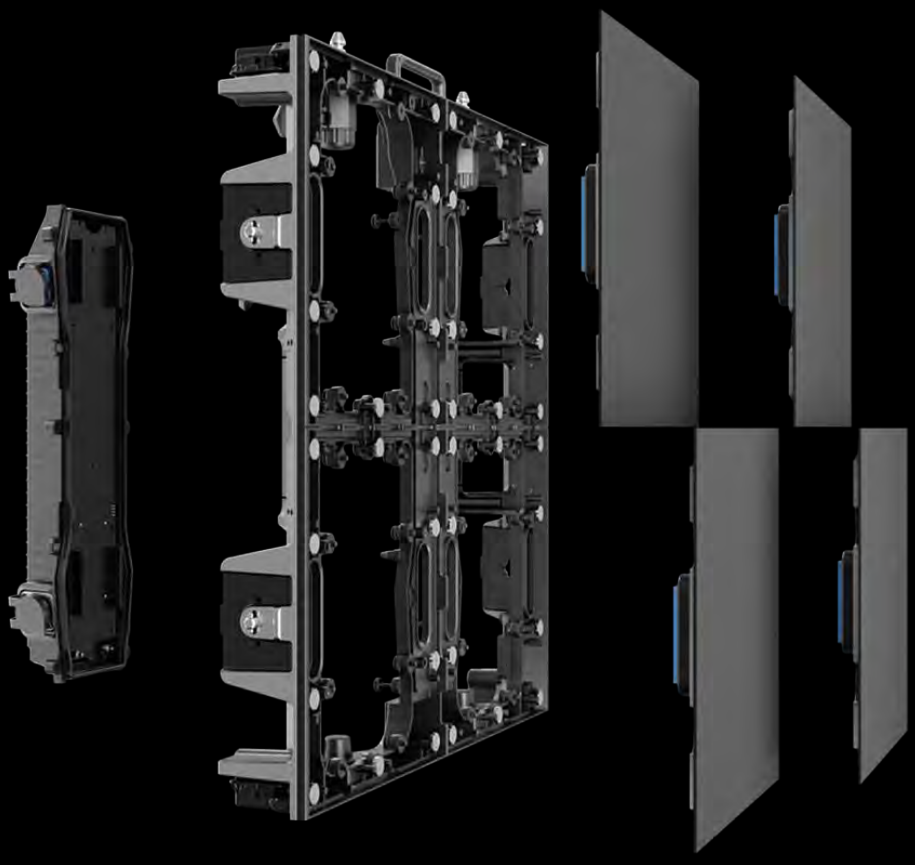
PENSARLED
Think Fine Pitch

LUX SERIES
MANUAL & INSTRUCTION GUIDE



PRODUCTION & RENTAL PANELS
INDOOR & OUTDOOR APPLICATIONS
500mm x 500mm & 500mm x 1000mm Panel Sizes

Introduction

This manual may contain technical inaccuracies, operational inconsistencies, or typographical errors. We will update the content as product features are enhanced, and will periodically improve or revise the products and procedures described herein. Updates will be included in future versions of this manual without prior notice.

Environmental Declaration

Comply with local regulations regarding equipment packaging materials, depleted batteries, and disposal of used equipment, and support recycling initiatives.

About This Manual

This document is used to guide users. The screenshots and diagrams in this document are for explanation only. The actual situation may vary.

Agreement

Pattern	Agreement
	Note: Add necessary information to the description of the operation content

Symbol	Agreement
黑体	Interface menu, such as click Zoom

Pensar LED

Headquarters office:
9780 SE Sunset Harbor Rd
Summerfield, FL 34491
Telephone: (833) 975-4031

Precautions for Installation and Use

- Do not install devices in flammable and explosive environments.
- The temperature and humidity at the installation site must be within normal operating ranges.
- Keep the device near vents to prevent heat accumulation.
- You are advised to leave space around the device for heat dissipation.
- Do not remove device parts or connect cables when the power is on.
- Take ESD measures during installation and maintenance. Before handling the product, wear an ESD, wrist strap or ESD gloves that are grounded. All tools must be strictly grounded during assembly.
- The shell, cabinet, and screen of the switching power supply must be strictly grounded with a grounding resistance of no more than 10 ohms. Spot check should be performed once every six months.
- Do not knock, scratch, bump, or scratch the display surface with hard objects.
- Do not flood or soak the device.
- Do not turn the air outlet of the air conditioner directly against the display or make the temperature difference between the inside and outside of the display too large.
- Do not place or use the display in an environment where volatile, corrosive, or combustible chemicals are present.
- When cleaning the surface of the LED module, do not use unknown chemical liquids to avoid damage or corrosion of the LED.
- When cleaning the LED tube, gently wipe it with a clean soft rag dipped in alcohol, and wait until dry before use.
- When cleaning the kit, wipe the kit gently with clean soft cloth dipped in water. Do not leave any trace of water after wiping, and dry the kit before using.
- It is strictly prohibited to install and debug the large screen during the interior decoration.
- If any abnormal situation occurs on the display, such as odor, smoke, leakage, abnormal temperature, wading in the screen, etc., please cut off the power supply immediately, and then contact our technical personnel.
- Under normal circumstances, ensure that the display is on at least twice a week and the startup time is not less than 2 hours; It should be lit for no less than 2 hours a day during the return of tide.
- In order to ensure the display effect of the LED, it is necessary to regularly clean the dust with a soft anti-static brush.
- When servicing LED modules, it is recommended to use a thermostatic electric soldering iron, the temperature of the electric soldering iron is adjusted according to the composition of the tin wire.
- When repairing LED welding, the electric soldering iron temperature is generally set at about 315°C, the welding time is not more than 5s (preferably 3s), and the welding number is not more than three times.
- When repairing CMOS devices, the soldering iron temperature must be kept below 315°C, the welding time should not exceed 3s, and the welding times should not exceed three times.

- In order to ensure the stability and service life of the LED, the module working surface temperature should not exceed 60°C, storage temperature should not exceed 60°C, otherwise necessary cooling measures must be taken.
- Special switching power supply for LED display must be used. The module adopts DC 4.6 input. Do not directly connect to 220V, otherwise the whole module will be burned.
- When installing the LED module, ensure that the power port is correctly connected, and the positive and negative terminals must correspond to each other; If the positive and negative terminals are reversed, power off in time to avoid damage to components.
- The operating voltage of the module should not exceed the maximum allowable operating voltage of 5.5V.
- During use and transportation, do not drop, push, squeeze or press the module to avoid damage to the module.

Special statement

- The figures in this document are for reference only. The actual product shall prevail.
- We do our best to ensure that the information in this manual is correct. Information is subject to change without prior notice due to upgrades or other reasons.
- This manual can be used as a guide for the use of multiple models of products. However, the usage information of each product is not listed. Please check it according to the actual product.
- Access to the Internet is at your own risk, including but not limited to the product may be subjected to network attacks, hacker attacks, virus infection, etc. The Company will not be responsible for the resulting product abnormal work, information leakage and other problems, the company will provide you with product related technical support in a timely manner.

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Chapter 1 Product Introduction

The LUX Series, a versatile rental solution crafted for the indoor and outdoor stage markets, boasts standardized design and multifunctional capabilities. It's ideal for a variety of events including stage performances, XR, press, studio and exhibitions.

1.1 Features

(1) Fast and Efficient：with integrated control box and magnetic modules to make LED panels operating faster and easier.;

(2) Multi-applicability：supports both indoor and outdoor application; with various slicing angles option (flat, convex, concave and 90 angle); products of different pixel pitch are compatible, greatly improving the extra value of the product and reduces further investmentin future;

(3) Higher reliability：with better heat dissipation, anti-detachment and anti-collision design, effectively improving it’s safety and reliability;

(4) Excellent display performance: the viewing angle exceeds 160°, the flatness can be controlled within 0.15mm, there is no light bias, and it supports XR product solutions.

1.2 Cabinet Appearance

1.2.1

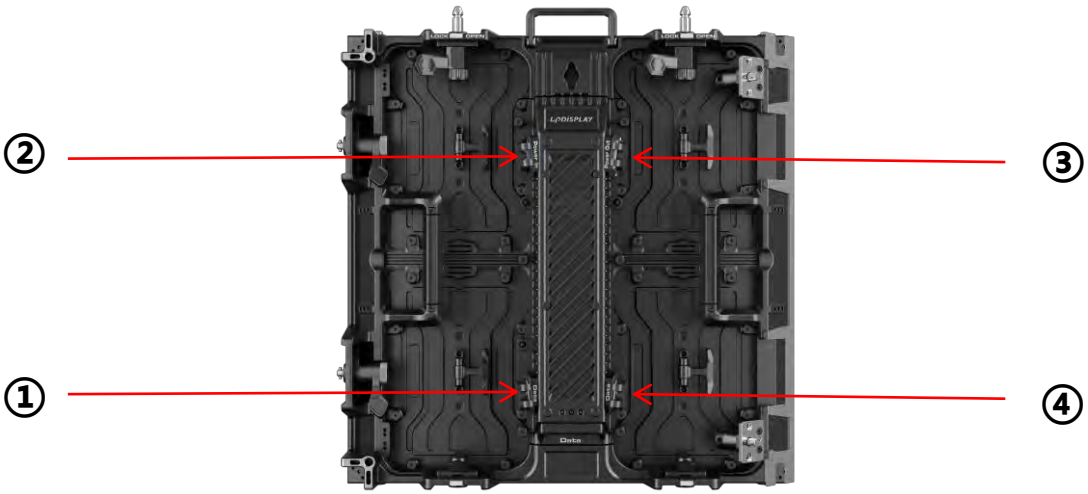


Fig 1-1

No	Descriptions
①	Power Input Terminals
②	Input Holefor Network Cable
③	Output Holefor Network Cable
④	Power Output Terminals

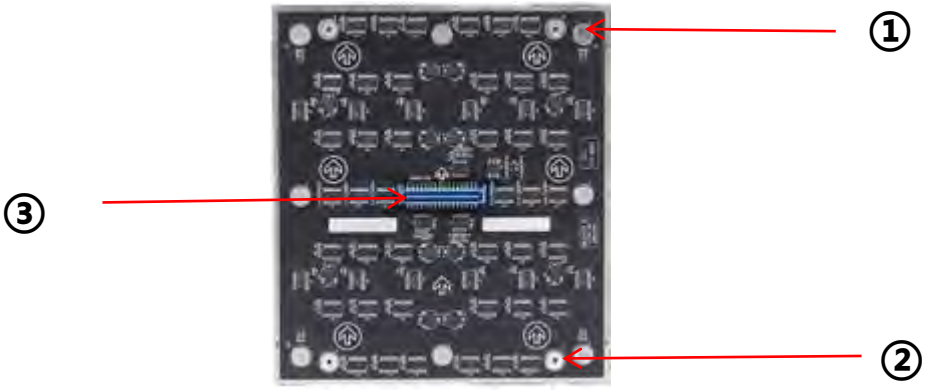
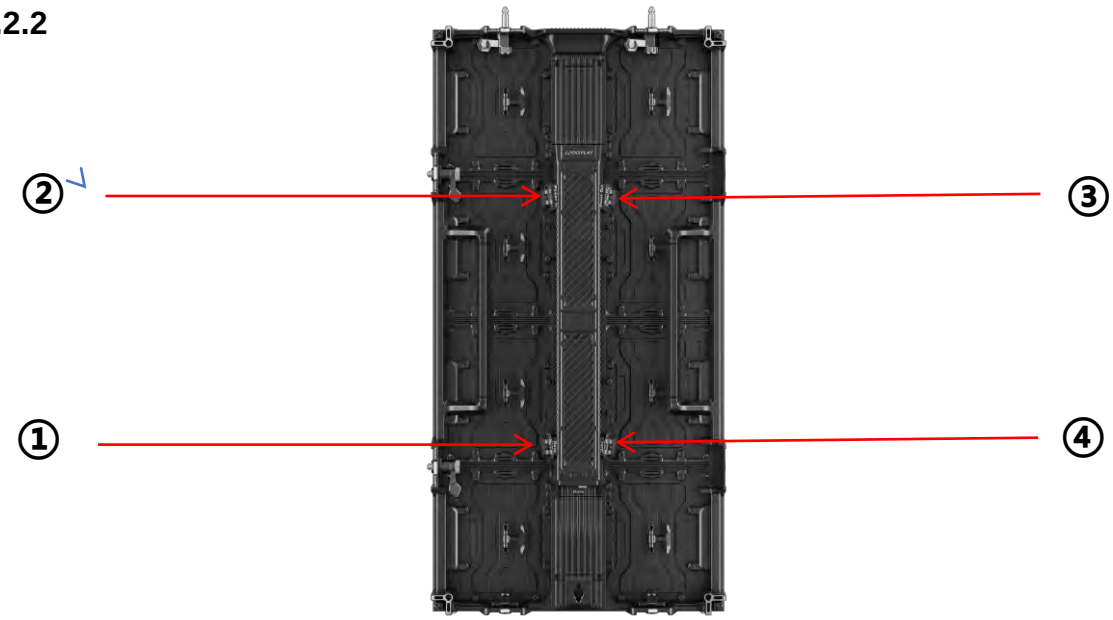


Fig 1-2

No	Descriptions
①	Sheet Ironof Light Plate
②	Locating Copper Column
③	Power Supply, Signal Interface

1.2 Cabinet Appearance

1.2.2



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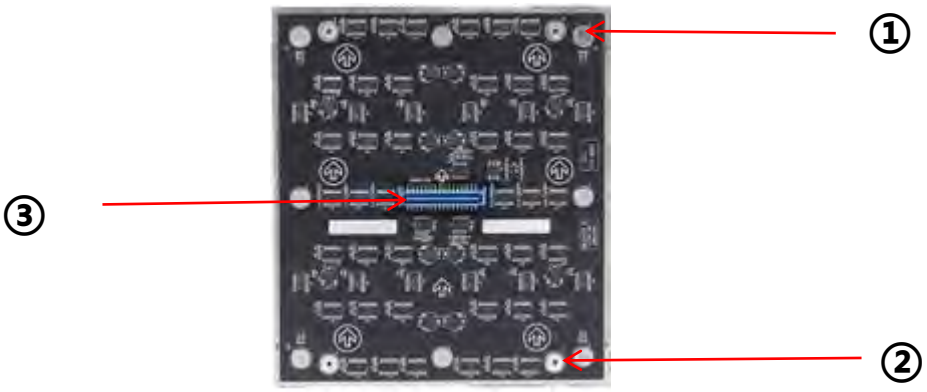


Fig 1-2

No	Descriptions
①	Sheet Ironof Light Plate
②	Locating Copper Column
③	Power Supply, Signal Interface

