User Manual

Multi-screen Splicing Processor

Version: 2021 V1.0

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 salesman for maintenance assistance. The functions described in this version were updated till January, 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 is used to a series of mixed card intelligent image splicing processor products. As follows:

Name	High	The maximum number of input channels	The maximum number of output channels (four ports per card)	The maximum number of output channels (two ports per card)
8x18	4U	8	18	9
18x36	5U	18	36	18
26x18	5U	26	18	9
36x36	9U	36	36	18
72x72	13U	72	72	36

SAFETY PRECAUTIONS

To ensure the best 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.

Table of Content

1. Product Introduction

This is a series of mixed card intelligent image splicing processor products, which can display multiple dynamic and static pictures on LED or LCD screens of different specifications, and support multi-window, superposition and roaming.

This series of products support a variety of sizes, meeting different sizes of screen-driven display. Support the mixed use of a variety of input and output signal formats, HDMI, DVI, VGA, SDI, HDBaseT and DP signal card can be selected, according to specific need.

The products work with the smart management software enable more screen splicing effects and better satisfy various user needs. It supports OSD, scene management, high-definition wallpaper, scrolling subtitles, upgrade, and realize the presentation of video images or big data with different needs on the spot; supports preview and echo function to achieve visual control management. Optional high performance redundant power supply module, that is, when the other power module failure will not affect the power supply of the equipment, the equipment can still work properly and effectively.

1.1. Features

- Modular design, input cards: 4K HDMI, 4K DP, HDMI, DVI, VGA, SDI, HDBaseT.
- Output cards (up to two input video source at one screen): HDMI, DVI, HDBaseT.
- Output cards (up to four input video source at one screen)：HDMI, DVI.
- Support LED and LCD screens.
- Support high-definition multi-port signal input and real-time synchronous output, compatible with Nvidia Mosaic and AMD Eyefinity technology.
- The Custom TV sign quickly traced back to video signal sources.
- Support output resolution selection and video resolution up to 1920x1200@60Hz.
- Support equipment high temperature alarm and intelligent fan regulation.
- Real-time display and preview, to implement visual operation management of equipment.
- Scene recalling, scene saving, scene rotation, getting and setting IP by RS232 communication commands.
- Support scrolling subtitles that be set font, size, color, position, transparent, dynamic and static parameters.
- Output picture supports splicing, segmentation, window superposition, scaling, stretching, cutting, PIP (picture in picture), roaming and so on.
- Up to build 2 or 4 windows on each display screen, single signal source can build many windows.

- Up to 4 groups of output screens can be set, and the video resolution of any group screen can be user-defined.
- Support to upload ultra-high wallpaper.
- Support user rating, decentralized management.
- Scene management: clearing, saving, calling, the rotated scene.
- Support configuration of backup and recovery: backup information, power-off memory.
- Controlled in a variety of ways, including RS232 instruction control and LAN software control, and supports serial port or network port control of third-party devices.
- Arbitrary installation, no need to connect the processor output port to the LED screen sending card in a fixed order.

1.2. Signal Card

The series of products support multiple signal cards as listed in the following chart

Type	Model	Description
Input Cards	4K HDMI IN	4Kx2K HDMI input card with 1 HDMI input and 1 L+R audio output ports.
	4K DP IN	4Kx2K DP input card with 1 DP input and 1 L+R audio output ports.
	DVI IN	1080P DVI input card with 2 DVI input and 2 L+R audio output ports.
	HDMI IN	1080P HDMI input card with 2 HDMI input and 2 L+R audio output ports.
	HDBaseT IN	1080P HDBaseT input card with 2 HDBaseT input and 2 L+R audio output ports.
	VGA IN	1080P VGA input card with 2 VGA input ports.
	SDI IN	1080P SDI input card with 2 SDI input and 2 SDI loop output ports.
	CVBS IN	1080P CVBS input card with 2 CVBS input
	Multi-format	Multi-format input card with 2 DVI input and 2 L+R audio output ports.
	IP IN	IP input card with 1 IP input port
Output Cards	DVI OUT	1080P DVI output card with 2 DVI ports
	DVI OUT	1080P DVI output card with 2 DVI ports, supports

(2 Ports)	(wallpaper, subtitle)	wallpaper and subtitle
	HDMI OUT	1080P HDMI output card with 2 HDMI ports
	HDMI OUT (wallpaper, subtitle)	1080P HDMI output card with 2 HDMI ports, supports wallpaper and subtitle
	HDBaseT OUT (wallpaper, subtitle)	1080P HDBaseT output card with 2 HDBaseT ports, supports wallpaper and subtitle
Output Cards (4 Ports)	DVI OUT	1080P DVI output card with 4 DVI ports
	DVI OUT (wallpaper, subtitle)	1080P DVI output card with 4 DVI ports, supports wallpaper and subtitle
	HDMI OUT	1080P HDMI output card with 4 HDMI ports
	HDMI OUT (wallpaper, subtitle)	1080P HDMI output card with 4 HDMI ports, supports wallpaper and subtitle

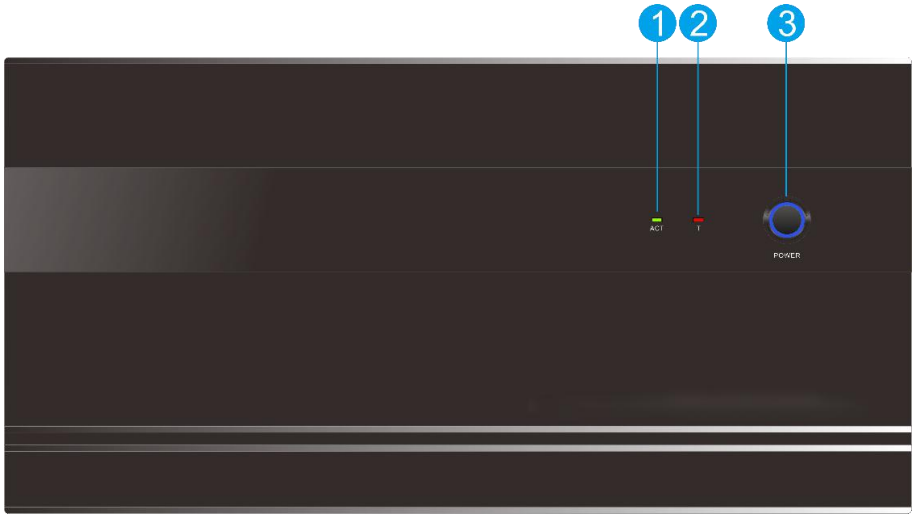
1.3. Package List

- 1x Multi-screen Splicing Processor
- 2x Mounting Ears with 12x Screws
- 2 Handles with 4x Screws
- 4x Plastic Cushions
- 1x RS232 Cable
- 1x Power Cord
- 2x 3-pin pluggable terminal block
- 1x Disk
- 1x Phillips screwdriver
- 1x User Manual

Note: *Please contact your distributor immediately if any damage or defect in the components is found.*

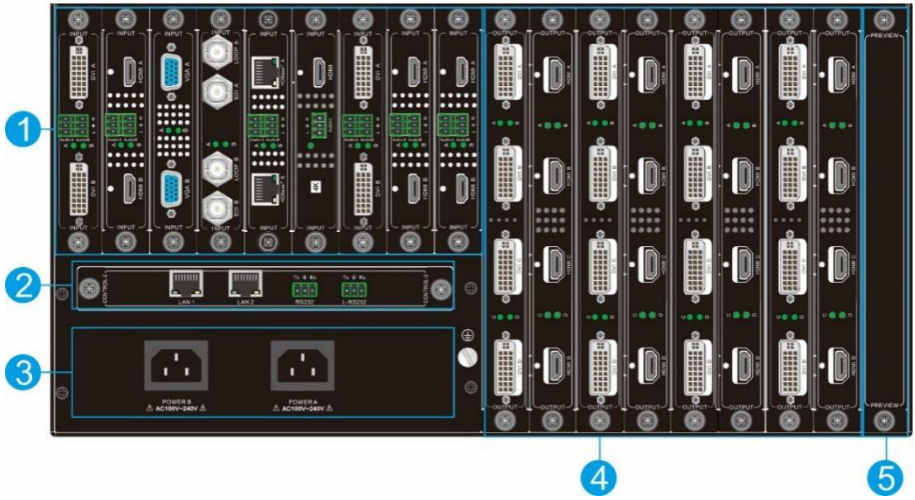
2. Panel Description

2.1. Front Panel



No.	Name	Description
①	ACT LED	The LED blinks green when the device is in the normal working status
②	Temperature Alarm LED	The LED blinks red when the device temperature is over 50℃
③	Power Button	Press the button to power on the device, and the LED will illuminates blue. If the button LED blinks blue or goes out, the device is in the abnormal power status.

2.2. Rear Panel



No.	Name	Description
①	Inputs	● 08x18: 4 slots for input signal cards ● 18x36: 9 slots for input signal cards ● 26x18: 13 slots for input signal cards ● 36x36: 18 slots for input signal cards ● 72x72: 36 slots for input signal cards
②	Outputs	insert 2 ports or 4 ports per output signal card: ● 08x18: 5 slots for output signal cards ● 18x36: 9 slots for output signal cards ● 26x18: 5 slots for output signal cards ● 36x36: 9 slots for output signal cards ● 72x72: 18 slots for input signal cards **Note:** The last output card only A.B ports support signal output on the 08x18&26x18; only A port supports signal output on the 18x36&36x36 The last output card slot can be inserted into the video card for signal echo pre-monitoring
③	Control	● **RS232:** Connect the control device (e.g. PC) to the RS232 port to control the processor by sending

No.	Name	Description
		RS232 commands. The third-party device can be connected to the L-RS232 port to be controlled by the control device. ● **LAN:** Connect the control device (e.g. PC) to the LAN port to control the processor by the software controller. The third-party device can be connected to another LAN port to be controlled by the control device.
④	Power	Optional high performance redundant power supply module, that is, when the other power module failure will not affect the power supply of the equipment, the equipment can still work properly and effectively
⑤	Echo and preview	for signal echo pre-monitoring

3. Signal Card

The products support expansion through various changeable input/output cards of different signals including DVI, HDMI, HDBaseT, VGA, SDI etc. Here is a brief introduction to the changeable signal cards.

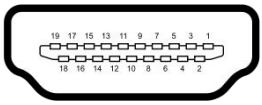
3.1. Input cards

3.1.1. 4K HDMI input card

4Kx2K HDMI input card with 1 HDMI input and 1 L+R audio output ports.

- 4Kx2K HDMI input card with 1 HDMI input and 1 L+R audio output ports.
- LED respectively indicate the work status of HDMI input signal.
- Supports audio de-embedding.
- Video resolution is up to 3840x2160@30Hz 4:4:4.
- Supports DVI and HDMI signal format and automatic detection feature.
- Any one of input sources can be switched to show in screen.
- Supports text overlap for input channels. User can customize the font, color, size, position, transparency of the added text, and make the text over the image to show source information in real-time.
- Supports embedded EDID management and DDC channel.
- Power off memory.

Pin layout of the HDMI connectors (female).

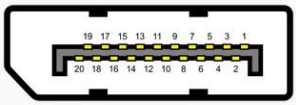


No.	Signal	No.	Signal
1	TMDS Data 2+	20	SHELL
2	TMDS Data 2 Shield	19	Hot Plug Detect
3	TMDS Data 2-	18	+5V Power
4	TMDS Data 1+	17	Ground
5	TMDS Data 1 Shield	16	DDC Data
6	TMDS Data 1-	15	DDC Clock
7	TMDS Data 0+	14	No Connect
8	TMDS Data 0 Shield	13	CEC
9	TMDS Data 0-	12	TMDS Clock-
10	TMDS Clock+	11	TMDS Clock Shield

3.1.2. 4K DP input card

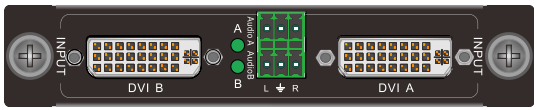
- 4Kx2K DP input card with 1 DP input and 1 L+R audio output ports.
- LED respectively indicate the work status of DP input signal.
- Supports audio de-embedding, audio 48Khz.
- Supports DP1.1.
- Video resolution is up to 4096x2160@24Hz.
- Any one of input sources can be switched to show in screen.
- Supports text overlap for input channels. User can customize the font, color, size, position, transparency of the added text, and make the text over the image to show source information in real-time.
- Supports embedded EDID management and DDC channel.
- Power off memory.

Pin layout of the DP connectors (female).



