newline

DV Element Series User Manual

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

Precautions for Installation and Use

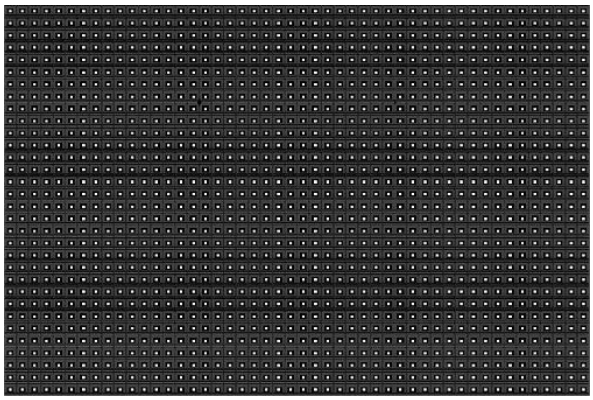
- Do not install devices in flammable and explosive environments.
- The temperature and humidity at the installation site must be within normal operating ranges.
- Keep the device near vents to prevent heat accumulation.
- You are advised to leave space around the device for heat dissipation.
- Do not 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.
- 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.

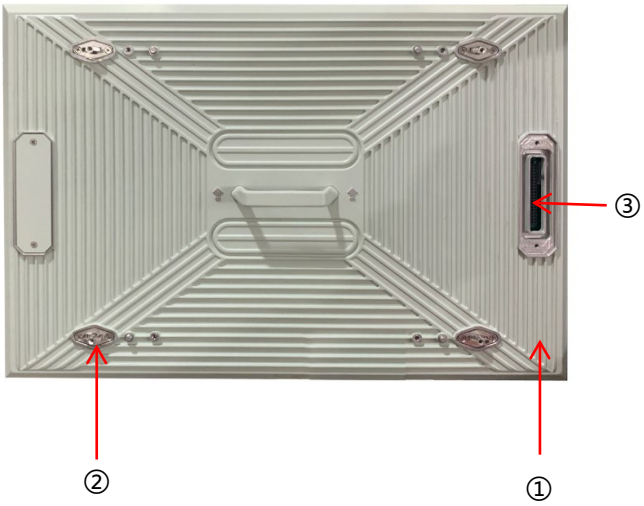
- In order to ensure the stability and service life of the LED, the module working surface temperature should not exceed 60°C, storage temperature should not exceed 60°C, otherwise necessary cooling measures must be taken.
- Special switching power supply for LED display must be used. The module adopts 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

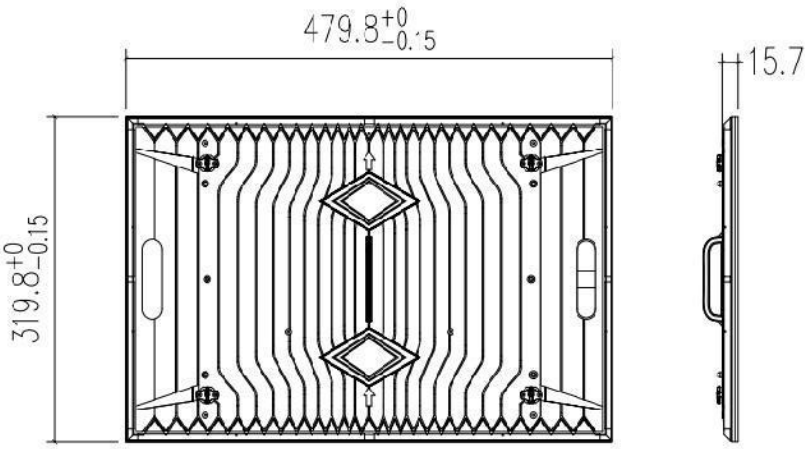
- The figures in this document are for reference only. The actual product shall prevail.
- We do our best to ensure that the information in this manual is correct. Information is subject to change without prior notice due to upgrades or other reasons.
- This manual can be used as a guide for the use 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.