1.3.1 Detail Product Drawing

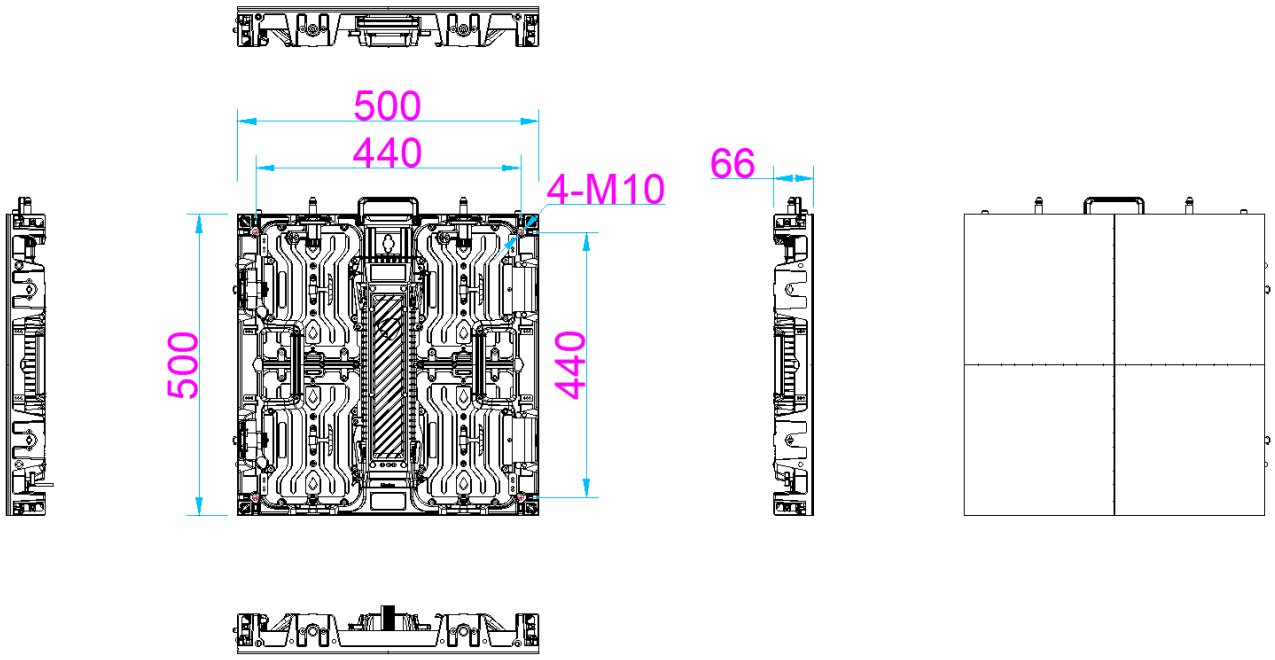


Fig 1-3

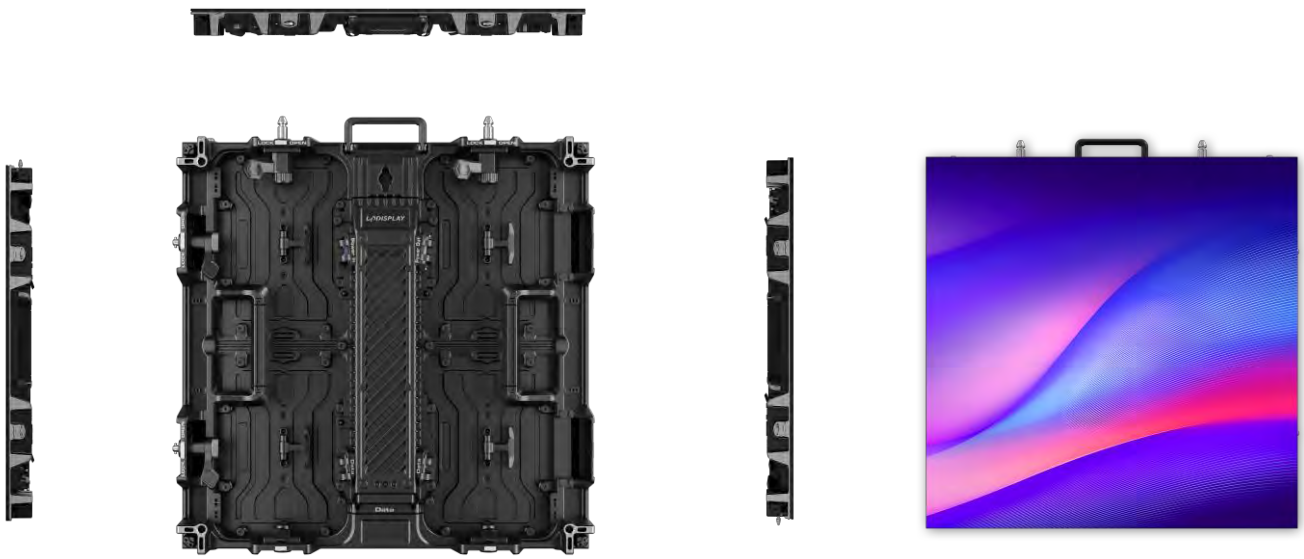


Figure 1-4

1.3.2 Detail Product Drawing

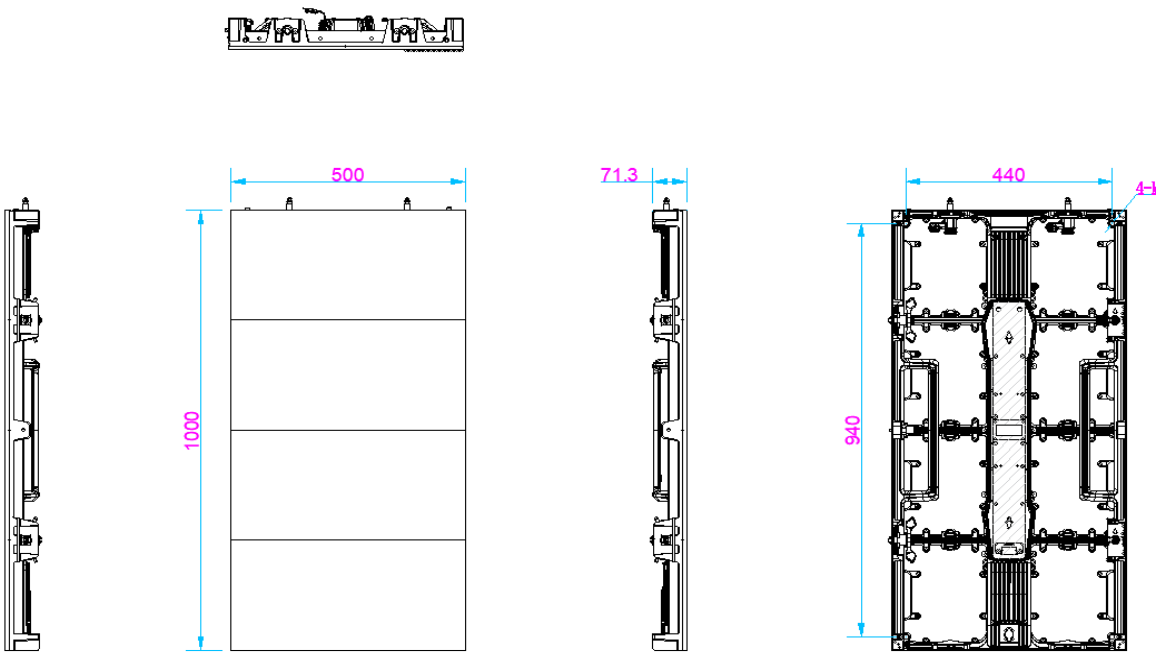


Fig 1-3

Figure 1-4

1.4 Internal components of the box:

500*500

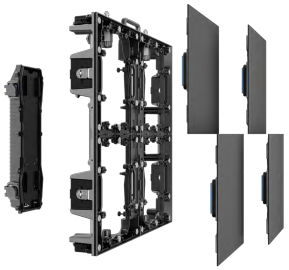
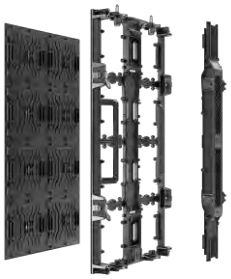


Fig 1-5



500*1000

LA(500*500)	LA(500*1000)
LED Module *4	LED Module *8
Power Signal Converter Board *1	Power Signal Converter Board *1
Power Supply *1	Power Supply *1
Power Connector*2	Power Connector*2
Signal Port (RJ45 Network Port) *2	Signal Port (RJ45 Network Port) *2

■ The interface of the receiving card is shown as follows:

Fig 1-6

No	Description
①	Power indicator. If the indicator is steady red, the power supply is normal.
②	Signal light.The green light blinks rapidly (5 to 10 times/second), and the data signal transmission is normal.
③	Fix the hole positions. It is used to reinforce the receiving card and improve the anti-vibration capability.
④	The Goldfinger interface.It is used to connect to the screen adapter or unit board. The front left guide is the first pin in the figure above.

Chapter 2 Installation and Wiring

2.1 Out-of-Box Inspection

Check whether the packages are damaged. If the packages are intact, check the main components against the shipping list. If any inconsistency is found, contact us in time.

The main components include cabinets, signal cable, power cable, USB cable, DVI cable, and sending box. For details about the components, refer to the shipping list.

Common Cables:

Power Cables

HDMI Cable

Incoming Signal Cable

USB Cable

DP Cable

DVI Cable

Fig 2-1

2.2 Installation method:

Common LED installation preparation tools (to the actual delivery as a standard, the picture is for reference only):

Hexagon socket head cap screws

Allen key

Rubber Hammer

connection piece

gradienter

mitten

Fig 2-2

2.3.1 Cabinet layout:

1. Open the packing box to check the number of each box, and find the packing box of accessories (installation tools, screws, connecting pieces, etc.).
2. Take out the boxes, arrange them according to the number of boxes, pay attention to the box size (Figure 2-3）.

(Subject to actual delivery, this sorting is for calibrated cabinets. If there is no calibration, it can be sorted according to the actual situation)

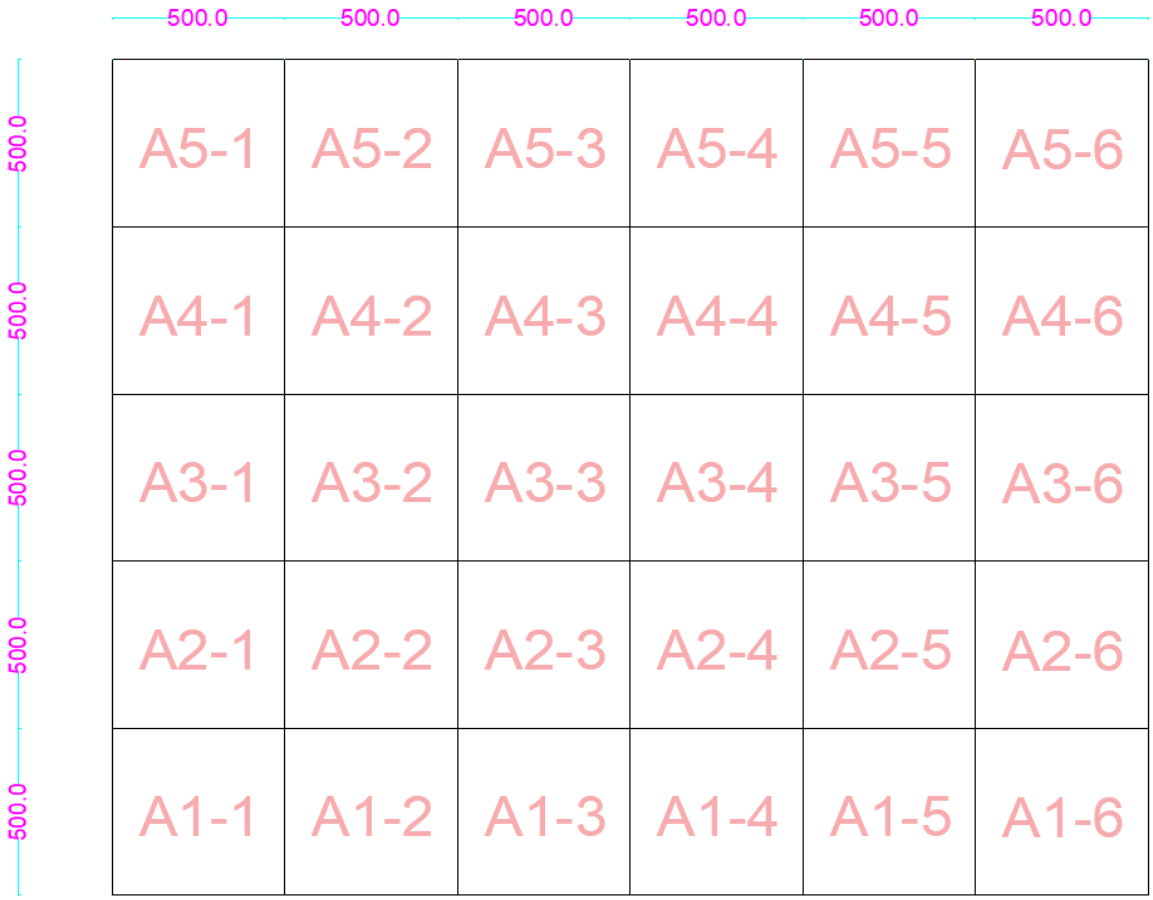


Fig 2-3

2.3.2 Cabinet layout:

1. Open the packing box to check the number of each box, and find the packing box of accessories (installation tools, screws, connecting pieces, etc.).
2. Take out the boxes, arrange them according to the number of boxes, pay attention to the box size (Figure 2-3) .

(Subject to actual delivery, this sorting is for calibrated cabinets. If there is no calibration, it can be sorted according to the actual situation)

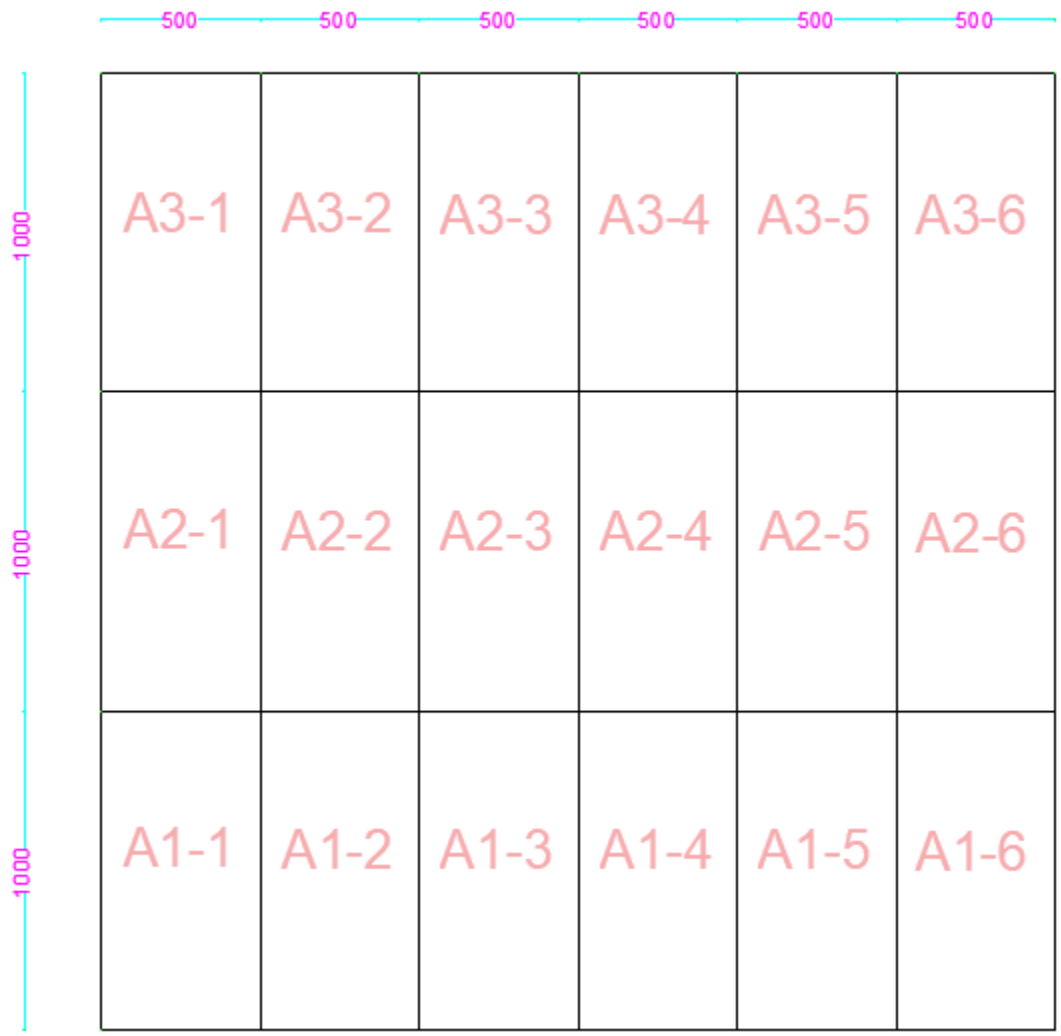


Fig 2-3

2.4 Installation Precautions

1. The cabinet is connected with the connecting piece, and the flatness must be ensured when assembling it, as shown in the figure