No.	Signal	No.	Signal
1	ML_Lane 0(p)	11	GND
2	GND	12	ML_Lane 3(n)
3	ML_Lane 0(n)	13	GND
4	ML_Lane 1(p)	14	GND
5	GND	15	AUX_CH(p)
6	ML_Lane 1(n)	16	GND
7	ML_Lane 2(p)	17	AUX_CH(n)
8	GND	18	Hot Plug
9	ML_Lane 2(n)	19	DP_PWR Return
10	ML_Lane 3(p)	20	DP_PWR

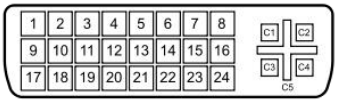
3.1.3. DVI input card



- 1080P seamless DVI input card with 2 DVI input and 2 L+R audio output ports.
- A and B LEDs respectively indicate the work status of DVI A and DVI B input signal.

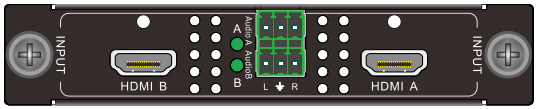
- Supports audio de-embedding.
- Supports HDMI1.3
- Video resolution is up to 1920x1200@60Hz.
- Supports DVI and HDMI signal format and automatic detection feature.
- Any one of input sources can be switched to show in screen.
- Supports text overlap for input channels. User can customize the font, color, size, position, transparency of the added text, and make the text over the image to show source information in real-time.
- Supports embedded EDID management and DDC channel.
- Power off memory.

Pin Layout of the DVI-I connector (Dual-Link). (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 (return for +5V,Hsync and Vsync)
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	Analog Vertical Sync	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-	13	T.M.D.S.Data3+
C1	RED	C2	Analog Green
C3	Analog Blue	C4	Horizontal Sync Analog
C5	GND		

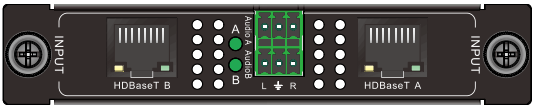
3.1.4. HDMI input card



- 1080P seamless HDMI input card with 2 HDMI input and 2 L+R audio output ports.

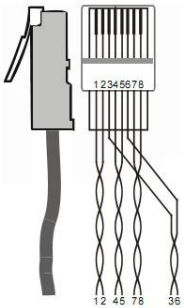
- A and B LEDs respectively indicate the work status of HDMI A and HDMI B input signal.
- Supports audio de-embedding.
- Video resolution is up to 1920x1200@60Hz.
- Supports DVI and HDMI signal format and automatic detection feature.
- Any one of input sources can be switched to show in screen.
- Supports text overlap for input channels. User can customize the font, color, size, position, transparency of the added text, and make the text over the image to show source information in real-time.
- Supports embedded EDID management and DDC channel.
- Power off memory.

3.1.5. HDBaseT input card



- 1080P seamless HDBaseT input card with 2 HDBaseT input and 2 L+R audio output ports.
- A and B LEDs respectively indicate the work status of HDBaseT A and HDBaseT B input signal.
- Supports audio de-embedding.
- Video resolution is up to 1920x1200@60Hz.
- Used with HDBaseT transmitter to extend video signal, and the transmission distance can up to 70 meters at 1080P via CAT6 cable.
- The green LED lights up to indicate that the input card and the HDBaseT transmitter are linked successfully.
- The yellow LED lights up to indicate that the input signal is transmitted with HDCP content.
- Any one of input sources can be switched to show in screen.
- Supports text overlap for input channels. User can customize the font, color, size, position, transparency of the added text, and make the text over the image to show source information in real-time.
- Supports embedded EDID management and DDC channel.
- Power off memory.

Pin layout of the HDBT connector:

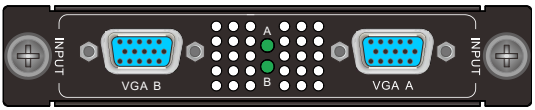


Pin	Color	Pin	Color
1	orange white	5	blue white
2	orange	6	green
3	green white	7	brown white
4	blue	8	brown

1st Group	4--5	3rd Group	3--6
2nd Group	1--2	4th Group	7--8

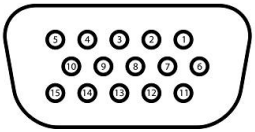
Note: *Cable connectors MUST be metal one, and the shielded layer of cable MUST be connected to the connector's metal shell, to well share the grounding.*

3.1.6. VGA input card



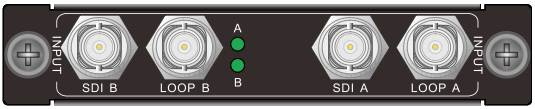
- 1080P seamless VGA input card with 2 VGA input ports.
- A and B LEDs respectively indicate the work status of VGA A and VGA B input signal.
- Video resolution is up to 1920x1080P@60Hz.
- Supports VGA signal format.
- Any one of input sources can be switched to show in screen.
- Supports text overlap for input channels. User can customize the font, color, size, position, transparency of the added text, and make the text over the image to show source information in real-time.
- Power off memory feature.

Pin layout of female VGA connector:



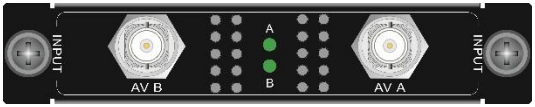
Pin	Signal	Pin	Signal
1	RED	9	KEY/PWR
2	GREEN	10	GND
3	BLUE	11	ID0/RES
4	ID2/RES	12	ID1/SDA
5	GND	13	HSync
6	RED_RTN	14	VSync
7	GREEN_RTN	15	ID3/SCL
8	BLUE_RTN		

3.1.7. SDI input card



- 1080P seamless SDI input card with 2 SDI input and 2 SDI loop output ports.
- A and B LEDs respectively indicate the work status of SDI A and SDI B input signal.
- Video resolution is up to 1920x1080P@60Hz.
- Supports SDI, HD-SDI, 3G-SDI signal format.
- Any one of input sources can be switched to show in screen.
- Supports text overlap for input channels. User can customize the font, color, size, position, transparency of the added text, and make the text over the image to show source information in real-time.
- Total distance of input and output transmission can up to 100 meters at 1080P.
- Power off memory.

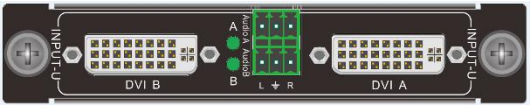
3.1.8. CVBS input card



- 1080P seamless CVBS input card with 2 CVBS input ports.
- A and B LEDs respectively indicate the work status of CVBS A and CVBS B input signal.
- Supports CVBS signal format.
- The output resolution supports 480i or 576i.
- Supports NTSC or PAL.
- Any one of input sources can be switched to show in screen.

- Supports text overlap for input channels. User can customize the font, color, size, position, transparency of the added text, and make the text over the image to show source information in real-time.
- Power off memory.

3.1.9. Multi-format input card



- 1080P seamless DVI input card with 2 DVI input and 2 L+R audio output ports.
- A and B LEDs respectively indicate the work status of DVI A and DVI B input signal.
- Supports audio de-embedding.
- Video resolution is up to 1920x1200@60Hz.
- Supports DVI, HDMI, VGA, CVBS, YPBPR signal format and set by the software controller.
- Any one of input sources can be switched to show in screen.
- Supports text overlap for input channels. User can customize the font, color, size, position, transparency of the added text, and make the text over the image to show source information in real-time.
- Supports embedded EDID management and DDC channel.
- Power off memory.

3.1.10. IP input card

- IP input card with 1 IP input port, 1 L+R audio output port, 1 firmware port and 1 button for restored factory default.
- Support 2 channels, and support a variety of display: Full Screen, 4 views , 9 views ,16 views in the each channel.
- Video resolution is up to 1920x1200@60Hz.
- Support decoding max 4 signals for 1080P@60Hz; 8 signals for 1080P@30Hz; 16 signals for 720P@30Hz; 32 signals for D1;
- Support H.264 / RTSP / RTP
- Support H.264 / AVC (MPEG-4 Part 10, AVC, Baseline/main/High Profile)
- Support ONVIF / RTSP

- Support the control of the camera, controlling the rotation direction of the network camera. And support a variety of cameras from mainstream manufacturers in the market
- The bright green LED lights up to indicate that is working.
- The dark green LED lights up to indicate that is firing or upgrading.
- The yellow LED lights up to indicate that is linked successfully.
- Power off memory.

3.2. Output cards (two ports per card)

3.2.1. DVI output card

- 1080P seamless DVI output card with 2 DVI output ports.
- A and B LEDs respectively indicate the work status of DVI A and DVI B output signal.
- Video resolution is up to 1920x1200@60Hz, and user-defined.
- Supports DVI and HDMI signal format.
- Up to build 4 windows on each screen.
- Output picture supports splicing, segmentation, window superposition, scaling, stretching, cutting, PIP (picture in picture), roaming and so on.
- Power off memory.

3.2.2. DVI output card with wallpaper and subtitle function

- 1080P seamless DVI output card with 2 DVI output ports, supports wallpaper and subtitle.
- A and B LEDs respectively indicate the work status of DVI A and DVI B output signal.
- Video resolution is up to 1920x1200@60Hz, and user-defined
- Supports DVI and HDMI signal format.
- Up to build 4 windows on each screen.
- Output picture supports splicing, segmentation, window superposition, scaling,

stretching, cutting, PIP (picture in picture), roaming and so on.

- Power off memory.

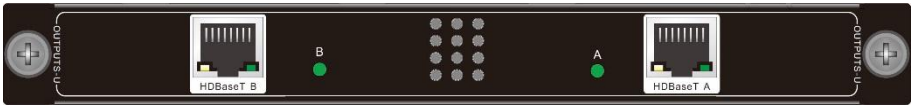
3.2.3. HDMI output card

- 1080P seamless HDMI output card with 2 HDMI output ports
- A and B LEDs respectively indicate the work status of HDMI A and HDMI B output signal.
- Video resolution is up to 1920x1200@60Hz, and user-defined.
- Supports DVI and HDMI signal format.
- Up to build 4 windows on each screen.
- Output picture supports splicing, segmentation, window superposition, scaling, stretching, cutting, PIP (picture in picture), roaming and so on.
- Power off memory.

3.2.4. HDMI output card with wallpaper and subtitle function

- 1080P seamless HDMI output card with 2 HDMI output ports, supports wallpaper and subtitle.
- A and B LEDs respectively indicate the work status of HDMI A and HDMI B output signal.
- Video resolution is up to 1920x1200@60Hz, and user-defined
- Supports DVI and HDMI signal format.
- Up to build 4 windows on each screen.
- Output picture supports splicing, segmentation, window superposition, scaling, stretching, cutting, PIP (picture in picture), roaming and so on.
- Power off memory.

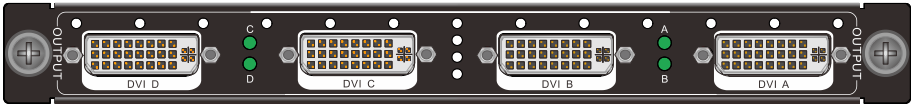
3.2.5. HDBaseT output card with wallpaper and subtitle function



- 1080P seamless HDBaseT output card with 2 HDBaseT output ports, supports wallpaper and subtitle
- A and B LEDs respectively indicate the work status of HDBaseT A and HDBaseT B output signal.
- Video resolution is up to 1920x1200@60Hz, and user-defined
- Used with HDBaseT receiver to extend video signal, and the transmission distance can up to 70 meters at 1080P via CAT6 cable.
- The green LED lights up to indicate that the output card and the HDBaseT receiver are linked successfully.
- The yellow LED lights up to indicate that the output signal is transmitted with HDCP content.
- Supports DVI and HDMI signal format.
- Up to build 4 windows on each screen.
- Output picture supports splicing, segmentation, window superposition, scaling, stretching, cutting, PIP (picture in picture), roaming and so on.
- Power off memory.

3.3. Output cards (four ports per card)

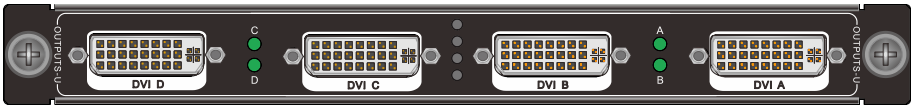
3.3.1. DVI output card



- 1080P seamless DVI output card with 4DVI output ports.
- A, B, C and D LEDs respectively indicate the work status of DVI A, DVI B, DVI C and DVI D output signal.
- Video resolution is up to 1920x1200@60Hz, and user-defined.
- Supports DVI and HDMI signal format.
- Up to build 2 windows on each screen.
- Output picture supports splicing, segmentation, window superposition, scaling, stretching, cutting, PIP (picture in picture), roaming and so on.
- Up to 4 groups of output screens can be set, and DVI A & DVI B or DVI C & DVI D must be set on the same group of output screen.

