



MPV2 Series User Manual

Shenzhen Dicolor Group Co.,Ltd

V1.0

Rev:A0

2024/03/07

This manual is applicable to the
MPV2 series products of Dicolor.

| Preface

To Users

Dear users of Dicolor.

Thank you for choosing and using Dicolor LED display products.

The products of Deeptech LED display are characterized by high quality and good performance. In order to facilitate your use, please read the manual carefully and operate according to the introduction of the manual. From the beginning to the end, the "all-weather 24H service" of Dicolor will accompany you, no matter what problems you have when using, please contact us according to the phone number and address of the warranty certificate, we are always waiting for you.

Please strictly observe the precautions in the product trial manual when using the product.

Dicolor - your most sincere friend.

Due to the improvement of the product, the Dicolor LED display you purchased may not be exactly the same as the description in the manual, we apologize!

24-hour service hotline: 0755-33691736

Thank you very much for choosing and using Dicolor LED display, please make sure to read this manual carefully before using, especially the safety precautions, after reading, please keep it properly for reference.

Catalog

To Users	- 1 -
Catalog	2
Chapter 1 Product Description	7
1.1 Products	7
1.2 Product Features	8
1.3 Product Size	9
1.4 Product parameters	10
1.5 Product Components	13
1.6 Product Wooden Case	15
Chapter 2 Product Installation	16
2.1 Installation requirements	16
2.2 Product installation accessories	16
2.3 Product installation (front installation)	17
2.4 Product installation (post installation)	19
Chapter 3 Product Maintenance	22
3.1 Pre-module maintenance	22
3.2 Receiver Card, Power Supply, HUB Board Front Maintenance	23
3.3 Post-module maintenance	24
3.4 Receiver card, power supply, HUB board after maintenance	26
Chapter 4 Product System	28
4.1 System connection requirements	28
4.2 Product common wire	28
4.3 Power connection diagram	29
4.4 Signal connection diagram	30
4.5 System Composition	31
Chapter 5 Display switch and maintenance	32
5.1 Opening screen operation sequence	32
5.2 Screen off operation sequence	32
5.3 Daily Maintenance	32
5.4 Saving of the display	32
Chapter 6 Common fault check	34
6.1 Common screen troubleshooting	34
6.2 Common faults in the control system	35
6.3 Video processor (if used) common troubleshooting	35

Safety instructions for use

Warning!

Be sure to read this section for safety precautions before installing, powering, operating, or commissioning this product. The manufacturer is not responsible for any damage to the product or for any injury to persons caused by incorrect handling practices.

The final interpretation right belongs to Shenzhen Dicolor Optoelectronics Co., Ltd

- Before using this product, please read this manual carefully and follow the safety instructions in the manual and on the product. If you have any questions, please ask Dicolor for assistance.



- Prohibit the stacking of flammable and explosive items near the working equipment to reduce the potential fire hazard.
- The risk of electric sparks in this equipment, it is strictly prohibited to use this equipment in explosive hazardous environment occasions (mines, textile workshops, etc.)
- Power line overload heat is likely to cause fire, please carry out professional load calculation and power distribution operation before use.
- Fire caused by poor contact or short circuit of power supply or cable, please make sure to use circuit breaker or fuse for protection.
- This equipment has the risk of electric leakage, please be sure to follow the local electricity safety code when installing and using it to ensure the safety of electricity.



- Disconnect power equipment or take other applicable lightning protection in the presence of lightning, and do not use it under adverse natural conditions, especially strong lightning.
- Disconnect power equipment or take other applicable lightning protection in the presence of lightning, and do not use it under adverse natural conditions, especially strong lightning.
- Disconnect power equipment or take other applicable lightning protection in the presence of lightning, and do not use it under adverse natural conditions, especially strong lightning.



- Safety helmets must be worn during installation work to reduce the chance of injury.

- When stacking products, please securely fix the products to prevent falling. Be sure to ensure a stable center of gravity when stacking for use to avoid the risk of tipping.
- Make sure that the relevant load-bearing, supporting, securing and connecting mechanisms can support the weight of the equipment and leave 100% redundancy before installation.
- When installing or dismantling the product, please use obvious warning signs to circle the construction isolation area to avoid inadvertent falling objects causing injuries to unrelated personnel.



- Pay attention to the suspended load and prohibit overweight suspension.
- When working with heavy loads, you need to be careful to reduce the chance of injury.



Precautions for use

- Product working environment temperature range - $10^{\circ}\text{C} \leq t \leq 40^{\circ}\text{C}$, working environment humidity range 10%~90%RH.
- Avoid using in high acid/alkali/salt environment.
- Keep away from the use of flammable and explosive substances, gases, dust, etc.
- Screen body has not been used for more than 3 days, must be dehumidified before lighting again, the screen body point white screen 30%-50% brightness preheat 4-8H, and then adjust to normal 80%- 100% brightness.
- LED display is not allowed to play the highest brightness of the full white screen for more than half an hour, so as not to cause excessive current, power line heating, LED lamp damage, it is recommended to play dynamic video-based.
- The product is taken lightly, try to avoid damage caused by collision.



- ESD (electrostatic protection) measures & LED screens: LED components in use in the display are susceptible to ESD (electrostatic discharge) damage. To prevent damage to LED components, please

wear anti-static gloves when operating (mounting, dismounting, etc.). Do not touch when the equipment is running or off.



Switching screen precautions

- open screen: first open the control computer so that it can operate normally before opening the LED display screen.
- Off screen: first turn off the LED screen body power, turn off the control software, and then the correct computer off; (first off the computer and then off the LED display, will cause the screen body high brightness, burn the lamp, with serious consequences)
- LED display products in the process of use, not continuous power on and off, the two operations should be separated by at least 1 minute.
- Avoid opening the screen in the full white screen state, because this is the maximum power state, its impact current on the entire distribution system is the largest.



