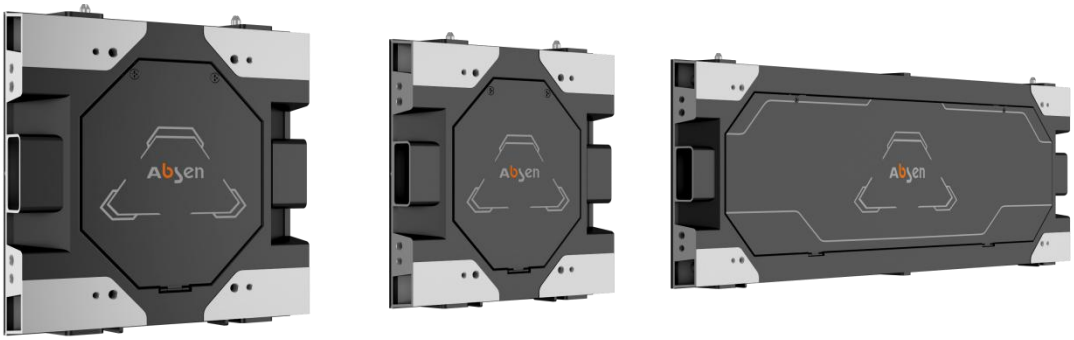
K V3 Series Product User Manual

K1.5 V3/K1.8 V3/K2.5 V3/K3.9 V3



Shenzhen Absen Optoelectronic Co.,Ltd.

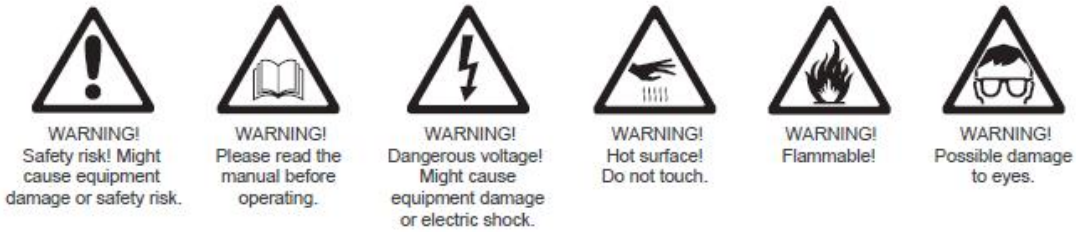
CONTENT

SAFETY INFORMATION

WARNING!

Please read the safety measures listed in this section carefully before installing, powering on, operating, or doing maintenance on this product.

The following marks on the product and in this manual indicate important safety measures.



WARNING: Be sure to understand and follow all safety guidelines, safety instructions, warnings and precautions listed in this manual. This product is for professional use only!
This product may result in serious injury or death due to fire hazard, electric shock, and crushing hazard.

Please read this manual carefully before installing, powering up, operating and maintenance of this product. Follow safety instructions in this manual and on the product. If you have any questions, please seek help from Absen.

Beware of Electric Shock!

• To prevent electric shock the device must be properly grounded during installation. Do not ignore using the grounding plug, or else there is a risk of electric shock.

• During a lightning storm, please disconnect the device's power supply, or provide other suitable lightning protection. If the equipment is not in use for a long time, please unplug the power cable.

• When performing any installation or maintenance work (e.g. removing the fuses, etc.,) make sure to turn off the master switch.

• Disconnect AC power when the product is not in use, or before disassembling, or installing the product.

• The AC power used in this product must comply with local building and electrical codes, and should be equipped with overload and ground fault protection.

• The main power switch should be installed at a location near the product and should be clearly visible and easily reached. This way in case of any failure the power can be promptly disconnected.

• Before using this product check all electrical distribution equipment, cables and all connected devices, and make sure all meet current requirements.

• Use appropriate power cables. Please select the appropriate power cable accableing to the required power and current capacity, and ensure the power cable is not damaged, aged or wet.

If any overheating occurs, replace power cable immediately.

• For any other questions, please consult a professional.

Beware of Fire!

• Use a circuit breaker or fuse protection to avoid fire caused by power supply cables overloading.

• Maintain good ventilation around the display screen, controller, power supply and other devices, and keep a minimum 0.1 meter gap with other objects.

• Do not stick or hang anything on the screen.

• Do not modify the product, do not add or remove parts.

• Do not use the product in case ambient temperature is over 55 ℃.

Beware of Injury!

• Warning: Wear a helmet to avoid injury.

• Ensure any structures used to support, fix and connect the equipment can withstand at least 10 times the weight of all the equipment.

• When stacking products, please hold products firmly to prevent tipping or falling.

• Ensure all components and steel frames are securely installed.

• When installing, repairing, or moving the product, ensure the working area is free of obstacles, and ensure the working platform is securely and stably fixed.

• In the absence of proper eye protection, please do not look directly at the lit screen from within a 1 meter distance.

• Do not use any optical devices that have converging functions to look at the screen to avoid burning the eyes.

WARNING: Beware of suspended loads.

LED lamps used in the module are sensitive and can be damaged by ESD (electrostatic discharge). To prevent damage to LED lamps, do not touch when the device is running or switched off.

WARNING: The manufacturer shall not bear any responsibility for any incorrect, inappropriate, irresponsible or unsafe system installation.

Product Disposal

• Any component that has a recycling bin label can be recycled.

• For more information on collecting, reusing and recycling, please contact the local or regional waste management unit.

• Please contact us directly for detailed environmental performance information.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user’ s authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

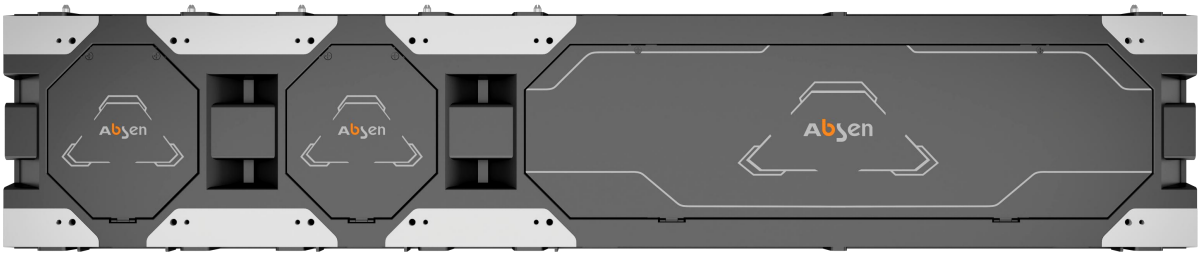
This Class B digital apparatus complies with Canadian ICES-003.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numerique de la classe B est conforme a la norme NMB-003 du Canada.

1 Product Introduction

Experience the next level of LED displays with Absen's unique triangular design. Our technology ensures unmatched stability, safety, and reliability, making every display stand out regardless of the setting. With the versatility of our 3+1+1 configuration, we make inventory management seamless for our esteemed clientele. Choose Absen and revolutionize your visual storytelling.



1.1 Product application scenarios

This product is mainly used in the following application scenarios (indoor):

Retail: display screen at the entrance of the store, pillar screen inside the store, wall display screen inside the store, etc.;

Other: Narrow screen and internal arc screen application scenarios.

1.2 Main Features

1.2.1 Structural design

- The cabinet supports rotary installation design, splicing is more flexible, to meet your creative needs for design.
- When the cabinet is rotated 90°, the module is rotated 90° in reverse, and the angle of view of the LED lamp bead is not affected.
- The thickness of the cabinet is only 39.5mm, the weight is only 25kg/㎡, thin and stylish.
- module adopts wireless plug design, providing convenient and quick disassembly experience.
- module adopts no shell design for higher splicing accuracy.
- Display unit adopts die-cast aluminum cabinet frame with high splicing precision.
- The cabinet supports XYZ three-axis adjustment to achieve better flatness between the cabinet and the cabinet.
- Front or rear installation, hanging, wall mounting, and steel structure installation.
- specially designed anti-knock lamp function, effectively prevent the lamp in the process of transportation and installation damage, greatly improve the durability and stability of the product.
- The receiving card is connected with high-precision tight connector, which is stable, reliable and convenient to maintain.
- provides non-magnetic solution selection, completely farewell to magnetic dust, so that the screen is always as new, committed to providing a clean and clear viewing experience, so that you enjoy the visual feast.
- products support customized right angle screen and curved screen to create unique visual effects, decorate the place and become a highlight of attention.

- Optional the "new" standard Trim Pieces, experience elegance like never before with our Ultra-Thin Bezel Design. Its innovative configuration conceals side wiring and panel structure, elevating your screen's sophistication to unparalleled heights.
- Ultra-thin wall hanging solution, providing standard wall hanging installation solutions, wall hanging thickness is less than 72mm, fully saving installation space, highlighting ultra-thin aesthetic feeling.
- Hanging installation solutions, providing standard hanging bar installation solutions to meet diverse application needs.
- floor installation solutions, providing steel structure installation solutions, simple and easy to operate, so that you can layout space as you like.
- Supports full pre-maintenance and no special maintenance channel is required to save space. Modules, power supplies, receiving cards, and HUB boards support full pre-maintenance.
- Support full maintenance, unique full maintenance design, convenient and fast to complete the maintenance of the equipment, to ensure the normal operation of the equipment at any time; Modules, power supplies, receiving cards, HUB boards support full post-maintenance.