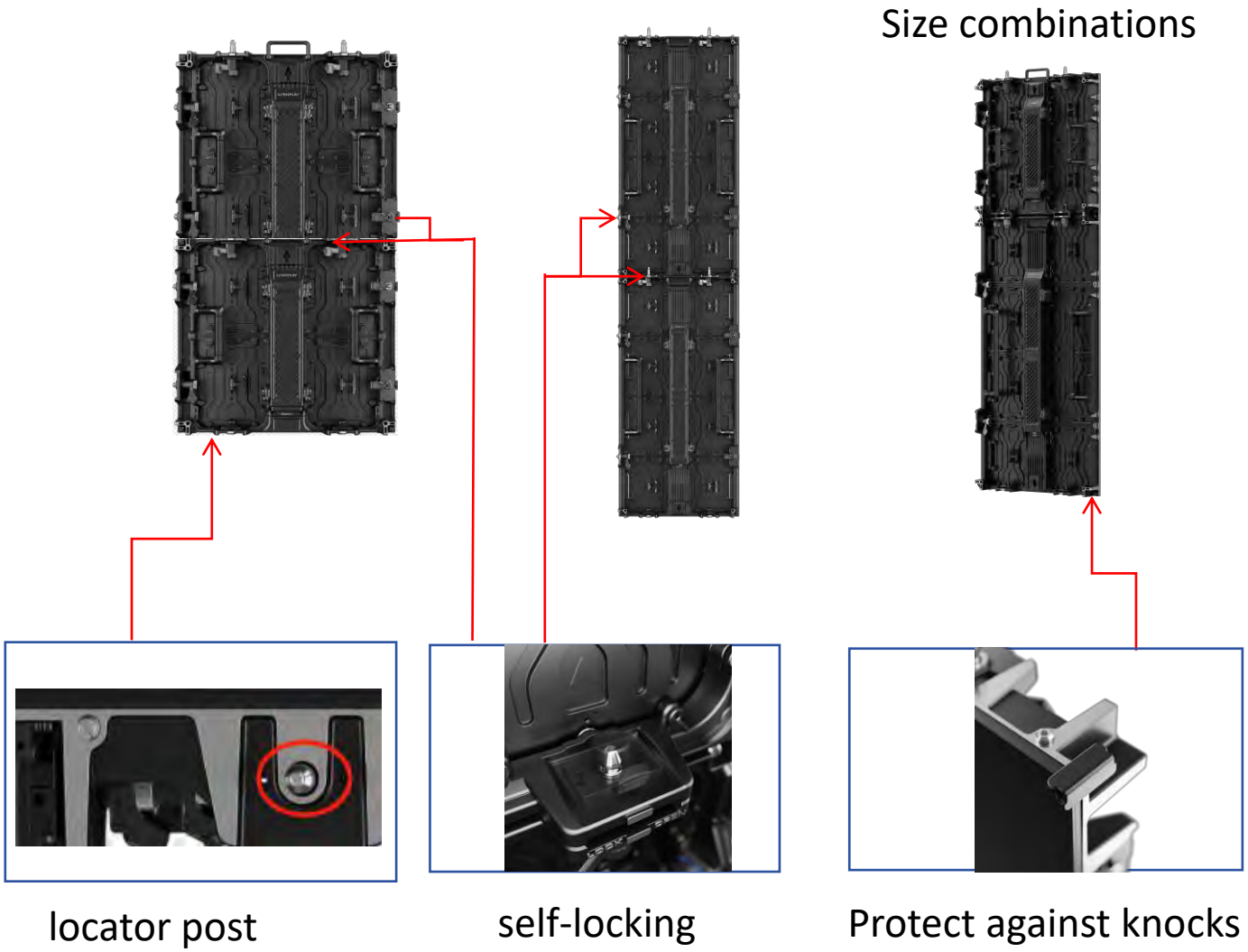


Fig 2-4

2. After the cabinet is installed, connect network cables and power cables. Before powering on, it is necessary to test whether the power cable is firmly in contact, whether there are leakage and short circuit, and whether the ground cable is firm. If no abnormal conditions are found, power on.
3. After power on, check whether the power supply works normally and whether the control card works normally; If any exception is found, replace it in time.
4. Turn off the power when no abnormality occurs, and start assembling the module

2.5 Floor mounting process:

Setup procedure for back mounting

Warning: LUX series box splicing display surface must be within the tolerance of +/- 0.1mm flatness, and keep perpendicular to the reference plane. Installation process 1, first assembled the first line of the box to adjust the level, the first line of the foundation is the most important, adjust the level of the left and right box internal lock fastening tightened, the back of the box and the box with a connecting piece of the connection with screws tightened

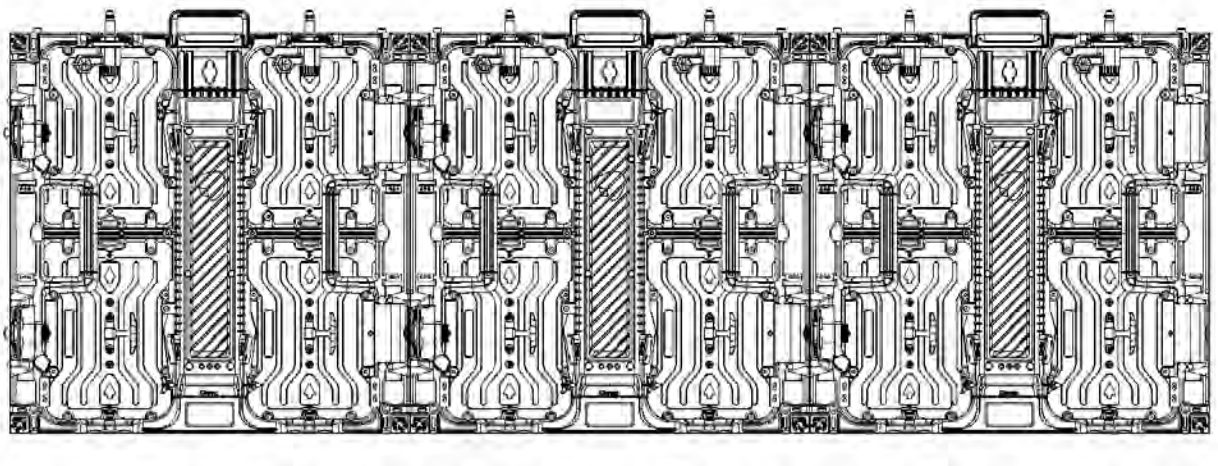


Fig 2-5

Install the first row and keep it at the same level

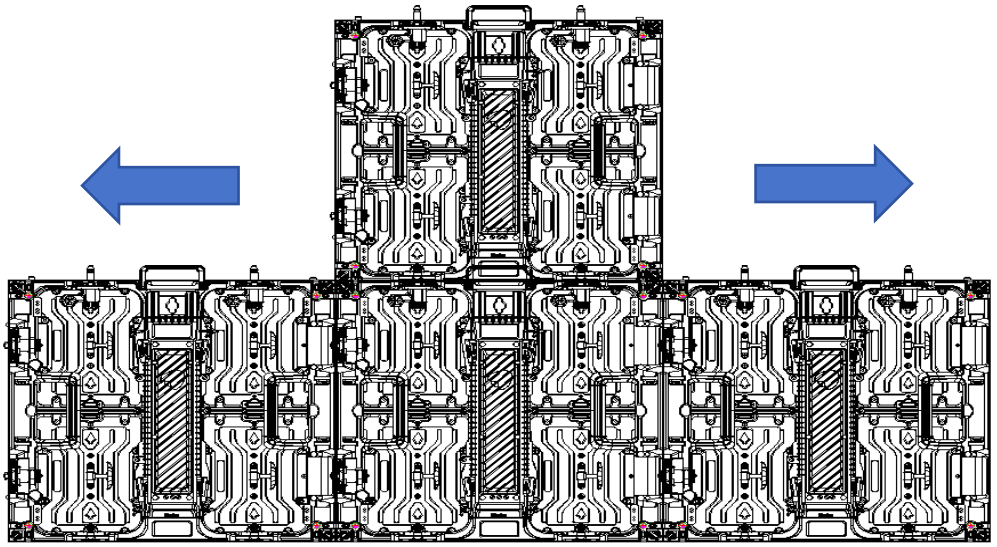


Fig 2-6

2. Continue to stack the mounts from the centre to the sides, adjusting the level of each box left and right to lock the top and bottom locks tightly. Fix the mounting parts in rows and columns on the supporting steel structure at the back of the display. (See steel structure design and installation drawings)

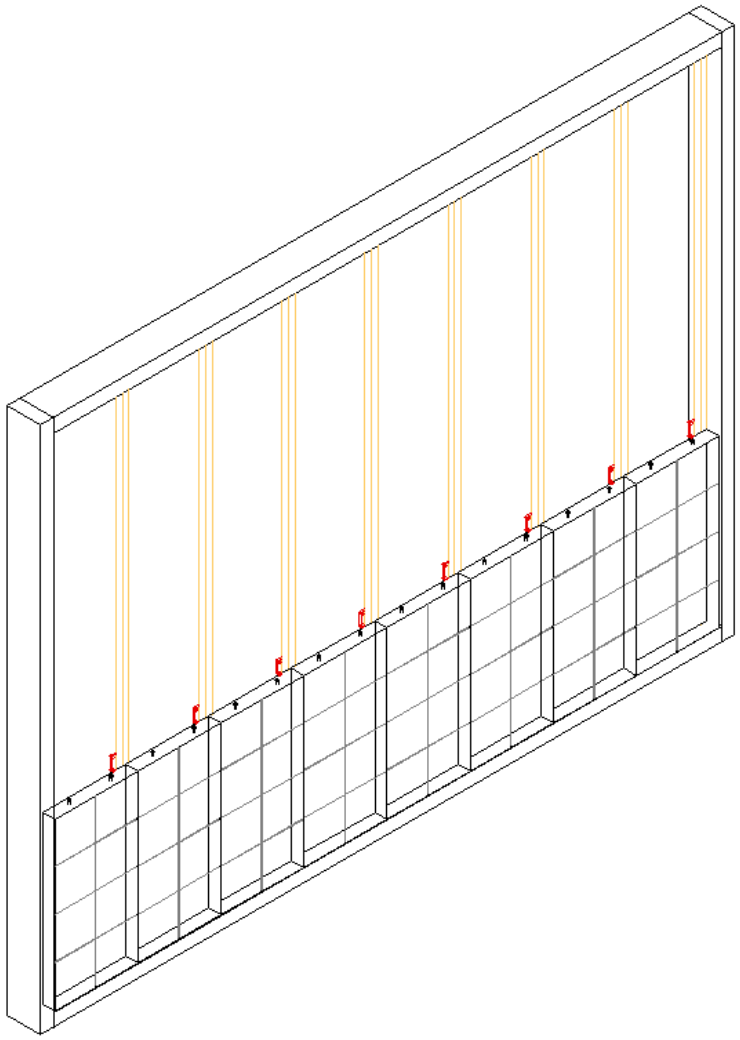


Fig 2-7

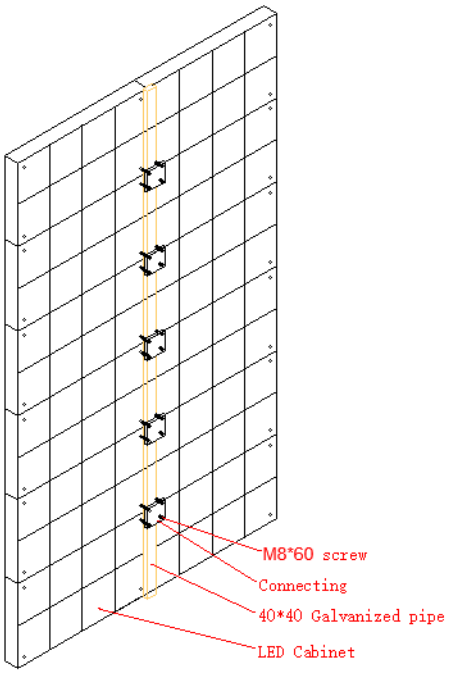


Fig 2-8

Fig 2-9

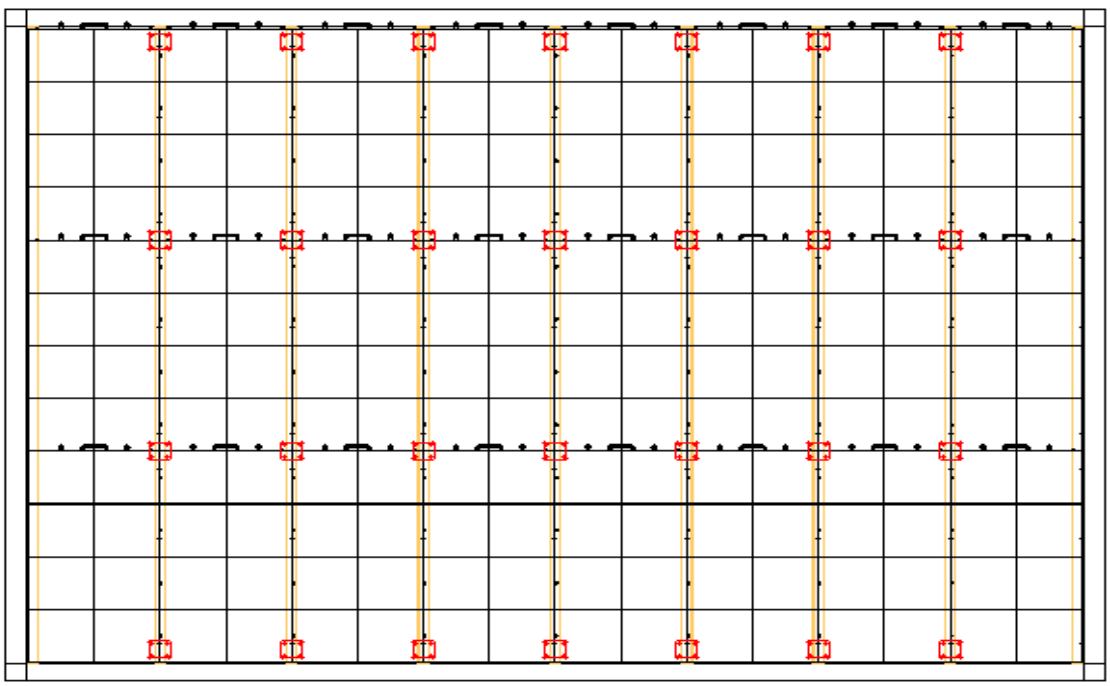


Fig 2-10

2.6.1 Signal Cable Connection

Signal cables shall be connected based on the wiring diagram of the delivered products for the project.

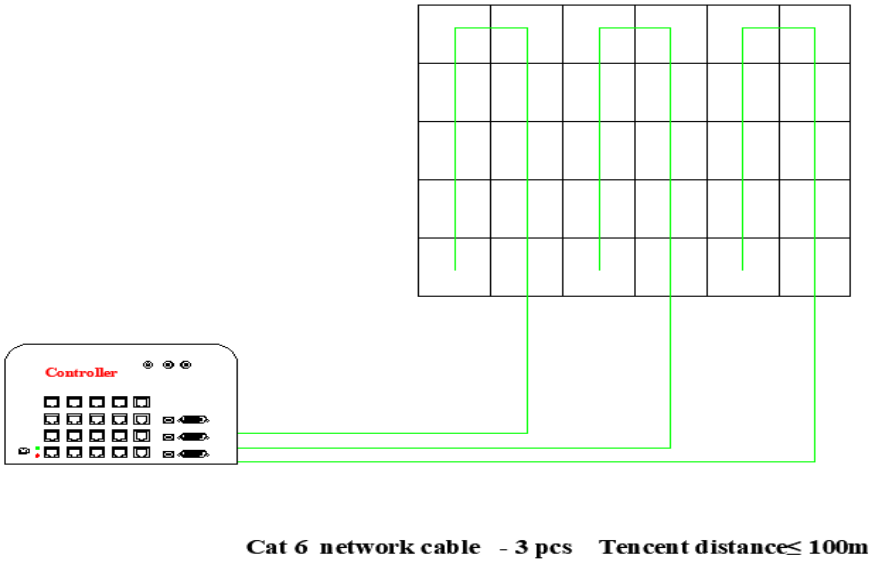


Fig 2-26 Signal Cable Connection Diagram of LUX 1.95

2.7.1 Power Cable Connection

Power cables shall be connected based on the wiring diagram of the delivered products for the project.