Notes on power supply

- LED module for DC + 5V power supply (working voltage: 4.2 ~ 5.2V), prohibit the use of AC power supply; power terminals positive and negative strictly prohibited to reverse (Note: once reversed will burn the product or even cause a serious fire).
- Conventional LED display power supply voltage: $220V \pm 10\%$, frequency: $50HZ \pm 5\%$; can be configured according to the voltage of different countries or regions to adapt to the local voltage power supply.
- Power supply phase line needs to be used in isolation, shorting is strictly prohibited, the ground needs to be grounded, access to power away from high-power power equipment.
- If short circuit, tripping, burning line, smoke and other abnormal appearances, should not be repeatedly energized test, should be timely to find the problem.
- Keep the power supply stable, it is recommended to install lightning protection equipment, and good grounding protection to avoid lightning strikes, do not use in adverse natural conditions, especially strong lightning weather.
- Must be step-by-step to the large screen power supply power supply, because the whole screen

maximum power state will have a shock to the entire power distribution system.

- LED display screen is not allowed to play the highest brightness of the full white screen for more than half an hour, so as not to cause excessive current, power line heating, LED lamp damage, affecting the service life of the display, it is recommended to play dynamic video-based.
- LED display screen internal wiring, non-professionals are prohibited from touching, so as not to electrocute, or cause damage to the line. If problems arise, ask professionals to overhaul.



Storage precautions

- The storage place should be well protected from moisture, storage and working environment: temperature is $-20^{\circ}\text{C} \leq t \leq 60^{\circ}\text{C}$ and relative humidity is less than 90%. After the package is opened, LED products shall be stored in a temperature of $22^{\circ}\text{C} \leq t \leq 28^{\circ}\text{C}$ and humidity of 30%~60% RH environment.
- Avoid insect bite and rodent damage, if necessary, anti-insect and anti-rodent drugs should be placed.



Cleaning Notes

- To clean the surface of the module, please use a soft brush and brush gently. Prohibit the use of any liquid substance to clean the surface of the LED module, otherwise the LED lamp beads may be damaged.
- LED display large screen surface can be dusted with anti-static brushes, vacuum cleaners, can not be directly wiped with a wet cloth.

Chapter 1 Product Description

Description

This chapter includes.

Mainly introduces the LED screen body content.

1. 1 Products

MPV2 series is a professional fixed product designed for outdoor high-definition display, mainly used for: outdoor advertising sign propaganda, digital signage system, airport station information release, city street advertising and other display fields.



Figure 1- 1 MPV2 series box back view

MPV2 series products are products developed by Deeptech Optoelectronics for outdoor solid installation LED display market, MP has P2.6 to P10 ultra-high definition mainstream small pitch and 500mm x 500mm, 500mm x 1000mm, 1000mm x 1000mm three different sizes of cabinets, covering the full scene of commercial advertising applications, close to the street scene advertising screen, light cabinet The three mainstream application scenes of the screen, to promote the city's intelligent display at the same time to create a higher return on investment for customers.

1.2 Product Features

- **Lightweight**

Ultra-thin and ultra-light, with weight as light as 25 kg/m and as thin as 68 mm, saving installation and transportation costs.

- **Multi-size interplay**

Provides 500x500, 500x1000, 1000x1000mm boxes to choose from, realizing inter-assembly and greatly satisfying the building needs of different areas.

- **Front and back maintenance**

Front and rear maintenance design, maintenance efficiency is increased more than 5 times compared with conventional products, saving time and effort for maintenance.

- **High precision**

High-strength die-casting aluminum + aluminum profile combination design, high-precision seamless splicing display.

- **Hidden alignment**

Die cast aluminum casing, high precision seamless splicing display.

- **90° curved corner**

The curved corner cabinet design is smoother and more delicate than the right angle transition, meeting the needs of multiple scenes such as building corners and street view corners;

- **Third generation energy-saving technology**

Adopting the third-generation DCD energy-saving is reduced by more than 30% compared with conventional products, which significantly reduces the operating cost of advertising.

