃～+45℃
Relative humidity	10%～90%
Power Supply	Powered by the host

6.3.4 IP Decoding Signal Input Board

IP stream input card	
Signal	1-channel IP streaming network input port, 1-channel HDMI input port, 1-channel independent audio input port, 1-channel USB upgrade port
Connector	RJ45，HDMI，3PIN Phoenix seat, USB-A female

Normal power consumption	7.8W
Weight (g)	260g
General	
HDMI Standard	Support HDMI1.3，compatible with HDCP
Decoding protocol	Standard ONVIF, RTSP protocol, support H.264, H.265 stream
HDMI input resolution	Maximum support 1920x1200@60Hz
Decoding ability	Support 1 channel 4K30Hz / 2 channels 4K@24Hz / 4 channels 1080P@60Hz / 9 channels 1080P@25Hz / 16 channels 720P@25Hz / 32 channels D1 decoding
Operating temperature	0℃～+45℃
Relative humidity	10%～90%
Power Supply	Powered by the host

6.4 Single-card Quad Signal Output Board parameters

6.4.1 DVI Signal Output Board

RJ45 Output Board	
Signal	8 RJ45 output signals
Connector	RJ45
Normal Power consumption	10.2W
Weight (g)	370g
Output resolution	Maximum support 1920x1200@60Hz
Operating temperature	0℃～+45℃
Relative humidity	10%～90%
Power Supply	Powered by the host

6.4.2 Audio output Board

Audio output Board	
Signal	4 independent audio output ports
Connector	3PIN Phoenix seat
Normal Power consumption	5.3W
Weight (g)	240g
General	
Signal format	PCM Format
Standard	Output 48KHz
Noise floor	- 88 dBu
SNR	- 86 dBr
Distortion	≤0.01% @1KHz，+4dBu
Frequency response	200Hz~20KHz(±1dB)
Operating temperature	0℃～+45℃
Relative humidity	10%～90%
Power Supply	Powered by the host

6.4.3 4 - channel 2Kp60 DVI Output Board

DVI output Board

Signal	4 independent DVI output ports
Connector	DVI-I Female Port
Normal Power consumption	10.2W
Number of windows	Supports 2 windows at 2K input; 1 window at 4K@30 input;
Weight (g)	270g
Video signal format	DVI Compatible HDMI
Output resolution	Supports up to 1920x1200@60Hz
Operating temperature	0℃～+50℃
Relative humidity	10%～90%
Power Supply	Powered by the host

6.4.4 4-channel 2Kp60 HDMI Output Board

HDMI output Board	
Signal	4 HDMI output signals
Connector	Type A 19PIN female connector
Normal Power consumption	10.2W
Number of windows	Supports 2 windows at 2K input; 1 window at 4K@30 input;
Weight (g)	270g
Video signal format	Compatible with HDMI, DVI-D
Output resolution	Supports up to 1920x1200@60Hz
Operating temperature	0℃～+50℃
Relative humidity	10%～90%
Power Supply	Powered by the host

6.4.5 2 Channel 4Kp30 HDMI Output Board

HDMI output Board	
Signal	2 HDMI output signals
Connector	Type A 19PIN female connector
Normal Power consumption	6.2W
Number of windows	Supports 2 windows at 2K input; 1 window at 4K@30 input; 1 window at 4K@60 input

Weight (g)	260g
Video signal format	HDMI
Output resolution	Supports up to 4096x2160@30Hz
Operating temperature	0℃～+50℃
Relative humidity	10%～90%
Power Supply	Powered by the host

6.4.6 Multi-function output card parameters

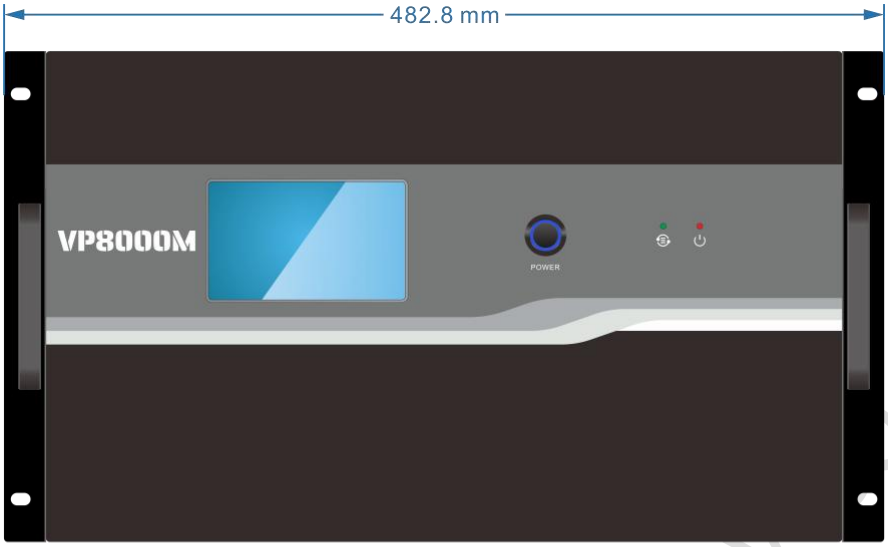
Port	1-channel 3pin Phoenix seat RS485 interface, 1-channel RS232 male socket, 1-channel IR IN receiving head, 1-channel IR OUT 3.5mm interface, 2-channel IO 3pin Phoenix seat interface, 1-channel RJ45 interface
Button	One Reset Button
Indicator	One power indicator light, green
Normal Power consumption	0.96W
Weight(g)	260g
Operating temperature	0℃～+45℃
Relative humidity	10%～90%
Power Supply	Powered by the host