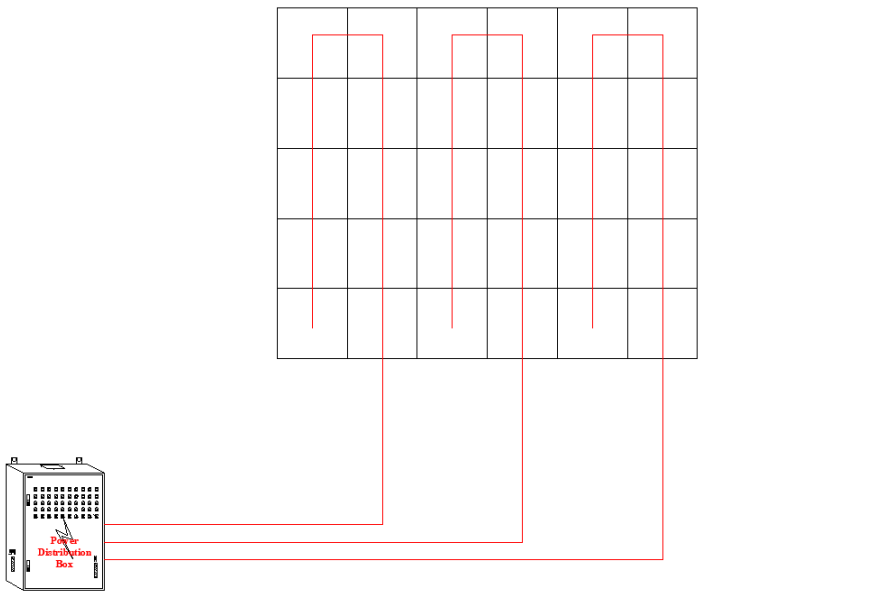


Fig 2-27 Power Cable Connection Diagram of LUX 1.95

2.6.2 Signal Cable Connection

Signal cables shall be connected based on the wiring diagram of the delivered products for the project.

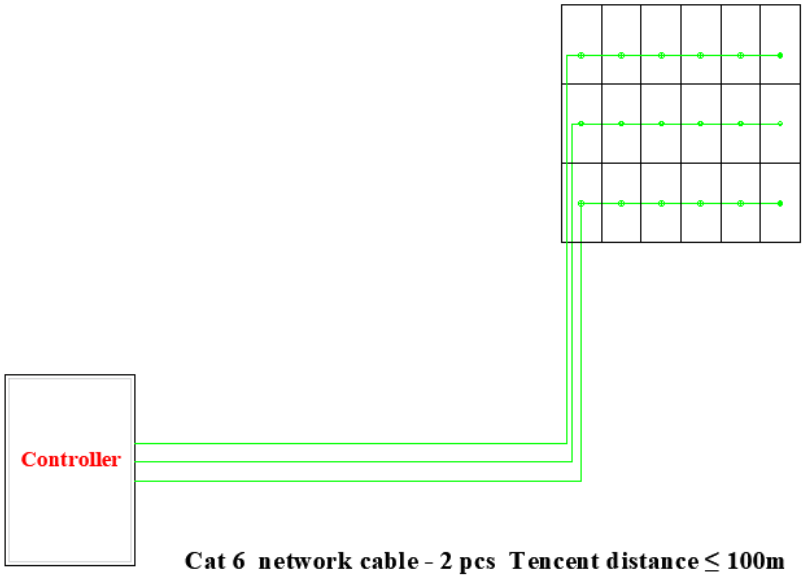


Fig 2-26 Signal Cable Connection Diagram of LUX 3.91

2.7.2 Power Cable Connection

Power cables shall be connected based on the wiring diagram of the delivered products for the project.

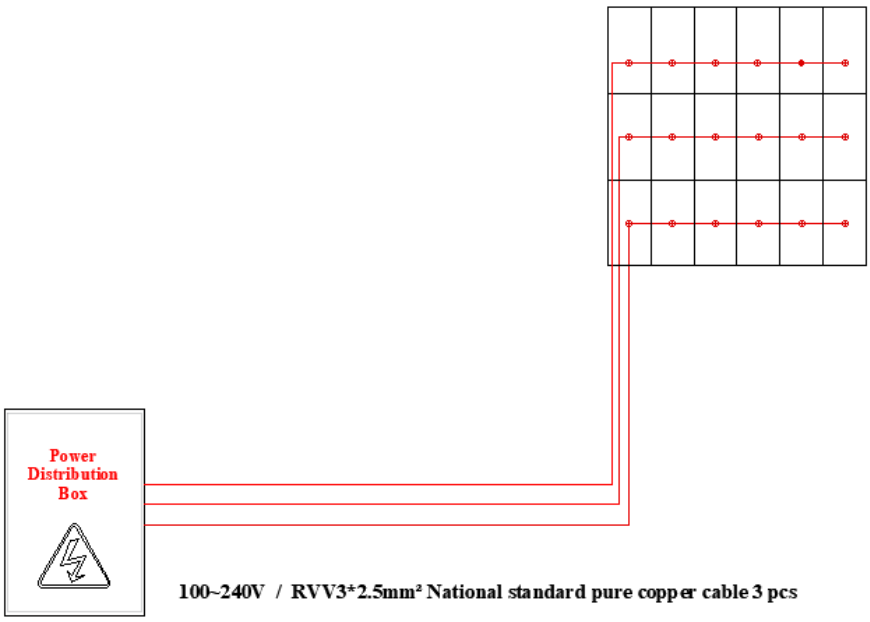
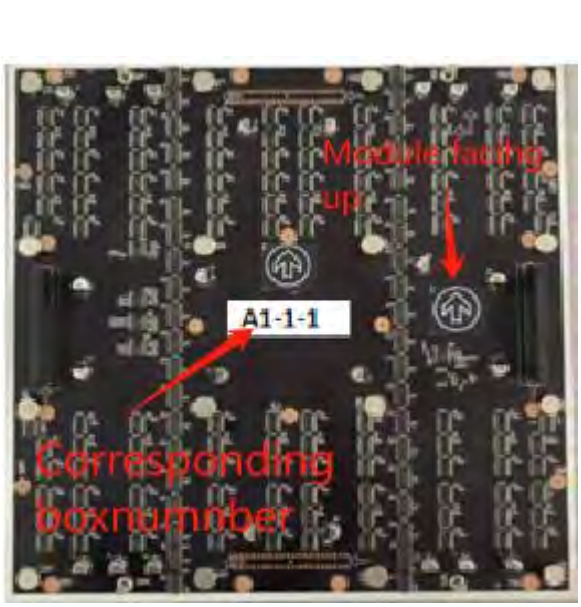


Fig 2-27 Power Cable Connection Diagram of LUX 3.91

2.8 Module layout

Screen calibration is performed on the LUX series product before shipment, and the product needs to be installed sequentially according to the cabinet number, as shown in Figure 2-11:



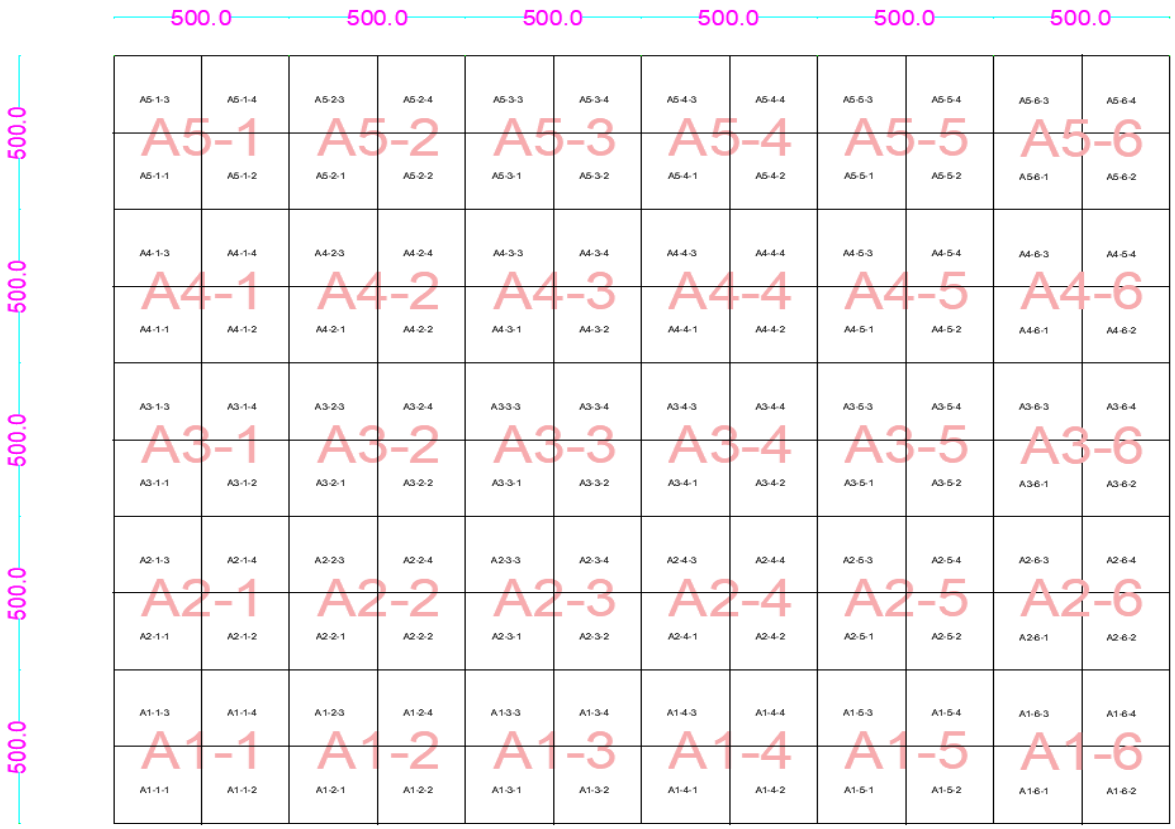
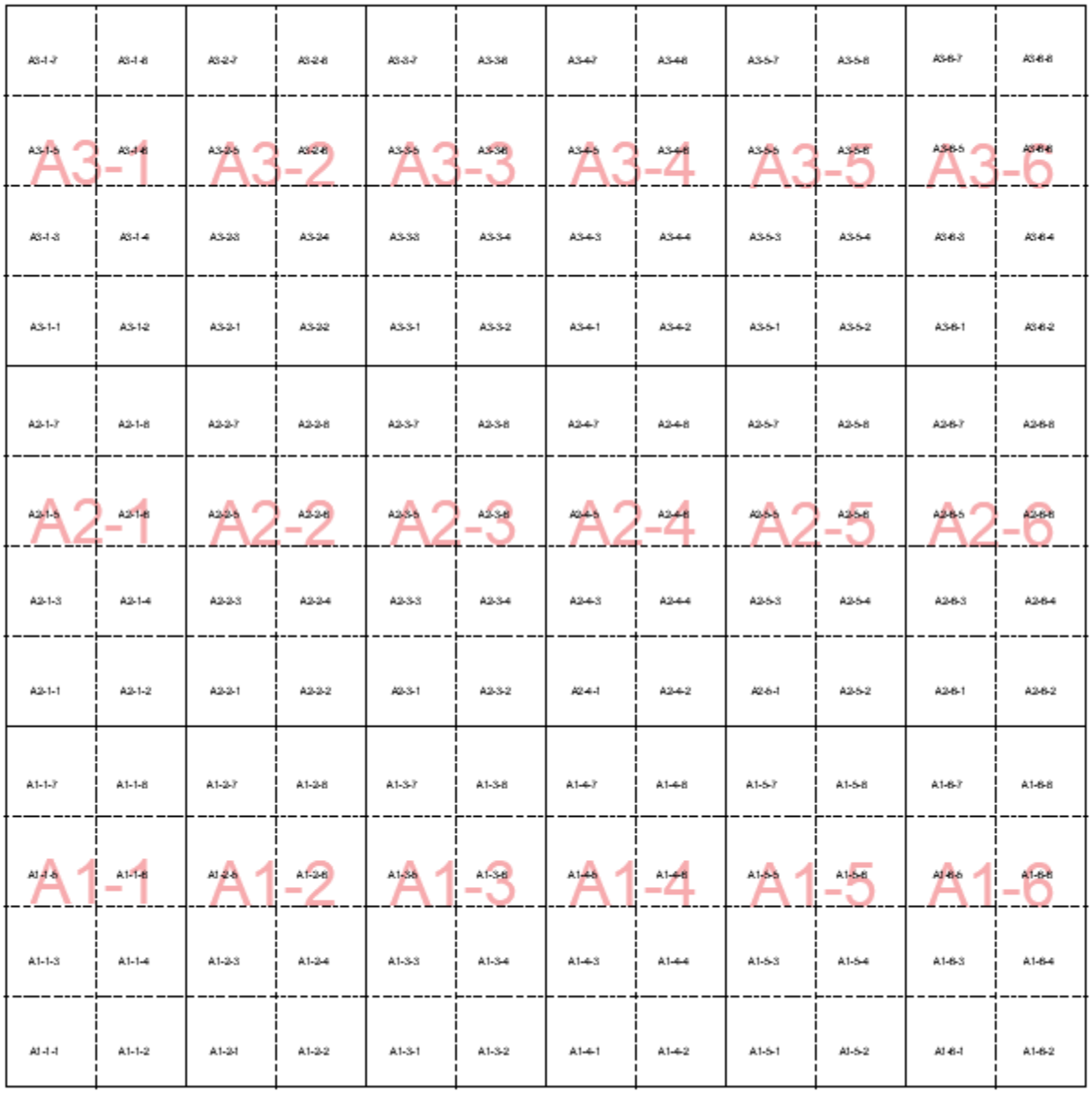


Fig 2-11 Front View of the Display


A3-1-7 A3-1-8 A3-2-7 A3-2-8 A3-3-7 A3-3-8 A3-4-7 A3-4-8 A3-5-7 A3-5-8 A3-6-7 A3-6-8
A3-1-5 A3-1-6 A3-2-5 A3-2-6 A3-3-5 A3-3-6 A3-4-5 A3-4-6 A3-5-5 A3-5-6 A3-6-5 A3-6-6
A3-1 A3-2 A3-3 A3-4 A3-5 A3-6
A3-1-3 A3-1-4 A3-2-3 A3-2-4 A3-3-3 A3-3-4 A3-4-3 A3-4-4 A3-5-3 A3-5-4 A3-6-3 A3-6-4
A3-1-1 A3-1-2 A3-2-1 A3-2-2 A3-3-1 A3-3-2 A3-4-1 A3-4-2 A3-5-1 A3-5-2 A3-6-1 A3-6-2
A2-1-7 A2-1-8 A2-2-7 A2-2-8 A2-3-7 A2-3-8 A2-4-7 A2-4-8 A2-5-7 A2-5-8 A2-6-7 A2-6-8
A2-1-5 A2-1-6 A2-2-5 A2-2-6 A2-3-5 A2-3-6 A2-4-5 A2-4-6 A2-5-5 A2-5-6 A2-6-5 A2-6-6
A2-1 A2-2 A2-3 A2-4 A2-5 A2-6
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A2-1-1 A2-1-2 A2-2-1 A2-2-2 A2-3-1 A2-3-2 A2-4-1 A2-4-2 A2-5-1 A2-5-2 A2-6-1 A2-6-2
A1-1-7 A1-1-8 A1-2-7 A1-2-8 A1-3-7 A1-3-8 A1-4-7 A1-4-8 A1-5-7 A1-5-8 A1-6-7 A1-6-8
A1-1-5 A1-1-6 A1-2-5 A1-2-6 A1-3-5 A1-3-6 A1-4-5 A1-4-6 A1-5-5 A1-5-6 A1-6-5 A1-6-6
A1-1 A1-2 A1-3 A1-4 A1-5 A1-6
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A1-1-1 A1-1-2 A1-2-1 A1-2-2 A1-3-1 A1-3-2 A1-4-1 A1-4-2 A1-5-1 A1-5-2 A1-6-1 A1-6-2

2.9 Smart Control Distribution Box

The Smart Control Distribution Box can be used for distributing electric power to the LED display, and has the function for real-time monitoring of the temperature, humidity, smoke, and mains voltage of the external environment. The control software has the scheduled start/stop function, allowing you to set any time for the LED display to be remotely started or stopped

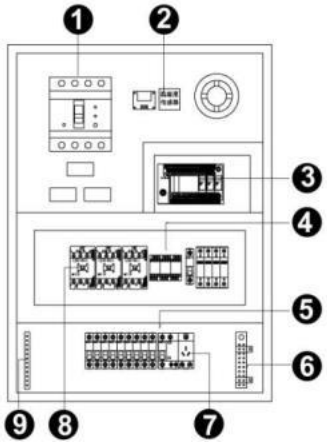


Fig 2-14 Internal Structure of Distribution Box

SN	Component	Remark (s)
1	Main switch	MCCB
2	Temperature sensor	Used for temperature detection
3	PLC	Used for smart control
4	Relays	Used to control the ON/OFF of the AC contactor
5	Circuit breaker	MCB,Connect to display live wire
6	Neutral wire socket	Connect neutral wire
7	Power Port	/
8	AC Contactor	Used to control the ON/OFF of the current
9	Earth wire socket	Connect earth wire

The PLC communication system is RS485, It uses converter from control computer RS232 to RS485. For more detail information, please refer to our Intelligent Power Distribution Management System Manual.