1.3 Product Size

All dimensions are in mm

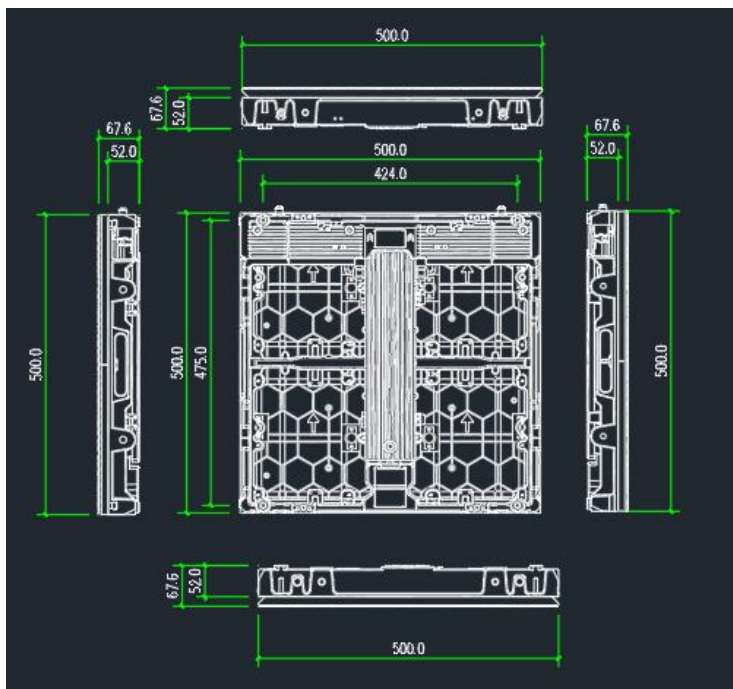


Figure 1-2 MPV2 series 500x500mm box size

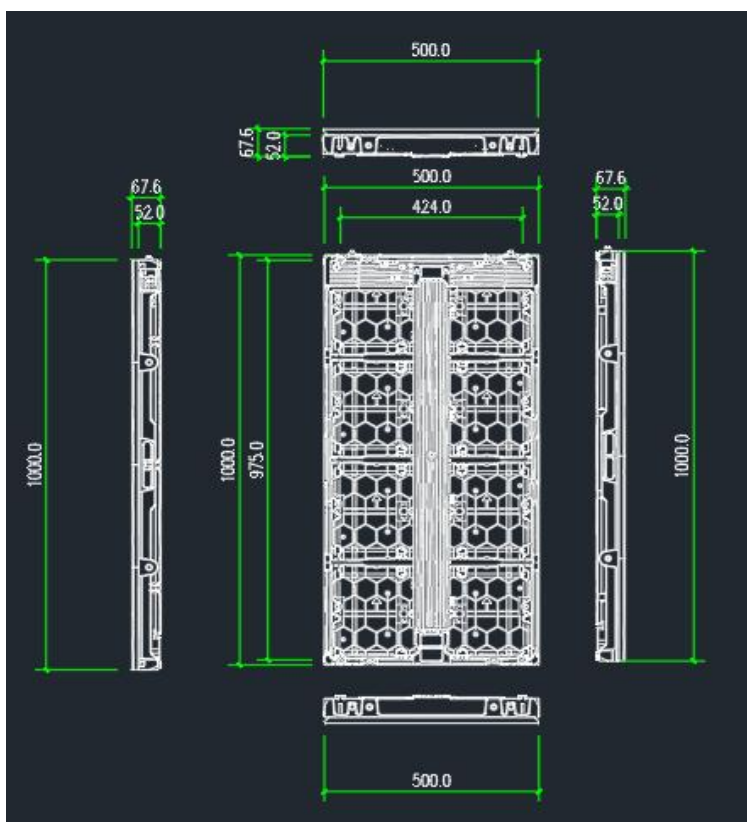


Figure 1-4 MPV2 series 500x1000mm box size diagram

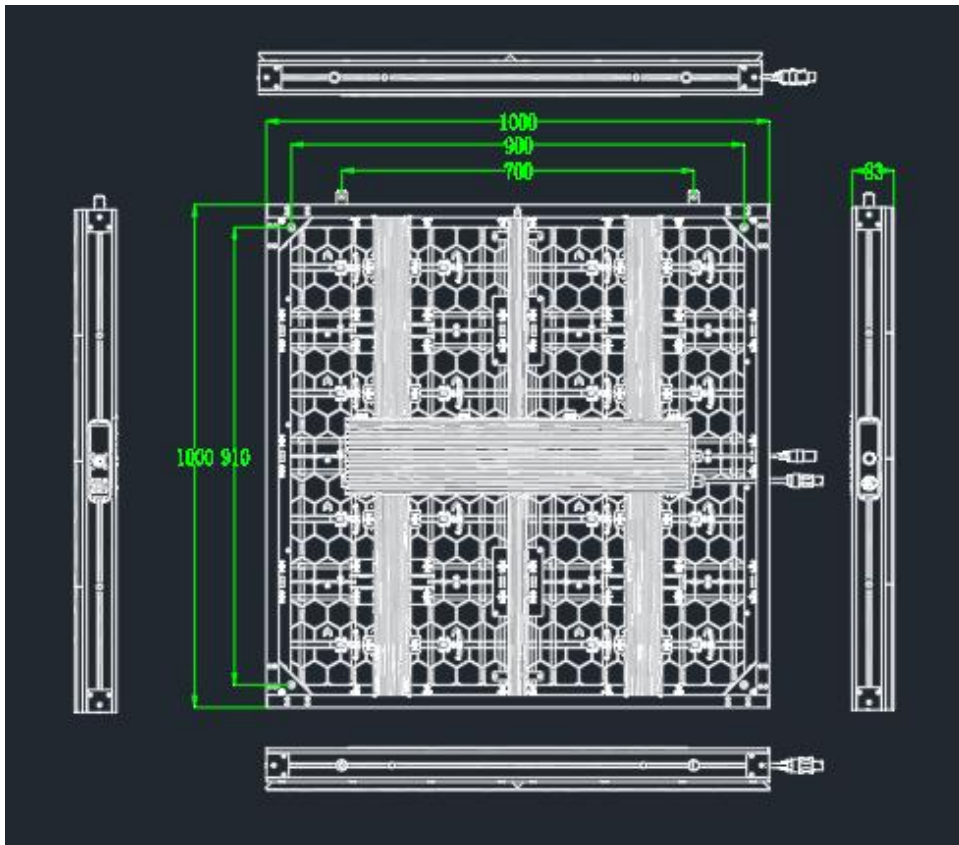


Figure 1-4 MPV2 series 1000x1000mm box size diagram

Note: Design and specifications are subject to change without notice.

1.4 Product parameters

(1) MPV2 product DCD energy-saving parameters:

Parameter	MP-260v2 DCD	MP-290v2 DCD	MP-390v2 DCD	MP-480v2 DCD
LED Arrangement	SMD1515	SMD1515	SMD1921	SMD1921
Pixel Pitch (mm)	2.604	2.976	3.91	4.81
Module Size (mm)	250x250	500x250	500x250	500x250
Module Resolution (W×H)	96*96	168*84	128*64	104*52
Unit Composition (W×H)	2*2/2*4	1*2/1*4	1*2/1*4	1*2/1*4
Cabinet Size (mm)	500x500 500x1000x68	500x500 500x1000x68	500x500 500x1000x68	500x500 500x1000x68
Cabinet Resolution (W×H)	192*192/192*384	168*168/168*336	128*128/128*256	104*104/104*208
Cabinet Acreage (m ²)	0.25/0.5	0.25/0.5	0.25/0.5	0.25/0.5
Pixel Density (Dots/m ²)	147456	112896	65536	43264
Cabinet Material	Die-casting aluminum	Die-casting aluminum	Die-casting aluminum	Die-casting aluminum
Cabinet Weight (kg)	7.3/12.6	7.3/12.6	7.3/12.6	7.3/12.6
Brightness Level (nits)	4000	4500	5000	5000
Visual View Angle (H/V)	140°/140°	140°/140°	140°/140°	140°/140°
Contrast Ratio	4000: 1	4000: 1	4000: 1	4000: 1
Max Power (W/m ²)	≤525	≤532	≤560	≤583
Average Power (W/m ²)	≤175	≤178	≤187	≤195
Voltage	AC100~240V (50~60Hz)	AC100~240V (50~60Hz)	AC100~240V (50~60Hz)	AC100~240V (50~60Hz)
Scanning Method	1/24S	1/21S	1/11S	1/8S
Frame Rate (Hz)	≥7680	≥7680	≥7680	≥7680
Grey Scale	14-16bit	14-16bit	14-16bit	14-16bit
Operating Temperature/ Humidity	-20°C ~ +50°C; 10% ~90%RH	-20°C ~ +50°C; 10% ~90%RH	-20°C ~ +50°C; 10% ~90%RH	-20°C ~ +50°C; 10% ~90%RH
Storage Temperature/ Humidity	-40°C ~ +60°C; 10% ~90%RH	-40°C ~ +60°C; 10% ~90%RH	-40°C ~ +60°C; 10% ~90%RH	-40°C ~ +60°C; 10% ~90%RH
Service Life	≥ 100,000Hrs	≥ 100,000Hrs	≥ 100,000Hrs	≥ 100,000Hrs
Maintenance Method	Front/ Back	Front/ Back	Front/ Back	Front/ Back
Protecting Rating	IP65	IP65	IP65	IP65
Certificate	CE、FCC、ETL	CE、FCC、ETL	CE、FCC、ETL	CE、FCC、ETL

