

Linsn V5 Series Splicing Processor



All Rights Reserved

Version: 2019V1.0

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 local distributor for maintenance assistance. The functions described in this version were updated till July, 2019. 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
36x36	9U	36	36	18

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.....	3
1.1. Features	3
1.2. Package List	4
2. Panel Description.....	5
2.1. Front Panel.....	5
2.2. Rear Panel.....	6
3. Signal Card	8
3.1. Input cards.....	9
3.1.1. 4K HDMI input card	9
3.1.2. 4K DP input card	10
3.1.3. DVI input card.....	11
3.1.4. HDMI input card.....	12
3.1.5. HDBaseT input card	12
3.1.6. VGA input card	13
3.1.7. SDI input card.....	14
3.2. Output cards (two ports per card)	15
3.2.1. DVI output card.....	15
3.2.2. DVI output card with wallpaper and subtitle function	15
3.2.3. HDMI output card	15
3.2.4. HDMI output card with wallpaper and subtitle function	16
3.2.5. HDBaseT output card with wallpaper and subtitle function.....	16
3.3. Output cards (four ports per card).....	17
3.3.1. DVI output card.....	17
3.3.2. DVI output card with wallpaper and subtitle function	18
3.3.3. HDMI output card	18
3.3.4. HDMI output card with wallpaper and subtitle function	19
3.4. Control signal card.....	19
3.5. Preview and Echo signal card	20
4. System Connection.....	21
4.1. Usage Precautions	21
4.2. System Diagram	21

Multi-screen Splicing Processor

4.3. Connection Procedure	21
4.4. Control the third party device by LAN	22
4.5. Control the third party device by L-RS232	22
5. RS232 Control	24
5.1. RS232 Control Software	24
5.2. RS232 Communication Command	25
6. Specification	27
6.1. Main Unit	27
6.2. Input cards	27
6.2.1. 4K HDMI input card	27
6.2.2. 4K DP input card	28
6.2.3. DVI input card	28
6.2.4. HDMI input card	28
6.2.5. HDBaseT input card	29
6.2.6. VGA input card	29
6.2.7. SDI input card	29
6.3. Output card (two ports per card)	30
6.3.1. DVI output Card	30
6.3.2. HDMI output Card	30
6.3.3. HDBaseT output Card	31
6.4. Output card (four ports per card)	31
6.4.1. DVI output Card	31
6.4.2. HDMI output Card	32
6.5. Preview and Echo signal card	32
7. Dimensions	33
8. Troubleshooting & Maintenance	35
9. Customer Service	36

1. Product Introduction

Linsn V5 series Splicing Processor 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. 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 Screwdriver
- 1x User Manual

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

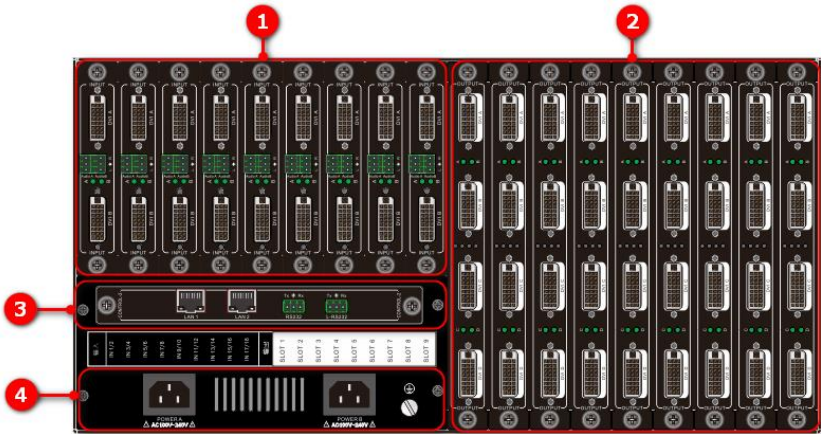
2. Panel Description

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°C
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	<ul style="list-style-type: none"> ● 08x18: 4 slots for input signal cards ● 18x36: 9 slots for input signal cards ● 36x36: 18 slots for input signal cards
②	Outputs	<p>insert 2 ports or 4 ports per output signal card:</p> <ul style="list-style-type: none"> ● 08x18: 5 slots for output signal cards ● 18x36: 9 slots for output signal cards ● 36x36: 9 slots for output signal cards <p>Note:</p> <p>The last output card only A.B ports support signal output on the 08x18; only A port supports signal output on the 18x36&36x36</p> <p>The last output card slot can be inserted into the video card for signal echo pre-monitoring</p>

No.	Name	Description
③	Control	<ul style="list-style-type: none"> <li data-bbox="412 165 1030 320">● RS232: Connect the control device (e.g. PC) to the RS232 port to control the processor by sending RS232 commands. The third-party device can be connected to the L-RS232 port to be controlled by the control device. <li data-bbox="412 336 1030 491">● 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

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.