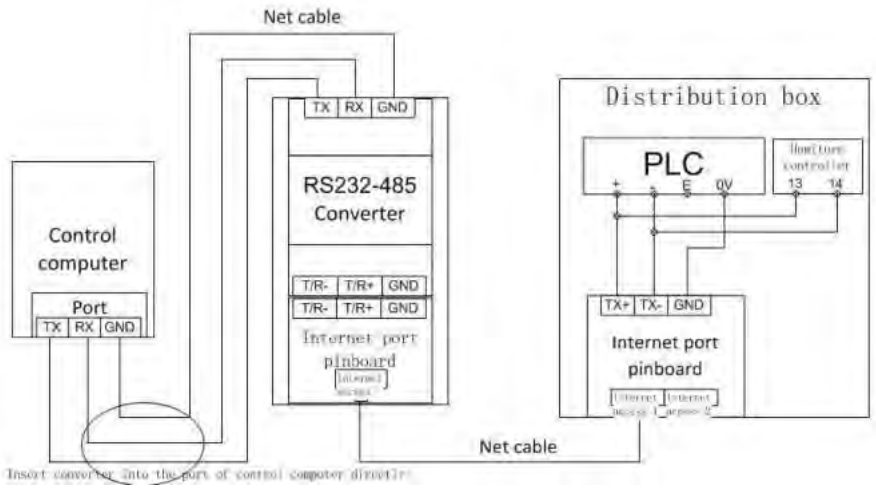


Fig 2-15 Distribution Box PLC Connection Diagram

2.10Load Calculation

2.10.1 Total Display Power

Total display power = total cabinet power + peripheral device power + cooling device rate

■ Switching Power Supply

Single supply power (W) = output voltage (V) * Output current (A)

■ Total Cabinet Power

- Total Number of Cabinets * Cabinet Power
- Total cabinet area * Maximum power per square *120% (reserved for switching power supply)

Note: For details about the maximum power per square box, see the device parameters of the corresponding cabinet model. For details, see 1.3 Device Parameters

■ Total Power of Peripheral Device

The processor and lighting equipment behind the screen are about 2KW.

■ Total Power of the Heat Dissipation Device

Air conditioning power ≈10m2/P≈800W. For example, a 30m² cabinet screen requires a 3P cooling air conditioner, then the total cooling power is 800w*3 = 2.4kw.

2.10.2 PDC Cable Model Selection

Table 2-1 Mapping to PDC Cable Models

PDC Model	Incoming Cable Model	Maximum Currency(A)	Minimum Tube (mm)
10KW PDC	RVV5×6mm²	25	25
20KW PDC	YJV5×10mm²	55	50
30KW PDC	YJV5×10mm²	70	50
40KW PDC	YJV4×25+1×16mm²	100	50
60KW PDC	YJV4×35+1×16mm²	125	65
80KW PDC	YJV4×50+1×25mm²	150	80
100KW PDC	YJV4×70+1×35mm²	190	80
120KW PDC	YJV4×95+1×50mm²	235	80
120KW PDC	YJV4×120+1×70mm²	265	100
150KW PDC	YJV4×150+1×70mm²	300	120
180KW PDC	YJV4×180+1×95mm²	360	150

Chapter3. System Solution

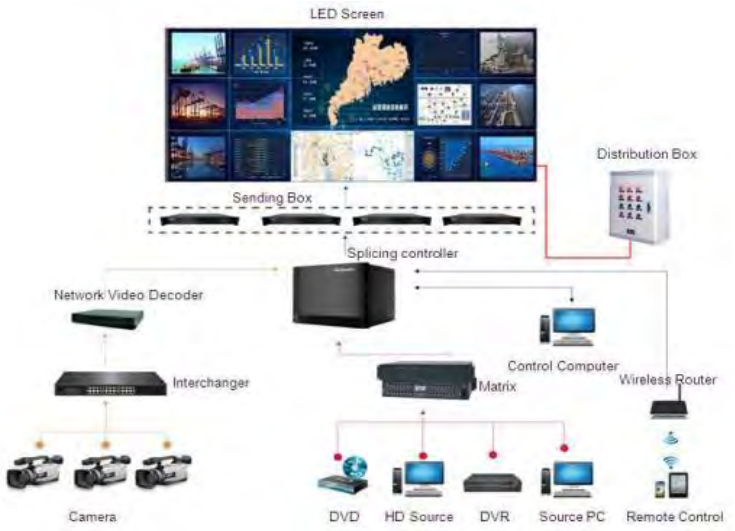


Fig 3-1

3.1 Scope of Application

LUX series is a rental product independently developed for the outdoor and indoor stage market, the product has a standardised, multi-functional features, mainly used for: stage performances, conferences, studios, exhibitions and other scenarios

3.2.1 Specification

■ The equipment parameters of fine-pitch LED LUX series unit box are shown in Table 1-5.

Name		LA15	LA19	LA26	LA29	LA39
Module Composition	Pixel Structure	SMD(1010)	SMD(1212)	SMD(1515)	SMD(1010)	SMD(1515)
	Pixel Pitch(mm)	1.56	1.95	2.6	2.976	3.91
	Module Resolution(W×H)	160*160	128*128	96*96	84*84	64*64
	Module Size(mm)	250*250				
Unit Cabinet Composition	Unit Module Composition(W×H)	2*2			2*4	2*4
	Module Resolution(W×H)	320*320	256*256	192*192	168*168 168*336	128*128 128*256
	Unit Size (mm)	500*500*67　500*1000*67				
	Unit Area(m^2)	0.25				
	Unit Weight(kg/unit)	6.9			11.5	
	Pixel Density(pixel/m^2)	409600	262144	**147456**	**112896**	**65536**
Optical Parameters	Point Brightness Correction	Support				
	Single Point Color Correction	Support				
	Brightness of White Balance(nits)	800-1200				
	Color Temperature(K)	7500				
	Horizontal View Angle(°)	160				
	Vertical Viewing Angle(°)	160				
	Distance Deviationof Light Point Center	< 3%				
	Luminance Uniformity	≧98%				
	Chroma Uniformity	±0.003Within Cx,Cy				
	Contrast	10000:1				

Name		LA15	LA19	LA26	LA29	LA39
Electrical Parameter	Peak Power(W/m²)	≤480				
	Average Power(W/m²)	≤180				
	Power Supply Requirement	AC100~240V（50-60Hz）				
	Frame Rate(Hz)	50&60				
	Refresh Rate(Hz)	≥3840				
	Operating Temperature Range(℃)	-10~40				
	Storage Temperature Range(℃)	-20~60				
	Operating Humidity Range(RH)	Operating：10~90%				
	Storage Humidity Range(RH)	Storage：10~90%				
Maintenance	Maintenance Method	Rear/Front				

3.2 .2Specification

■ The equipment parameters of fine-pitch LED LUX series unit box are shown in Table 1-5.

Name		LA290	LA390	LA480	LA590
Module Composition	Pixel Structure	SMD1415	SMD1921	SMD1921	SMD2727
	Pixel Pitch(mm)	2.9	3.91	4.81	5.9
	Module Resolution(W×H)	168*84	128*64	104*52	84*42
	Module Size(mm)	500*250			
Unit Cabinet Composition	Unit Module Composition(W×H)	1*2		1*4	
	Module Resolution(W×H)	168*168 168*336	128*128 128*256	104*104 104*208	84*84 84*168
	Unit Size (mm)	500*500*74		500*1000*74	
	Unit Area(m^2)	0.2025			
	Unit Weight(kg/unit)	6.9		11.5	
	Pixel Density(pixel/m^2)	112896	65536	43264	28224
Optical Parameters	Point Brightness Correction	Support			
	Single Point Color Correction	Support			
	Brightness of White Balance(nits)	800			
	Color Temperature(K)	2000~10000			
	Horizontal View Angle(°)	160			
	Vertical Viewing Angle(°)	160			
	Distance Deviationof Light Point Center	< 3%			
	Luminance Uniformity	≧98%			
	Chroma Uniformity	±0.003Within Cx,Cy			
	Contrast	10000:1			

Name		LA290	LA390	LA480	LA590
Electrical Parameter	Peak Power(W/m²)	≤900			
	Average Power(W/m²)	≤290			
	Power Supply Requirement	AC100~240V（50-60Hz）			
	Frame Rate(Hz)	50&60			
	Refresh Rate(Hz)	≥3840			
	Operating Temperature Range(℃)	-10~40			
	Storage Temperature Range(℃)	-20~60			
	Operating Humidity Range(RH)	Operating：10~90%			
	Storage Humidity Range(RH)	Storage：10~90%			
Maintenance	Maintenance Method	Rear/Front			

Chapter 4 LED Display Control Setting

4.1 Power-on Testing

Before performing control setting on the LED display, confirm that each device is connected correctly.

1) Before turning on the power of the LED display, you must use a multimeter to test the live wire, neutral wire, and ground wire of the AC power supply, in order to ensure they are not conductive with each other.
2) The ground wire must be in reliable contact with the ground, and kept away properly from the live wire. The connected power supply shall be distant from high-power equipment.
3) When the 3-phase and 5-wire system is adopted, the load shall be distributed evenly among the phases to ensure three-phase balance as far as possible.
4) The input voltage must meet the voltage requirements indicated the cabinet rating label.
5) Connect the USB cable provided for the sending box to the USB port on the control PC.
6) Check whether cables for the LED display are connected in accordance with the power cable and signal cable connection diagrams provided for the delivered products.

4.2 Preparation for debugging

4.2.1 Starting the Hardware

Start the control PC Windows system. After the graphics card driver is activated, set graphics card of the control PC to replication mode and confirm that the green indicator of the sending box is blinking normally (blinking once per second).

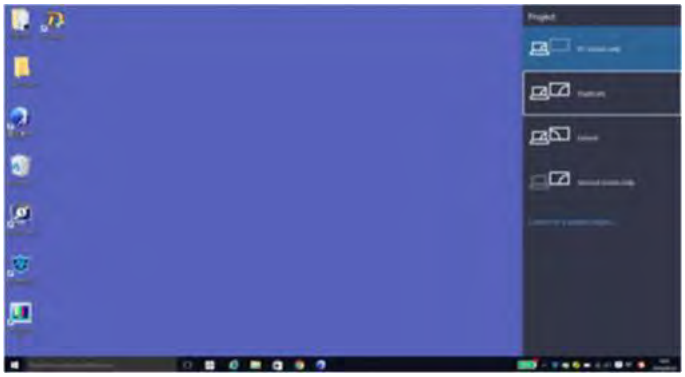


Fig 4-1 Replication Mode

4.2.2Installing the Software

Open the optical disk provided for the delivered products. Install the LED control software LCT stored in the optical disk to the control PC. Then install LCT

Fig 4-2 Software Installation

NOTE: You can follow the software installation wizard to install the software.

4.3 Display Configuration

Run LCT. Make sure that Control System on the main window is 1. Click the User option and select Advanced Login, as shown in Figure 4-3.

Fig 4-3 Main Window of LCT

Enter the initial password “admin”, as shown in Figure 4-4, to go to the advanced user window

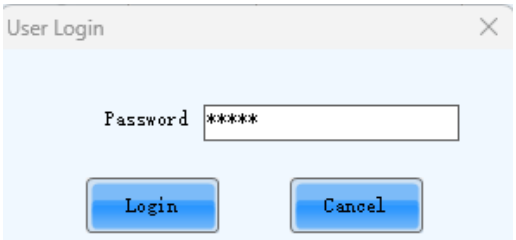


Fig 4-4 User Login

After login, click Screen Config on the main window, as shown in Figure 4-5

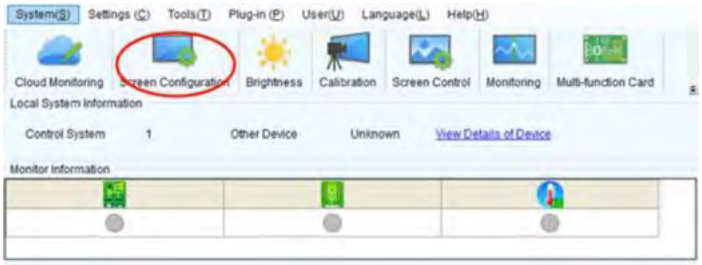


Fig 4-5 Main Window for Advanced User

Click Next, as shown in Figure 4-6:

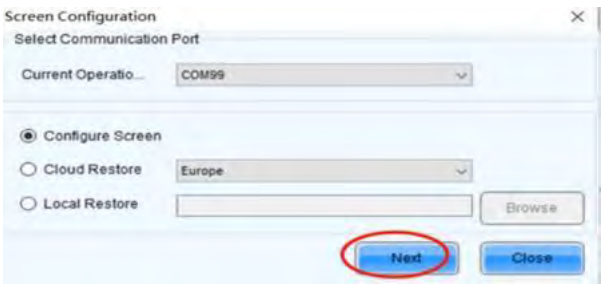


Fig 4-6 Screen Configuration

The following window is displayed. Set Sending Board Resolution (1920×1080 recommended). Set Graphics Output Resolution to the same value as Sending Board Resolution. Then click Save to save the settings.

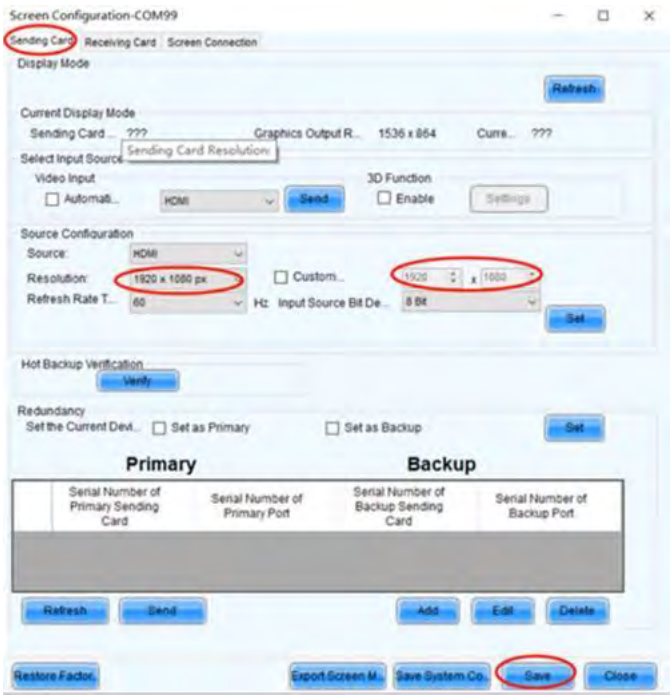


Fig 4-7 Sending Board Configuration

After configuring the parameters on the Sending Board page, click Recaiving Card to display the following window:

1) Click Load From File to load the file xxxx.rcfg stored in the optical disk.