Parameter	MP-590v2 DCD	MP-780v2 DCD	MP-100v2 DCD
LED Arrangement	SMD2727	SMD2727	SMD2727
Pixel Pitch (mm)	5.95	7.81	10.41
Module Size (mm)	500x250	500x250	500x250
Module Resolution (W×H)	84*42	64*32	48*24
Unit Composition (W×H)	1*2/1*4/2*4	1*2/1*4/2*4	1*2/1*4/2*4
Cabinet Size (mm)	500x500/500x1000 1000x1000x68	500x500/500x1000 1000x1000x68	500x500/500x1000 1000x1000x68
Cabinet Resolution (W×H)	84*84/84*168/168*168	64*64/64*128/128*128	48*48/48*96/96*96
Cabinet Acreage (m ²)	0.25/0.5/1	0.25/0.5/1	0.25/0.5/1
Pixel Density (Dots/m ²)	28224	16384	9216
Cabinet Material	Die-casting aluminum	Die-casting aluminum	Die-casting aluminum
Cabinet Weight (kg)	7.3/12.6/25	7.3/12.6/25	7.3/12.6/25
Brightness Level (nits)	5000	7000	7000
Visual View Angle (H/V)	140°/140°	140°/140°	140°/140°
Contrast Ratio	4000: 1	4000: 1	4000: 1
Max Power (W/m ²)	≤510	≤525	≤580
Average Power (W/m ²)	≤ 170	≤ 175	≤ 194
Voltage	AC100~240V (50~60Hz)	AC100~240V (50~60Hz)	AC100~240V (50~60Hz)
Scanning Method	1/6S	1/4S	1/2S
Frame Rate (Hz)	≥7680	≥7680	≥7680
Grey Scale	14-16bit	14-16bit	14-16bit
Operating Temperature/ Humidity	-20°C ~ +50°C; 10% ~90%RH	-20°C ~ +50°C; 10% ~90%RH	-20°C ~ +50°C; 10% ~90%RH
Storage Temperature/ Humidity	-40°C ~ +60°C; 10% ~90%RH	-40°C ~ +60°C; 10% ~90%RH	-40°C ~ +60°C; 10% ~90%RH
Service Life	≥ 100,000Hrs	≥ 100,000Hrs	≥ 100,000Hrs
Maintenance Method	Front/ Back	Front/ Back	Front/ Back
Protecting Rating	IP65	IP65	IP65
Certificate	CE, FCC, ETL	CE, FCC, ETL	CE, FCC, ETL

(2) MPV2 product common anode parameters:

Parameter	MP-260v2 common anode	MP-290v2 common anode	MP-390v2 common anode	MP-480v2 common anode
LED Arrangement	SMD1515	SMD1515	SMD1921	SMD1921
Pixel Pitch (mm)	2.604	2.976	3.91	4.81
Module Size (mm)	250x250	500x250	500x250	500x250
Module Resolution (W×H)	96*96	168*84	128*64	104*52
Unit Composition (W×H)	2*2/2*4	1*2/1*4	1*2/1*4	1*2/1*4
Cabinet Size (mm)	500x500 500x1000x68	500x500 500x1000x68	500x500 500x1000x68	500x500 500x1000x68
Cabinet Resolution (W×H)	192*192/192*384	168*168/168*336	128*128/128*256	104*104/104*208
Cabinet Acreage (m ²)	0.25/0.5	0.25/0.5	0.25/0.5	0.25/0.5
Pixel Density (Dots/m ²)	147456	112896	65536	43264
Cabinet Material	Die-casting aluminum	Die-casting aluminum	Die-casting aluminum	Die-casting aluminum
Cabinet Weight (kg)	7.3/12.6	7.3/12.6	7.3/12.6	7.3/12.6
Brightness Level (nits)	4000	4500	5000	5000
Visual View Angle (H/V)	140°/140°	140°/140°	140°/140°	140°/140°
Contrast Ratio	4000: 1	4000: 1	4000: 1	4000: 1
Max Power (W/m ²)	≤750	≤760	≤800	≤832
Average Power (W/m ²)	≤250	≤253	≤267	≤277
Voltage	AC100~240V (50~60Hz)	AC100~240V (50~60Hz)	AC100~240V (50~60Hz)	AC100~240V (50~60Hz)
Scanning Method	1/24S	1/21S	1/11S	1/8S
Frame Rate (Hz)	≥7680	≥7680	≥7680	≥7680
Grey Scale	14-16bit	14-16bit	14-16bit	14-16bit
Operating Temperature/ Humidity	-20°C ~ +50°C; 10% ~90%RH	-20°C ~ +50°C ; 10% ~90%RH	-20°C ~ +50°C; 10% ~90%RH	-20°C ~ +50°C ; 10% ~90%RH
Storage Temperature/ Humidity	-40°C ~ +60°C; 10% ~90%RH	-40°C ~ +60°C ; 10% ~90%RH	-40°C ~ +60°C; 10% ~90%RH	-40°C ~ +60°C ; 10% ~90%RH
Service Life	≥ 100,000Hrs	≥ 100,000Hrs	≥ 100,000Hrs	≥ 100,000Hrs
Maintenance Method	Front/ Back	Front/ Back	Front/ Back	Front/ Back
Protecting Rating	IP65	IP65	IP65	IP65
Certificate	CE, FCC, ETL	CE, FCC, ETL	CE, FCC, ETL	CE, FCC, ETL