1.2.2 Feature design

- The full series of cabinet design adopts an innovative combination: 3+1+1. In the case of limited cabinet types to achieve diversified splicing, flexible matching customer needs, convenient inventory management.
- Using A5C+ point-by-point correction technology, effectively improve the display uniformity and color consistency of the screen, greatly improve the color saturation, and restore the real vision.
- Absen's professional color management technology realizes the adaptive video source color gamut, making the color display full and fresh, the details are clear and sharp, the dark texture is rich, and the color is more accurate and true.
- provides dual brightness configuration of conventional bright version and high bright version, the brightness of conventional bright version can reach up to 700nits, and the brightness of high bright version can reach 3000nits, to meet the diversified needs of use.
- TUV Rheinland low blue light certification, filter harmful blue light, love your eyes;
- Electromagnetic compatibility reaches Class B level, health worry free.

- Automatically turn on the black screen energy-saving mode after cutting off the signal source, it achieves efficient energy conservation, merging sustainability with cost efficiency.
- provides intelligent module selection function, effectively improve product operation and maintenance efficiency and realize intelligent management, so that you can grasp the working status of the product at any time, calmly deal with various situations. Support to monitor the receiving card temperature and voltage, module current, voltage and temperature, cable connection status, and support bad spot check function.
- Adopts PWM constant current output high-end chip to achieve low light and high gray, rich color layers and accurate detail presentation.
- The cabinet supports signal loop backup.
- A single module is set with attenuation coefficient, so that there is no color difference after repair and replacement.
- The software has the function of adjusting the light and dark lines with one key.
- Correction data can be stored on the receiving card and the module itself, and the software can read back data from both.

1.3 Product Parameters

1.3.1 Conventional bright version specifications

Parameters		K1.5 V3	K1.8 V3	K2.5 V3	K3.9 V3
Physical Parameter	Diode Type	SMD1212	SMD1515	SMD1515	SMD2121
	Pixel Pitch (mm)	1.5	1.8	2.5	3.9
	Panel Dimensions (WxHxD)/(mm)	750/1000/1250*250*39.5			
	Pixel Per Panel	480/640/800*160	396/660/528*132	300/400/500*100	192/256/320*64
	Panel Weight (kg)	4.6/6.2/7.9			
	Panel Material	Die-cast aluminum			
	Module Dimensions (WxH)/(mm)	250*250			
Optical Parameter	Brightness (nit)	700nits			
	Refresh Rate (Hz)	3840			
	Gray scale (bit)	14 bit			
	Contrast Ratio	3500:1	3000:1	3500:1	4500:1
	Color Temperature (K)	6500			
	Viewing Angle (H/V) (°)	160/160	160/160	160/160	160/160
	Driving Type	1/54	1/44	1/34	1/22
	AC Operating Voltage (V)	100~240			
	Power Consumption (Max./Avg.)(W/m²)	360/120	390/130	360/120	300/100
Application Parameter	Storage Temperature	-40 ~ +60			
	Operating Temperature	-10 ~ +40			
	Storage Humidity	10% ~ 85%			
	Operating Humidity	10% ~ 80%			
	LED Lifetime	100000			
Installation/Maintenance	Module maintenance	Full front/Full rear			
	Power & other maintenance	Full front/Full rear			
	Installation method	Hanging, Wall mounting and Stacking			
EMC level	CLASS B				
Certification	CCC/CE/FCC/ETL/ROHS/TUV/CB/UKCA/BIS				

Note: Power consumption tolerance: ±15%, according to the actual situation.

1.3.2 High bright version specifications

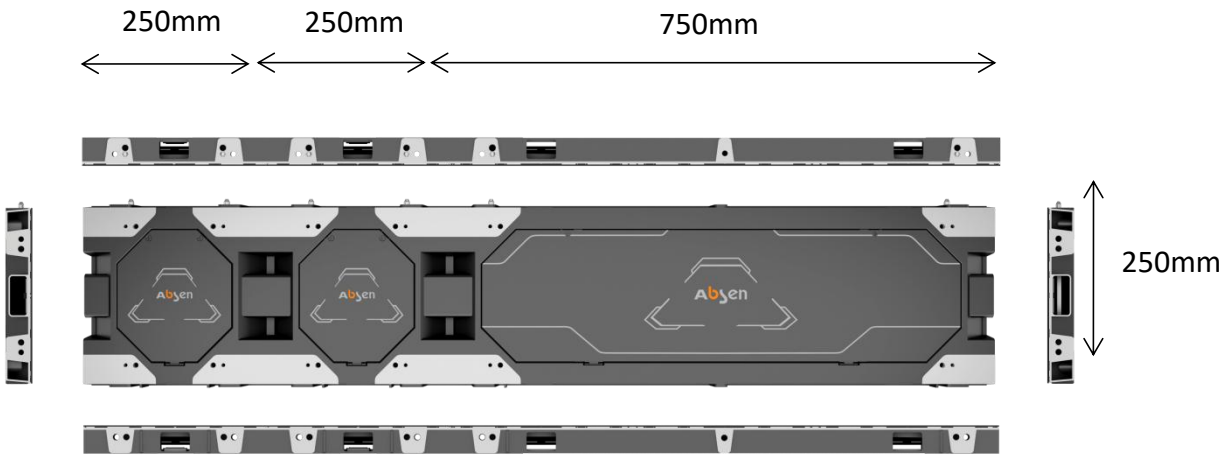
Parameters		K1.8 V3	K2.5 V3	K3.9 V3
Physical Parameter	Diode Type	SMD515	SMD1515	SMD1515
	Pixel Pitch (mm)	1.5	1.8	2.5
	Panel Dimensions (WxHxD)/(mm)	750/1000/1250*250*39.5		
	Pixel Per Panel	396/660/528*132	300/400/500*100	192/256/320*64
	Panel Weight (kg)	4.6/6.2/7.9		
	Panel Material	Die-cast aluminum		
	Module Dimensions (WxH)/(mm)	250*250		
Optical Parameter	Brightness (nit)	3000		
	Refresh Rate (Hz)	3840		
	Gray scale (bit)	14		
	Contrast Ratio	4500:1	8000:1	8000:1
	Color Temperature (K)	6500		
	Viewing Angle (H/V) (°)	160/160		
	Driving Type	1/44	1/34	1/22
	AC Operating Voltage (V)	100~240		
	Power Consumption (Max./Avg.)(W/m²)	450/150	360/120	330/110
Application Parameter	Storage Temperature	-40～+60		
	Operating Temperature	-10～+40		
	Storage Humidity	10%～85%		
	Operating Humidity	10%～80%		
	LED Lifetime	100000		
Installation/ Maintenance	Module maintenance	Full front/Full rear		
	Power & other maintenance	Full front/Full rear		
	Installation method	Hanging, Wall mounting and Stacking		
EMC level	CLASS B			
Certification	CCC/CE/FCC/ETL/ROHS/TUV/CB/UKCA/BIS			

Note: Power consumption tolerance: ±15%, according to the actual situation.