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.
Output Cards (2 Ports)	DVI OUT	1080P DVI output card with 2 DVI ports
	DVI OUT (wallpaper, subtitle)	1080P DVI output card with 2 DVI ports, supports 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

3.1. Input cards

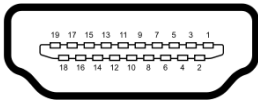
3.1.1. 4K HDMI input card

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.
- Supports HDMI and HDCP.
- 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).



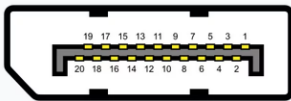
No.	Signal	No.	Signal
1	TMDS Data 2+	20	SHELL
2	TMDS Data 2 Shield	19	Hot Plug Detect
3	TMDS Data 2-	18	+5V Power
4	TMDS Data 1+	17	Ground
5	TMDS Data 1 Shield	16	DDC Data
6	TMDS Data 1-	15	DDC Clock
7	TMDS Data 0+	14	No Connect
8	TMDS Data 0 Shield	13	CEC
9	TMDS Data 0-	12	TMDS Clock-
10	TMDS Clock+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

3.1.2. 4K DP input card



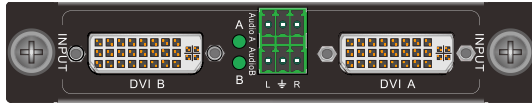
- 4Kx2K DP input card with 1 DP input and 1 L+R audio output ports.
- LED respectively indicate the work status of DP input signal.
- Supports audio de-embedding, audio 48Khz.
- Supports DP1.1.
- Video resolution is up to 4096x2160@24Hz.
- Any one of input sources can be switched to show in screen.
- 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 and HDCP1.4
- 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.

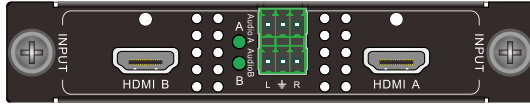
Pin Layout of the DVI-I connector (Dual-Link). (Female)



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-	24	T.M.D. S. Clock -

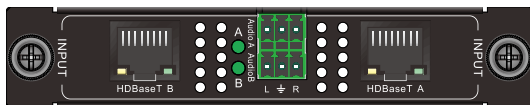
C1	RED	C2	Analog Green
C3	Analog Blue	C4	Horizontal Sync Analog
C5	GND		

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.
- Supports HDCP.
- 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

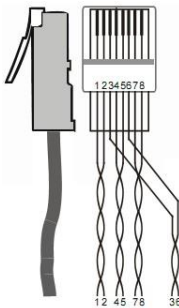


- 1080P seamless HDBaseT input card with 2 HDBaseT input and 2 L+R audio output ports.
- A and B LEDs respectively indicate the work status of HDBaseT A and HDBaseT B input signal.
- Supports audio de-embedding.
- Video resolution is up to 1920x1200@60Hz.
- Used with HDBaseT transmitter to extend video 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:

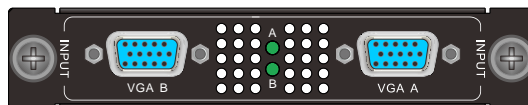


Pin	Color	Pin	Color
1	orange white	5	blue white
2	orange	6	green
3	green white	7	brown white
4	blue	8	brown

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.

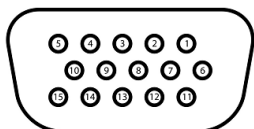
3.1.6. VGA input card



- 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.

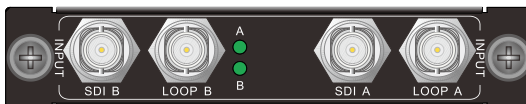
- Supports text overlap for input channels. User can customize the font, color, size, position, transparency of the added text, and make the text over the image to show source information in real-time.
- Power off memory feature.

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.

3.2. 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.