Parameter	MP-590v2 common anode	MP-780v2 common anode	MP-100v2 common anode
LED Arrangement	SMD2727	SMD2727	SMD2727
Pixel Pitch (mm)	5.95	7.81	10.41
Module Size (mm)	500x250	500x250	500x250
Module Resolution (W×H)	84*42	64*32	48*24
Unit Composition (W×H)	1*2/1*4/2*4	1*2/1*4/2*4	1*2/1*4/2*4
Cabinet Size (mm)	500x500/500x1000 1000x1000x68	500x500/500x1000 1000x1000x68	500x500/500x1000 1000x1000x68
Cabinet Resolution (W×H)	84*84/84*168/168*168	64*64/64*128/128*128	48*48/48*96/96*96
Cabinet Acreage (m ²)	0.25/0.5/1	0.25/0.5/1	0.25/0.5/1
Pixel Density (Dots/m ²)	28224	16384	9216
Cabinet Material	Die-casting aluminum	Die-casting aluminum	Die-casting aluminum
Cabinet Weight (kg)	7.3/12.6/25	7.3/12.6/25	7.3/12.6/25
Brightness Level (nits)	5000	7000	7000
Visual View Angle (H/V)	140°/140°	140°/140°	140°/140°
Contrast Ratio	4000: 1	4000: 1	4000: 1
Max Power (W/m ²)	≤700	≤750	≤830
Average Power (W/m ²)	≤233	≤250	≤263
Voltage	AC100~240V (50~60Hz)	AC100~240V (50~60Hz)	AC100~240V (50~60Hz)
Scanning Method	1/6S	1/4S	1/2S
Frame Rate (Hz)	≥7680	≥7680	≥7680
Grey Scale	14-16bit	14-16bit	14-16bit
Operating Temperature/ Humidity	-20°C ~ +50°C; 10% ~90%RH	-20°C ~ +50°C; 10% ~90%RH	-20°C ~ +50°C; 10% ~90%RH
Storage Temperature/ Humidity	-40°C ~ +60°C; 10% ~90%RH	-40°C ~ +60°C; 10% ~90%RH	-40°C ~ +60°C; 10% ~90%RH
Service Life	≥ 100,000Hrs	≥ 100,000Hrs	≥ 100,000Hrs
Maintenance Method	Front/ Back	Front/ Back	Front/ Back
Protecting Rating	IP65	IP65	IP65
Certificate	CE, FCC, ETL	CE, FCC, ETL	CE, FCC, ETL

※ The parameters vary slightly depending on the configuration, for more information, please contact us.

1.5 Product Components

The structure of MPV2 series products mainly includes: die-casting aluminum + aluminum profile frame, positioning pin, power cable interface, network cable interface, power box, warning label, module latch, module, nameplate, connection piece screw hole, et

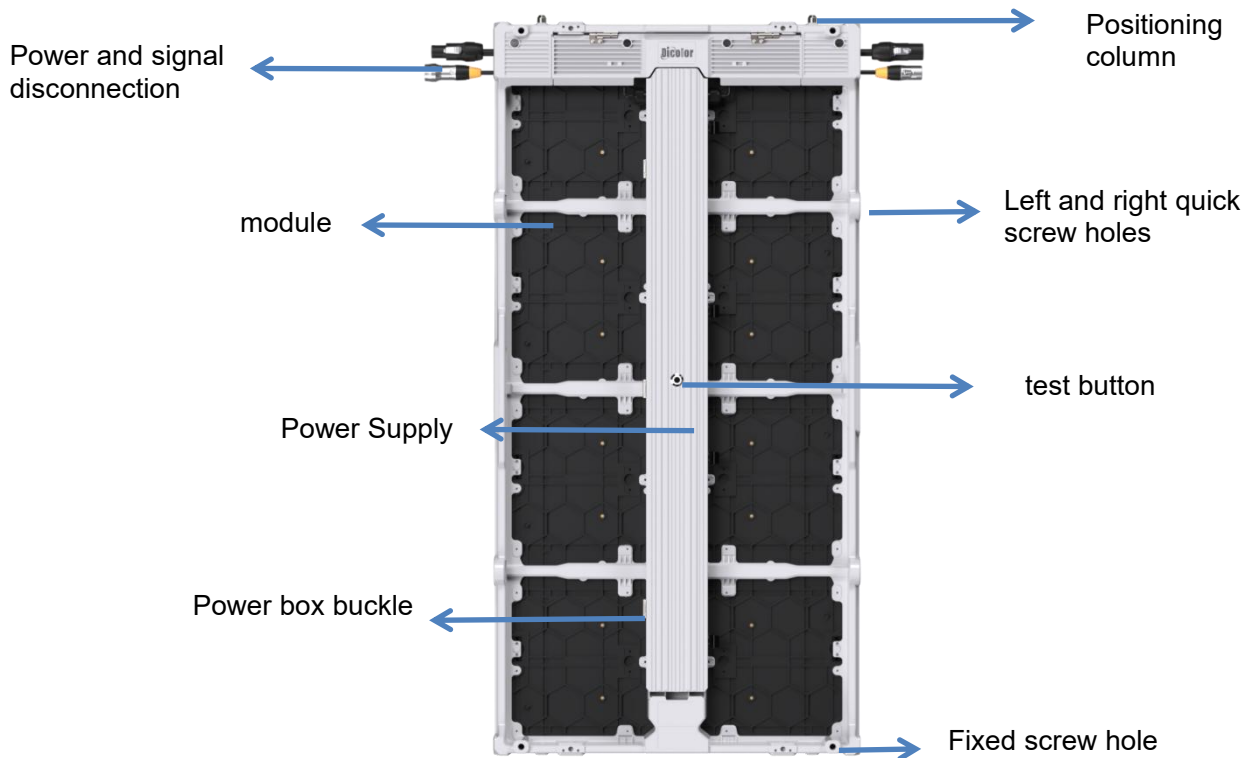


Figure 1-5 MPV2 series cabinet structure 500*1000mm

Serial number	Part Name	Role		Unit
1	Positioning Column	Positioning during box installation	2	pcs
2	Fixed screw hole	Used to fix the connecting piece when connecting the screen	4	pcs
3	Module	Display unit of the box	4	pcs
4	Fixed module clips	Fixed module use	40	pcs
5	Control Box	Enclosure control unit	1	pcs
8	Test button	Used for power signal testing	1	pcs
9	Control box buckle	Control box can be opened/closed	4	pcs
10	Screw hole position	Used to fix the connecting piece when connecting the screen	4	pcs
11	HUB board	Mainly used to distribute the receiving card signal to each module	1	pcs
12	Power supply	Convert power input 300W (5v*60A)	2	pcs
13	Receiving Card	Signal to individual cabinet for control	1	pcs

*Note: Here accessories to the number of 500x1000 box specifications, other specifications size requirements according to the actual configuration shall prevail.