1.1 Module Appearance





1.2.1 Module Drawings：

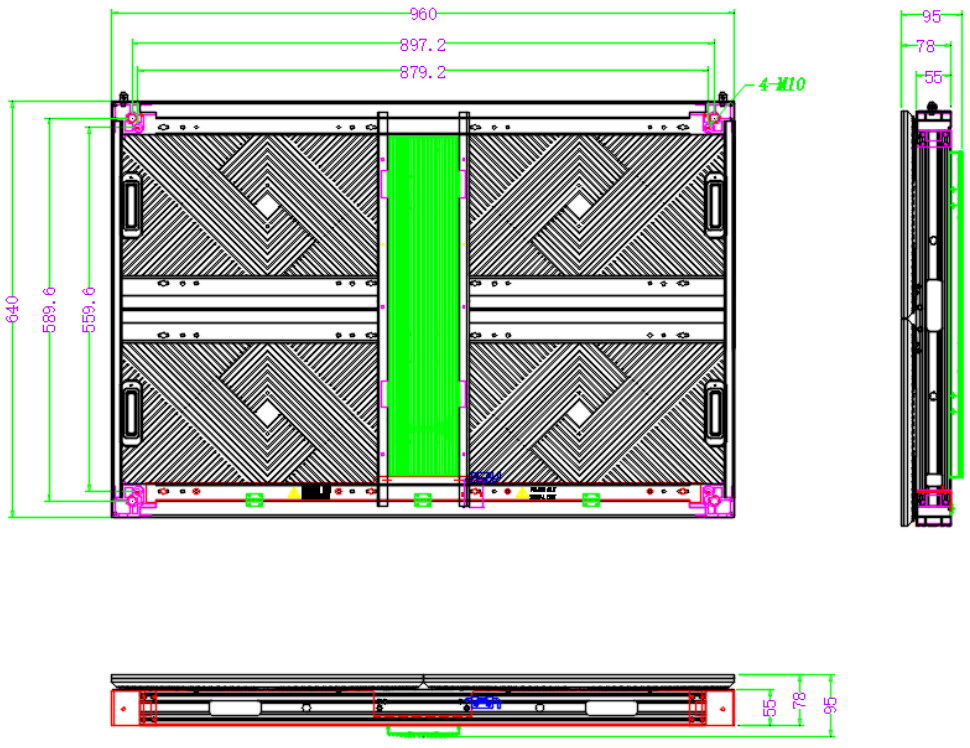


■ **The module structure is shown in the figure below:**

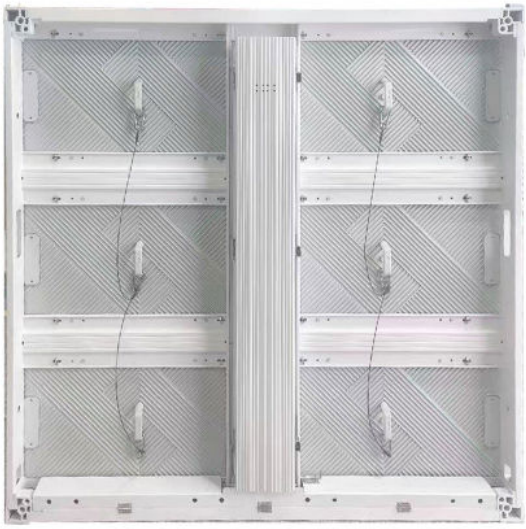
No.	Component Name
①	Bottom Shell
②	Module Locking Clip
③	Module Power & Signal Connector

1.3.1 Enclosure Appearance: 960*640

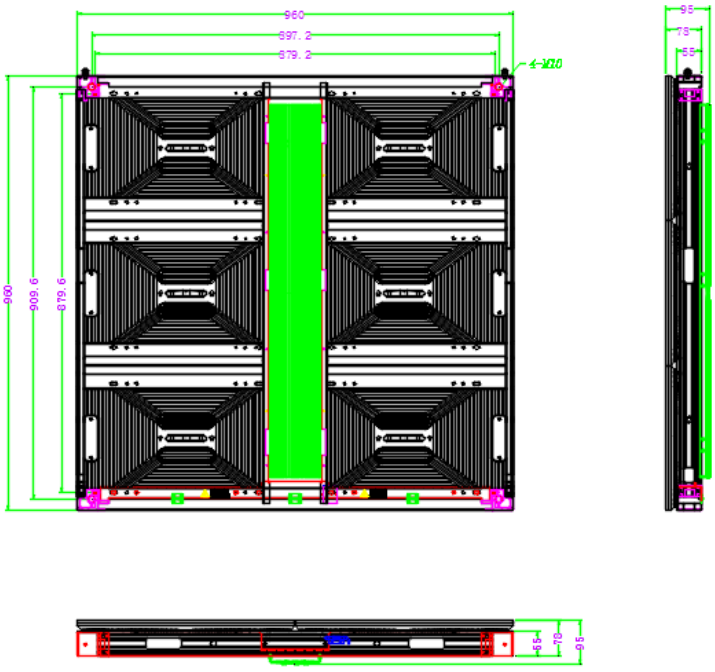
1.3.2 Enclosure Drawings:



1.4.1 Enclosure Appearance: 960*960

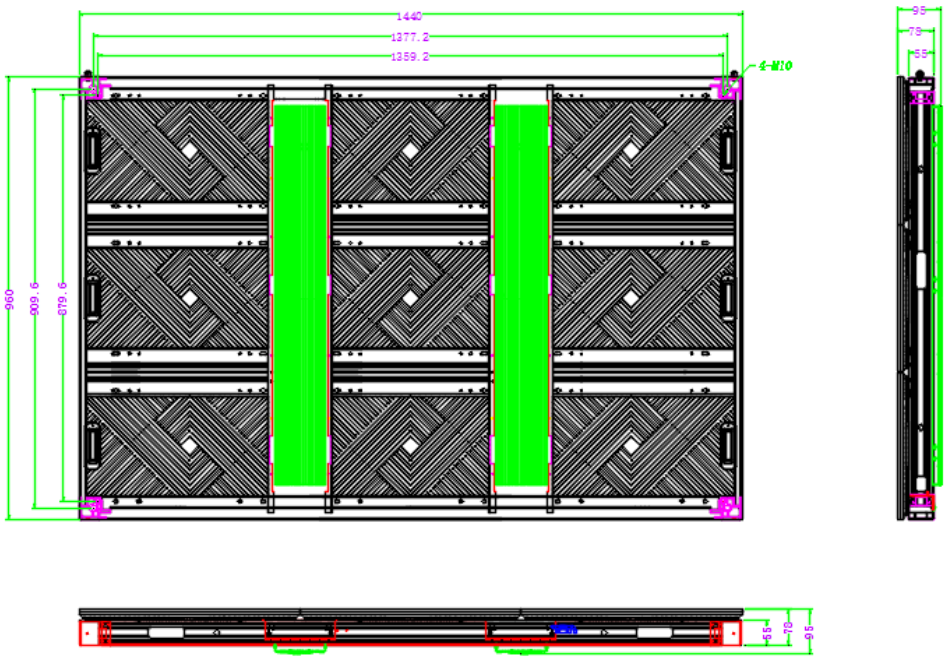


1.4.2 Enclosure Drawings:



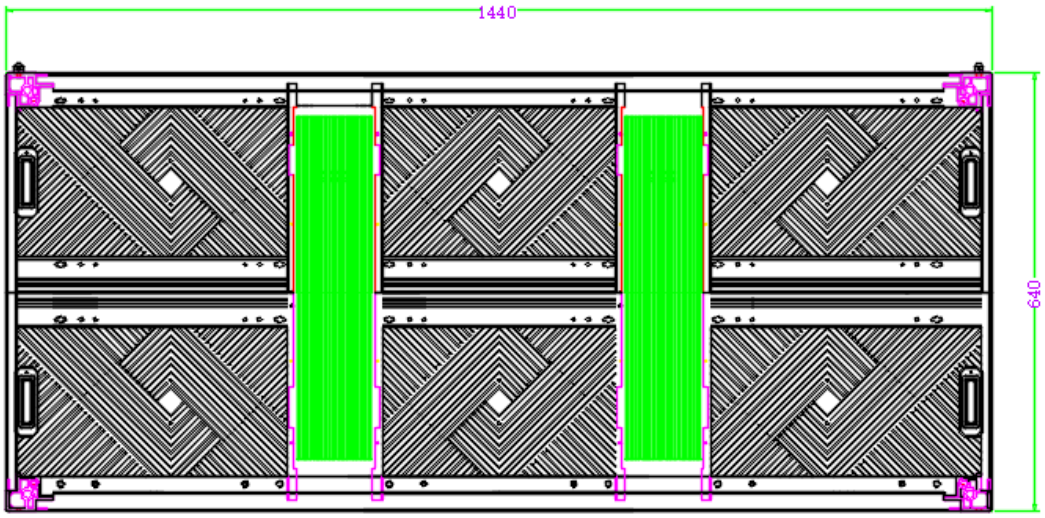
1.5.1 Enclosure Appearance: 1440*940

1.5.2 Enclosure Drawings:

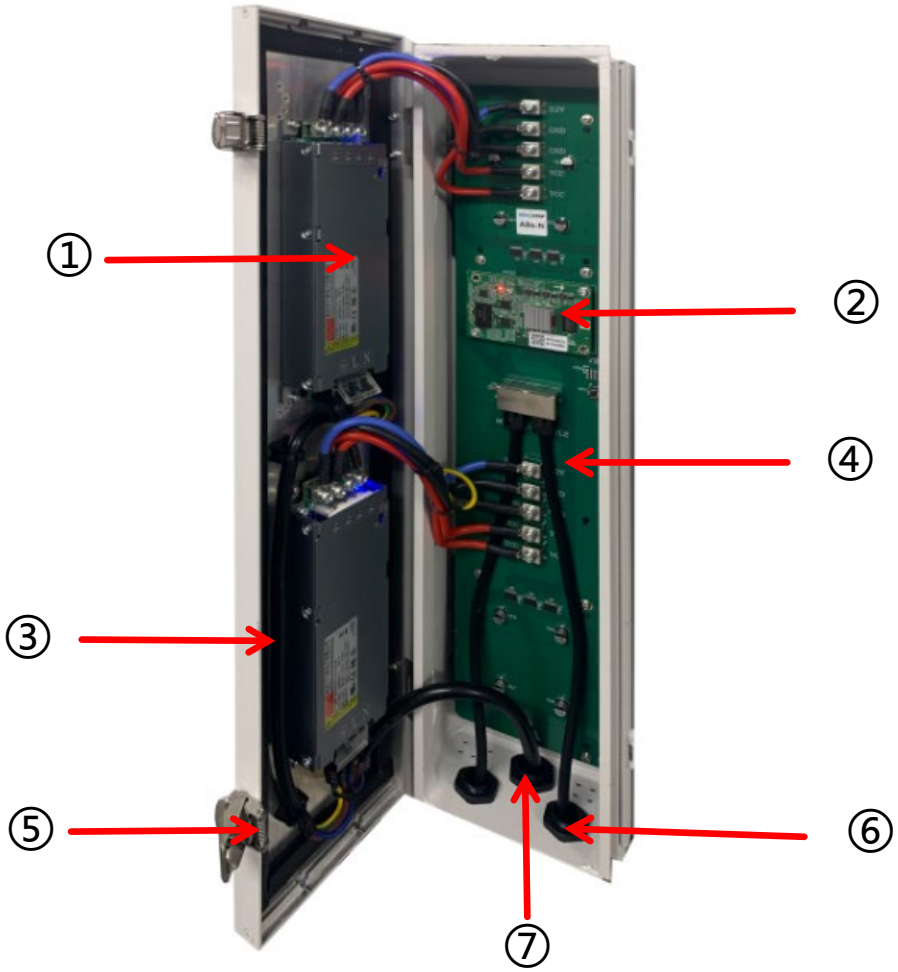


1.6.1 Enclosure Appearance: 1440*640

1.6.2 Enclosure Drawings:



1.7 Enclosure Control Box



■ **The enclosure control box structure is illustrated in the diagram below:**

No.	Component Name
①	Power Supply
②	Receiving Card
③	Waterproof rubber ring
④	HUB Board
⑤	Lock
⑥	Signal line interface
⑦	Power cord interface