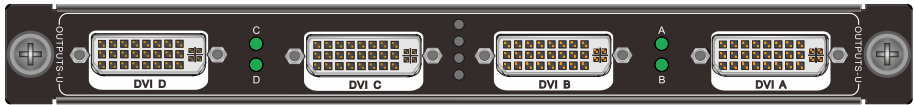
3.3. Output cards (four ports per card)

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



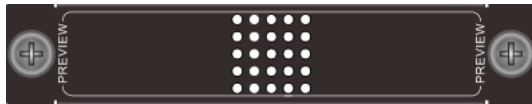
- 1080P seamless HDMI output card with 4 HDMI output ports, supports wallpaper and subtitle.
- A, B, C and D LEDs respectively indicate the work status of HDMI A, HDMI B, HDMI C and HDMI D output signal.
- Video resolution is up to 1920x1200@60Hz, and user-defined
- Supports DVI and HDMI signal format.
- 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

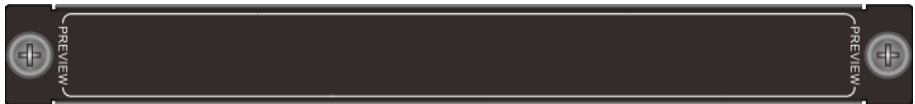


- Control signal card with 2 LAN and 2 RS232 ports.
- Supports LAN control and RS232 control.
- The third-party device can be controlled via the any **LAN** ports and **L-RS232** port.
- The default IP is 192.168.0.178, and the port number is 4001.
- The baud rate is 115200.
- Used with the Preview and 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 18x36、36x36

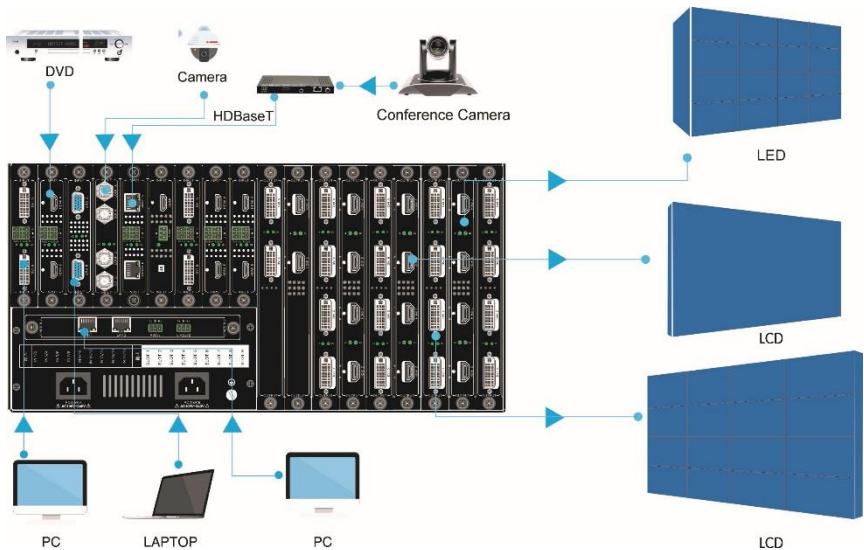
- Preview the input sources and echo the output image.
- Supports H.264.
- Video resolution of echo the output image is up to 1920x1080P@60hz 8bit.
- Video resolution of preview the input sources is up to 480x270
- Must be insert into the last output slot.

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.

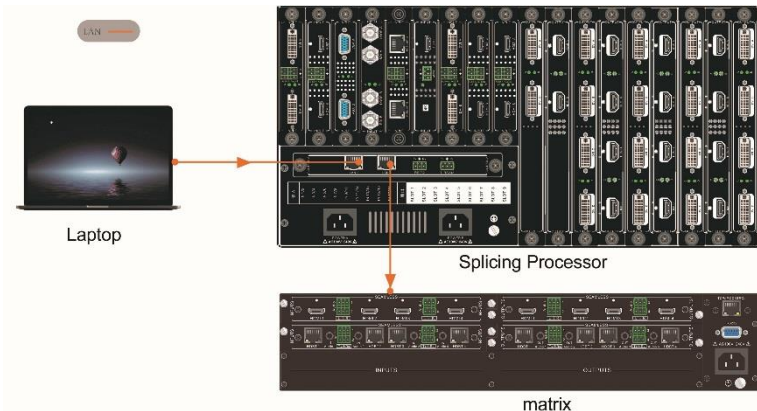
Step5. The third-party can be controlled by the control device (e.g. PC). There are two types of connection way can be chosen:

- 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).