1.6 Product Wooden Case

Before installation

- Check whether the number of products is complete, whether the box is damaged, and whether the accessories are complete.
- After confirming the accessories are complete, open the wooden box and take out the corresponding LED case, connection piece, screws and other related parts.

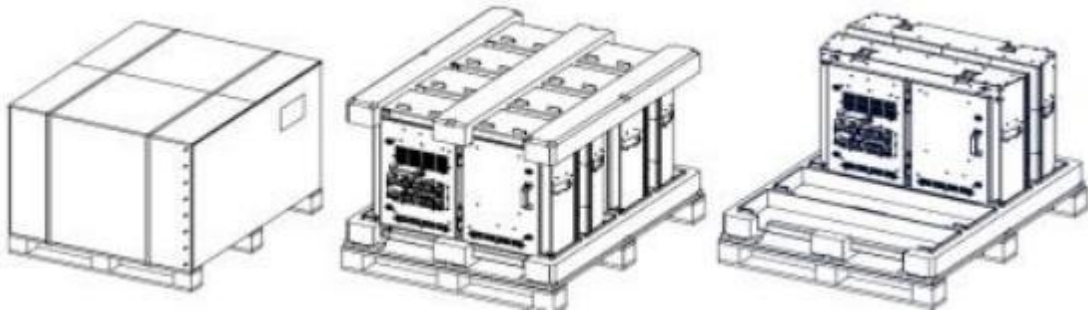


Figure 1-6 MPV2 series wooden box

Chapter 2 Product Installation

Description

This chapter includes.

Mainly introduces the LED display installation method description.

2. 1 Installation requirements

Weight: Ensure that the floor, truss or wall where the display is mounted can support the load of the entire display.

Level surface: the mounting surface and truss where the display is installed must be kept level. Do not install the display in a tilted box When erecting the screen, please weld the steel structure first and confirm it is qualified before installing the display and other subsequent work.



Focus on : Side welding side installation or after installation and then welding, should prevent welding slag, arc and other damage to the internal devices of the LED display, the situation may cause the screen module scrap. Boxes in the rack screen, the bottom of the first row of boxes must be put together to ensure that there is no obvious gaps and misalignment before continuing up the assembly. In the installation and maintenance of the LED display, need to isolate the area of the possible fall range closed, and ensure that the module will not have the risk of falling.

LED display has high consistency, do not have paint, dust, welding slag and other dirt sticky in the module light surface or screen body surface during installation, so as not to affect the display effect.

LED display should not be installed near the sea or water, high salt fog, high temperature and high humidity is very easy to cause the display components to High salt fog, high temperature and humidity will easily cause the display components to be affected by moisture, oxidation and corrosion, if there is a need, you need to communicate with the manufacturer in advance to do special three-proof treatment and good ventilation, dehumidification, cooling and other work.

2.2 Product installation accessories

Main accessories:



Middle four-hole connecting piece



Upper and lower left and right hole connection piece



Two hole connecting
pieces on both sides



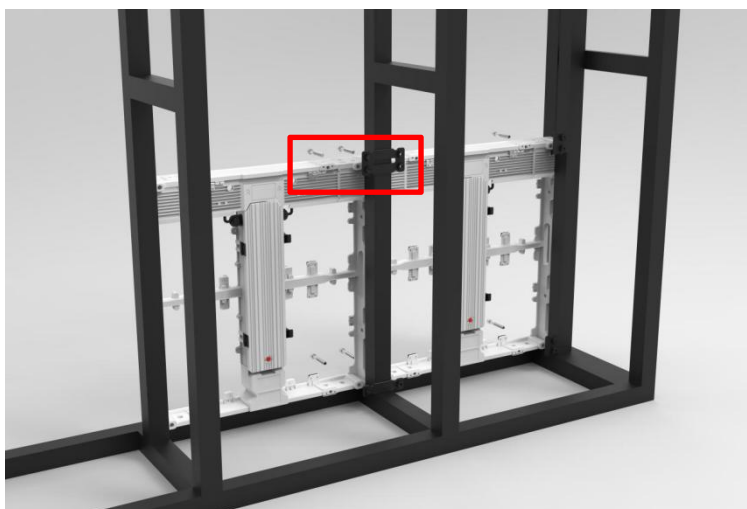
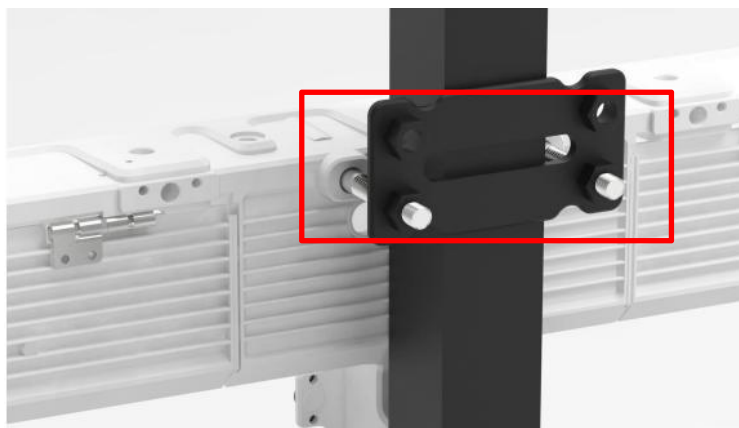
M8 * 85 screw
(front installation)