2.1 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

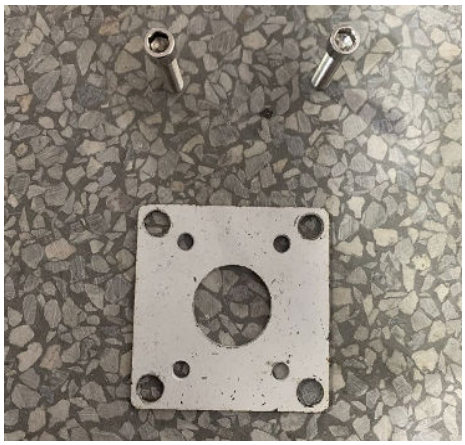
connection piece

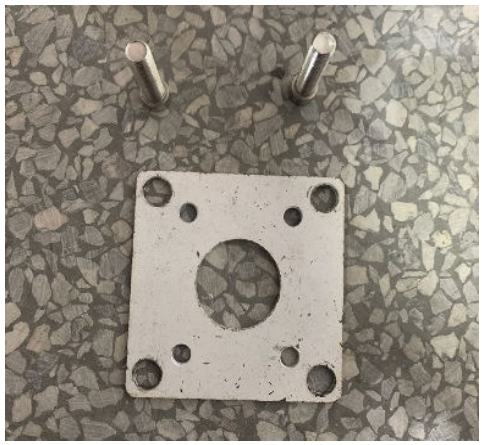
gradienter

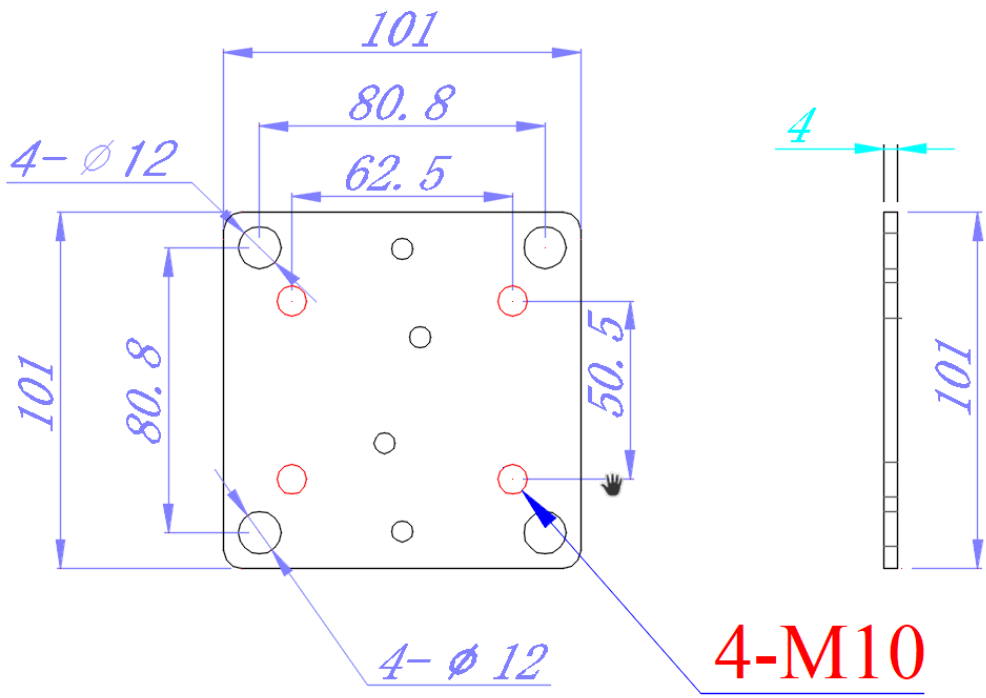
Gloves

Fig 2-2

2.2 Rear Connector Tab:







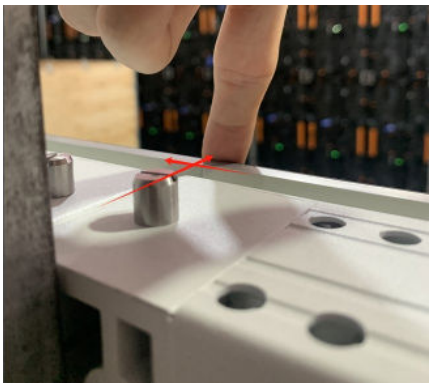
2.3 Ground Installation Procedure:

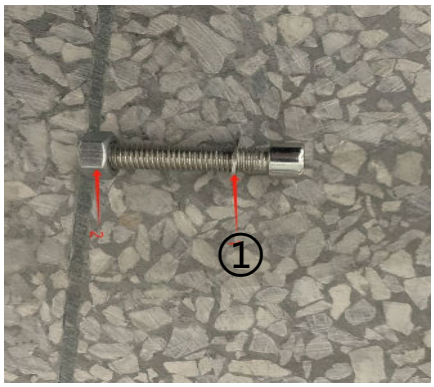
The flatness tolerance of the Element series enclosure spliced display screen surface must be within ±0.1 mm and remain perpendicular to the reference plane.

Installation Procedure:

Adjust the first row of enclosures so that the centers of the two enclosures align flush with the square tube.

1.Use the rear connector tab and 4×12mm hex socket screws to secure the first row of enclosures onto the square tubing. After fastening, proceed to make fine adjustments.

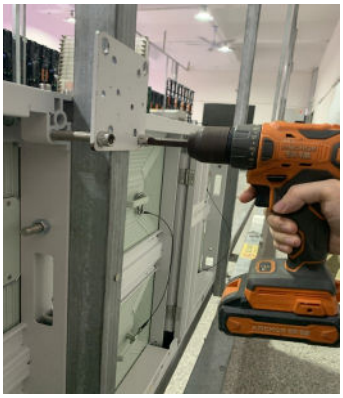




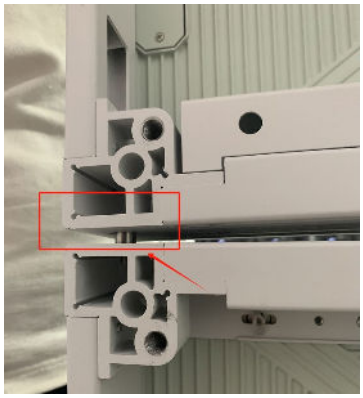
2.Check the enclosure surface by touch to ensure flatness within a tolerance of ±0.1 mm. There should be no misalignment, protrusions, or depressions between enclosures

3.Use connector screws, placing marker point No. 1 near the nut head to ensure the enclosure is secured more firmly during installation.

4.After confirming that the connection between enclosures is level, tighten the screws. Hold the enclosure steady with your left hand and use your right hand to tighten the screws, as shown in the illustration