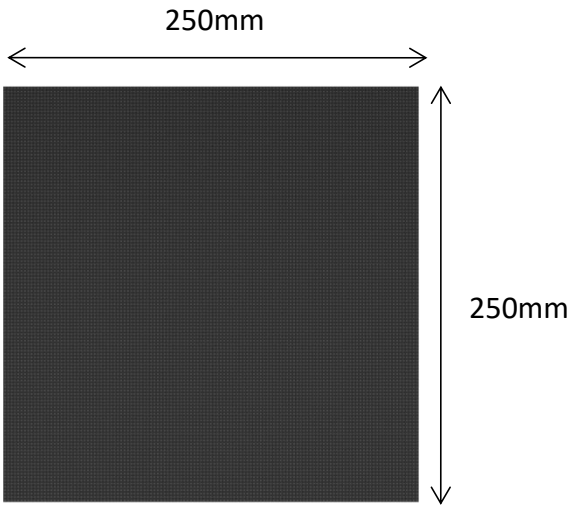
2 Introduction of Product Components

2.1 Product Size Introduction

2.1.1 Cabinet size drawing

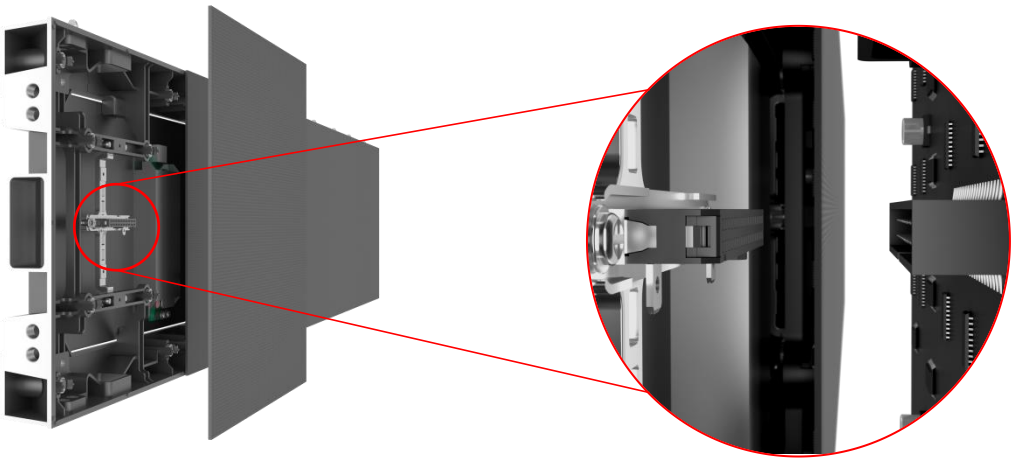


2.1.2 Module size drawing

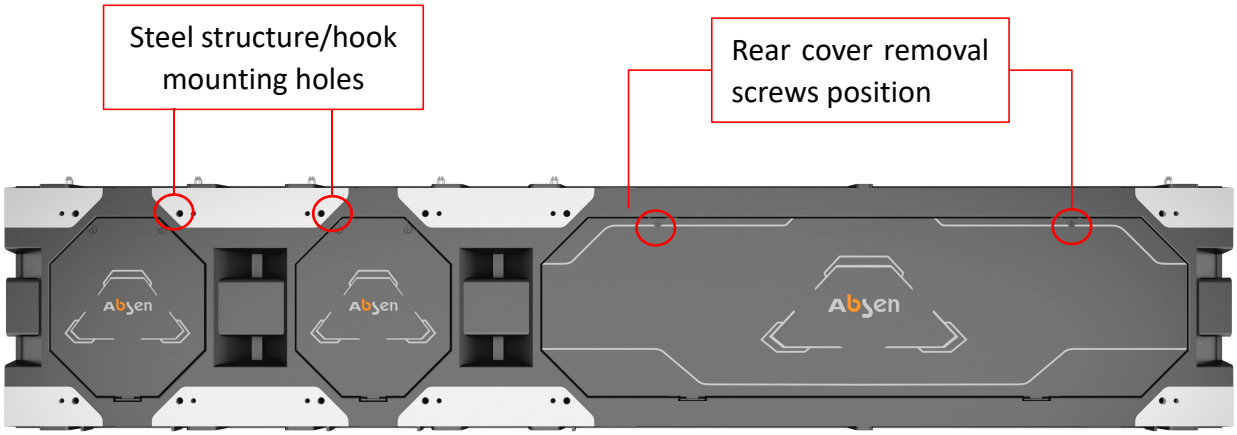


2.2 Introduction of Cabinet Components

2.2.1 Introduction to panel structure



Module wireless plug

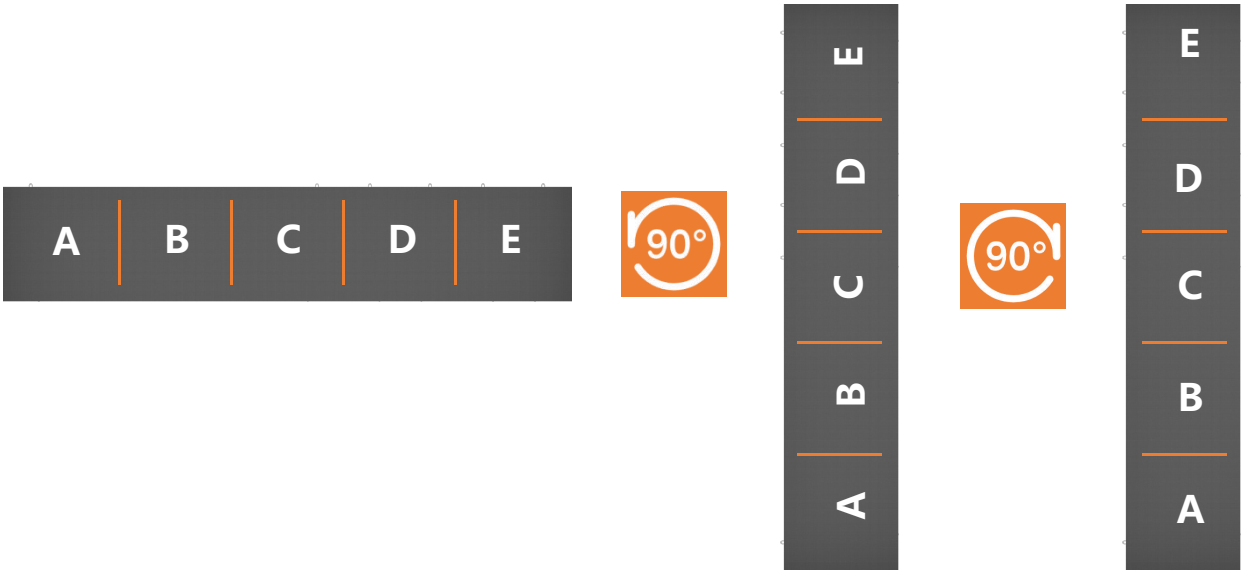


2.2.2 Rotatable installation for panel

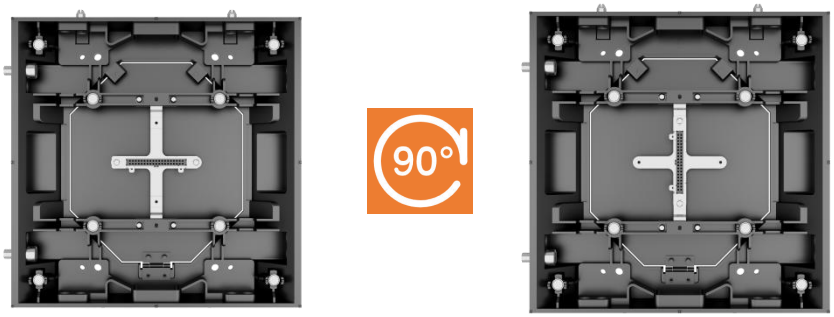
The cabinet supports rotating installation. When the cabinet is rotated 90°, the

module is rotated 90° in reverse, and the LED lamp viewing angle is not affected in any way.

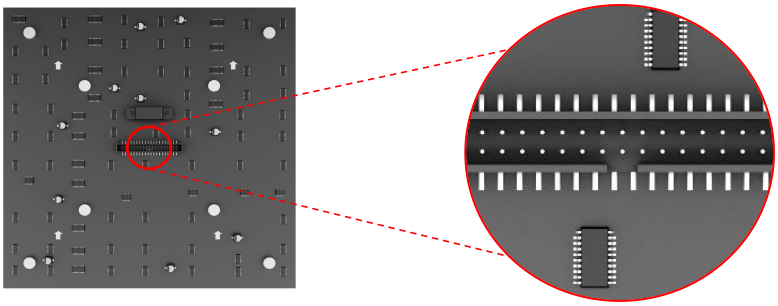
Based on the module surface, the small cabinet remains at the top of the cabinet after rotation.



The module rotates 90° clockwise, and the wireless connector rotates clockwise synchronously, based on the module surface.



Anti-dull design, prevent module short circuit



3 Preparation before Installation

3.1 Installation Tools

	Tool type	function	picture
Installation Tool List	knife	Open the cabinet	
	Hexagon screwdriver	Install and remove the hexagon socket screws	
	6mm T-wrench	Install the connecting plate screws	
	5mm T-wrench	Install the "Z" axis adjustment screw	
	Socket hexagon wrench	Install the screws between the LED cabinets	
	PH2 screwdriver	Maintenance and disassembly	
	Multimeter	Measuring power cable and distribution cabinet	
	Spirit level	Check the flatness of the cabinet installation	
	Rubber hammer	Adjusting the flatness of the panel structure	
	Front maintenance tool	Install& maintain the LED module	
	Diagonal pliers	Handling cable ties when arranging cables	
	tape measure	Measure the distance	

	Laser level	Measuring installation position	

3.2 Installation Environment Requirements

1. The small spacing series requires on-site temperature and humidity testing to ensure that the temperature is within 35 ℃ and the humidity is within 70% RH;

2. When the temperature exceeds (35 ℃, 70% RH), the product cannot be installed on site;

3.3 Precautions before Installation

Before installation

1. Determine the power distribution plan:

Provide a specific power distribution plan based on the size and arrangement order of the actual display screen, determine the specifications and quantity of the power distribution panel , main power lines, and the number of power lines connected to the cabinet. Determine the specifications and quantity of the sending panel and video processor, as well as the number of network cables, based on the total pixel points and arrangement order.

2. Power distribution precautions

① The wiring should be neat, horizontal and vertical, and non cable cables must be laid with wire slots or conduits;

② The signal line and power line are laid separately to avoid interference;

③ The wiring should consider three-phase power balance, and try to have an equal number of display panel es for each phase of electrical load;

④ The cable head needs to be pressed with wire terminals;

⑤ Encode the wire ends, and ensure that the overall distribution diagram is consistent with the actual wiring for easy troubleshooting in the future;

⑥ Under the premise of considering the safe carrying capacity, lay the cables from the distribution panel to the display screen panel based on the actual arrangement of the panel;

⑦ Long distance wiring, considering line loss voltage, to ensure that the display terminal voltage is within the allowable range;

3. Tool preparation: commonly used tools for screen installation, including matching and preparing models with tools such as screwdrivers, wrenches, and multimeters.

During installation

4. Installation of distribution panel : The installation of distribution panel must be firm and reliable. Reliable protective grounding.

5. Panel installation: equipment handling. Adequate manpower must be provided to ensure safety. Pay attention to handling with care and avoid damaging the appearance and function of the panel due to collision. Install the display screen and check if the magnet legs are tightened. Confirm that the power cord and network cable are connected in place and correctly, the network cable is inserted in place, and the screen connection sequence is correct.

6. Wiring sequence: First, connect the panel in series with a power cord connected to the panel, and then connect the main power cord from the distribution panel or socket to the bottom layer of the panel.

7. Power connection: Firstly, confirm that the power supply end is in a "disconnected" state and must start connecting from the power consumption end (equipment switch or distribution panel , etc.). Only after checking the correct connection of the power supply end can the power supply end be connected. First, connect the protective grounding, then connect the zero line, and finally connect the phase line. After connecting to the power supply: Check the power supply switch or equipment distribution voltage, confirm that there are no errors, and then "disconnect" the power supply. The power cord must be distinguished by color for ground wire, neutral wire, and phase wires such as A, B, and C.