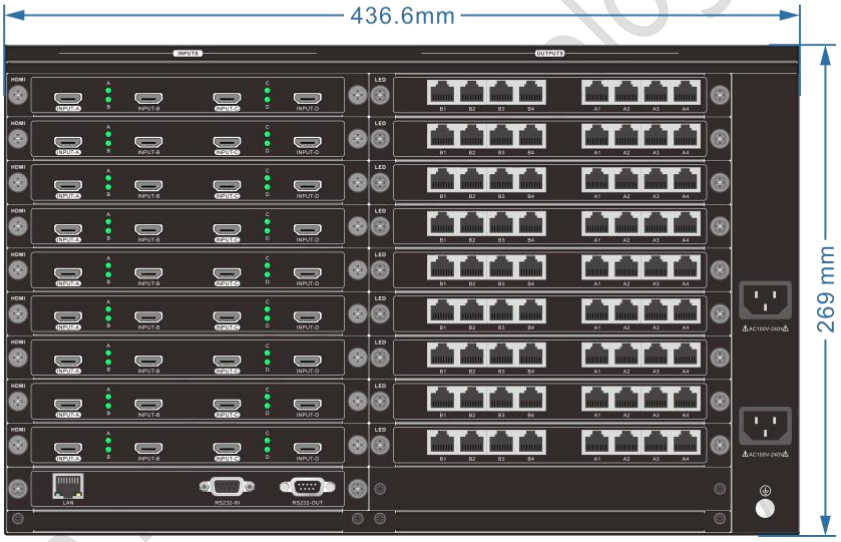
7.Dimensions

08x24 Hybrid Plug-In Processor：W436.6mm x H88.0m x D320mm：

20x32 Hybrid Plug-In Processor：W436.6mm x H136.0mm x D320mm：

36x72 Hybrid Plug-In Processor：W436.6mm x H269.0mm x D320.0mm：





8.Common failures and maintenance

Fault phenomenon	Cause Analysis	Troubleshooting
The power indicator light is off, and the operation has no response	The power supply is not plugged in	Check power and make sure it's on
	Poor power input contact	Check the power interface and make sure it is in good contact, and connect it to another power input
When the signal is switched, there is no corresponding image	The signal source or splicer is not turned on	Check to make sure the source and splicer are on
	Poor contact of video signal port	Check and make sure the corresponding

output		video signal port is properly connected
The output image is disturbed	Poor contact of connecting wires between input and output devices	Connect the equipment correctly and make it in good contact
	The quality of input / output connecting wire is not up to standard or damaged	Replace the regular standard wire
	Too long wire distance	Replace the high-quality wire with the length of the transmission distance range supported by the system
There is obvious static electricity when plugging or unplugging the video interface.	Splicing processor device not well grounded	Ground the splice processor ground connection well
The LAN port cannot control the splicing processor	The network segment of the control device is inconsistent with that of the splicing processor.	Change the network segment of the control device to be consistent with the splicing processor
	The network segment of the splicing processor is inconsistent with the network segment connected to the LAN	Change the splicing processor network segment to be consistent with the LAN network segment
host unavailable	Internal damage to the host	Send to professional repair point for repair

After-sales Service

1) If you use this product in an abnormal situation, within the warranty period of the product, under normal use conditions, the company will be responsible for free maintenance without dismantling and repairing the fault caused by the quality of the product itself.
2) The company provides a one-year warranty service for this product. Warranty start date：
   - ✓ Product date of manufacture；
   - ✓ The above date cannot be obtained, and the production date of the product in the company's SN code shall prevail.
3) In any of the following cases, the warranty service will not be implemented, and the maintenance and parts fees will be charged reasonably：
   - ✓ Damage caused by improper use, storage and maintenance of consumers；
   - ✓ Appearance and components are damaged by humans；

- ✓ Damage caused by changing the configuration or modifying the product without the authorization of the company;
- ✓ Damage caused by force majeure factors.

4) n any of the following circumstances, the company has the right to refuse to provide maintenance services or provide maintenance services for a fee:：

- ✓ No warranty certificate and valid invoice, no SN code for the product;
- ✓ The fragile label of the body is damaged (except authorized by the company), and the content of the product label has been altered or blurred and cannot be identified;
- ✓ Damage caused by installation, disassembly and repair not authorized by the company;
- ✓ There is no sales certificate or the sales certificate does not match the model of the repaired product;
- ✓ Products not produced and sold by our company.

5) You can contact the after-sales service department of our company directly by letter or call, please inform the following content:

- ✓ The model and name of the product you are using;
- ✓ Fault phenomenon (as detailed as possible);
- ✓ The process before and after the failure occurs.