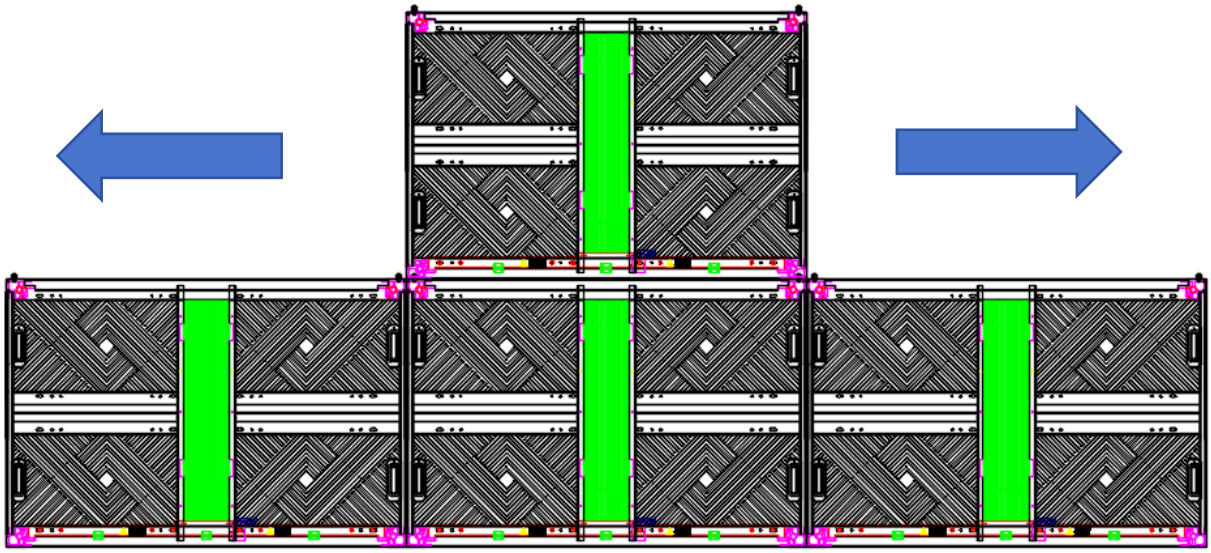


5-1

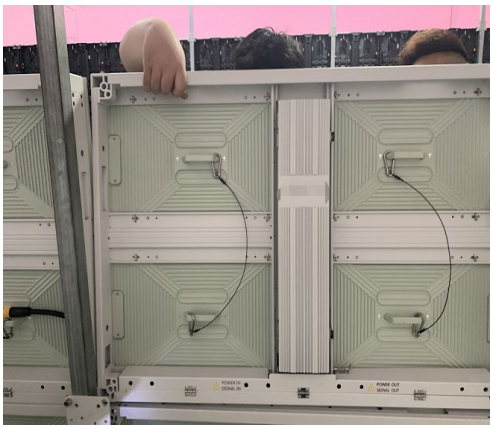


5-2

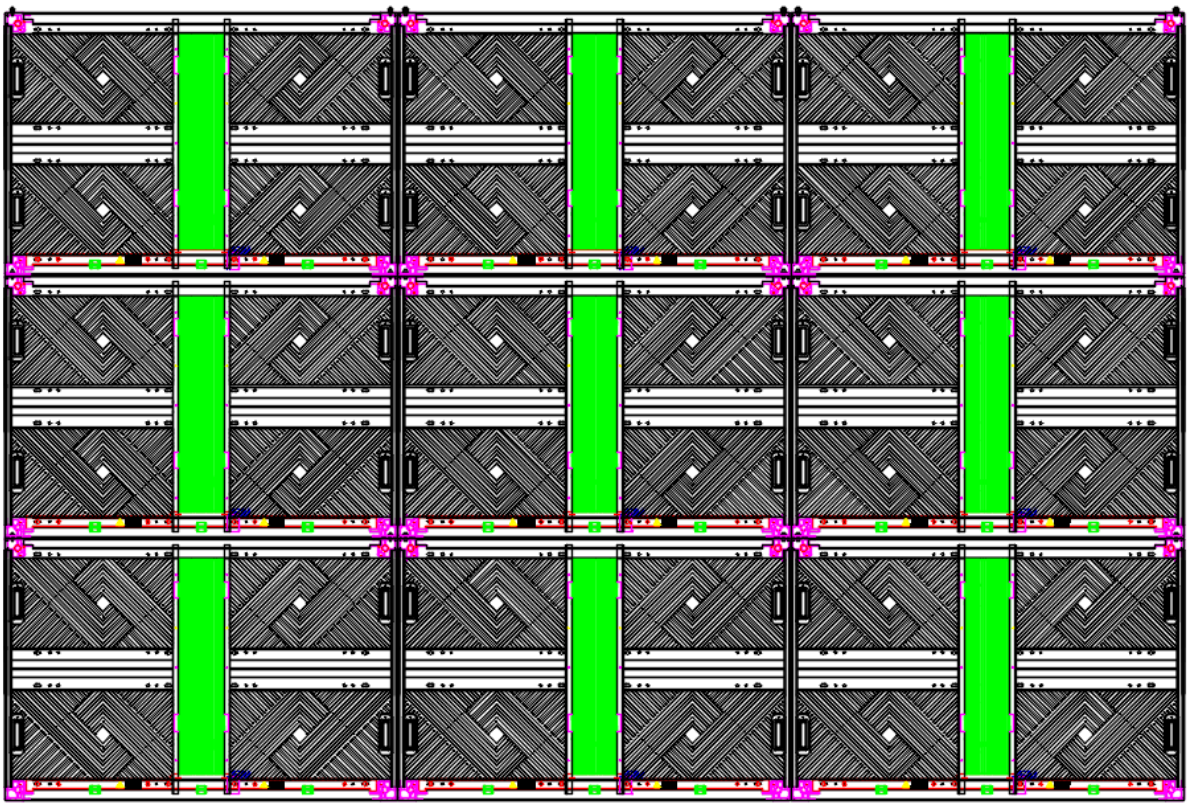
5.After securely installing and fixing the first row of enclosures, continue stacking additional enclosures upward as shown in Figure 5-2. There are positioning pins between the enclosures vertically; confirming their alignment facilitates more efficient installation



6.For multiple enclosures, secure them starting from the center, then proceed to install the left and right sides.



7.While stacking upward, continue tightening the screws on the rear connector tabs and the screws connecting the enclosures to adjust and secure the assembly.