2) Click Send to Receiving Card.

3) After sending, confirm that the loaded picture received by scan board is normal on the screen. Then click Save.

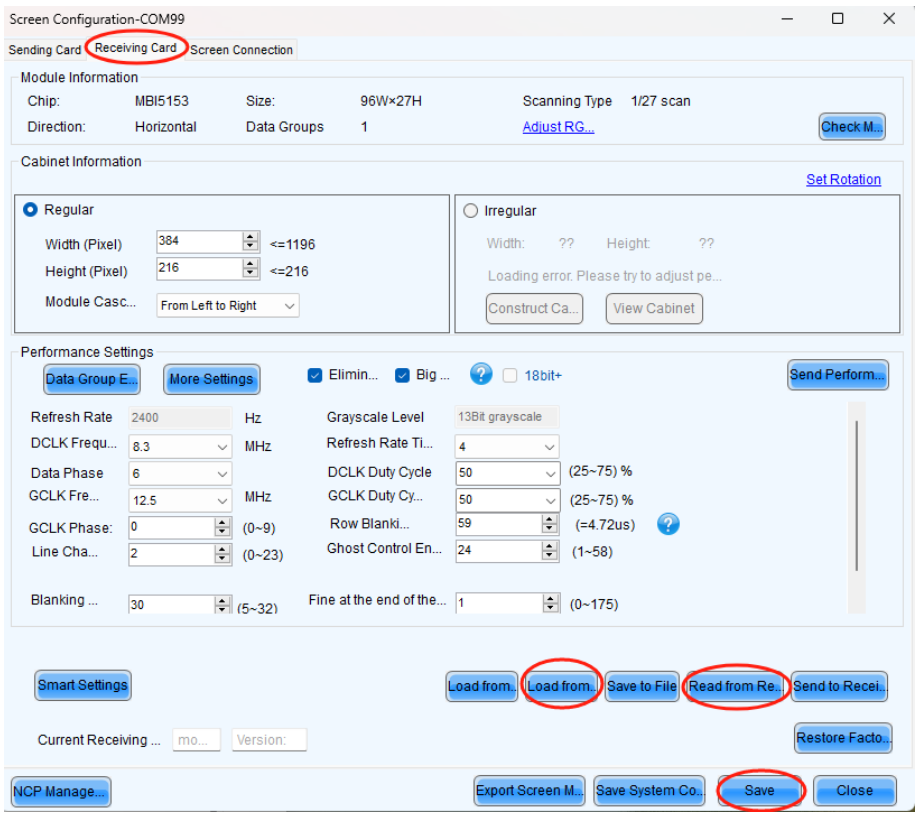


Fig 4-8 Scan Board Configuration

After configuring the parameters on the Scan Board page, click Screen Connection to display the following window:

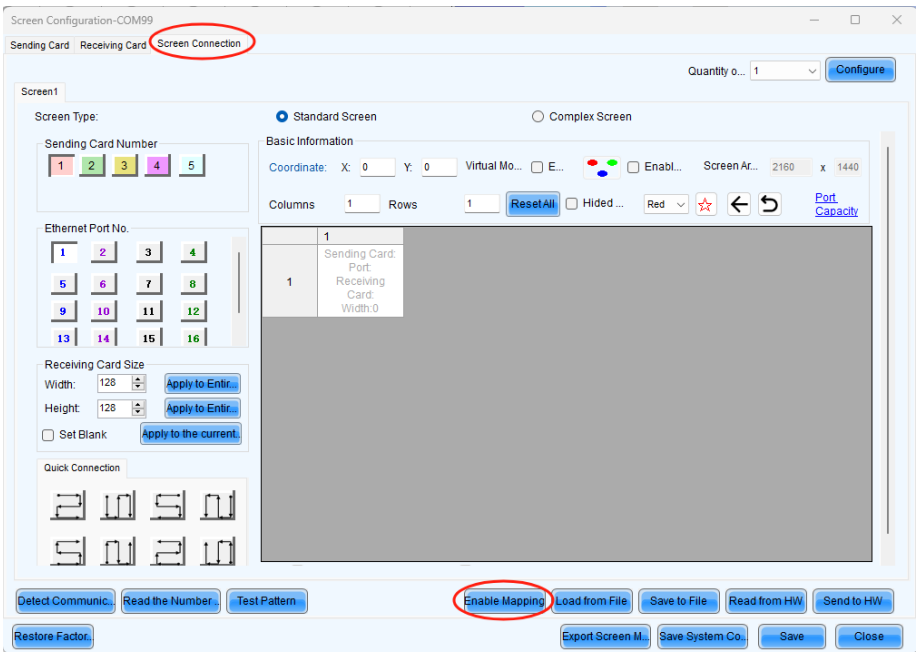


Fig 4-9 Screen Connection

1) Click Read File to load the file xxxx.scr stored in the optical disk, as shown in Figure 3-10.

2) Click Send to HW.

3) After sending, confirm that the screen is complete. Then click Save.

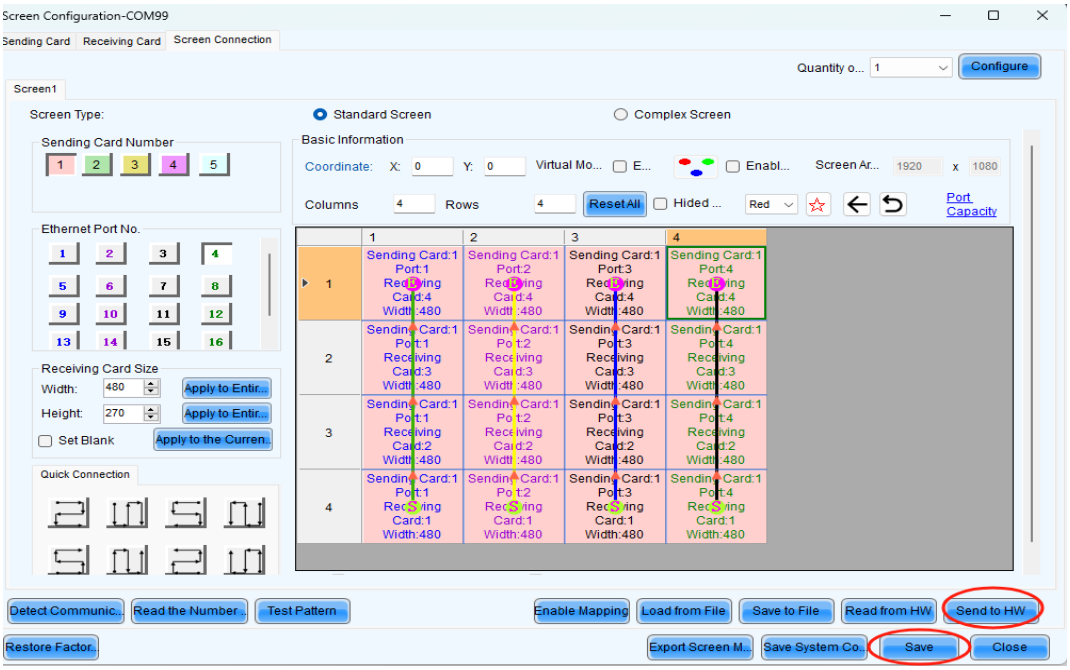


Fig 4-10 Screen Connection with Loaded File

4.4 Brightness Adjustment

On the main window, click **Brightness**, as shown in Figure 3-11, to display the brightness adjustment interface:

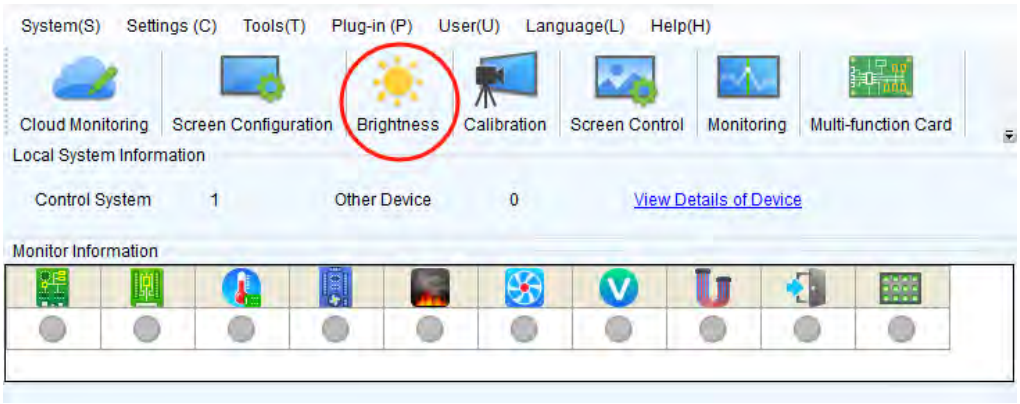


Fig 4-11 Main Window for Advanced User

There are four brightness adjustment modes, namely Manual, Schedule, Auto, and Auto Adjustment by Hardware. After adjustment is finished, click Save to HW to save the adjustment results to the hardware.

1.Manual Adjustment

Select Manual and adjust the brightness by dragging the scroll bar below Brightness Adjustment or directly modifying the brightness value (the maximum value is 255) next to the scroll bar.

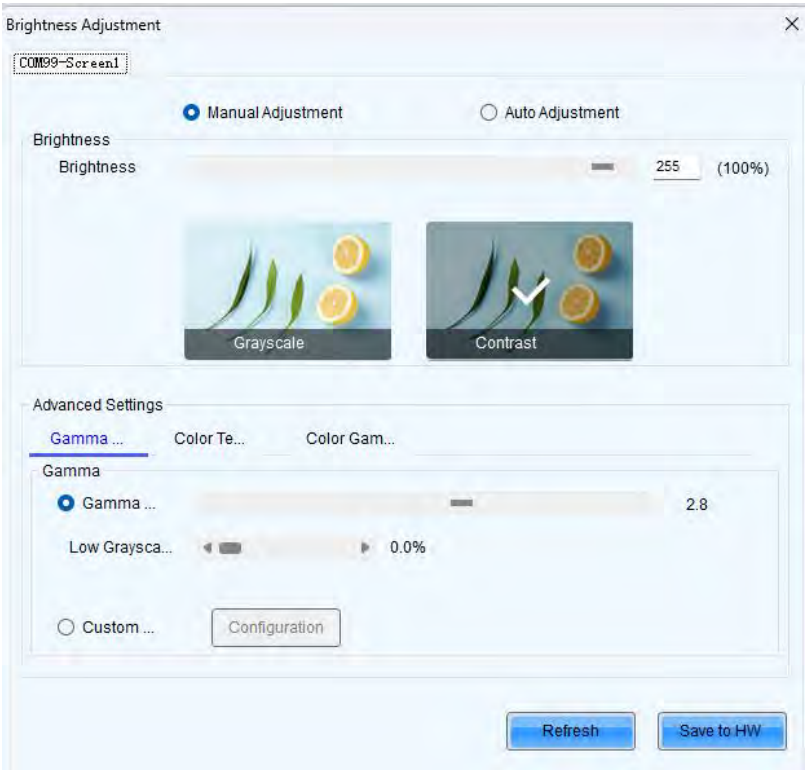


Fig4-12 Manual Adjustment

Display Quality: Includes Soft mode and Enhanced mode. The Soft mode is generally used for indoor LED displays while the Enhanced mode is used for outdoor LED displays.

Gamma Adjustment: Includes Mode A and Mode B. The LED display in Mode A can light up earlier than that in Mode B.

Gain: For chips with current gain function, adjusting the current gain can improve the chip's current output.

RGB brightness: Adjusts the brightness of Red (R), Green (G) or Blue (B) separately.

2.Automatic Adjustment

Schedule, Auto, and Auto Adjustment by Hardware are automatic adjustment modes. Automatic adjustment function is not recommended for indoor LED display products because the indoor environment has stable ambient light and is rarely affected by the ambient brightness. If you really need to use this function, you can configure this function by using the wizard.

4.5 Firmware Program Update

In the Screen Configuration interface, click Program Update. In the popup window, you can either click Cloud Update to match and install the firmware package automatically, or select and load a package manually. Alternatively, you can click Local Update to load and install the firmware package from your computer.

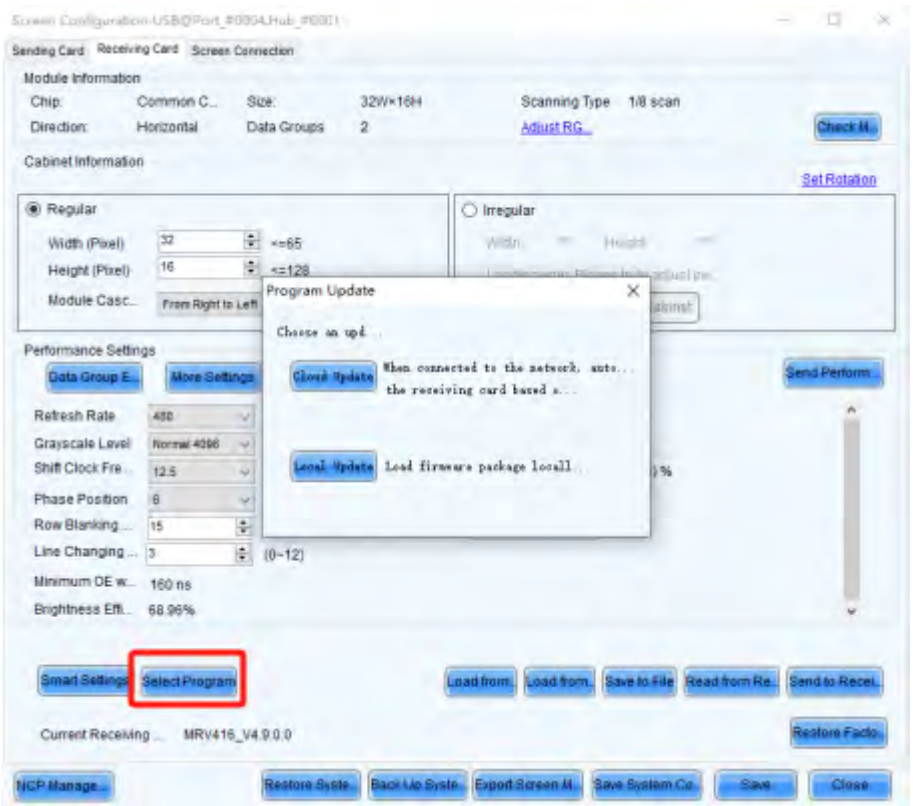


Fig4-13

Operating Procedure

Step 1: On the menu bar, choose User > Advanced Synchronous System User Login. Enter the password and click Login.
The default password is "admin

Step 2 : Type "admin" to open the program loading window as shown in

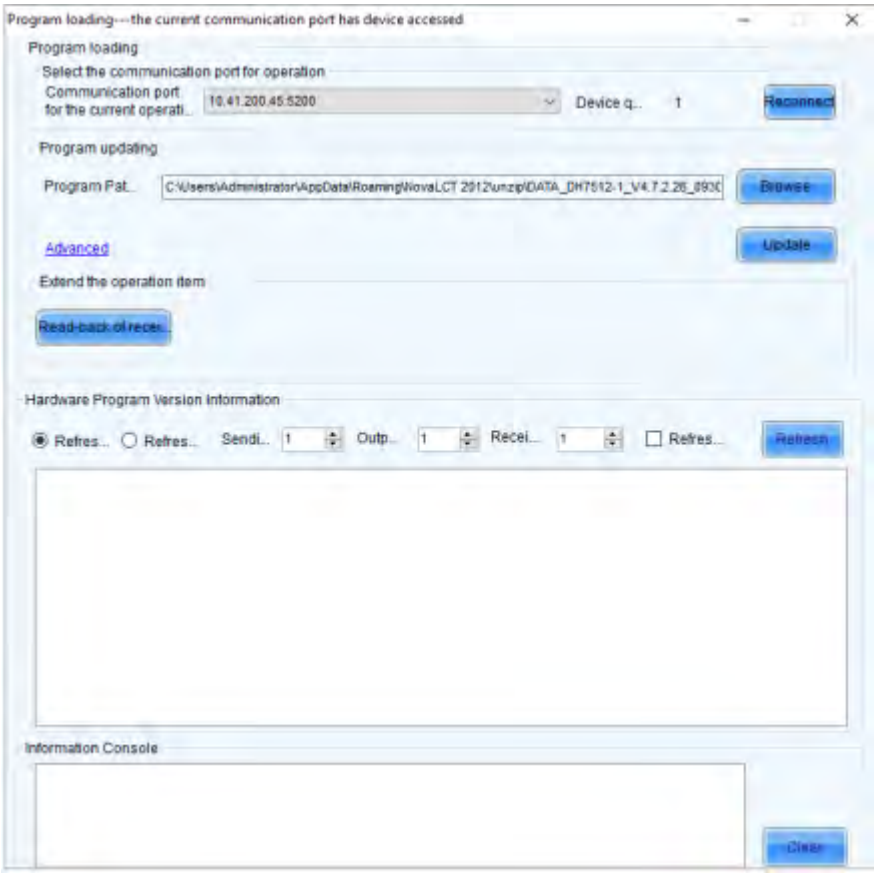


Fig4-14

Step 3: Choose a communication port.
If you need to reconnect the sending card, click Reconnect.