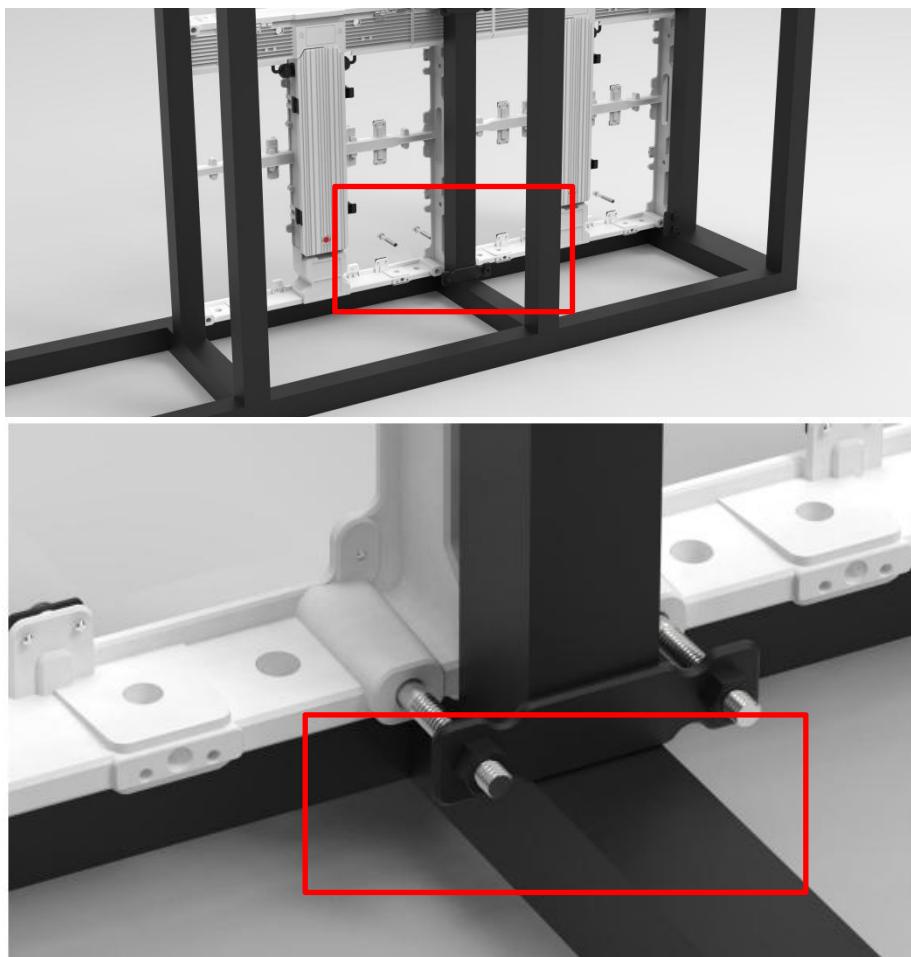
M10 * 65 screw
(rear installation)

2.3 Product installation (front installation)

Step 1: Remove the module of the box to be installed and fix the MPV2 cabinet frame to the front using M8 * 85 screws and installation connectors On the installation structure; (The diagram shows the 4-hole connecting piece in the middle of the screen body)



Step 2: Use M8*85 screws and installation connectors to fix the MPV2 cabinet to the installation structure;
(The diagram shows the 2-hole connecting pieces on the upper and lower parts of the screen)



Step 3: Repeat the above steps to complete the installation of the cabinet frame;



Step 4: Install the disassembled modules one by one, use maintenance tools before use, tighten and level the modules, pay attention to the direction of the module arrows, and complete the installation of the LED display screen.

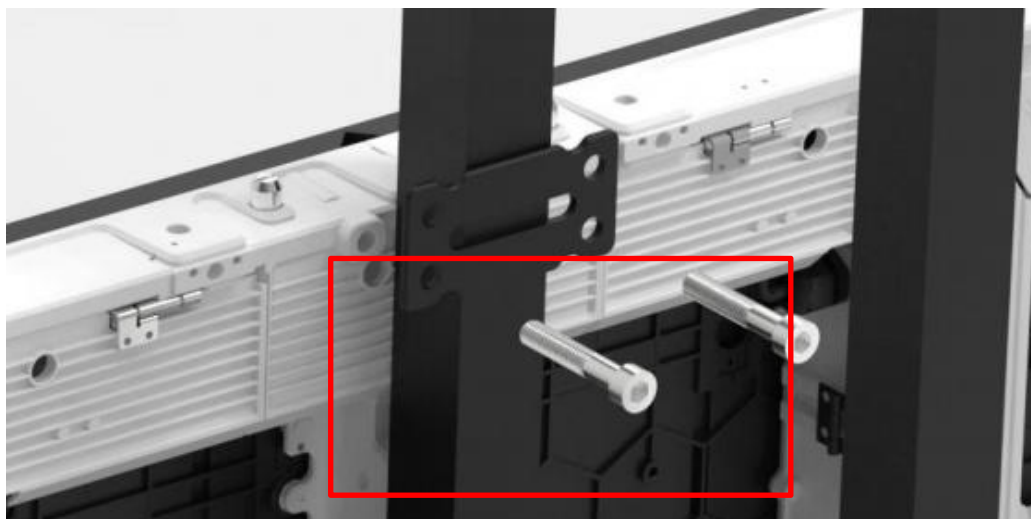


2.4 Product installation (post installation)

Step 1: Weld the steel structure for installing and fixing the screen. The steel structure shown in the diagram is for installation, and the actual situation is subject to the specific project;