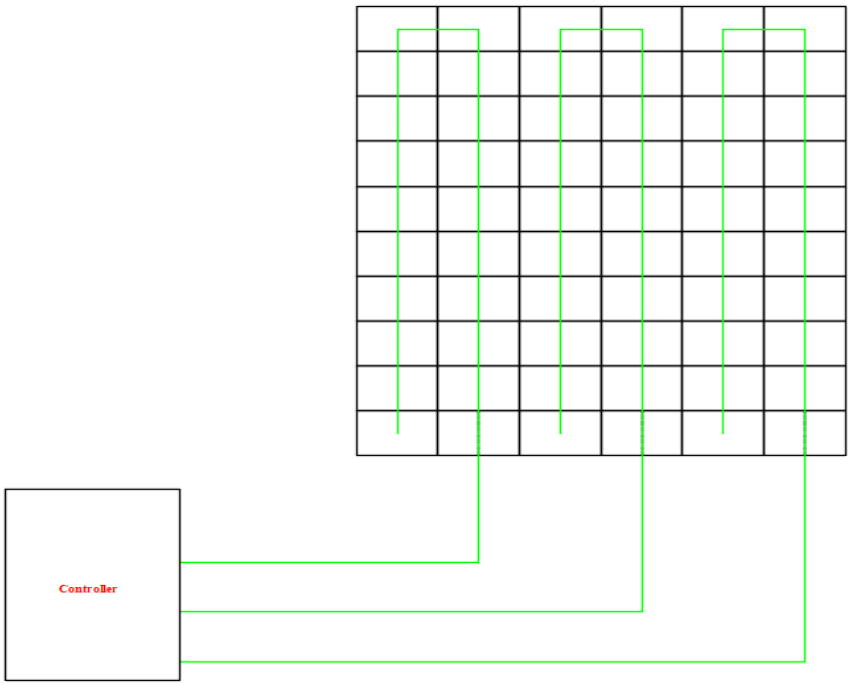
8.Align the holes and connect the power cables.

9.Align the holes and connect the signal cables.

10.Status After Signal and Power Cable Connection

2.4.1 Signal Cable Connection

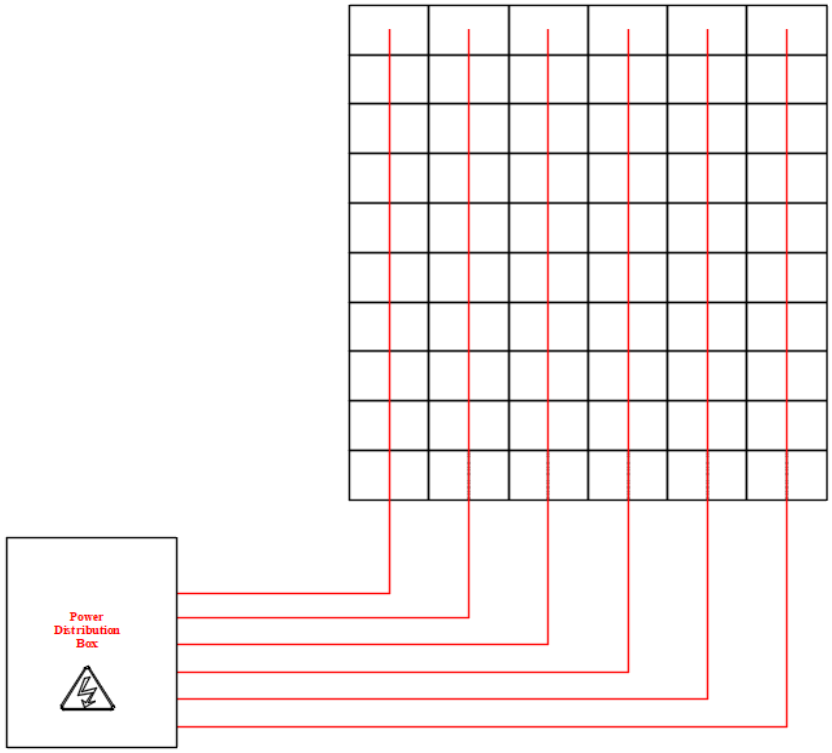
The signal cables shall be connected according to the wiring diagram provided with the project deliverables.



P4 Signal Cable Connection Diagram

2.4.2 Power Cable Connection

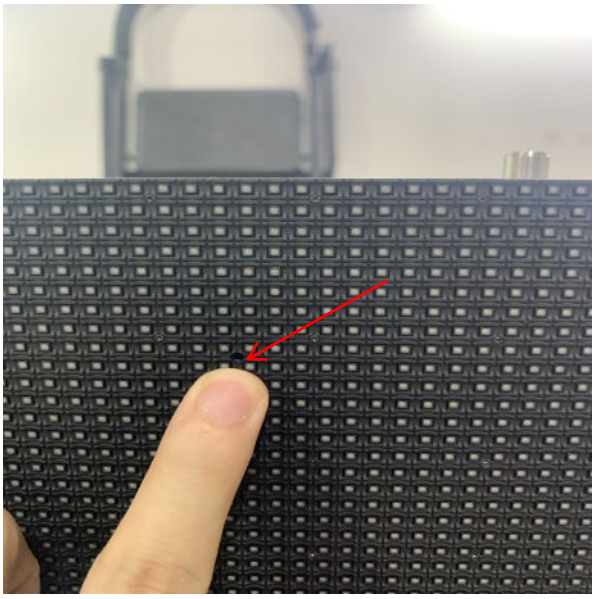
The power cables should be connected according to the wiring diagram provided with the project deliverables.