8. Panel adjustment: Check if the display screen is flat and clean. Perform micro silicon adjustment on the gaps between modules and between panel es. When installing, be sure to lock the panel tightly with screws to ensure the smoothness of the left, right, top, and bottom between the panels.

9. Power test: Before supplying power to the entire screen and providing control signals, please carefully check whether the power and signal lines are connected correctly; Please carefully check the "L" line, "N" line, and "PE" line on the AC power input port of each panel to ensure that there is no short circuit between the three (measured with a multimeter).

10. Power on detection: Fault diagnosis, checking the appearance of the power on detection for any broken screen and correct text output; If a fault occurs, make a judgment based on the fault phenomenon and eliminate the fault.

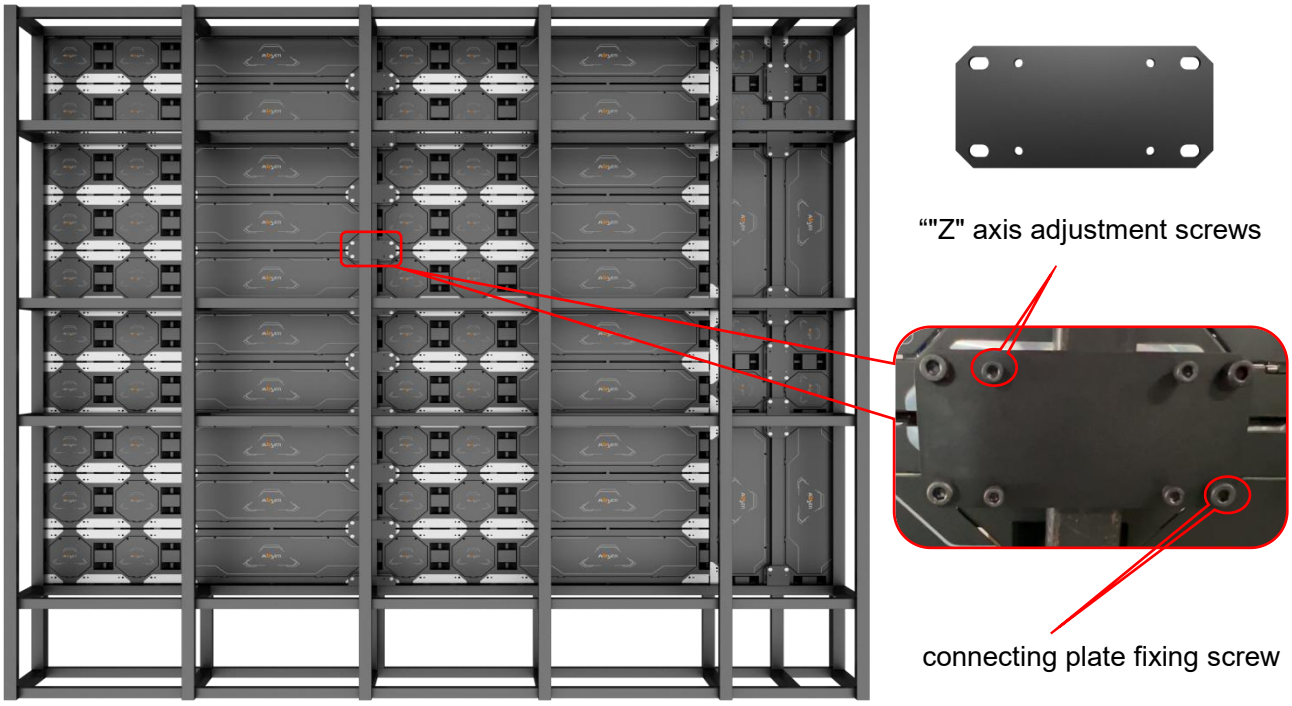
4 Product Installation

4.1 Steel Structure Installation

The steel structure installation method : cabinets are installed layer by layer from the bottom to up.

1. Use M8*25 screws to lock adjacent cabinets.

2. Use the connecting plate and M8x55mm screws to fix the square, install M6*50 "Z" axis adjustment screws on the connecting plate.



Note: When the steel structure is installed, if there is a part of the cabinet rotating installation, the connection plate only needs to be fixed between the

rotating cabinet and the rotating cabinet, and the rotating cabinet and the standard cabinet only need to use the cabinet internal screws to fix.

3. After the cabine is installed, confirm that the cable is connected and then install the module on the cabinet according to the number (Refer to the chart below for module codes).

340-1	340-2	340-3 340	340-4	340-5

4.2 Back Strip Mounting

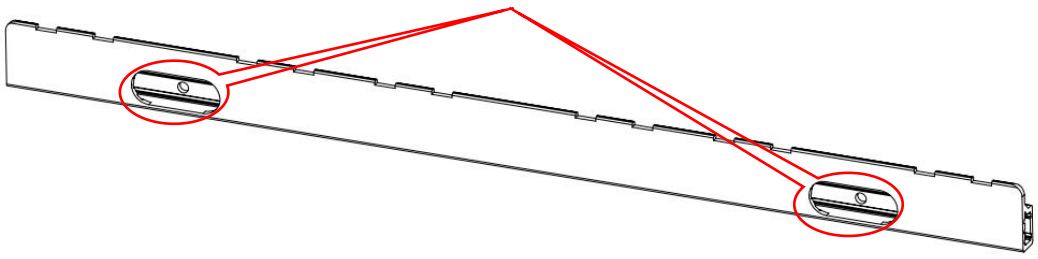
Back strip type:

250mm back strip

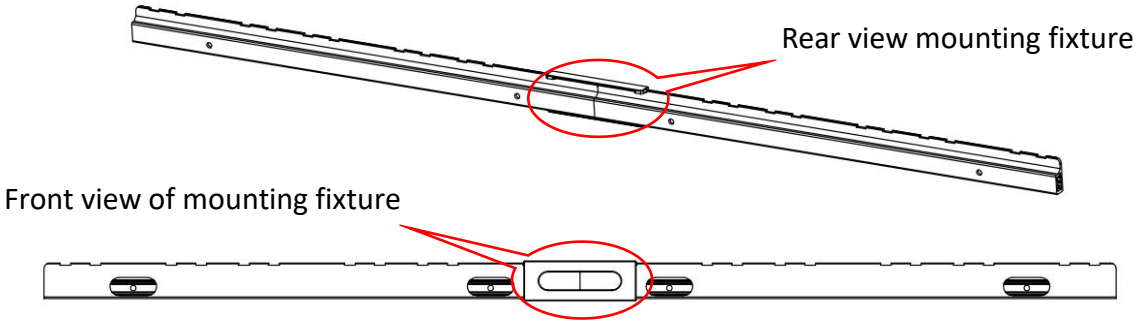
750mm back strip

1. Fix the first back strip in the lower left corner of the first row (the bottom of the screen) on the flat wall with M6 self-tapping screws or M6 expansion screws.

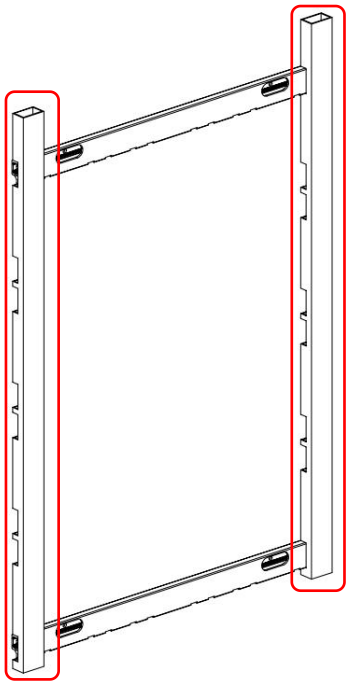
M6 screw installation position



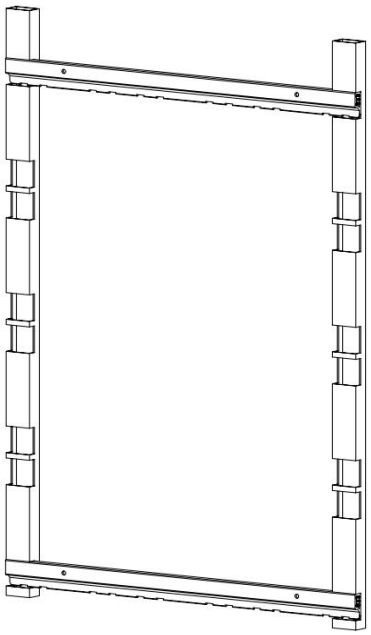
2. Install the other back strips of the first row using the transverse mounting fixture.



3. After installing the first row of back strips, install the second row of back strips using vertical fixtures (the distance between the second row of back strips and the first row of back strips depends on the site conditions, can be one cabinet, two cabinets, three cabinets or four cabinets height, four cabinet height is recommended as a group).