- Power off memory.

3.3.2. DVI output card with wallpaper and subtitle function

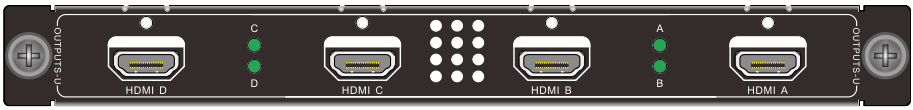


- 1080P seamless DVI output card with 4 DVI output ports, supports wallpaper and subtitle.
- A, B, C and D LEDs respectively indicate the work status of DVI A, DVI B, DVI C and DVI D output signal.
- Video resolution is up to 1920x1200@60Hz, and user-defined
- Supports DVI and HDMI signal format.
- Up to build 2 windows on each screen.
- Output picture supports splicing, segmentation, window superposition, scaling, stretching, cutting, PIP (picture in picture), roaming and so on.
- Up to 4 groups of output screens can be set, and DVI A & DVI B or DVI C & DVI D must be set on the same group of output screen.
- Power off memory.

3.3.3. HDMI output card

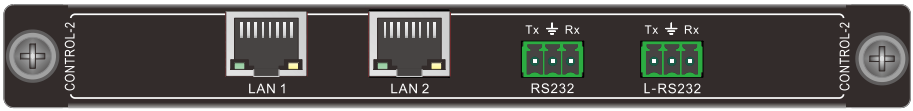
- 1080P seamless HDMI output card with 4 HDMI output ports
- A, B, C and D LEDs respectively indicate the work status of HDMI A, HDMI B, HDMI C and HDMI D output signal.
- Video resolution is up to 1920x1200@60Hz, and user-defined.
- Supports DVI and HDMI signal format.
- Up to build 2 windows on each screen.
- Output picture supports splicing, segmentation, window superposition, scaling, stretching, cutting, PIP (picture in picture), roaming and so on.
- Up to 4 groups of output screens can be set, and HDMI A & HDMI B or HDMI C & HDMI D must be set on the same group of output screen.
- Power off memory.

3.3.4. HDMI output card with wallpaper and subtitle function



- 1080P seamless HDMI output card with 4 HDMI output ports, supports wallpaper and subtitle.
- A, B, C and D LEDs respectively indicate the work status of HDMI A, HDMI B, HDMI C and HDMI D output signal.
- Video resolution is up to 1920x1200@60Hz, and user-defined
- Supports DVI and HDMI signal format.
- Up to build 2 windows on each screen.
- Output picture supports splicing, segmentation, window superposition, scaling, stretching, cutting, PIP (picture in picture), roaming and so on.
- Up to 4 groups of output screens can be set, and HDMI A & HDMI B or HDMI C & HDMI D must be set on same group of output screen.
- Power off memory.

3.4. Control signal card



- Control signal card with 2 LAN and 2 RS232 ports.
- Supports LAN control and RS232 control.
- The third-party device can be controlled via the any **LAN** ports and **L-RS232** port.
- The default IP is 192.168.0.178, and the port number is 4001.
- The baud rate is 115200.
- Used with the Preview and Echo signal card to preview the input sources and echo the output image.

3.5. Preview and Echo signal card

A-be used to 8x18

B-be used to 26x18、18x36、36x36、72x72

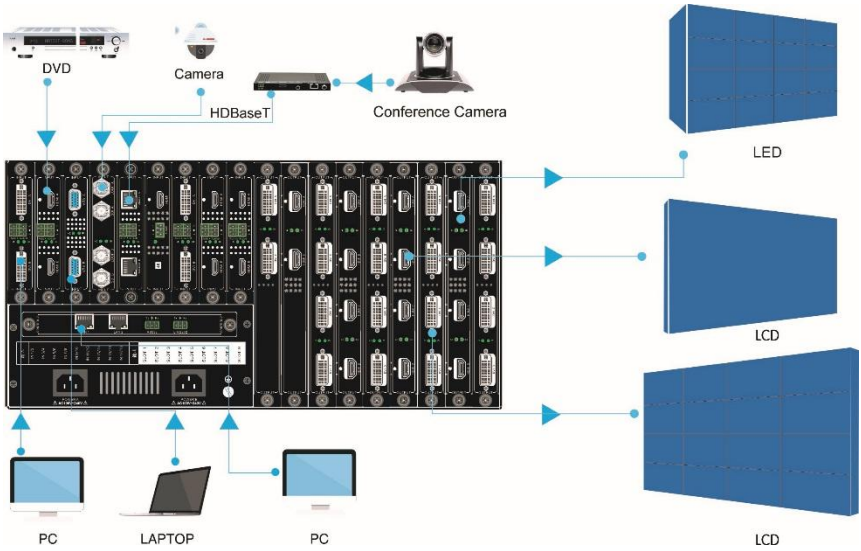
- Preview the input sources and echo the output image.
- Supports H.264.
- Video resolution of echo the output image is up to 1920x1080P@60hz 8bit.
- Video resolution of preview the input sources is up to 480x270
- Must be insert into the last output slot.

4. System Connection

4.1. Usage Precautions

- Make sure all components and accessories included before installation.
- System should be installed in a clean environment with proper temperature and humidity.
- All of the power switches, plugs, sockets, and power cords should be insulated and safe.
- All devices should be connected before power on.

4.2. System Diagram



Note: *This system diagram is for reference only, the specific system connection is subject to real devices.*

4.3. Connection Procedure

Step1. Install all needed signal cards into the card slots in the rear panel.

Step2. Connect all needed source devices to the input ports of input signal cards.

Step3. Connect all needed display devices to the output ports of output signal cards.

Step4. The processor supports RS232 and LAN control. The control device (e.g. PC) needs to be connected to the **RS232** or any **LAN** port.

Step5. The third-party can be controlled by the control device (e.g. PC). There are two

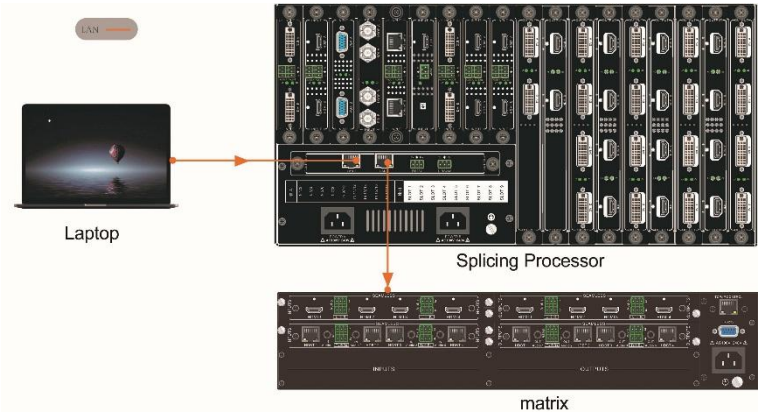
types of connection way can be chosen:

1) Connect the third-party to the any **LAN** port.
2) Connect the third-party to the **LAN** port of a router, and then connect the any **LAN** port to another **LAN** port of the router

Step6. Connect the third-party to the **L-RS232** port, the third-party can be controlled by the control device (e.g. PC).

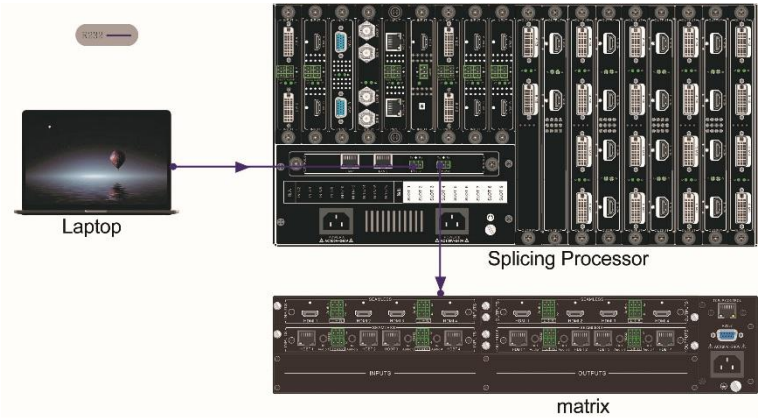
4.4. Control the third party device by LAN

Note: use the LAN control method of third party device when the third-party device controlled.



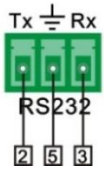
4.5. Control the third party device by L-RS232

Note: use the RS232 control method of third party device when the third-party device controlled.



5. RS232 Controller

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 3- D connector. The definition of its pin layout is shown in the table below:



No.	Pin	Function
2	Tx	Transmit
3	Rx	Receive
5	Gnd	Ground

5.1. RS232 Control Software

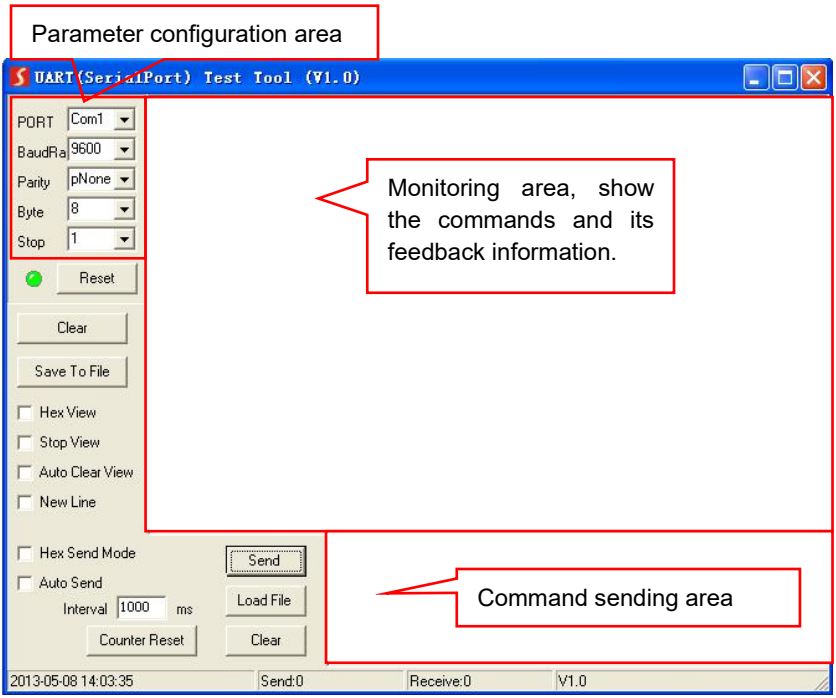
When connect to the RS232 port of a computer with control software, users can control it by that computer. To control the processor, users need to use RS232 control software.

- **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

Protocol

Baud rate: 115200

Data bit: 8

Stop bit: 1

Check bit: /

Command	Description	Feedback
%=QNIP	Get the system information	Eg : MAC: 00:00:00:00:01:01 IP: 192.168.0.178:4001 Netmask: 255.255.255.0 Gateway: 192.168.0.1
%=SNIP:a;b;c;d	Set the device IP address to a.b.c.d	OK

		>>>BootLoader Running Flag: 0x44332211 App will run
%=SCSV:a	Save scene, [a] is the No.(a=1 ~ 32)	OK
%=SCLD:a	Recall scene, [a] is the No.a (a=1 ~ 32)	OK
%=SCPI:a	Set the scene rotation time interval [a](a=10 ~ 99999 s)	OK
%=SCPL:a;b;c;d;e;f;g;h	Set up a list of rotating scenes, up to 8. **%=SCPL** means All valid scene rotationed (a/b/c/d/e/f/g/h=1 ~ 32)	OK
%=SCPS:a	On or off Scene rotation, a=1(on); [a]=0(off)	OK
%=SOIS:a;b	Switch all input sources [a] corresponding to the output window to input source [b], (a/b=1 ~ 18)	OK
%=SGID:a	Change group, [a]=1~4	OK
%=QGID	Get the group number of the current group, [a]=1~4	GROUP:2
%=SWIS:a;b	Switches the input signal source of the specified window. ([a] is the window ID; [b] is input port)	OK
%=SMIO:a;b or %=SMIO:a;b~c	Switching in matrix mode([a] is input port; [b], [c] is output port)	OK
%=SMIC:a	Set input channel of matrix mode to [a](from 1)	OK
%=SMOC:b	Set output channel of matrix mode to [b] (from 1)	OK

6. Software Controller

6.1. Installation

The processor supports LAN control. The **Video Wall Processor LMP Pro** APP is designed for video wall configuration and device control. Please follow the below procedures to install control software for LAN control.