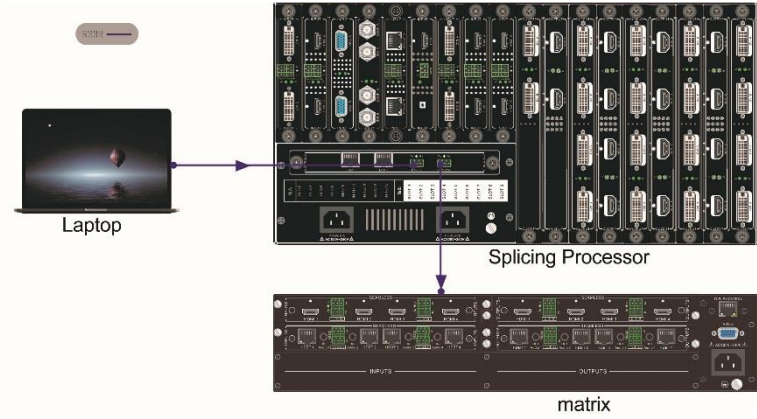
4.4. Control the third party device by LAN

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



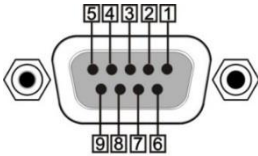
4.5. Control the third party device by L-RS232

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



5. RS232 Control

Connect the control device (e.g. PC) to the **RS232** port to control the processor by sending RS232 commands. This RS-232 communication port is a female 9- D connector. The definition of its pin layout is shown in the table below:



No.	Pin	Function
1	N/u	Unused
2	Tx	Transmit
3	Rx	Receive
4	N/u	Unused
5	Gnd	Ground
6	N/u	Unused
7	N/u	Unused
8	N/u	Unused
9	N/u	Unused

5.1. RS232 Control Software

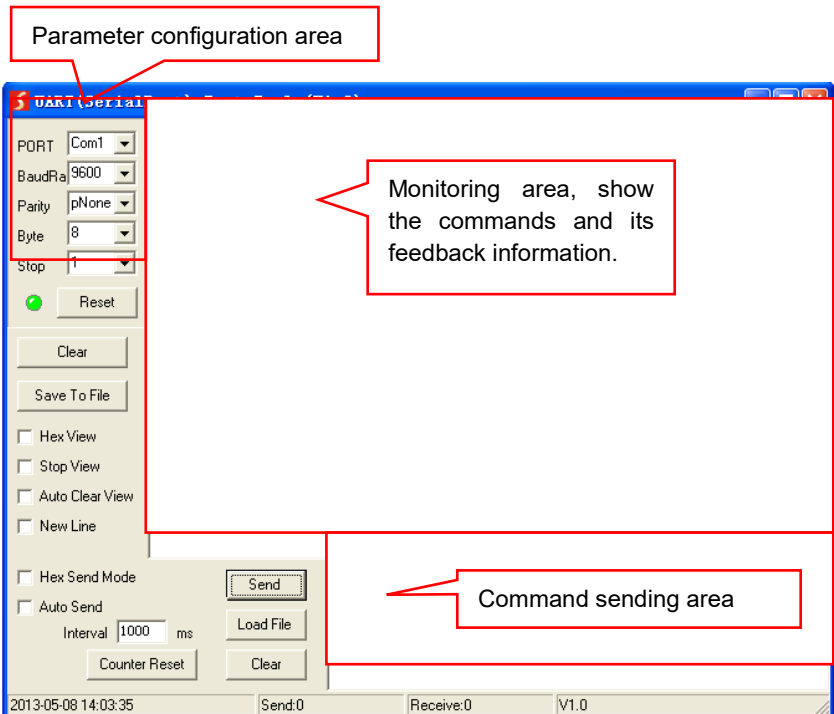
When connect to the RS232 port of a computer with control software, users can control it by that computer. To control the processor, users need to use RS232 control software.

- **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 rotated (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. Specification

6.1. 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°C~+50°C
Relative Humidity	10%~90%
Power Consumption	08x18: 29.0W 18x36: 32.0W 36x36: 30.0W
Dimension (W*H*D)	08x18: W436.6mm x H178.0mm x D320mm 18x36: W436.6mm x H219.0mm x D320mm 36x36: W436.6mm x H400.0mm x D320.0mm
Net Weight (kg)	08x18: 8.3kg 18x36: 9.8kg 36x36: 11.5kg
Chassis material	Aluminum

6.2. Input cards

6.2.1. 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 & HDCP1.4
Video Resolution	Up to 3840x2160@30Hz 4:4:4
Power Supply	By the main unit

6.2.2. 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

6.2.3. 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
Standard	HDCP1.4
Video Resolution	Up to 1920x1200 @60Hz
Power Supply	By the main unit

6.2.4. 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 & HDCP1.4
Video Resolution	Up to 1920x1200 @60Hz
Power Supply	By the main unit