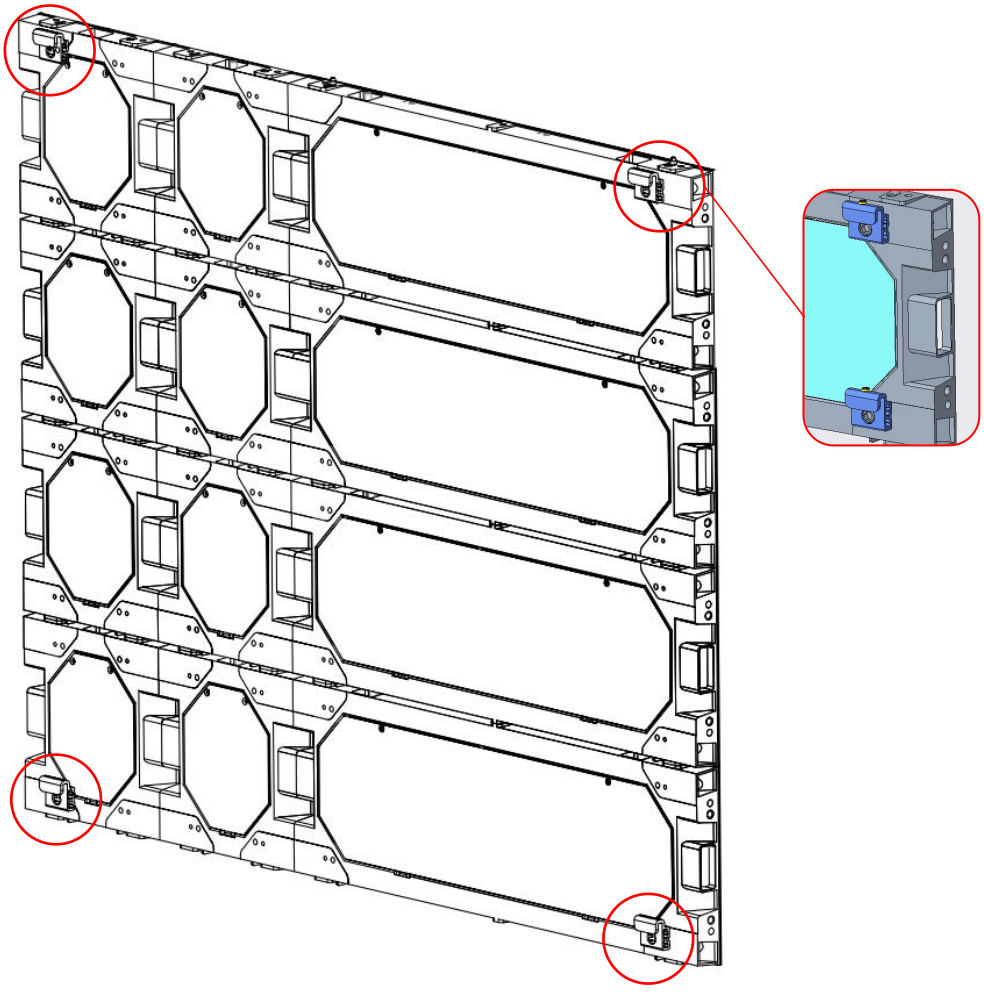
Front view of mounting fixture



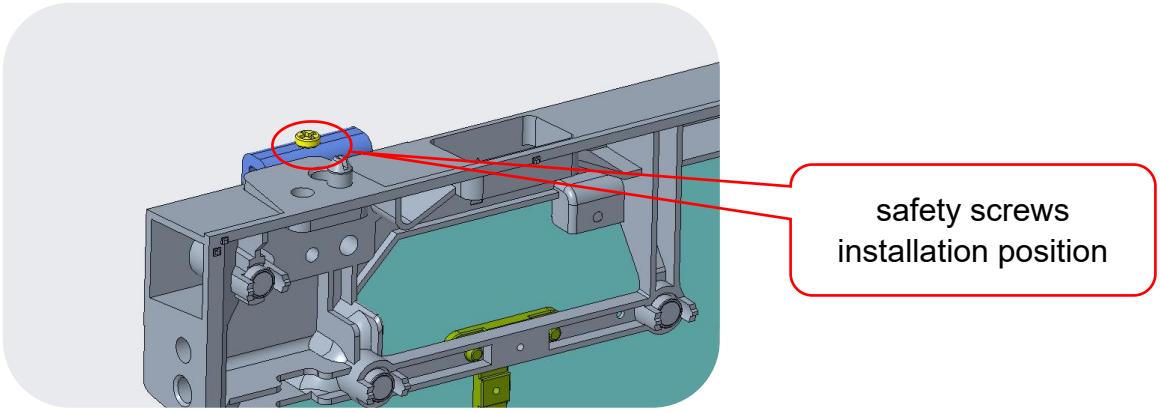
Rear view mounting fixture

4. Repeat the above actions to install the back strip.

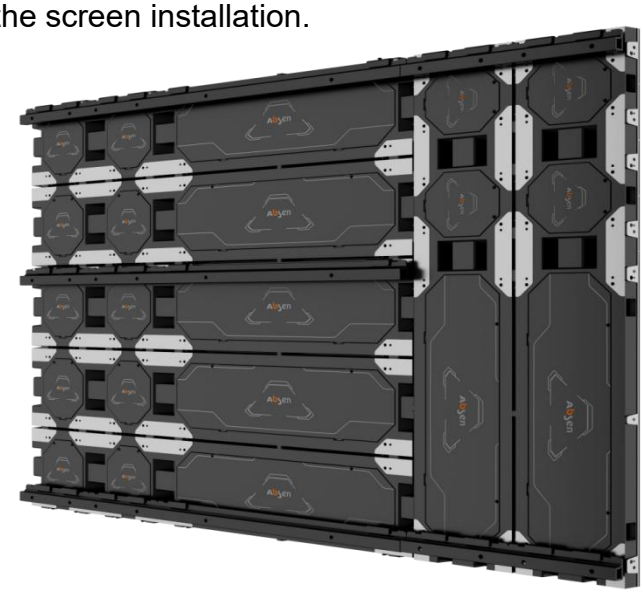
5. Assemble the cabinet (excluding the module), the four cabinets are in a group, using M8*15 screws to install the cabinet hook.



6. Hang the cabinet against the back strip and lock the safety screws to ensure that the cabinets will not slip.



7. Install other cabinets and use M8*25 screws to lock between cabinets to complete the screen installation.



Note: When a rotating cabinet is installed, the back strip does not need to be rotated, only the cabinet needs to be rotated.

8. Wiring power cables and network cables.

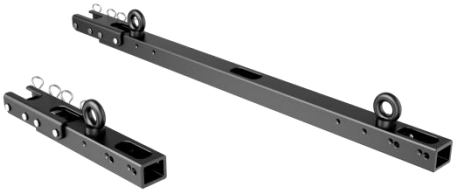
9. Install modules according to the corresponding numbers of modules and cabinets (Refer to the chart below for module codes).

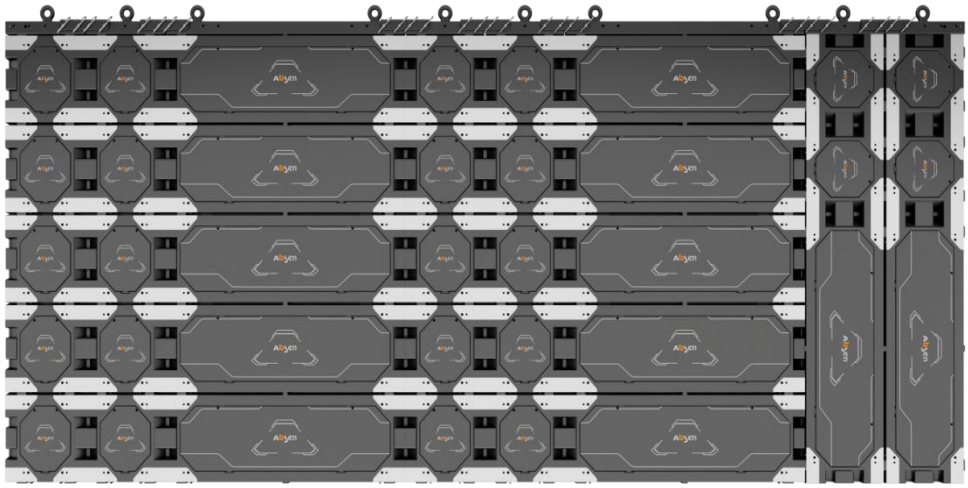
340-1	340-2	340-3 340	340-4	340-5

4.3 Hanging Installation

Use the cabinet fixing screws to connect the cabinet and the hanging bar, the hanging bar can lift up to 24 cabinets; The hanging bar is divided into 750mm Hanging bar and 250mm hanging bar.
Installation steps:

1. Fix the hanging bar on the structure;
2. Align the screws of the cabinet with the mounting holes on the hanging bar, and install the cabinet under the hanging bar;
3. Install other cabinets and lock the screws between the cabinets;
4. Complete the connection of network cables and power cables;
5. Complete module installation;





4.4 Trim pieces installation

This product supports optional trim pieces. The trim pieces installation only needs to be stuck into the cabinet hole, and no screws are needed to fix the trim pieces (the internal arrow faces the module face when installing the trim pieces).