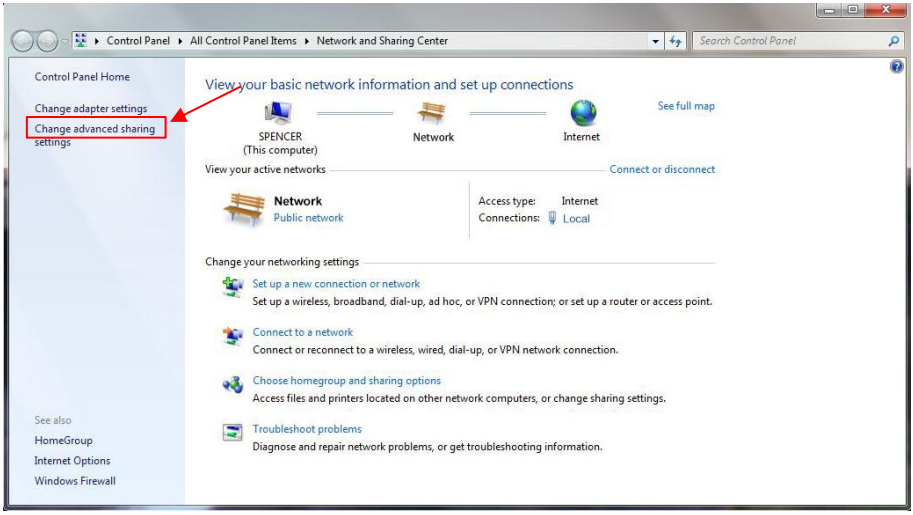
Step1: Connect a control device (e.g. PC) to the **LAN 1** port of the processor.

Step2: Set the same network segment of PC and the processor.

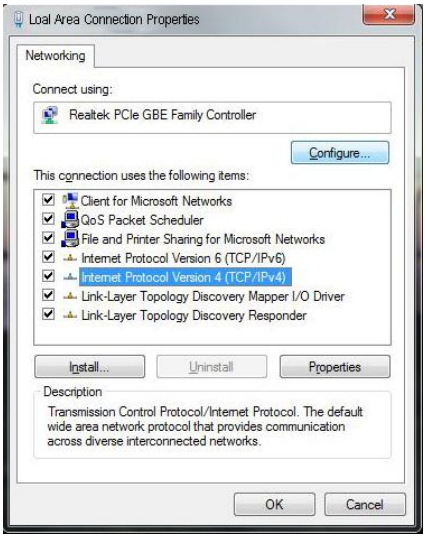
Default IP: 192.168.0.178

Serial Port: 4001

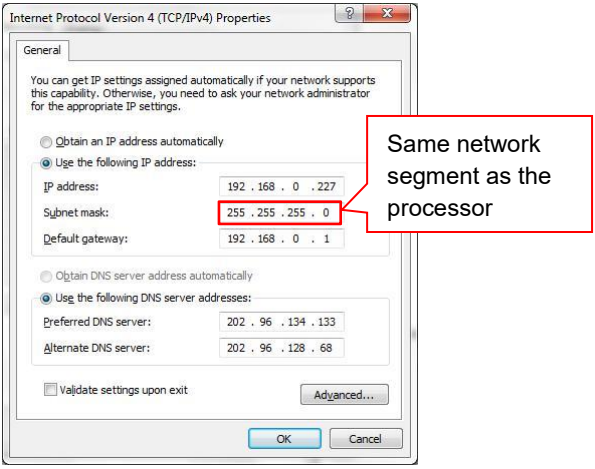
1) Go to “Control Panel -> All Control Panel Items -> Network and Sharing Center -> Change adapter settings” (Microsoft Windows version) to set the Static IP of the PC.



2) And then, right-click the “Local Area Connection” in the Network Connections page, and then click “Properties”. Open “Internet Protocol Version 4 (TCP/IPv4)” on the tap of the Networking, and then click the “Properties".



3) Set the network segment of PC to the same as the default IP of the LMP2609 (192.168.0.178), and then click “OK” to save.



Step3: Copy the **Digital Multimedia Image Mosaicing Processor** software package to the control PC. If the software package is not received, please contact your distributor immediately.

Step4: Double-click the below software icon to install the software.

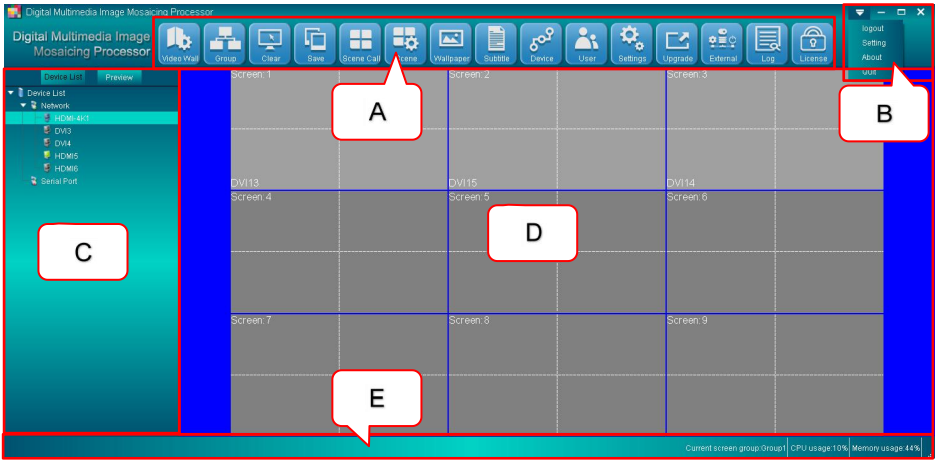
6.2. Login

Double-click the **Digital Multimedia Image Mosaicing Processor** APP icon, it will enter the below log-in page:

Account: admin

Password: admin

Type the account and password, and then click “Login” to enter the section for video wall configuration.



A. Menu Bar: Including Video Wall, Group, Clear, Save, Scene Call, Scene, Wallpaper, Subtitle, Device, User, Setting, Upgrade, External, Log and License options.

B. Properties: Including log off, Setting, About and Quit options.

C. Device List: Display all source devices which are connected by LAN network or RS232 serial port. The icon lights up when there is signal input, otherwise, it is dark. And preview all source devices. In particular, when RS232 serial port control, the preview can't be supported.

D. Multi-screen Splicing Processing Window: Set and display virtual multi-screen splicing image.

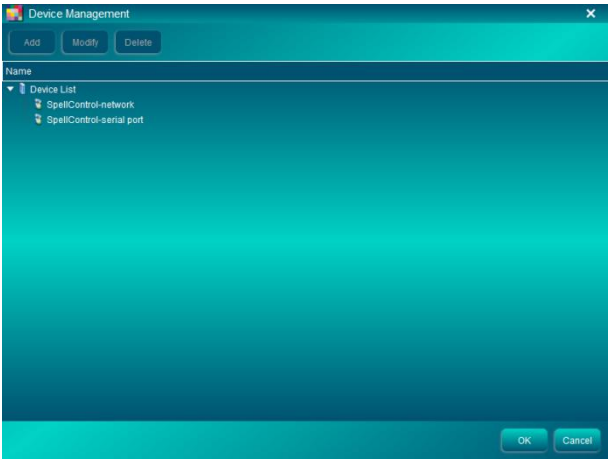
- **Rename:** Custom name of subscreen. Any subscreen with an output signal right-click to pull up the renaming menu

E. Status Bar: Display the operation tips and some physical parameters.

6.3. Device Connection

The device connection parameters must be set firstly for ensuring the successful connection between the multi-screen splicing processor and the control software.

Click "Device" on the menu bar to enter the below device management section.

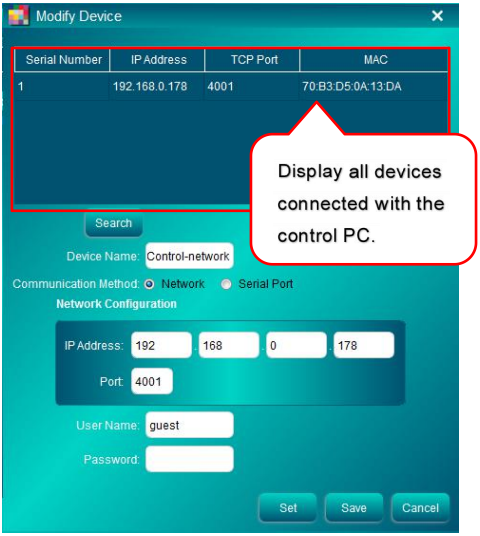


There are two control modes can be selected to add new device or modify the configuration of connected devices.

1) Network

① Ensure the network segment of the control PC and the processor is same.

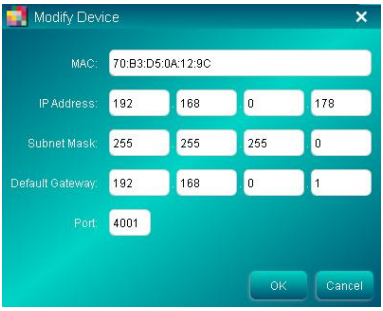
② Select the "Network", and then click "Modify" to enter below setting page.



③ Click “Search” to get the IP address of processor, and then type them into the blank box at the Network Configuration area.

④ Set the User Name, Password as need.

⑤ Click “Set” can enter the below menu to modify the IP Address, Subnet Mask, Default Gateway and Communication Port number. Note that the MAC address cannot be changed.

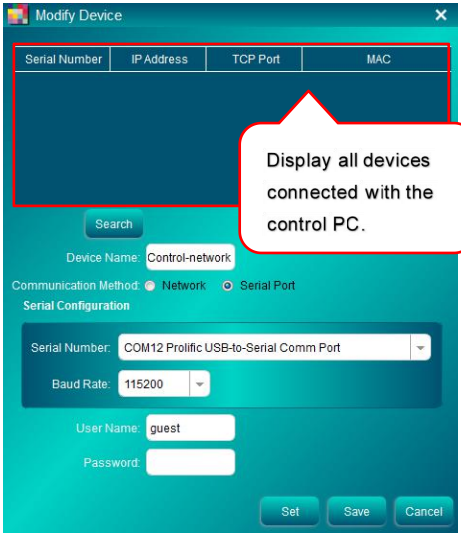


⑥ Click “Save” to confirm setting.

2) Serial Port

① Ensure the control PC and the processor are connected successfully by the RS232 cable.

② Select the “Serial Port”, and then click “Modify” to enter below setting page.



③ Select the Serial Number and Baud Rate at the Serial Number area.

④ Set the User Name, Password and Notes as need.

⑤ Click “Save” to confirm setting.

Note:

- *The baud rate is 115200.*
- *There are two kinds of user name and the password can be chosen:*
  - ① User Name: guest, Password: Null
  - ② User Name: admin, Password: 123

6.4. Source Signal Setting

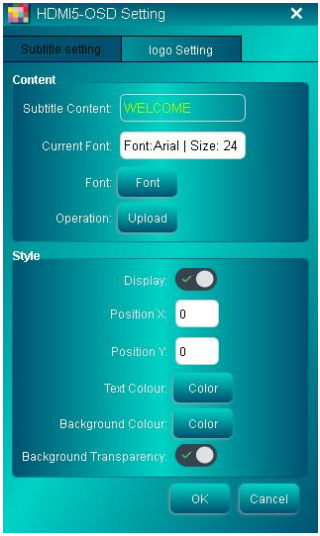
Click “Network” or “Serial Port”, all connected input source will be showed at the device list. These input source supports OSD setting, EDID setting, Clip Edges setting and Property setting.

Select any active input source, and then click right button of your mouse to set the parameter of input source.

1) OSD Setting

Click “OSD Setting” to enter the below pages to set subtitle and logo.

Note: Display：  *； not display：* 



2) EDID Setting

Click “EDID Setting” to enter the below page to customize the EDID of input signal card.

Note: *there are two EDID named EDID-DVI_1.3.bin & EDID-HDMI_1.3.bin*

3) Clip Edges Setting

Click “Clip” to enter the below page to set the clip edges.