6.2.5. 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
Standard	HDCP1.4
Video Resolution	Up to 1920x1200 @60Hz
Power Supply	By the main unit

6.2.6. 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

6.2.7. 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

6.3. Output card (two ports per card)

6.3.1. DVI output Card

DVI	
Output	(2) DVI
Output Connector	(2) Female DVI-I
Power Consumption	5.8W (No load)
Net Weight (g)	370g
DVI (support wallpaper and subtitle)	
Output	(2) DVI
Output Connector	(2) Female DVI-I
Power Consumption	7W (No load)
Net Weight (g)	380g
General	
Video Signal Format	DVI, HDMI compliant
Standard	HDCP1.2
Video Resolution	Up to 1920x1200 @60Hz
Power Supply	By the main unit

6.3.2. 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 & HDCP1.4
Video Resolution	Up to 1920x1200@60Hz
Power Supply	By the main unit

6.3.3. 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
Standard	HDCP
Video Resolution	Up to 1920x1200 @60Hz
Power Supply	By the main unit

6.4. Output card (four ports per card)

6.4.1. 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
Standard	HDCP1.4

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

6.4.2. 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 & HDCP1.4
Video Resolution	Up to 1920x1200@60Hz
Power Supply	By the main unit

6.5. Preview and Echo signal card

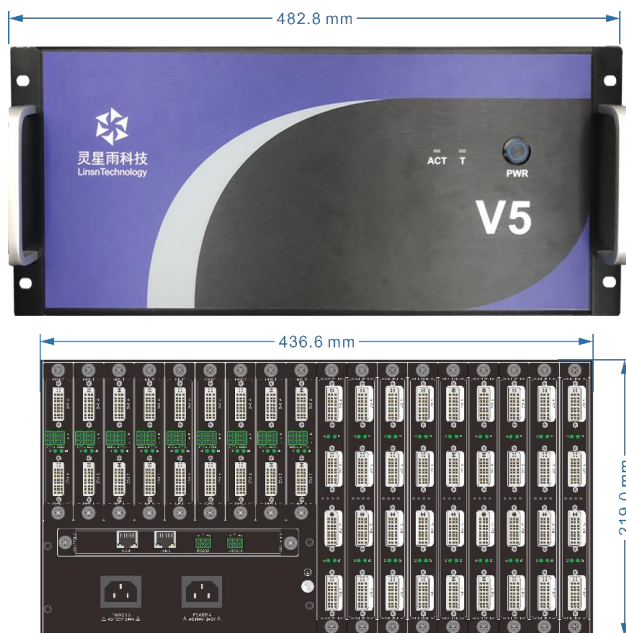
Function	Used with the control card to preview the input sources and echo the output image.
General	
Power Consumption	A: 7.8W B: 7.8W
Net Weight (g)	A: 215g B: 575g
Dimension (W*H*D)	A: 23.7mm x 124.2mm x 180mm B: 23.7mm x 214.2mm x 180mm
Power Supply	Powered by main unit.

7. Dimensions

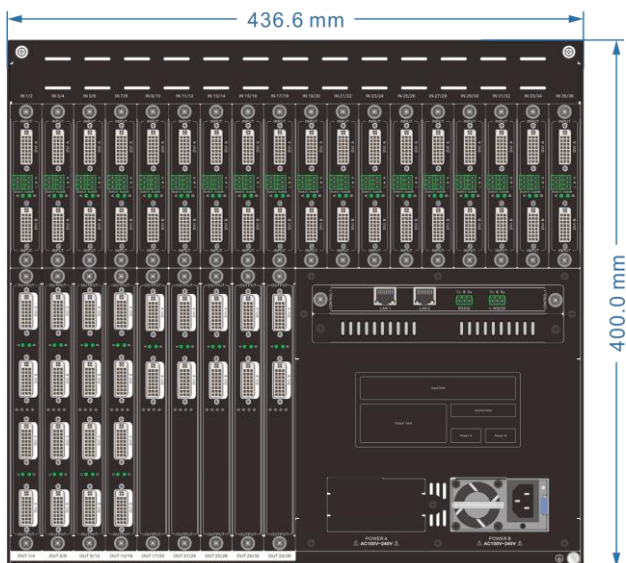
08x18: W436.6mm x H178.0mm x D320mm:



18x36: W436.6mm x H219.0mm x D320mm:



36x36: W436.6mm x H400.0mm x D320.0mm:



8. Troubleshooting & Maintenance

Problems	Potential Causes	Solutions
Output image with ghost	Bad quality of the connecting cable	Try another high quality cable
	Improprate 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. These 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 defect 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.