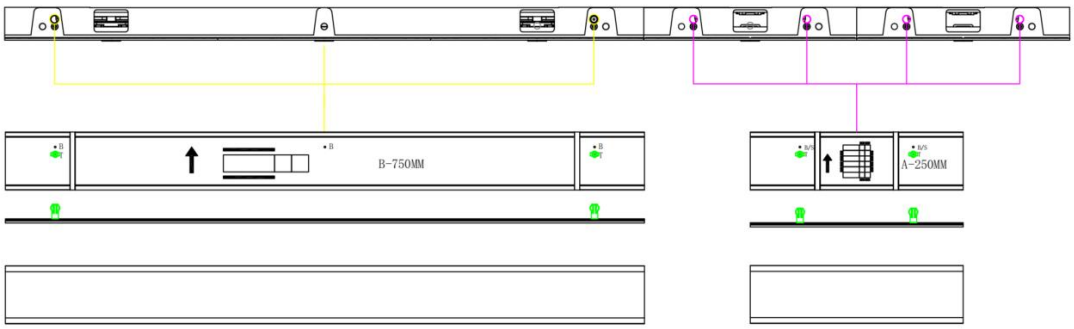
Serial number	Trim pieces type	Application description
①	750x68x5mm	Only used for top and bottom trim pieces of 750x250 cabinetes
②	750x68x5mm	Limited to 3 250mm size splicing sizes (combined of 3 250mm cabinet splicing)
③	260x68x5mm	One row, one row, 260mm length trim pieces
④	255x68x5mm	Screen corner trim pieces
⑤	250x68x5mm	Applicable to all 250mm size bits

The following is an example of trim pieces installation:

1. the cabinet top and bottom trim pieces installation, using the ① trim pieces (yellow line part of the installation position) and ⑤ trim pieces (purple line part of the installation position) for installation (when the trim pieces is installed at the top, the cabinet positioning column needs to be removed).

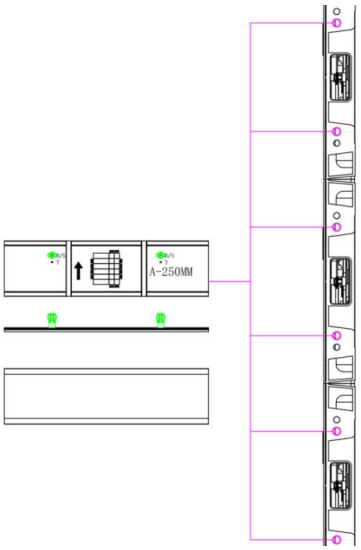
Note: Select "T" button for trim pieces when installing ① trim pieces at the top of the screen; select "B" button when installing ① trim pieces at the bottom of the screen.

⑤ trim pieces is installed at the top of the screen, select the “T” buckle mounting hole. If trim pieces is installed at the bottom of the screen, select the B/S buckle mounting hole.



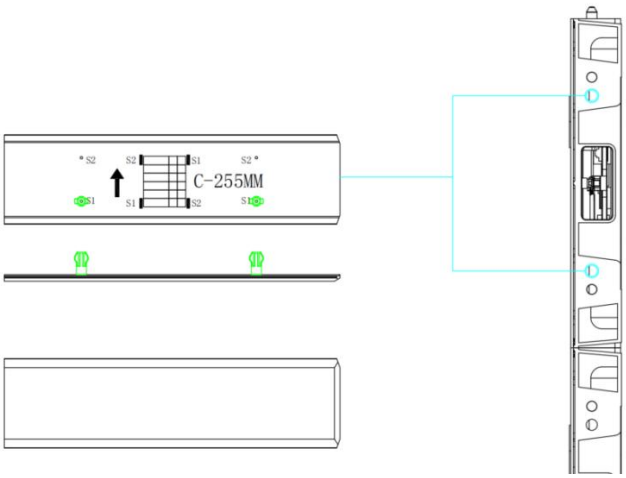
2. the left and right sides of the cabinet trim pieces installation (excluding the four corners of the screen) using ⑤ trim pieces (purple line part is the installation position).

Note: When the ⑤ trim pieces is installed on both sides of the screen, select the "B/S" buckle mounting hole.



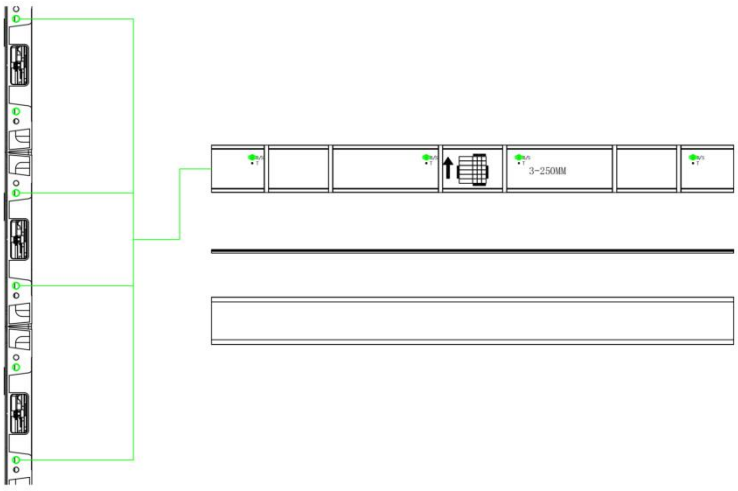
3. The four corners trim pieces of the screen are installed using ④ trim pieces (the blue line part is the installation position).

Note: When the ④ trim pieces is installed in the lower left and upper right of the screen, select "S1" buckle mounting hole, and when it is installed in the upper left and lower right of the screen, select "S2" buckle mounting hole.



4. If you encounter a combination of three 250mm length cabinets, use ② trim pieces installation (the green line part is the installation position).

When the ② trim pieces is installed on the top of the screen, the buckle of the trim pieces is selected as the "T" buckle mounting hole; Select the B/S buckle mounting hole for trim pieces on both sides of the screen and at the bottom



5. If there is a single row and single column screen that needs to be installed with trim pieces, use ① and ⑤ trim pieces on the top and bottom, and use ③ trim pieceson both sides (the blue line part is the installation position).

5 Product Wiring

5.1 Preparation before Connection

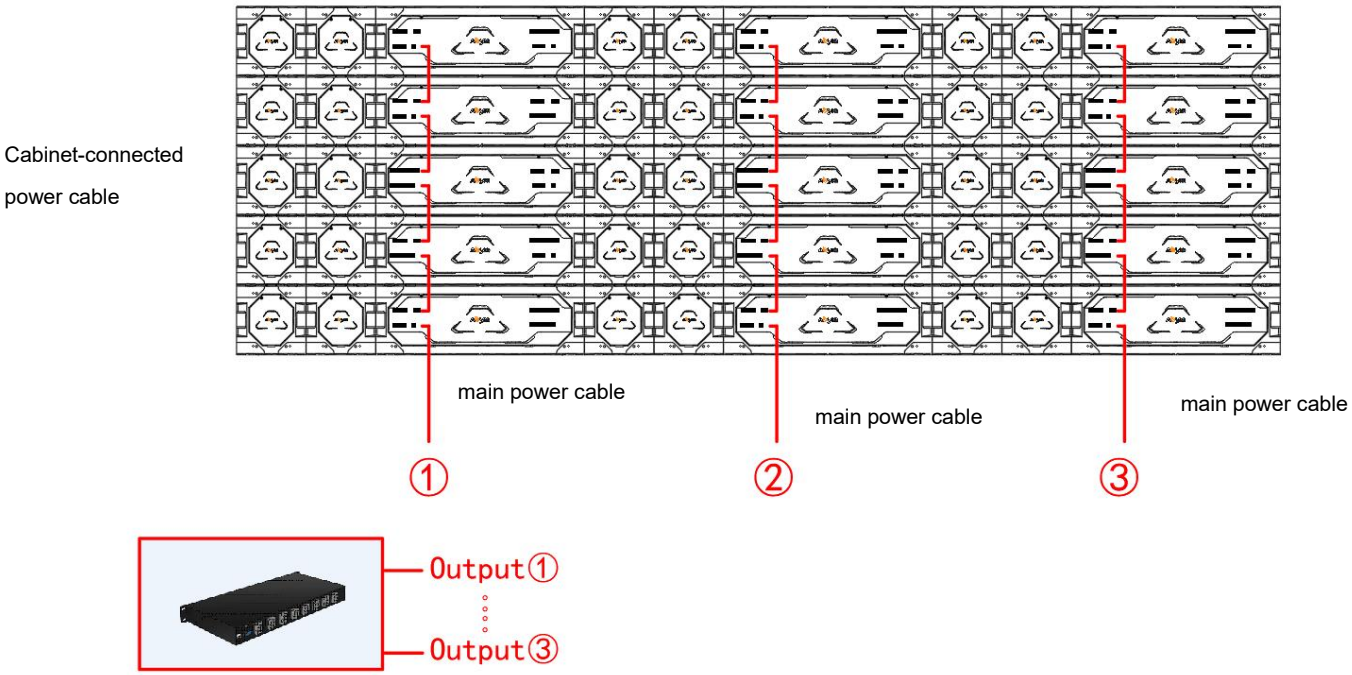
Before connecting: Before supplying power to the entire screen, please carefully check whether the power cable between the cabinets is connected, and whether the main power cable between the screen and the distribution cabinet is properly connected; check and confirm the AC power input port of each cabinet "L" wire, "N" wire, and "PE" wire, confirm that there is no short circuit between the three (measured with a multimeter).

And before providing control signals, Please calculate the power cable connection scheme according to the maximum power consumption and select the appropriate power distribution cabinet or socket model. For specific options, please consult your electrician or power distribution cabinet manufacturer. The input voltage of the cabinet is 100-240V/AC, and a 3X1.5mm² power cable is used from the distribution cabinet to the cabinet. Please confirm the input voltage, different voltages and different product models, and each power cable carries a load of the cabinet The quantity will be different (when unable to confirm, please contact our customer service department!).