4) Rename: custom name of input cards

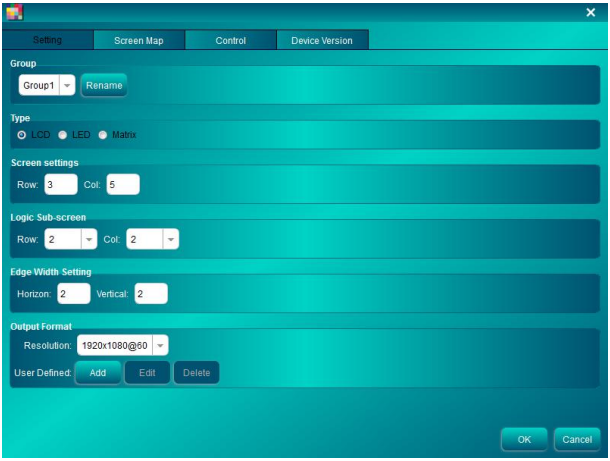
5) Property Setting

Click “Property” to enter the below page to get the input card type, resolution, OSD and clip edges.

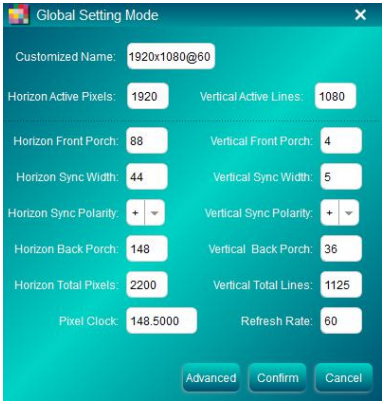
6.5. Video Wall Configuration

1) Setting

Click “Video Wall” to enter the below page to set the screen group, type of screens, screen settings, logic sub-screen, edge width setting and output resolution.

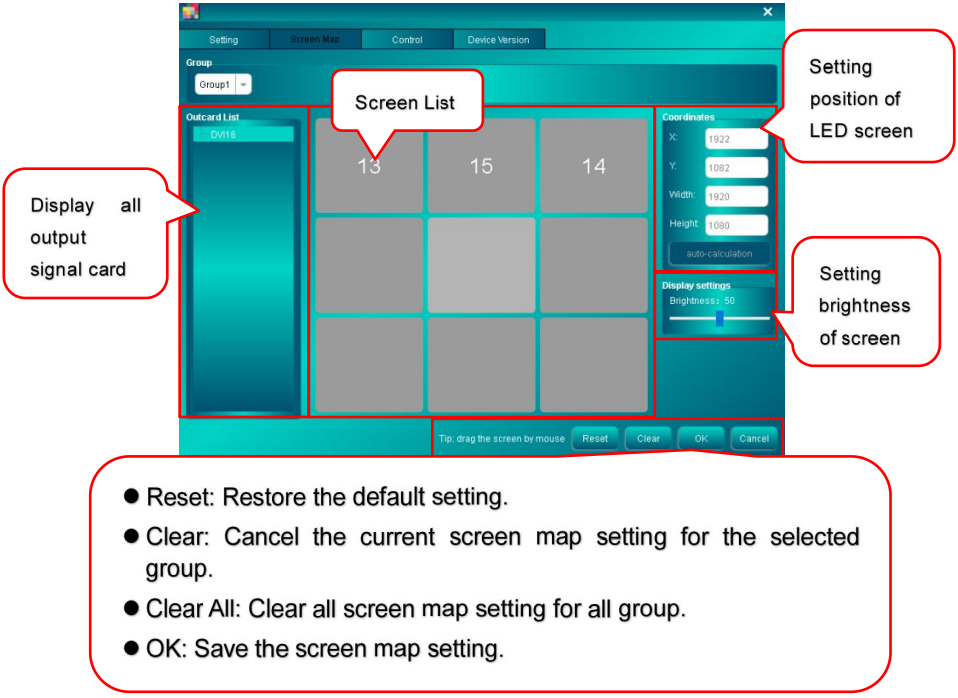


- **Group:** There are four screen groups can be selected. And custom name of the group.
- **Type:** Support LCD, LED and matrix mode
- **Screen settings:** Set the screen combination format of video wall to n x m. Up to 20x20.
- **Logic Sub-screen:** It means that one screen is divided into some logic sub-screens, and up to four logic sub-screens. Default is 2x2.
- **Edge Width Setting:** When the LCD screens are used for establishing the video wall, the black edge between these screens may cause the image seems to be fragmented, so the bezel compensation is designed for better visual effects by setting the proper horizon and vertical edge width.
- **Output Format:** Select the output resolution, or click “add” to enter the below page to customize a new video resolution.



2) Screen Map

Click “Screen Map” to enter the below page to set the physical screens to correspond to the real output display screens which are connected to the output signal cards.

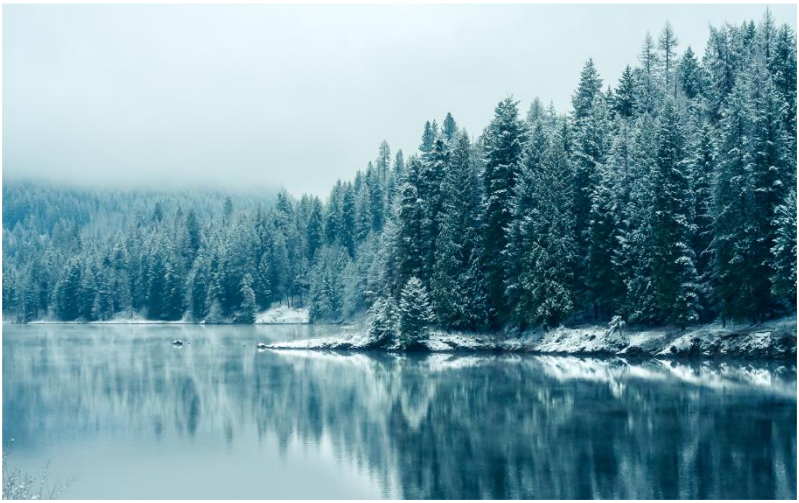


Note:

- *When you select “auto-calculation”, you need to set the screen size and starting point coordinates of the first row and the first column of the physical screen, and then click “auto-calculation” to automatically set the position and size of the*

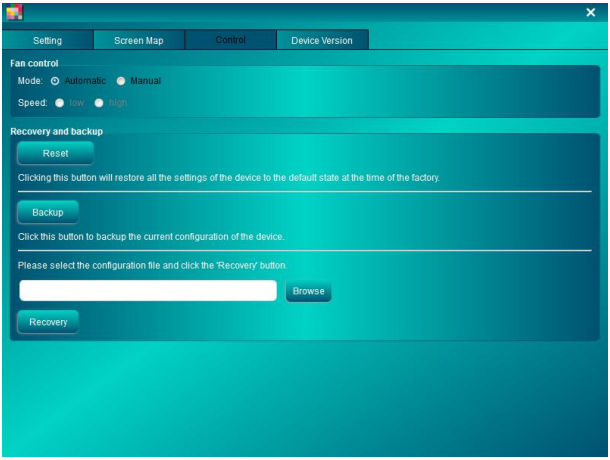
remaining unset physical screen.

- *When some screen positions don't correspond to the output card port, and click on the output card, the output window corresponding to the display interface on the right will be lit. Then use the mouse to drag the output card to the lighting window position. Adjust the display screen in order to achieve the correct display of the screen.*



3) Device Control

Click "Control" to enter the below page to set fan control parameter, device recovery and backup.

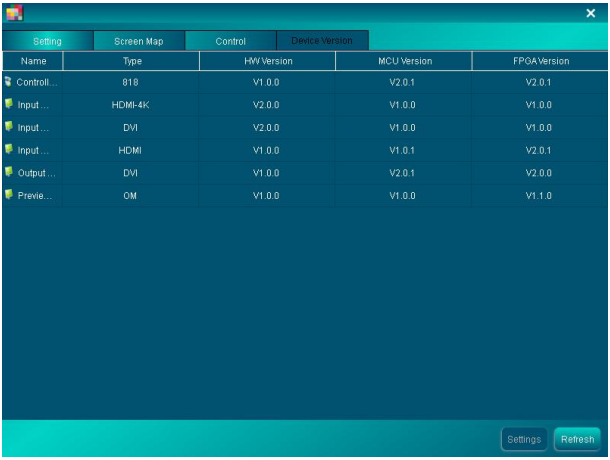


- **Fan Control Mode:** Automatic or Manual mode can be selected.
- **Fan Speed:** Low or High speed can be selected when Manual mode can be selected.
- **Factory Default:** Click “Reset” to restore all the settings of the device to the factory default.
- **Device Backup:** Click “Backup” to back up the current configuration of the device.
- **Device Recovery:** Click “Browse” to select the previous backup file to recover the previous setting (Network parameters, input cards name, packet data including mapping & resolution and scene).

4) Device version

Click “Device version” to enter the below page to show signal cards information.

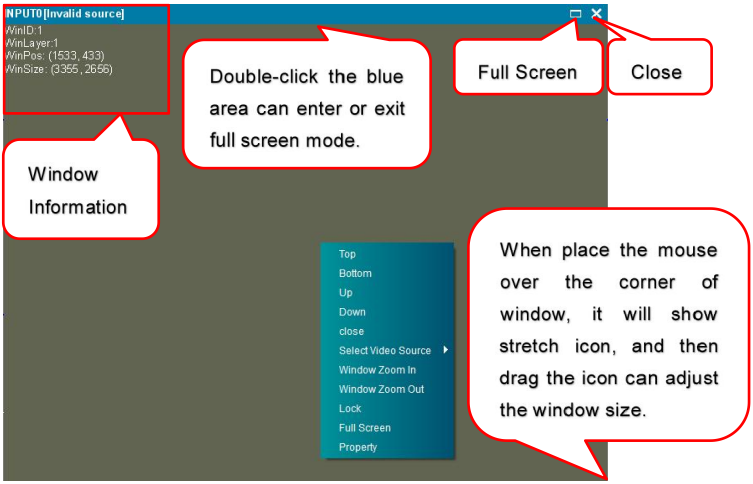
- **Settings:** select video signal format when use multi-function signal card (Not yet available, researching).
- **Refresh:** upgrade interface.



6.6. Multi-screen Splicing Operation

1) Window

Click to select any input source at device list, and then press and drag in screen area to create a new video window. The number of windows is unlimited.



Right-click the pop-up 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, Property.

- **Top:** Bring forward
- **Bottom:** Send backward
- **Up:** Bring in front

- **Down:** Send behind
- **Close:** Turn off the window
- **Select Video Source:** Switching signal source
- **Window Zoom In:** The full subscreen
- **Window Zoom Out:** Restored to its full size
- **Lock**: Fixed window size, location and priority
- **Full Screen:** The full screen.
- **Property:** Set window title status, content, location and size information

Note:

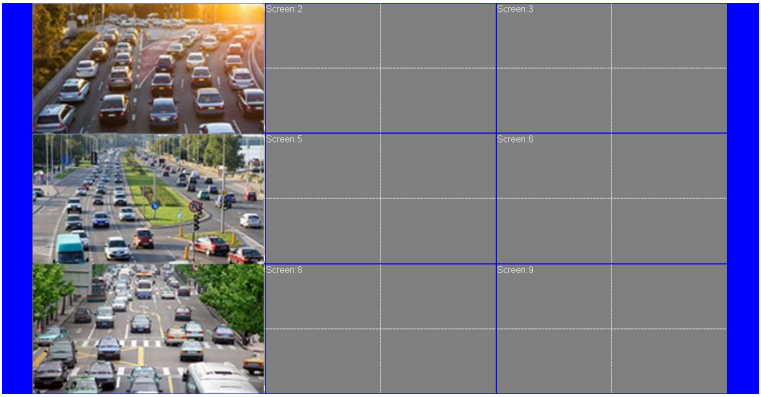
- *Each output screen can display up to 4 windows, and the windows that are added later have the priority to display. In particular, when 4K HDMI input is selected as the signal source, each actual output display screen can display up to 2 Windows*

2) Multi-screen Splicing

There are four screen splicing mode are provided by the processor.

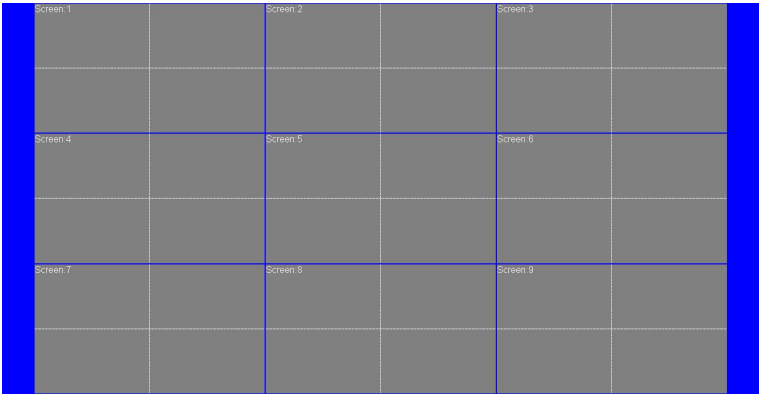
① Display one image on multiple screen. For example: Display one image on nine screens.