Step 4: Specify the viewing range and click Refresh to view the current program version of the hardware.
□ **Refresh All:** View the program versions of all the sending cards and receiving cards.
□ **Refresh Specified:** View the program versions of the specified sending cards and receiving cards.
If the module has an MCU, select Refresh Module MCU to view the MCU version.

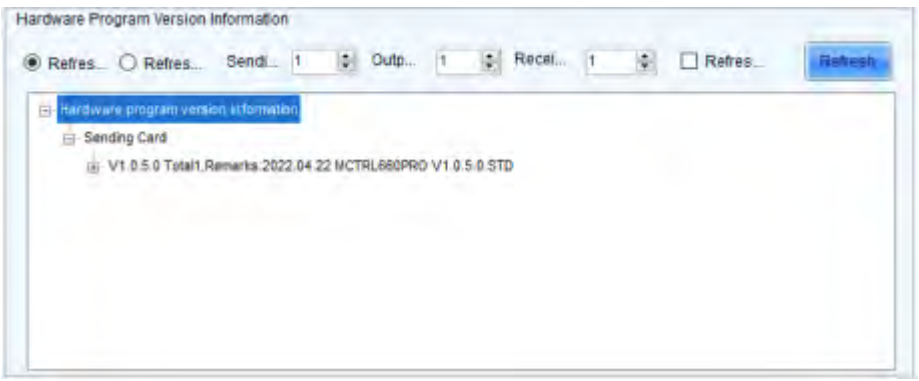


Fig4-15

Step 5: Click Browse, select a program package, and click OK. If you select an integrated firmware package for the receiving card (which includes firmware for multiple receiving cards), follow these steps:

In the Update Program interface, select the appropriate driver IC and decoding method based on your actual requirements, then either match the package file automatically or choose it manually, and click Update.

- Auto match: Select Auto Match, and the software will automatically select the appropriate package file based on the receiving card model, and the specified driver IC and decoding method.
- Manual selection: Unselect the Auto Match, and manually choose the required package file from the list

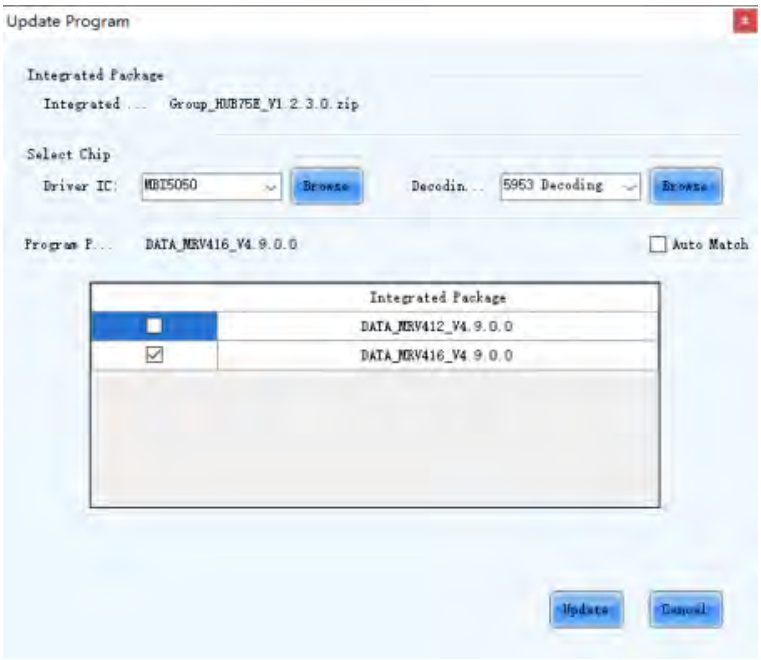


Fig4-16

Step 6: Click Advanced, select the items to be updated, and click OK.

Step 7 : Click Update.

Step 8: Set to update the programs of all receiving cards or the specified receiving card, and then click OK.

Fig4-17

Step 9: After the programs are updated successfully, click OK.

4.6 Send calibration data to the receiver card

Step 1: Click or choose Tools > Calibration from the menu bar.

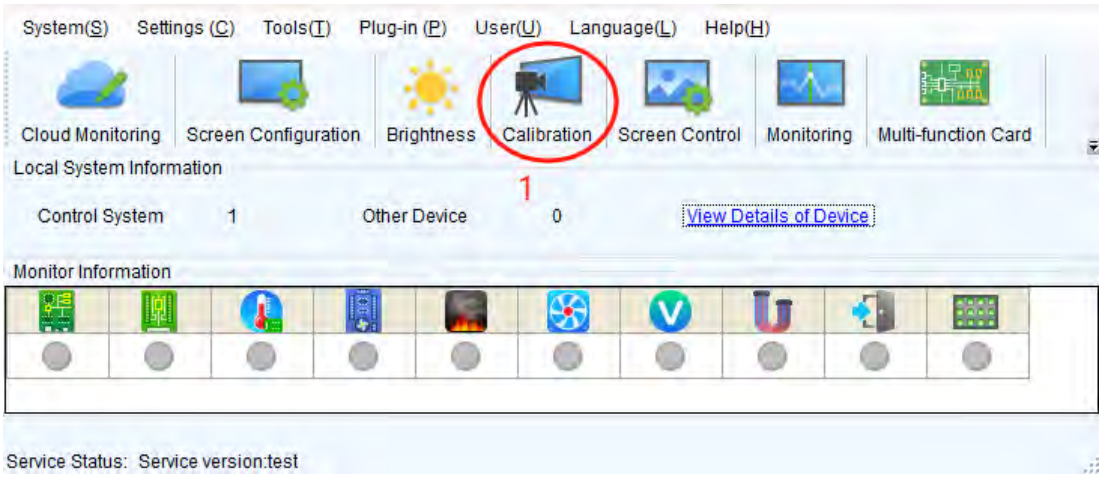


Fig4-18

Step 2: Select the Single-Screen Mode tab.

Step 3: Select the Manage Coefficients tab

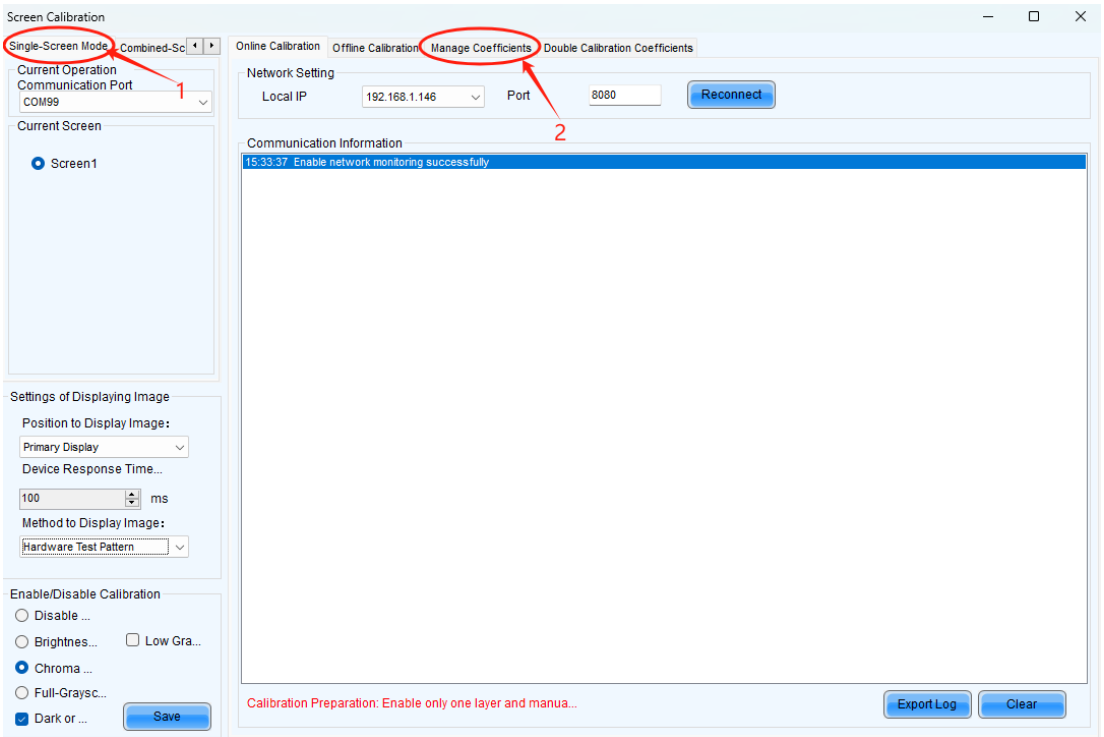


Fig4-19

Step 4: Click on the light board flash as shown

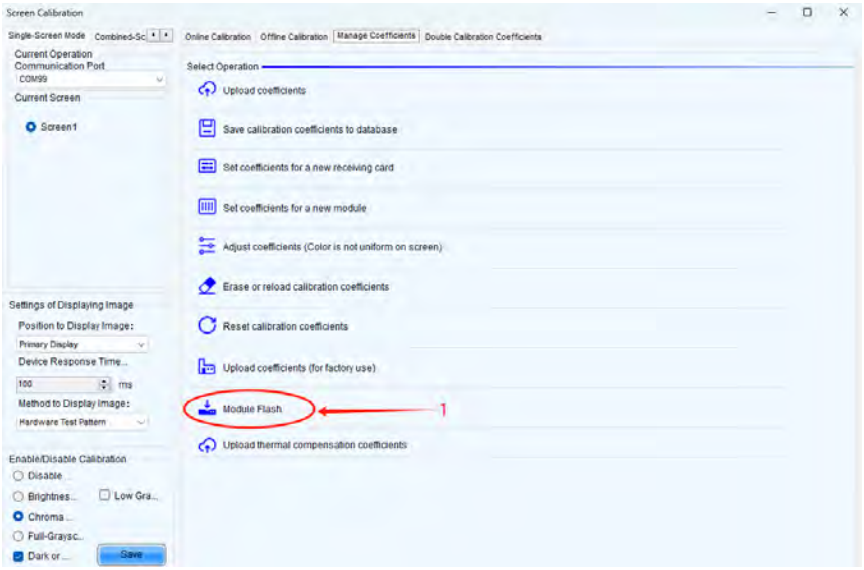


Fig4-20

Step 5: Click Flash Calibration, click View Lamp Board Calibration Factors, click Save Calibration Factors to Receiver Card, and click Cure.