5.2 Power Cable Connection

The following uses a 5x3 K1.5 V3 cabinets as an example to describe how to connect power cables:
When 220V voltage is applied, 15 K1.5 V3 cabinets are carried using three main power cables, each of which carries five cabinets. Connect the cabinets in series using the connecting power cables, and then connect the 3 x 1.5mm2 power cables from the distribution box or socket to the bottom cabinets.

Model	Cabinet size(mm)	Power consumption (maximum)	Power cable on load (220V)	Power cable on load (110V)
K1.5 V3	1250x250x39.5	360 W/㎡	22	11
K1.8 V3	1250x250x39.5	390 W/㎡	20	10
K2.5 V3	1250x250x39.5	360 W/㎡	22	11
K3.9 V3	1250x250x39.5	300 W/㎡	26	13



5.3 Signal Cable Connection

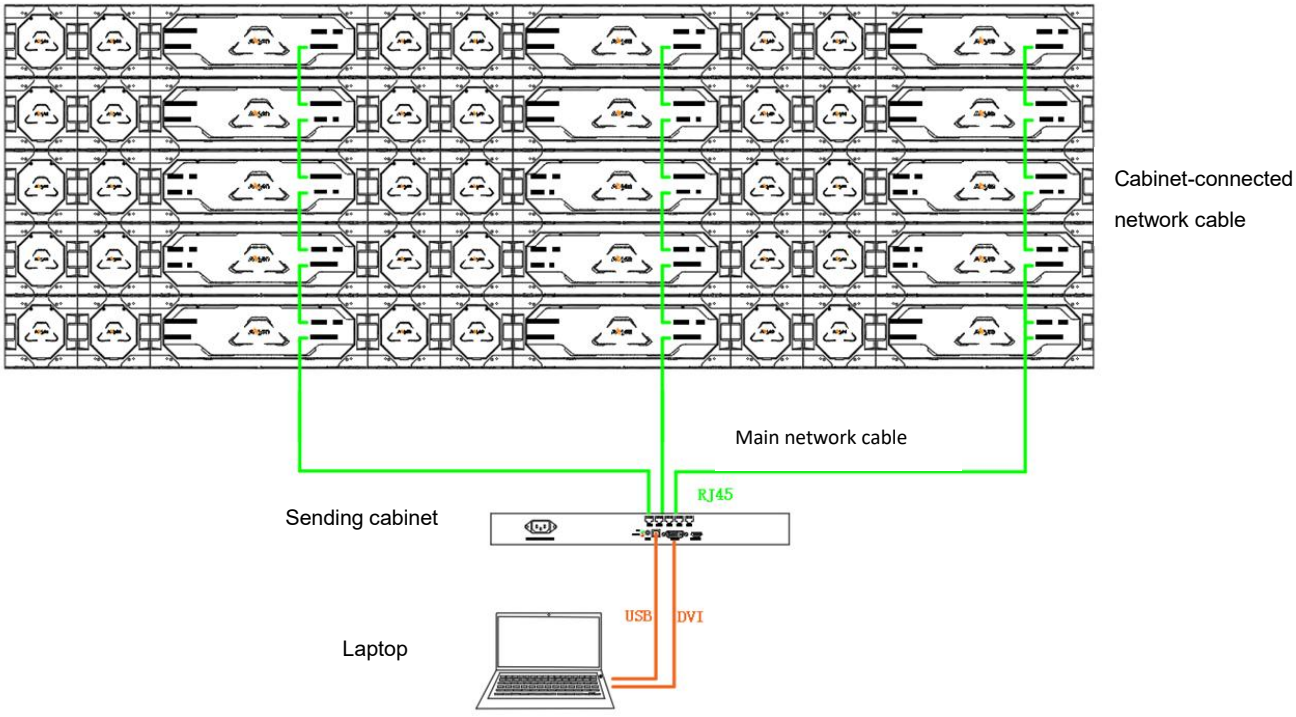
The signal cable adopts RJ45 CAT5 network cable, and the network cable interface of the panel can be used for input and output. The method of connecting the "S" type up and down is to calculate the resolution based on each panel pixel and connect the signal cable according to the load range of the sending card. Pay attention to the load on each network port.

The pixel range cannot exceed 655360 points (as shown in the following figure)

Taking the 5x3 K1.5 V3 panel as an example, the connection method of the power cable is introduced as follows:

The pixel count of a single K1.5 V3 panel is 800x160=128000, and 15 K1.5 V3 cabinets are loaded with 3 network cables, with each cable carrying 5 cabinets.

Model	Cabinet size	Panel resolution	Single network port with load	Note
K1.5 V3	1250x250x39.5	800x160	Cabinets ≦ 5	When calculating the actual maximum number of panels carried by a single network cable, the calculation is based on the number of panels in the rectangular area carried by the network cable
K1.8 V3	1250x250x39.5	660x132	Cabinets ≦ 7	
K2.5 V3	1250x250x39.5	500x100	Cabinets ≦ 13	
K3.9 V3	1250x250x39.5	320x64	Cabinets ≦ 31	



5.4 The Test of Setting up an Electric Circuit

After the cabinet connection is completed, please use a multimeter to measure whether there is short circuit at the AC input (L/N/PE) and DC output (VCC/GND) of the power supply. If a short circuit is found, please check the circuit carefully. After ensuring the cable is normal, switch on the power to electrify the cabinets to work.

Note: Please refer to the software user manual for software operation.

6 Product Maintenance

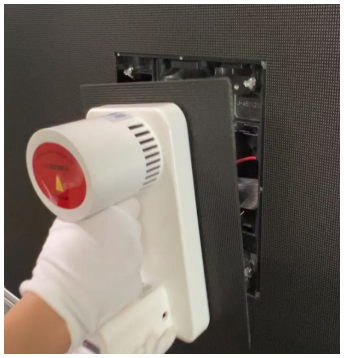
6.1 Preparation Tools

	Tool type	function	picture
maintenance Tool List	Module front service tool	Installation and removal LED module	
	Safety rope	Used for module rear-maintenance	
	PH2 screwdriver	Removing/installing screws for adapter board, receiving card, and power supply	
	Multimeter	Measuring power cable and distribution cabinet	

6.2 Front Maintenance

6.2.1 Module maintenance

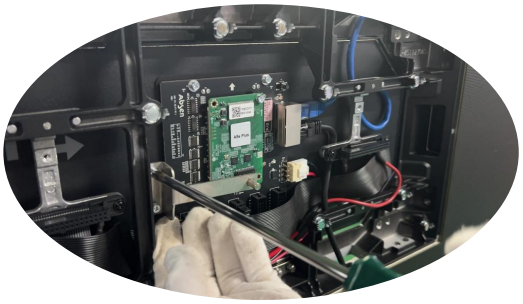
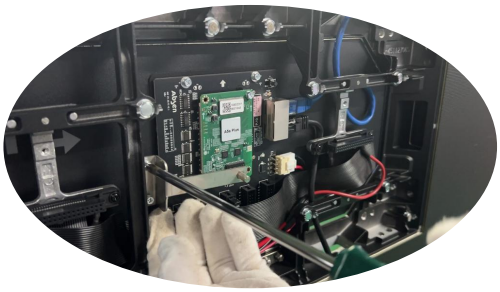
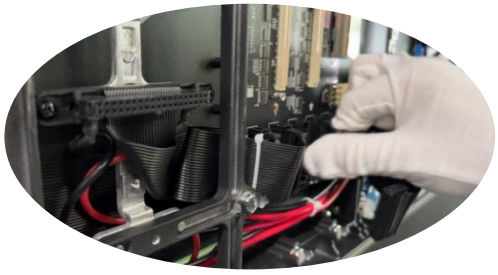
The K V3 series module can be quickly removed using a vacuum adsorption tool in 3-5 seconds, Attach the front maintenance tool to the faulty module surface to be removed, press the switch once, hold for 3-5 seconds, and then forcefully pull the air suction tool outward to remove the module.

Illustration			
Maintenance step	❶Confirm the location of the faulty module and place the vacuum front maintenance tool on the middle area of the faulty module	❷Press the switch once and hold for 3-5 seconds. Grasp the handle and forcefully pull the suction tool outward to remove the module.	❸ Gently install the spare module onto the screen in an upward direction.
Note	1. The front maintenance tools should be placed in the middle area of a single module and cannot cross adjacent modules; 2. After adsorbing and removing the module from the screen, use your left hand to hold the module to prevent the front maintenance tool from running low or the switch from closing, which may cause the module to fall off.		

6.2.2 Adapter board/Receiving card/Power supply maintenance

Using the maintenance tool, remove the modules on the faulty cabinet, and then use a screwdriver to replace the faulty components.