② Display different image on different screen. For example: Display three images on three screens.



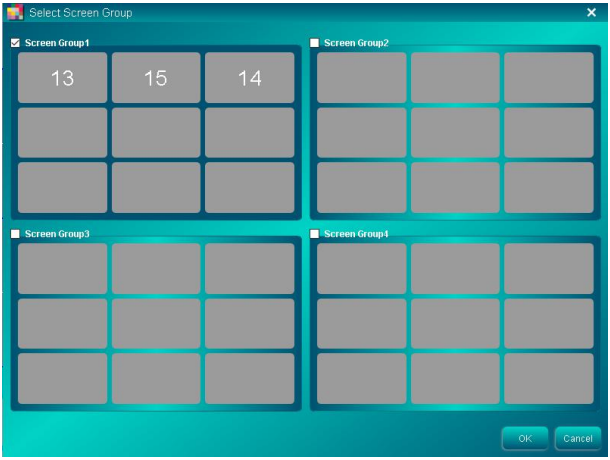
③ Up to four or two images can be showed on one screen. For example: Display four images on one screen.

④ Picture in Picture. Display multiple images on one screens.



6.7. Screen Group Selection

Click “Group” to enter the below page to select the screen group. There are four groups can be chosen.

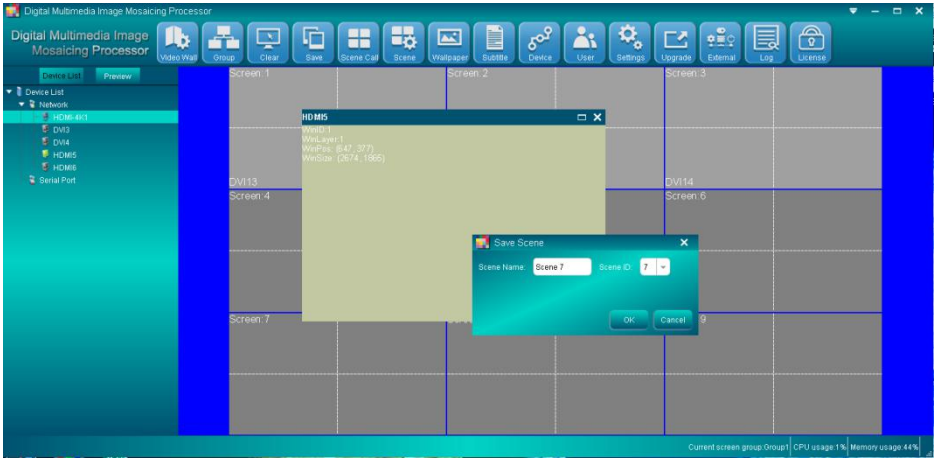


6.8. Clear Screen

Click “Clear” can clear all video source windows.

6.9. Save Scene

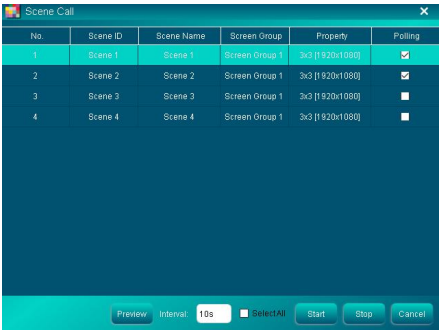
The current multi-screen splicing status can be save as a preset scene for convenient recall in the next time. After setting the multi-screen splicing, and then click “Save” to enter the below page:



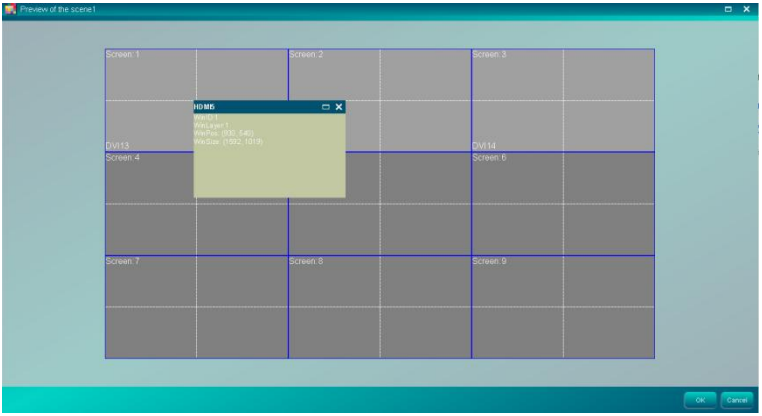
There are 32 scenes can be saved, and the scene name and ID can be renamed.

6.10. Scene Call

Click “Scene Call” can enter the below page to invoke the saved scene.



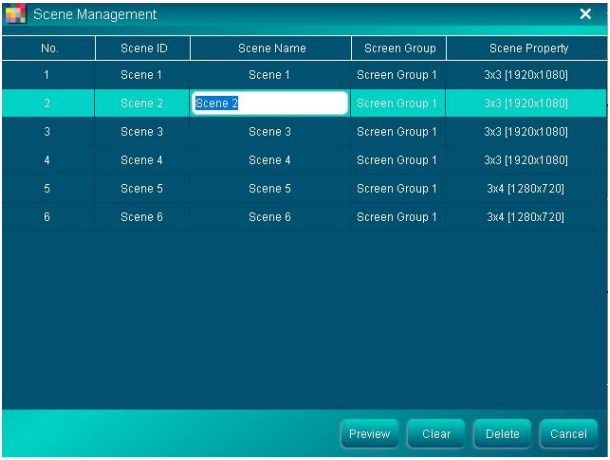
- Supports roll polling function. Select several or all saved scenes, and set the interval time, then click “Start” to confirm the setting. The selected scenes will be automatically invoked in turn. The minimum time interval and default time interval is 10S
- Select one saved scene, click “Preview” can preview the scene configuration, and then click “OK” to invoke the scene.



Note: *Only calling all scenarios with the same resolution and group are called*

6.11. Scene Management

Click “Scene” to enter the below page to preview, clear, delete the selected scene.

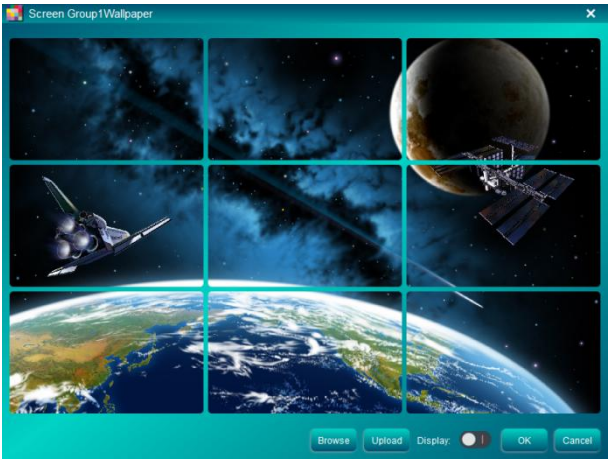


6.12. Wallpaper

Support to upload ultra-high wallpaper with wallpaper & subtitles signal cards.

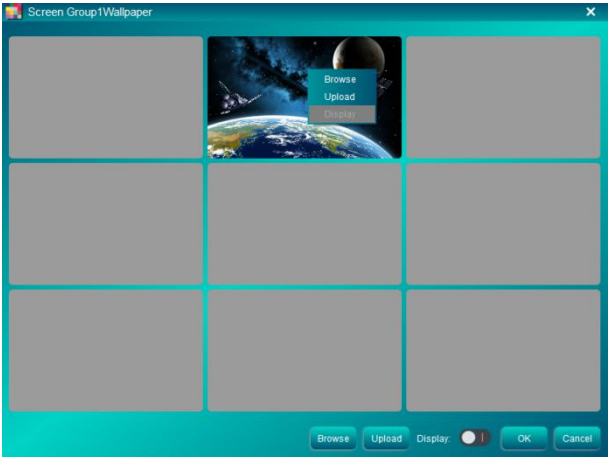
1) Full-screen wallpaper setting

Click “Wallpaper” to enter the below page can browse, upload, display or save wallpaper.



2) Single-screen wallpaper setting

Click “Wallpaper” to enter the below page, then click on a single screen to display the menu that can browse, upload or display wallpaper.



6.13. Subtitle

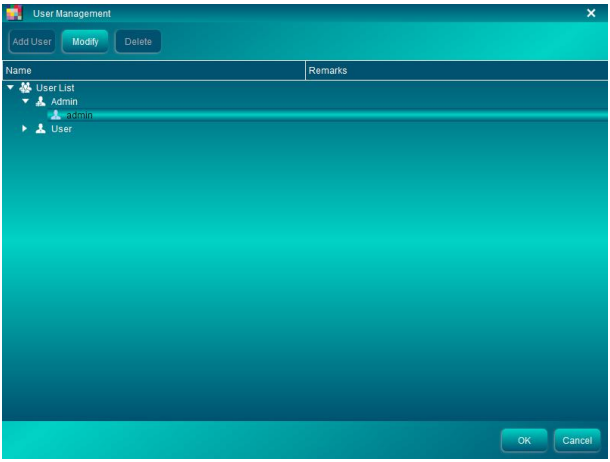
Click “Subtitle” to enter the below page can set font, size, color, position, transparency, dynamic or static parameters.

Note:

- *Support scrolling subtitles with wallpaper & subtitles signal cards.*
- *Bespread: scrolling in the all screens*
- *The size of font can be up to 512.*
- *The position of font can be up to 1920 x [11x1080].*

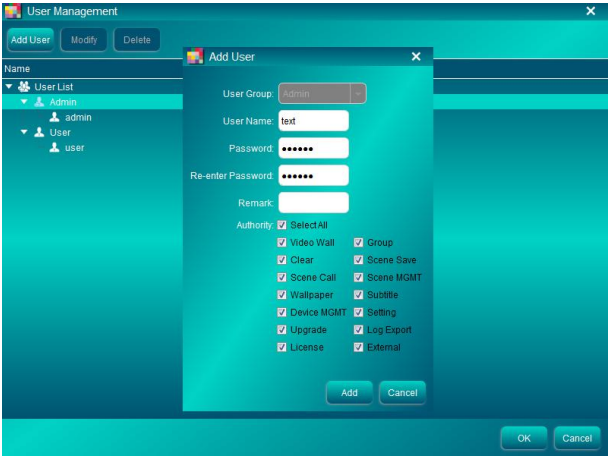
6.14. User Management

Click “User” to enter the below page to add, modify or delete user account.



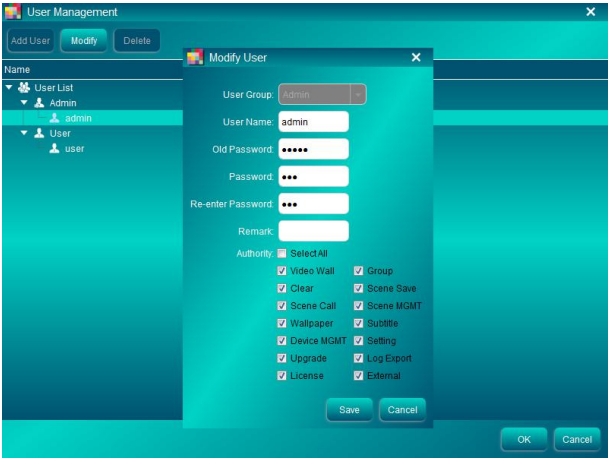
1) Add User

Click “Add User” to enter the below page to add new user.



2) Modify

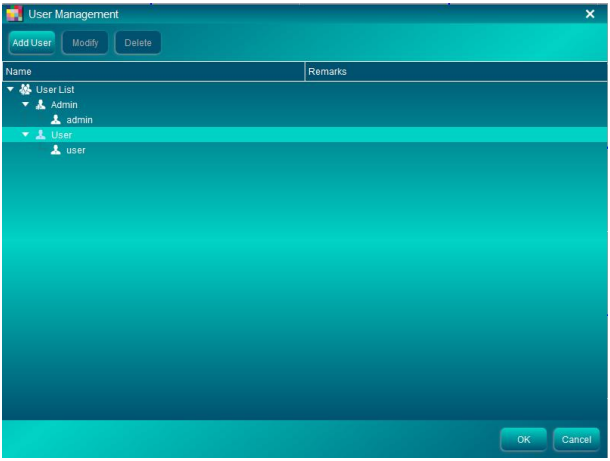
Click “Modify” to enter the below page to modify the information of the selected user.