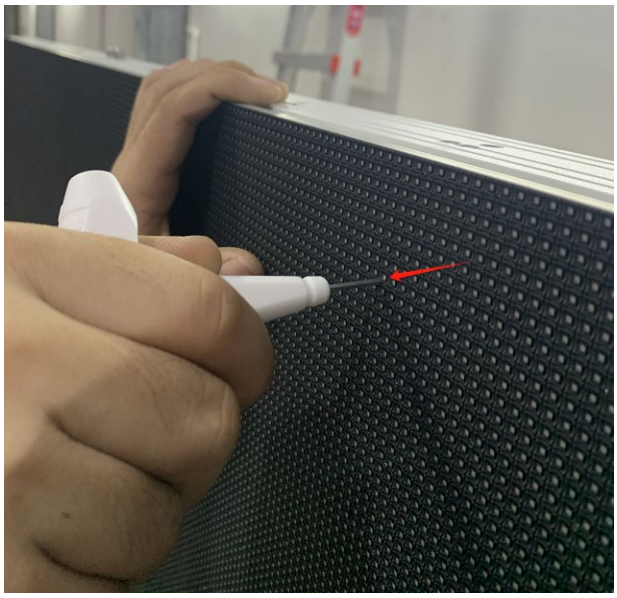


P4 Power Cable Connection Diagram

3.1 Product Maintenance

1.Module Replacement:

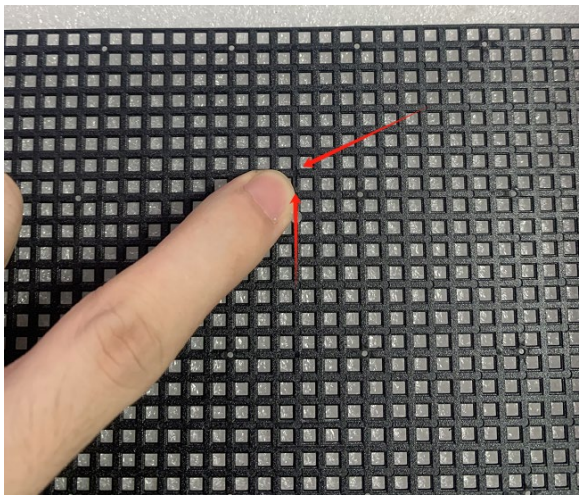




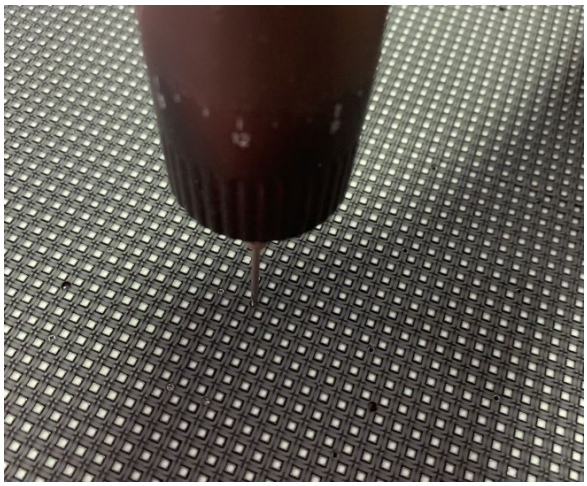
Locate the module’s mounting holes and use the designated removal tool to replace it

Locked Module

Unlocked Module



1.The side with the arrow is the back of the mask; install according to the module's orientation



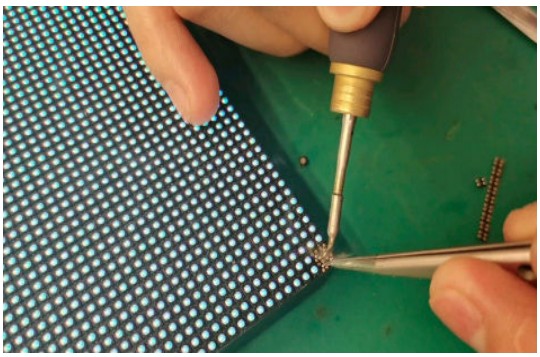
2.Remove and install screws according to the orientation.

3.Press and rotate the yellow part to easily disconnect the power and signal cables.

4.1.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

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.



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)

4.2.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.

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

4.3.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

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

4.4 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.