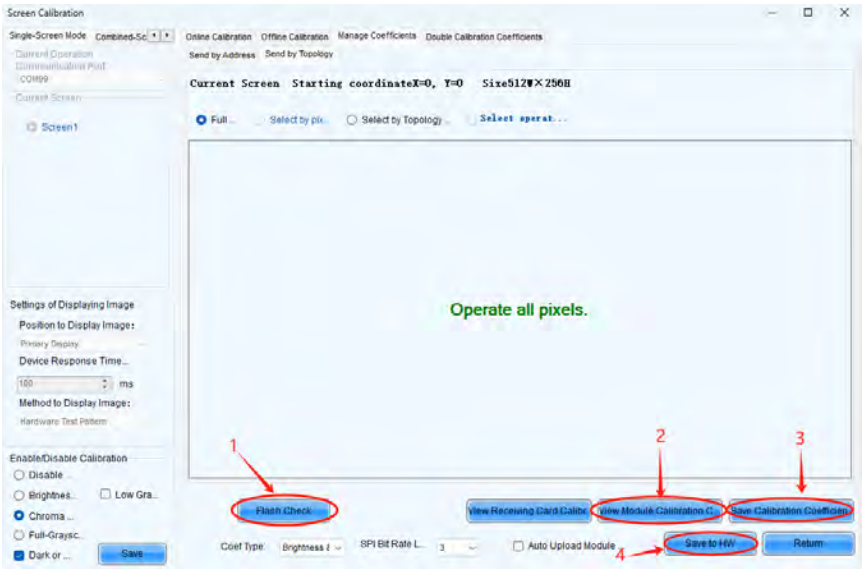


Fig4-21

4.7Image Booster Engine

Step 1: Open as shown Image Booster Engine

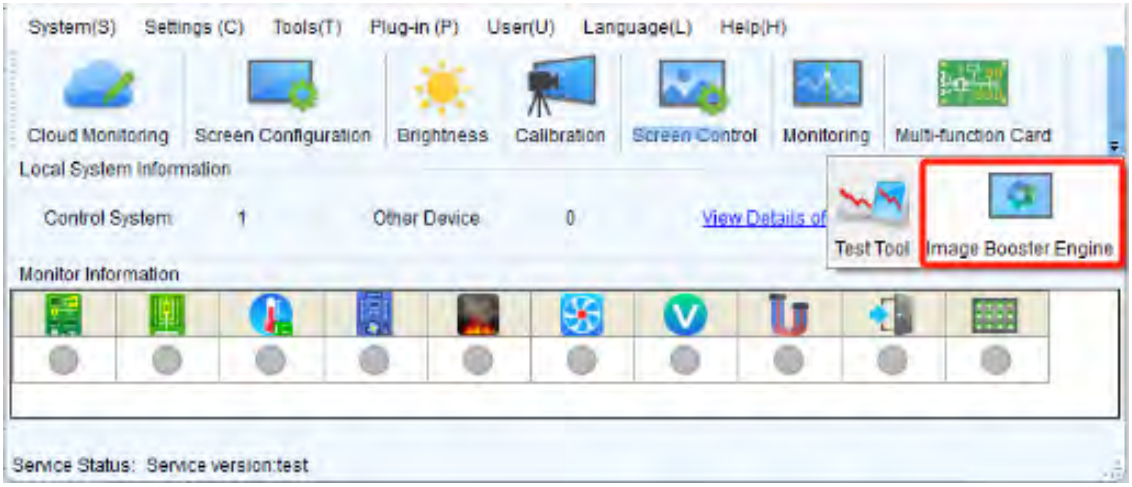


Fig4-22

Step 2: Colorimeter Connect

Step 3: Check the Hz value

Step 4: Automatic acquisition settings

Step 5: Start

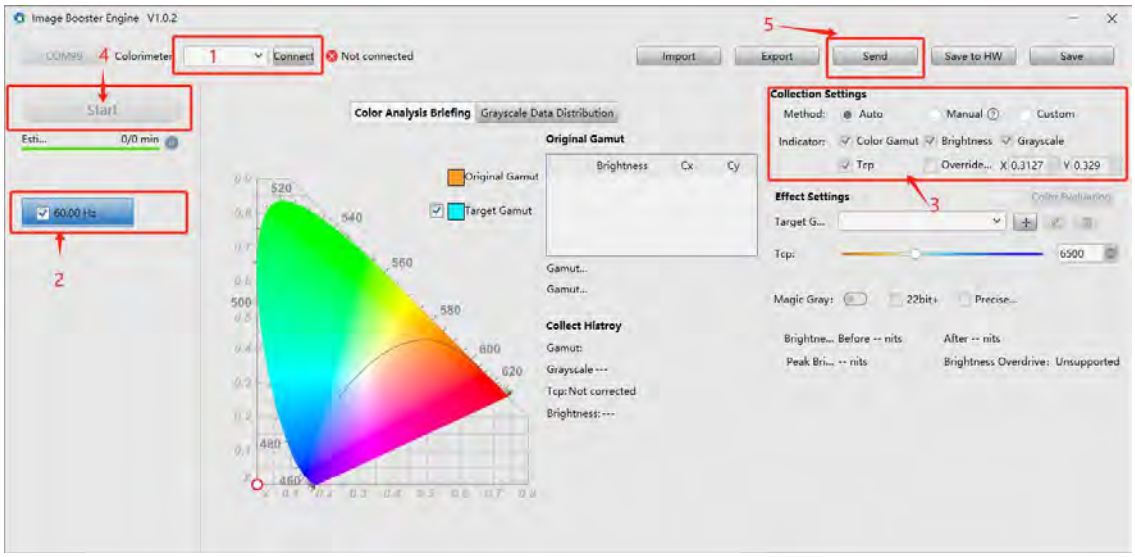


Fig4-23

4.8 Screen Play

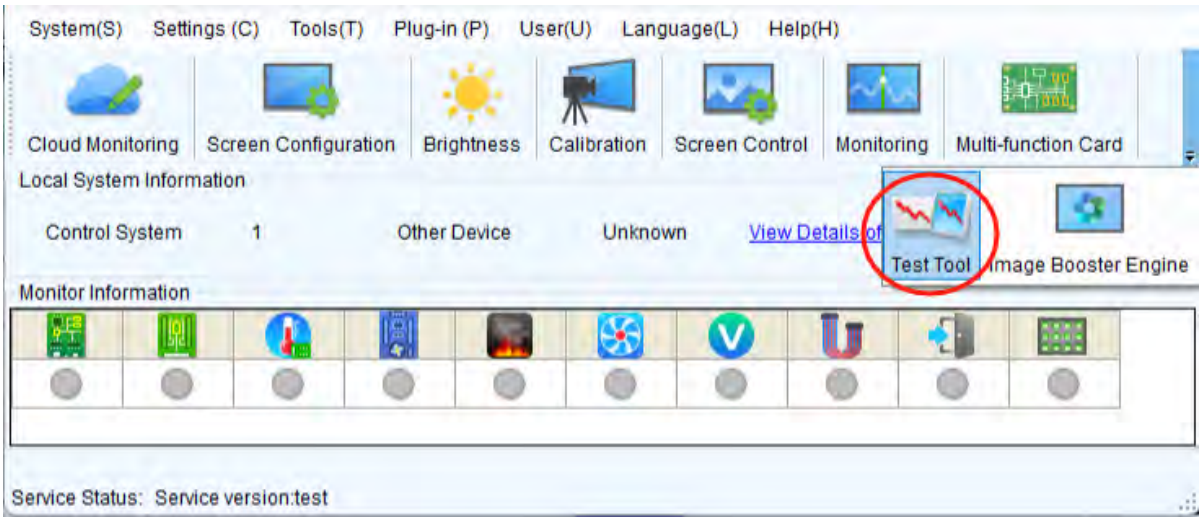


Fig 4-24 Test Tool

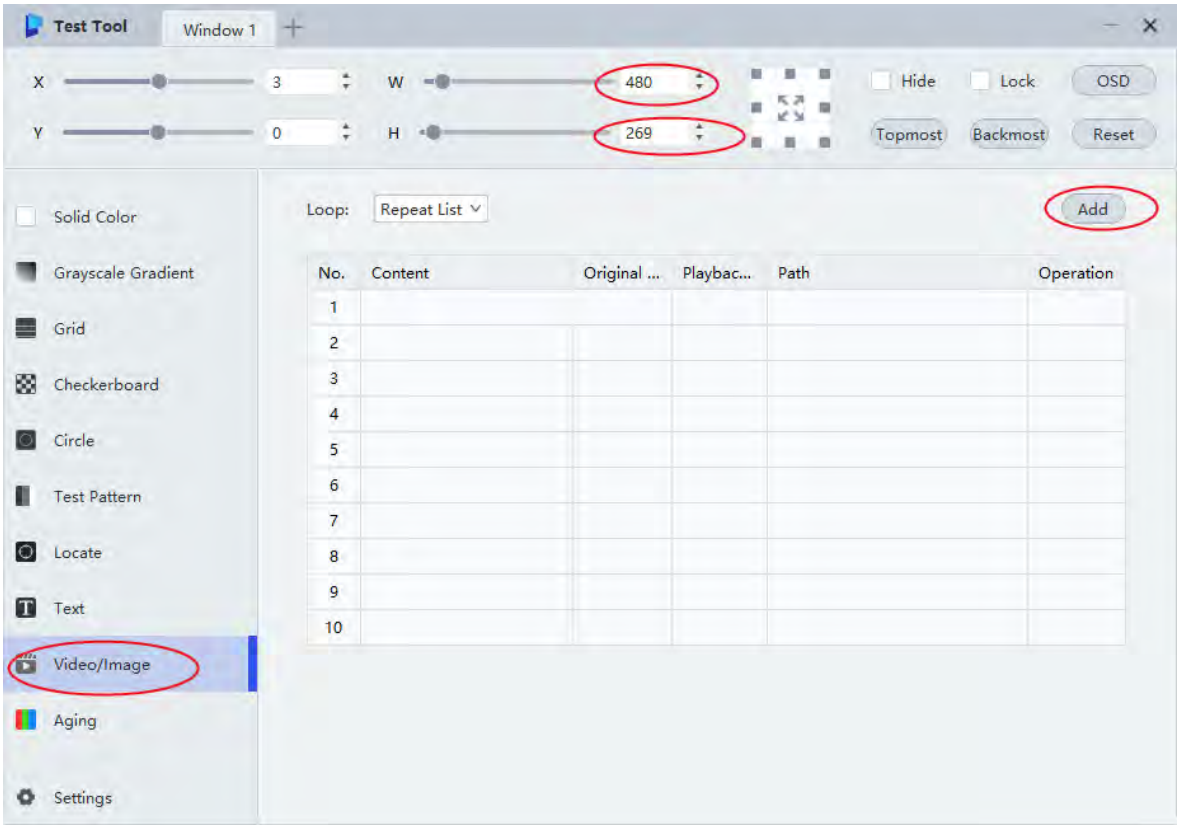
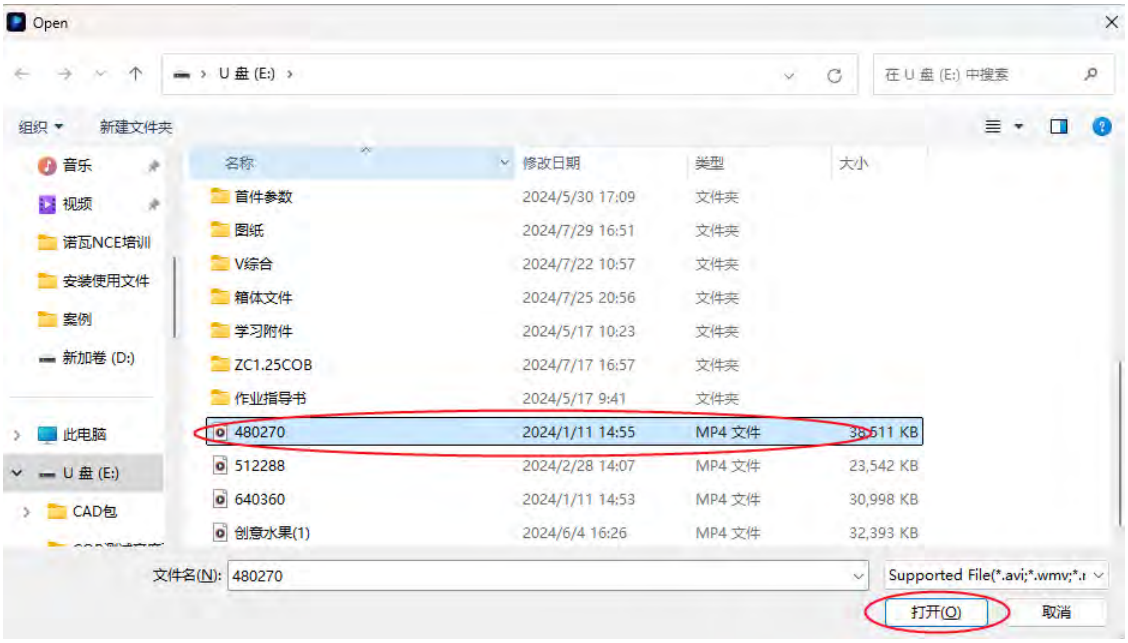


Fig 4-25Video/Image Settings W/H Add

Step 3：　Add video source



Step 4： as shown

Fig 4-26

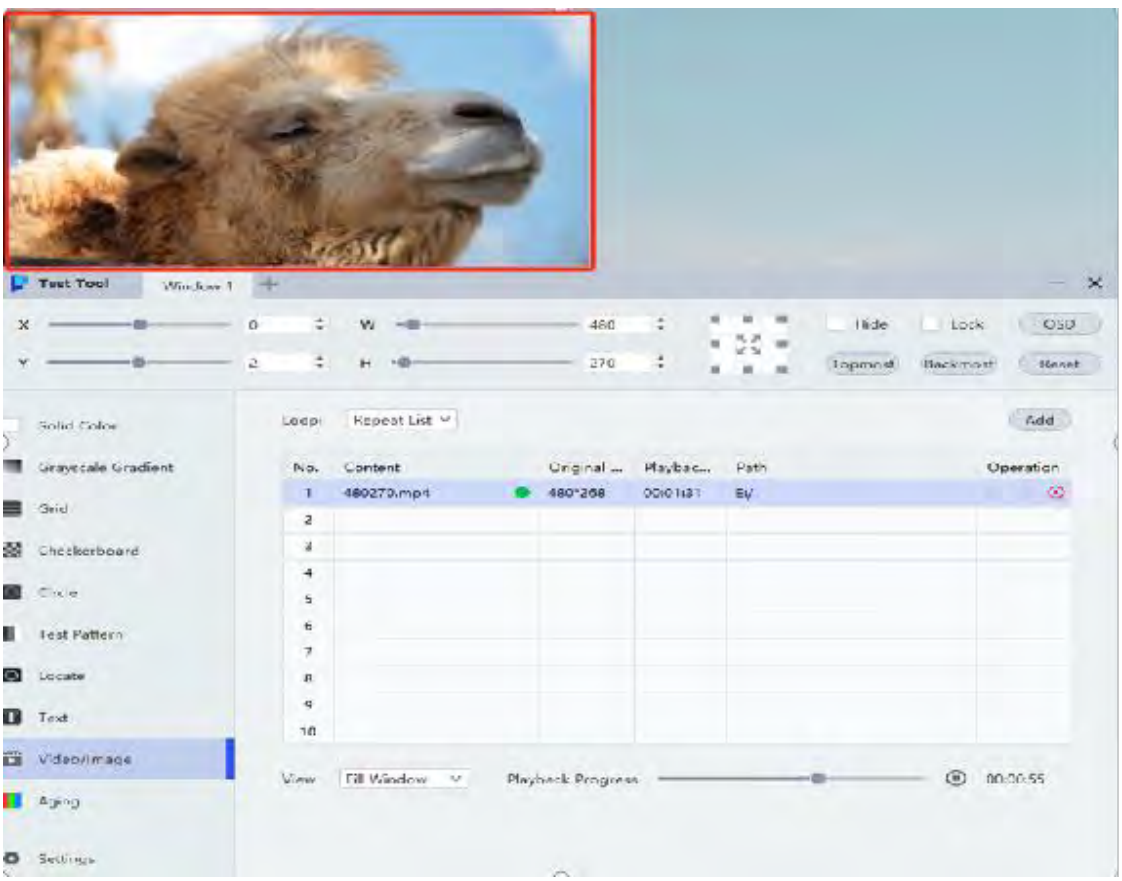


Fig 4-27

Chapter 5.Hardware Troubleshooting Analysis:

5.1.Module Failure:

Fault type	fault description	Phenomena and solutions	rationale
LED light	dead lamp	Replacement of modules	Dead or bad soldering
LED Pixel Block	Pixel block black or missing color	Replacing an IC or Module	Driver IC/resistor poorly soldered or not working
LED Modules	One or more LED modules in a row are black or faulty	Check the connection of the module to the adapter board	Not connected or poorly connected

Fig 5-1

In the case of the above defects, it is recommended to replace the spare module as a matter of priority. If the module still fails after replacement, it is recommended to check and replace the connecting board and the firmware of the receiver card.

Fig 5-2

Replace the problematic module, check whether the lamp beads have poor contact or dead lights, black blocks, colour blocks and other problems, check whether the driver IC is false welding, welding or replacement if it does not work (if you can't solve the problem on the spot, please contact our technicians in time)

5.2.Power failure：

Fault type	fault description	Phenomena and solutions	rationale
Module Power Supply	The entire module is black	Check the power connection of the module	Poor power-to-module connection
power supply	The entire module is black	Replacing a faulty power supply	There's a problem with the power supply that powers the receiver card.
power supply	Several neighboring module areas are black	Replacing a faulty power supply	There's a problem with the power supply that powers the receiver card.

Fig 5-3

Prioritise checking the power cord for poor contact

Fig 5-4

Several adjacent module areas are black, check whether the receiver card signal light is normal, use a test pen to check the power supply to the output part, if there is no voltage to replace the faulty power supply

5.3.data transmission fault:

Fault type	fault description	Phenomena and solutions	rationale
fiber optics	black screen	Check fiber optic connections and data I/O sequence	Fiber optic cable damage or data I/O errors
CAT5e	Black screen of the whole column of the display	Check the network cable between the sending box and the first scan card	Bad connection or faulty RJ45
CAT5e	Black screen of one of the modules in a column	Check RJ45 cables between modules	Bad connection or faulty RJ45
CAT5e	All modules are lit, but the order of each column is not correct	Check and correct the RJ45 cable connection order	Incorrect connection sequence

Fig 5-5

Fig 5-5

According to whether the signal lamp is normal, if the display is not normal according to the above fault description one by one to investigate

5.4 Regular Maintenance

- Ensure that the LED display is well ventilated, dry and operating at the right temperature.
- Regularly check the internal components of the LED display to ensure that the cables are connected correctly, the power supply is working properly, the ground wire connection is not damaged, and the lightning arrester is operating properly.
- Regularly wipe the dust on the surface of the LED module with an anti-static soft brush to keep the surface of the LED display clean and avoid brightness differences between LED modules.
- Precautions for use.
- Turn on the power of the LED display first, then turn on the power of the remote LED display.
- Before shutting down the display system, turn off the power of the LED display first, then turn off the computer.
- It is best to turn off the LED display when editing a video playlist.
- In case of a fault, turn off the power of the LED display first, and then contact our technical service department for technical support.

■ EASY FRONT SERVICE DESIGN

The cabinet and the module are packed separately, the cabinet is installed first and then the module, and the cabinet and the module are connected through pin headers. Intelligent adjustment: The unique 6-axis alignment function ensures that the video wall is perfectly aligned and seamless, and the screen flatness tolerance is less than 0.1mm

The final installation of the product requires steel structure bracket fixation, and professional front maintenance tools are used to disassemble the LED module.