3) Delete

Select the user that needs to be removed, and then click “Delete”.

Note: The user "admin" is not deleted.



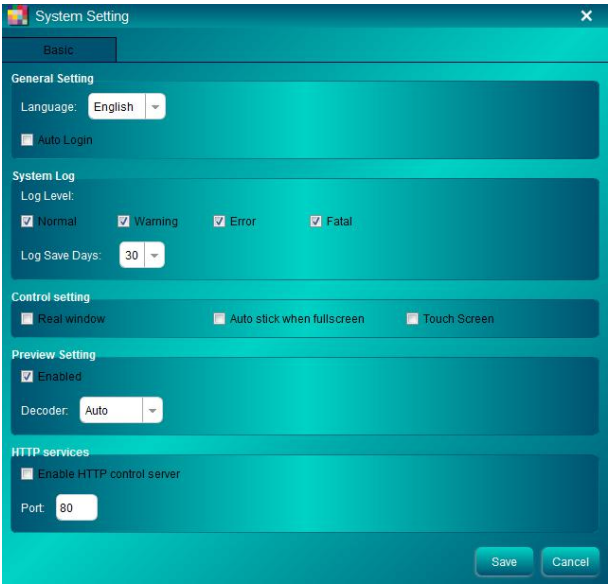
4) Authority

Support for setting different user authority included select all, video wall, group, clear, scene save, scene call, scene management, wallpaper, subtitle, device management, setting, upgrade, log export, license and external.

6.15. System Setting

Click “Settings” to enter the below page to set Language, the Log Level, Control, Preview mode and HTTP services.

- **Language:** Chinese and English. Need to restart the software when system language is switched.
- **Log Save Days:** 7, 15, 30.
- **Real window:** The window is displayed in real time according to the moving track.
- **Auto stick when full screen:** Make sure the full-screen window screen is a priority.
- **Touch screen:** Touch screen mode that is operation icon magnification, easy touch-operated software. Need to restart the software to take effect.
- **Preview:** Support to preview when the Preview and echo signal card is used. And need to restart the software to take effect.
- **Decoder mode:** Auto, Software, Hardware.
- **HTTP:** Used to support third-party software control.



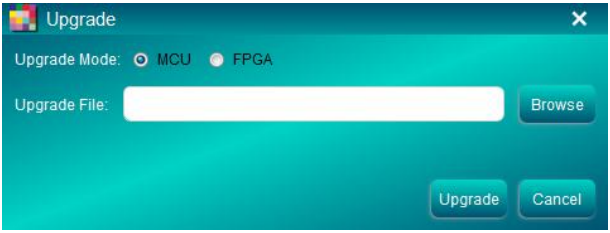
6.16. System Upgrade

Click “Upgrade” to enter the below page to upgrade the MCU and FPGA program of the control card.

Upgrade Operation:

1) Select the upgrade mode.
2) Upload the upgrade file. Please contact your distributor or our technical support to gain the last upgrade file.

3) Click “Upgrade” to start.

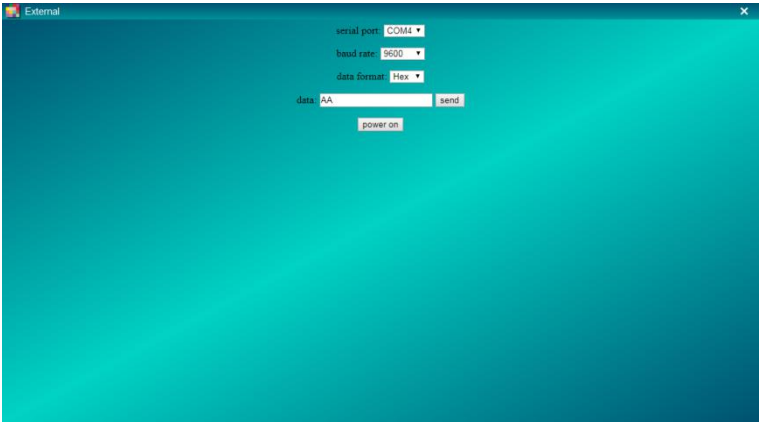


Note:

- *If the way of controlling device is RS232, no support to upgrade MCU and FPGA;*
- *When select to upgrade FPGA, need to restart the software to take effect.*

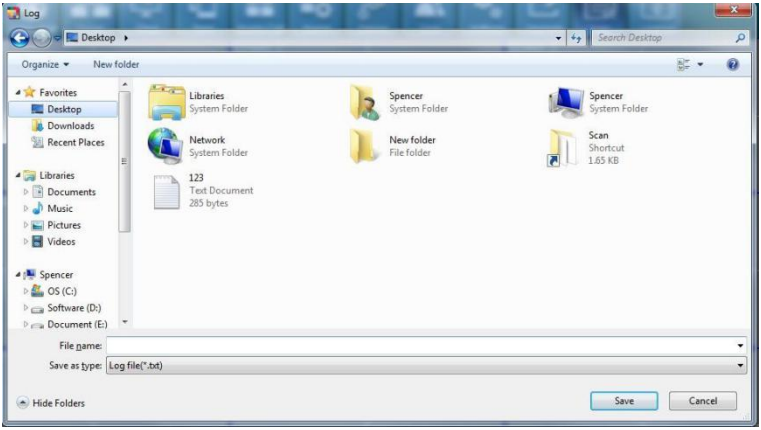
6.17. Third party equipment control

Click “External” to enter the below page to control external devices.



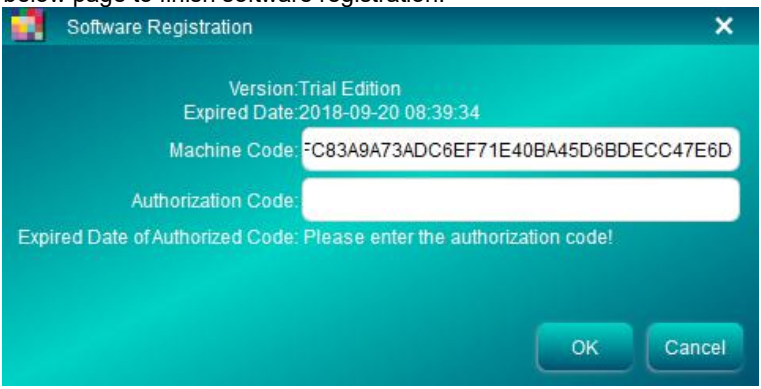
6.18. Logs Download

Click “Log” to download the logs to any local folder.



6.19. Software License

Please obtain software authorization before using the control software. Click “License” to enter below page to finish software registration.

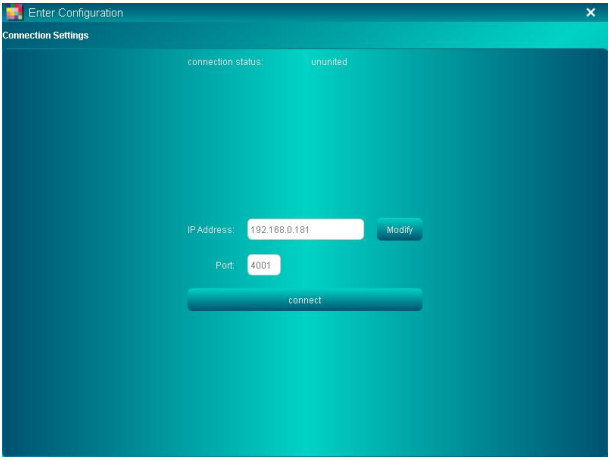


Only one-month trial period after the initial installation of the control software, please contact your distributor or our technical support to gain the authorization code.

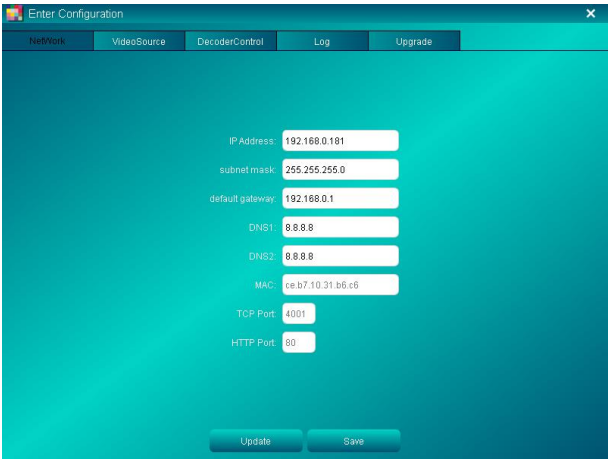
6.20. IP input card controlling

6.20.1. Connection

① Double-click any of the IP channels in the device list to enter below page, then click “connect”. When the network segment of the IP is different with the PC or router, the configuration interface is automatically entered, and the IP address can be modified according to the situation. The default IP address :192.168.0.181



② Click “connect” to enter below page to modify network segment.

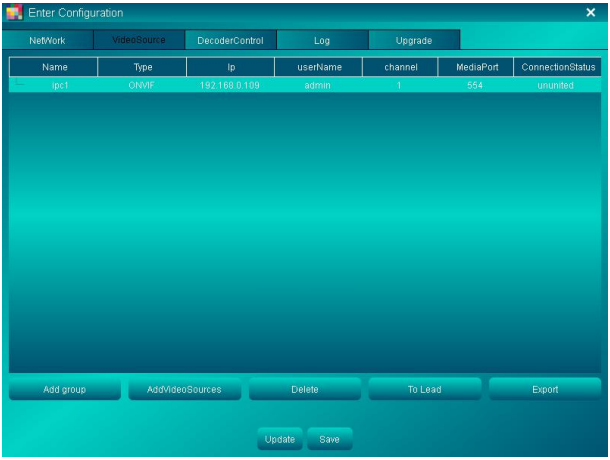


Note:

- *Ensure be same network segment for all units.*
- *When re-login the software, need to manually connect IP.*
- *Click "save" to take effect.*

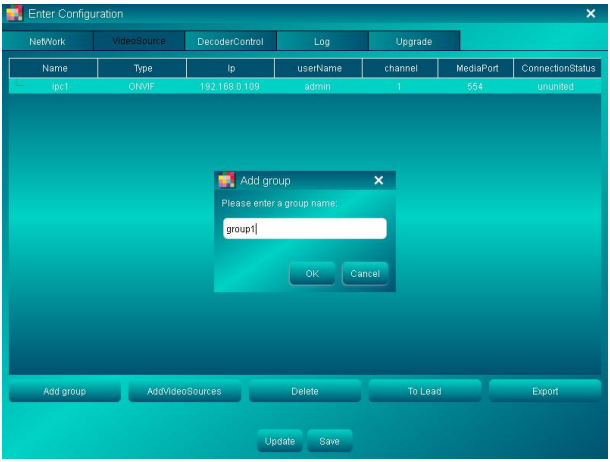
6.20.2. Video Source

Click “Video Source” to enter the below page can Add group, Add, Delete, Lead or Export.



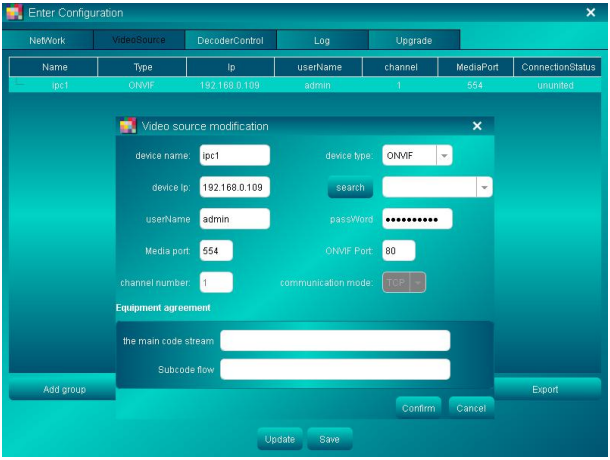
1) Add group

Click “Add group” to enter the submenu to set a rename group.



2) Add video source

Click “Add video source” to enter the submenu to add video source. Support search video source or manually set the device name, device type, IP …



3) Delete video source

Select the video source as required, then click “Delete” to delete video source.