Receiving card maintenance method	Schematic drawing
① Remove all modules from the faulty ccabinet using a pre-vacuum maintenance tool	

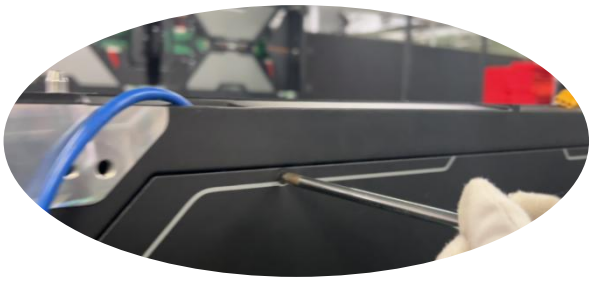
② Use a Phillips screwdriver of PH2 to remove the module leveller inside the cabinet	
③ Remove the screws securing the receiving card using the Phillips screwdriver of PH2, and replace the faulty receiving card	
HUB maintenance method	Schematic drawing
① Use a Phillips screwdriver of PH2 to remove the module leveller inside the cabinet	
② Remove network cables, cables, and 5V power supply cables from the HUB board	
③ Remove the screws securing the HUB board using the Phillips screwdriver of PH2, and replace the faulty HUB board	
Power supply maintenance method	Schematic drawing

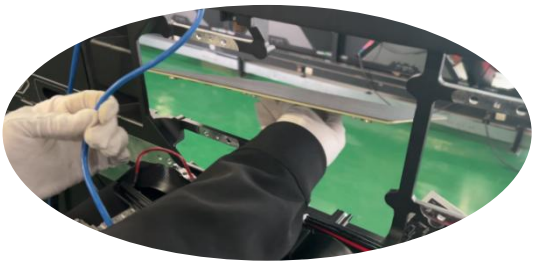
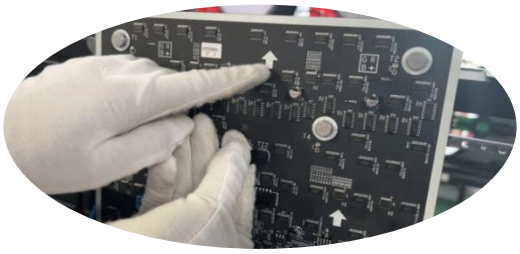
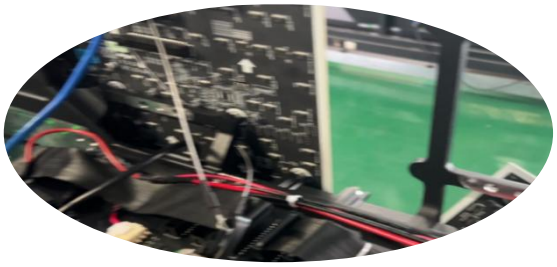
① Use a Phillips screwdriver of PH2 to remove the module leveller inside the cabinet	
② Remove the power cable from the power supply, and use the Phillips screwdriver of the PH2 to remove the screws that secure the power supply	

6.3 Rear maintenance

6.3.1 Module maintenance

Note: Please install the safety rope to prevent the module from falling during rear-maintenance of the module

Module maintenance method	Schematic drawing
① Remove 2 loose screws from rear cover	
② Remove the module connector	
③ Install safety rope to adjacent modules of the failed module	

③ Push the module with the safety rope outward and hang it on the surface of the screen	
④ Rotate the faulty module 90° to replace the module	
⑤ When installing the module, note that the arrow of the module is upward, and install the module on the cabinet	
⑥Replace the new module with a safety rope to prevent the module from falling	
⑦ Install adjacent modules on the cabinet	
⑧ Lock the connectors of the two modules	

⑨Remove the module safety rope and close the rear cover of the cabinet	 

6.3.2 Adapter board/Receiving card/Power supply maintenance

When maintaining the receiver card, HUB board, and power supply, open the rear cover of the cabinet for rear-maintenance. For the rear-maintenance method, see the previous maintenance method

6.4 Product Maintenance Precautions

6.4.1 Precautions for switch on /off LED screen

(1) Turn on the screen: first turn on the control computer to make it run normally, and then turn on the LED display.
(2) Turn off the screen: first turn off the power of the LED screen, turn off the control software, and then turn off the computer correctly; (first turn off the computer without turning off the display screen, it will cause the screen to appear bright spots, burn the lamp, and have serious consequences)
(3) The interval between switching screens should be greater than 5 minutes;
(4) Avoid turning on the screen in the state of full white screen, because it is the maximum power state at this time, and its impact current to the entire power distribution system is the largest.

6.4.2 Precautions for power supply

(1) The LED module is powered by DC +5V (working voltage: 4.2~5.2V), AC power is prohibited; the positive and negative poles of the power supply terminals are strictly prohibited to be reversed (note: once reversed, the product will be burnt out and even cause serious fire);
(2) Power supply voltage of LED display: 220V±10% Frequency: 50HZ±5%;
(3) Safe and reliable earth contact, reliable isolation between the earth wire

and the neutral wire, and keep the power supply away from high-power spares;

(4) If abnormalities such as short circuit, tripping, wire burning, smoke, etc. are found, the power-on test should not be repeated, and the problem should be found in time;

(5) Keep the power supply stable, and do grounding protection to avoid lightning strikes, do not use it under harsh natural conditions, especially strong lightning weather;

(6) The large screen power supply must be supplied step by step, because the maximum power state of the entire screen will have an impact on the entire power distribution system;

(7) The LED display screen is not allowed to play the full white screen with the highest brightness for more than half an hour, so as not to cause excessive current, power cord heating, LED light damage, and affect the life of the display screen. It is recommended to play dynamic videos;

(8) During the use of LED display products, the power supply should not be turned on and off continuously, and there should be at least 1 minute between the two operations;

(9) Non-professionals are forbidden to touch the internal wiring of the large screen of the LED display to avoid electric shock or damage to the wiring.

6.4.3 Notes on cleaning

(1) Regular cleaning and maintenance: The indoor fine pitch LED display screen will be used for a long time, and more dust will accumulate on the screen. This needs to be cleaned regularly and in time to prevent it from affecting the viewing effect;

(2) To clean the surface of the module, please use a soft brush and wipe gently. It is forbidden to use any liquid substance to clean the surface of the LED module, otherwise the LED may be damaged;

(3) Wipe correctly: the surface of the large LED display screen cannot be wiped with alcohol or directly with a damp cloth. It is recommended to use brushes and vacuum cleaners to remove dust.

6.4.4 Moisture-proof and storage requirements

(1) Storage temperature requirements: ambient temperature -20℃≤t≤50℃. After the package is opened, the LED products must be stored in an environment with a temperature of <30℃ and a humidity of <70%RH;

(2) According to the environmental conditions of the display screen and the control part, avoid insect bites, and put anti-rodent drugs if necessary;

(3) The LED display should not be turned off for a long time. In a high-humidity environment, if the display is not used for more than 3 days, the pre-heating method should be used each time the display is turned on: 30%-50% brightness is preheated 4 -8 hours, then adjust to normal brightness (80%-100%) to light up the screen, so as to remove moisture so that there is no abnormality during use; if the screen has not been used for more than 7 days, every time the screen is turned on Need to adopt the pre-heating method: 30%-50% of the brightness is preheated for more than 12 hours, and then adjusted to normal brightness (80%-100%) to light up the screen, so as to remove the moisture, so that there is no abnormal.

(4) The large LED screen needs to be checked regularly to see if it is working properly. If the circuit is damaged, it should be repaired or replaced in time. The main control computer and other related equipment should be placed in an air-conditioned and dusty room to ensure the computer's ventilation and heat dissipation and stable operation. Non-professionals are forbidden to touch the internal wiring of the screen to avoid electric shock or damage to the wiring. If there is a problem, you should ask a professional for inspection and repair.

6.5 Troubleshooting

No.	Common faults	Solution
1	Some modules are not lighting on	1. Check whether the power plug of the corresponding module is tightly inserted;
		2. Check whether the power cable of the corresponding module is burnt out;
		3. Check whether the switch power supply of the corresponding module has no output;
		4. Check whether the flat cable of the corresponding module is malfunctioning;
		5. Replace the flat cable of the corresponding module;
		6. Replace the module;
		7. Replace the receiving card;
		8. Send rcfg file;
2	The whole screen is not lighting on	1. Check whether the screen power is on;
		2. Check whether the DVI cable or HDMI cable is loose;
		3. Check whether the main data cable is inserted tightly;
		4. Check whether the sending card is powered on and whether the running indicator is flashing;
		5. Replace the sending card;
		6, Connecting the computer to an LCD display, check

		whether there is output on video card;
		7. Update the video card driver;
		8. Replace the computer;
3	Screen show scrambled image	1. Check whether the power plug of the receiving card is tightly inserted;
		2. Check whether the power cable of the receiving card is burnt out;
		3. Check whether the power supply has no output;
		4. Check the data cable of the receiving card;
		5. Replace the data cable;
		6. Send the rcfg file;
		7. Upgrade the firmware version of the receiving card;
		8. Replace the receiving card;
4	Chromatic aberration between modules	1. Check whether the module power plug is plugged tightly;
		2. Replace the flat cable;
		3. Replace the power supply;
		4. Replace the module;
		5. Replace the receiving card;
5	All LED panels display the same content	1. Set the screen connection on software;
		2. Check whether the data port is wrong.
6	No control system detected	1. Check the USB cable;
		2. Check whether the computer USB port is malfunctioning;
		3. Update the USB driver;
		4. Replace the USB cable;
		5. Replace the sending card;
7	No multi-function card detected	1. Check whether the distribution cabinet is in the automatic state;
		2. Check whether the multi-function card is powered;
		3. Replace the power supply of the multi-function card;
		4. Check whether the main data cable is inserted into the wrong data port;
		5. Check whether the sending card data port is malfunctioning;
		6. Re-add the multi-function card;
		7. Replace the multi-function card;
		8. Replace the sending card;
8	No full screen display	1. Check whether the setting of the playback window is normal;
		2. Check the output resolution of the video processor;
		3. Check the output window of the video processor;

Check for Power Supply Short Circuit

After completing the cabinet wiring, please use a multimeter to check if there is any short circuit at the AC input power supply (L / N / PE) and DC output terminal (VCC / GND). If there is a short circuit, please carefully investigate the wiring. Make sure all wiring are normal, and only then connect power to operate the unit.

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