4) Lead

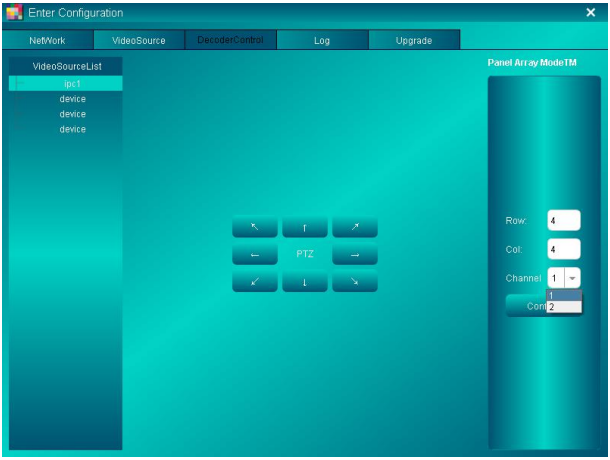
Click “**Lead**” to select the previous backup file to recover the previous setting

5) Export

Click “**Export**” to back up the current configuration of the device.

6.20.3. Decoder Control

Click “Decoder Control” to enter the below page setting screen mode and video source console control.



1) Video source console control**:** Select the video source, then click the desired direction button in the PTZ control area to adjust the shooting direction of the video source.

2) Screen mode**:** set the screen mode of channel 1 and 2 separately: 1x1, 2x2, 3x3, 4x4.

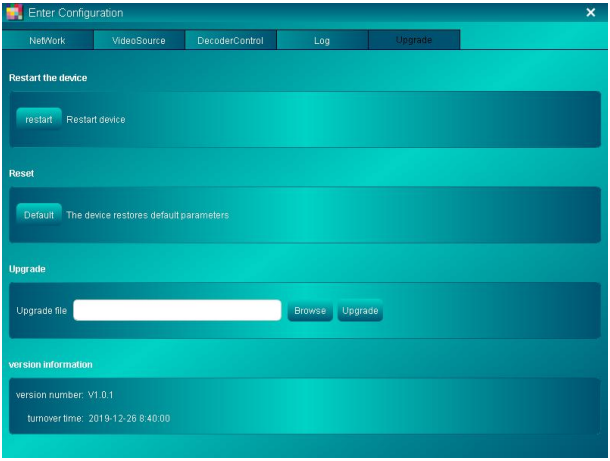
6.20.4. Log

Click “Log” to download operation record to any local folder.

6.20.5. Upgrade

Click “Upgrade” to enter the below page can restart device, restore default, upgrade and information about IP card.

Note: clicking “default” can’t restore default IP address



7. Specification

7.1. Main Unit

Control	
RS232 Control	(2) 3-pin terminal blocks
LAN Control	(2) RJ45 connectors; TCP/IP
General	
Redundant Power Supply	100V～240V AC,50/60Hz
Operation Temperature	0℃～+50℃
Relative Humility	10%～90%
Power Consumption	08x18: 29.0W 18x36: 32.0W 26x18: 22.5W 36x36: 30.0W 72x72: 35.2W
Dimension (W*H*D)	08x18: W436.6mm x H178.0m x D320mm 18x36: W436.6mm x H219.0mm x D320mm 26x18: W436.6mm x H219.0mm x D320.0mm 36x36: W436.6mm x H400.0mm x D320.0mm 72x72: W436.6mm x H560.0mm x D320.0mm
Net Weight (kg)	08x18: 8.3kg 18x36: 9.8kg 26x18: 10.7kg 36x36: 11.5kg 72x72: 17.3kg
Chassis material	Aluminum

7.2. Input cards

7.2.1. 4K HDMI input card

Input	(1) HDMI, (1) Audio
Input Connector	(1) Type-A female HDMI, (1) 3-pin terminal blocks
Power Consumption	4.7W(No load)
Net Weight (g)	267g
General	

Video Signal Format	HDMI, DVI-D compliant
Standard	HDMI1.4
Video Resolution	Up to 4096 x 2160@24Hz
Power Supply	By the main unit

7.2.2. 4K DP input card

Input	(1) DP, (1) Audio
Input Connector	(1) Display Port, (1) 3-pin terminal blocks
Power Consumption	1.9W(No load)
Net Weight (g)	190g
General	
Standard	DP1.1
Video Resolution	Up to 4096 x 2160@24Hz
Power Supply	By the main unit

7.2.3. DVI input card

Input	(2) DVI, (2) Audio
Input Connector	(2) Female DVI-I, (2) 3-pin terminal blocks
Power Consumption	6.5W(No load)
Net Weight (g)	161g
General	
Video Signal Format	DVI, HDMI compliant
Video Resolution	Up to 1920x1200 @60Hz
Power Supply	By the main unit

7.2.4. HDMI input card

Input	(2) HDMI, (2) Audio
Input Connector	(2) Type-A female HDMI, (2) 3-pin terminal blocks
Power Consumption	4.5W(No load)
Net Weight (g)	152g
General	
Video Signal Format	HDMI, DVI-D compliant
Standard	HDMI1.3

Video Resolution	Up to 1920x1200 @60Hz
Power Supply	By the main unit

7.2.5. HDBaseT input card

Input	(2) HDBaseT, (2) Audio
Input Connector	(2) RJ45 connectors (With green and yellow LED), (2) 3-pin terminal blocks
Power Consumption	14.5W(No load)
Net Weight (g)	187g
General	
Transmission Distance	HDBaseT technology; 1080P ≤ 70m
Video Resolution	Up to 1920x1200 @60Hz
Power Supply	By the main unit

7.2.6. VGA input card

Input	(2) VGA
Input Connector	(2) Female 15-pin HD VGA
Power Consumption	6.5W (No load)
Net Weight (g)	164g
General	
Video Signal Format	VGA
Video Resolution	Up to 1920x1080P@60Hz
Power Supply	By the main unit

7.2.7. SDI input card

Input	(2) SDI & (2) SDI LOOP
Input Connector	(4) BNC
Power Consumption	6.5W (No load)
Net Weight (g)	190g
General	
Transmission Distance	1080P≤100m (The total distance of input and loop)
Video Signal Format	3G-SDI, HD-SDI, SD-SDI
Video Resolution	Up to 1920x1080P @60Hz
Power Supply	By the main unit

7.2.8. CVBS input card

Input	(2) CVBS
Input Connector	(2) BNC
Power Consumption	4.5W (No load)
Net Weight (g)	230g
General	
Video Signal Format	CVBS
Video Resolution	PAL：720x576I，NTSC：720x480I
Power Supply	By the main unit

7.2.9. Multi-format input card

Input	(2) DVI, (2) Audio
Input Connector	(2) Female DVI-I, (2) 3-pin terminal blocks
Power Consumption	5.1W (No load)
Net Weight (g)	200g
General	
Video Signal Format	DVI, HDMI, VGA, CVBS, YPBPR
Video Resolution	Up to 1920x1080P @60Hz
Power Supply	By the main unit

7.2.10. IP input card

Input	(1) IP, (1) Audio, (1) USB
Input Connector	(1) RJ45, (1) 3-pin terminal blocks, (1) USB-A
Power Consumption	6W (No load)
Net Weight (g)	220g
General	
Video Resolution	Up to 1920x1200 @60Hz
Power Supply	By the main unit

7.3. Output card (two ports per card)

7.3.1. DVI output Card

DVI	
Output	(2) DVI
Output Connector	(2) Female DVI-I

Power Consumption	5.8W (No load)
Net Weight (g)	360g
DVI (support wallpaper and subtitle)	
Output	(2) DVI
Output Connector	(2) Female DVI-I
Power Consumption	7W (No load)
Net Weight (g)	370g
General	
Video Signal Format	DVI, HDMI compliant
Video Resolution	Up to 1920x1200 @60Hz
Power Supply	By the main unit

7.3.2. HDMI output Card

HDMI	
Output	(2) HDMI
Output Connector	(2) Type-A female HDMI
Power Consumption	5.5W (No load)
Net Weight (g)	360g
HDMI (support wallpaper and subtitle)	
Output	(2) HDMI
Output Connector	(2) Type-A female HDMI
Power Consumption	6W (No load)
Net Weight (g)	370g
General	
Video Signal Format	HDMI, DVI-D compliant
Standard	HDMI1.3
Video Resolution	Up to 1920x1200@60Hz
Power Supply	By the main unit

7.3.3. HDBaseT output Card

HDBaseT (support wallpaper and subtitle)	
Output	(2) HDBaseT

Output Connector	(2) RJ45 connectors (With green and yellow LED)
Power Consumption	10.5W (No load)
Net Weight (g)	400g
General	
Transmission Distance	HDBaseT technology; 1080P ≤ 70m
Video Resolution	Up to 1920x1200 @60Hz
Power Supply	By the main unit

7.4. Output card (four ports per card)

7.4.1. DVI output Card

DVI	
Output	(4) DVI
Output Connector	(4) Female DVI-I
Power Consumption	7.5W (No load)
Net Weight (g)	390g
DVI (support wallpaper and subtitle)	
Output	(4) DVI
Output Connector	(4) Female DVI-I
Power Consumption	8.0W (No load)
Net Weight (g)	410g
General	
Video Signal Format	DVI, HDMI compliant
Video Resolution	Up to 1920x1200 @60Hz
Power Supply	By the main unit

7.4.2. HDMI output Card

HDMI	
Output	(4) HDMI
Output Connector	(4) Type-A female HDMI
Power Consumption	9.2W (No load)
Net Weight (g)	375g

HDMI (support wallpaper and subtitle)	
Output	(4) HDMI
Output Connector	(4) Type-A female HDMI
Power Consumption	9.7W (No load)
Net Weight (g)	495g
General	
Video Signal Format	HDMI, DVI-D compliant
Standard	HDMI1.3
Video Resolution	Up to 1920x1200@60Hz
Power Supply	By the main unit

7.5. Preview and Echo signal card

Function	Used with the control card to preview the input sources and echo the output image.
General	
Power Consumption	A：7.8W B：7.8W
Net Weight (g)	A：215g B：575g
Dimension (W*H*D)	A：23.7mm x 124.2mm x 180mm B：23.7mm x 214.2mm x 180mm
Power Supply	Powered by main unit.

8. Troubleshooting & Maintenance

Problems	Potential Causes	Solutions
Output image with ghost	Bad quality of the connecting cable	Try another high quality cable
	Impropriate image setting of the displayer	Adjust corresponding image settings
Output image with color losing or no video signal output	Fail connection	Reconnect the displayer and the matrix
No output image when switching	No signal at the input / output end	Check with oscilloscope or multimeter if there is any signal at the input/ output end.
	Fail or loose connection	Make sure the connection is good
	The switcher is broken	Send it to authorized dealer for repairing.
POWER indicator doesn't work or no respond to any operation	Fail connection of power cord.	Make sure the power cord connection is good.
EDID management does not work normally	The HDMI cable is broken at the output end.	Change for another HDMI cable which is in good working condition.
There is a blank screen on the display when switching	The display does not support the resolution of the video source.	Switch again.
		Manage the EDID data manually to make the resolution of the video source automatically compliant with the output resolution.
Static becomes stronger when connecting the video connectors	Bad grounding	Check the grounding and make sure it is connected well.
Cannot control the device by control device (e.g. a PC) through RS232 port	Wrong RS232 communication parameters	Type in correct RS232 communication parameters.
	Broken RS232 port	Send it to authorized dealer for checking.

Note: *If your problem persists after following the above troubleshooting steps, seek further help from authorized dealer or our technical support.*

9. Customer Service

The return of a product to our Customer Service implies the full agreement of the terms and conditions hereinafter. There terms and conditions may be changed without prior notice.

1) Warranty

The limited warranty period of the product is fixed three years.

2) Scope

These terms and conditions of Customer Service apply to the customer service provided for the products or any other items sold by authorized distributor only.

3) Warranty Exclusions

- Warranty expiration.
- Factory applied serial number has been altered or removed from the product.
- Damage, deterioration or malfunction caused by:
  - ✓ Normal wear and tear.
  - ✓ Use of supplies or parts not meeting our specifications.
  - ✓ No certificate or invoice as the proof of warranty.
  - ✓ The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.
  - ✓ Damage caused by force majeure.
  - ✓ Servicing not authorized by distributor.
  - ✓ Any other causes which does not relate to a product defect.
- Shipping fees, installation or labor charges for installation or setup of the product.

4) Documentation

Customer Service will accept defective product(s) in the scope of warranty coverage at the sole condition that the defeat has been clearly defined, and upon reception of the documents or copy of invoice, indicating the date of purchase, the type of product, the serial number, and the name of distributor.

***Remarks**: For further assistance or solutions, please contact your local distributor.*