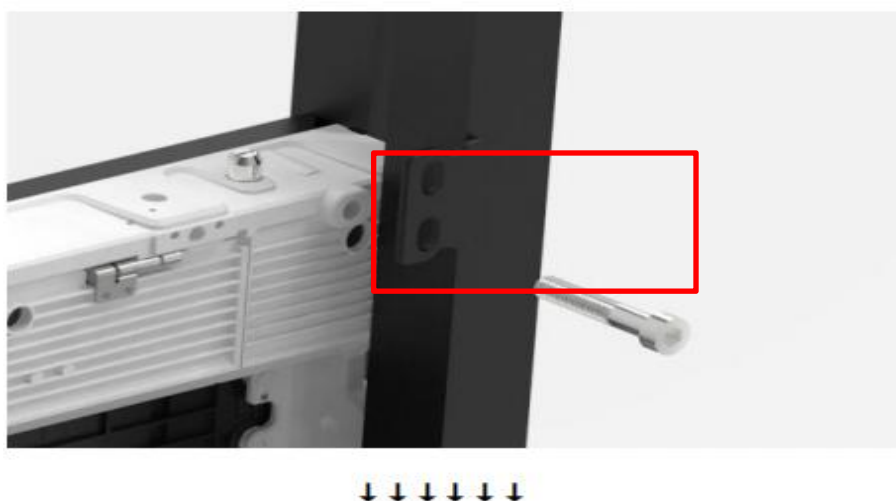
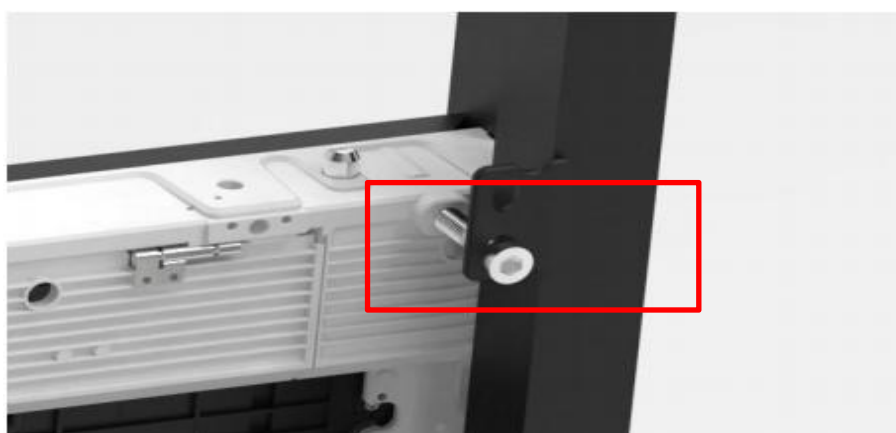
Step 2: Remove the module of the cabinet to be installed, and use M10 * 65 screws and installation connectors from the front to fix the MPV2 cabinet frame to the installation structure; (The diagram shows the 4-hole connecting piece in the middle of the screen body)



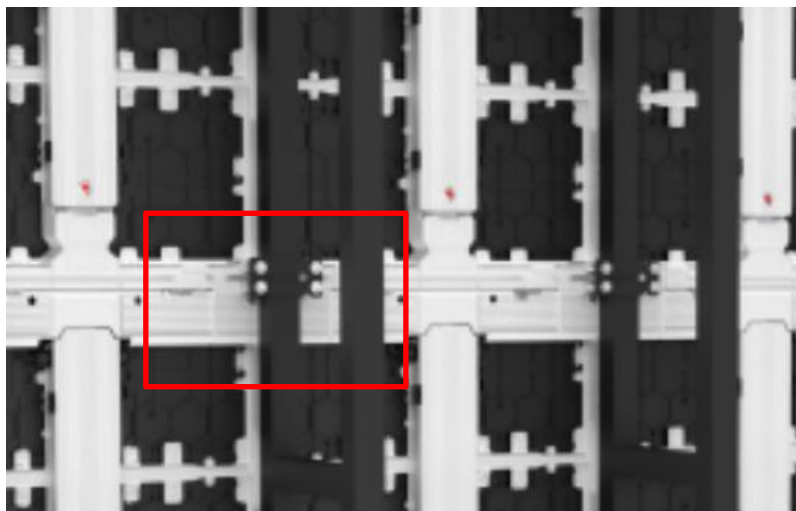
Step 3: Use an Allen wrench, thread M10 * 65 hex bolts through the connecting plate, and lock them onto the middle hole of the connecting piece;



Step 4: Use M10X65 screws and installation connectors to fix the MPV2 box to the installation structure;
(The diagram shows the 2-hole connecting pieces on both sides of the screen)



Step 5: Similarly, install the second and third layers of the cabinet in sequence. At the same time, check the flatness of the gap between the lower boxes and repeat the operation. Tighten the bolts of all connecting plates and reinstall the removed modules one by one to complete the installation of the LED display screen.



Chapter 3 Product Maintenance

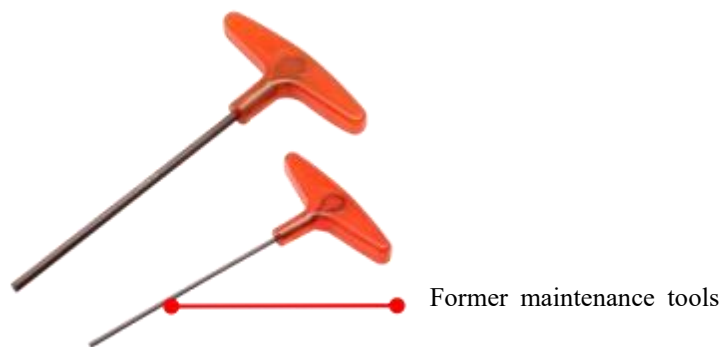
Description

This chapter includes.

Mainly introduces the LED display maintenance method description.

3. 1 Pre-module maintenance

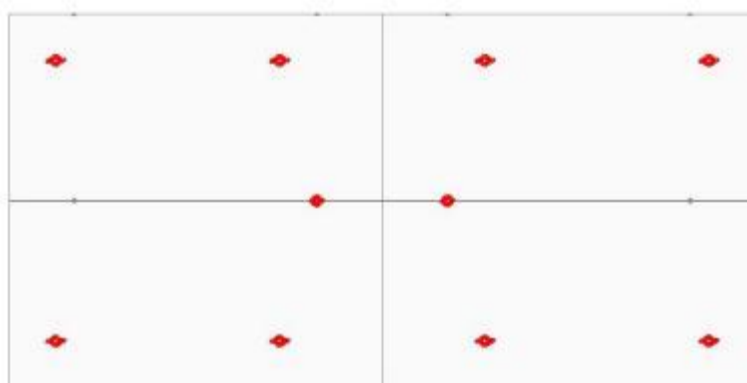
Step 1: Use a T-hexagonal 1.5 mm front maintenance tool.



Step 2: Use the front maintenance tool to enter the latch lock core hole and twist and rotate 90 degrees counterclockwise to the side latch bit into the vertical.



Step 3: Unlock the 10 snap locks on the surface of the module by repeating the operation with the module front maintenance identification tool.

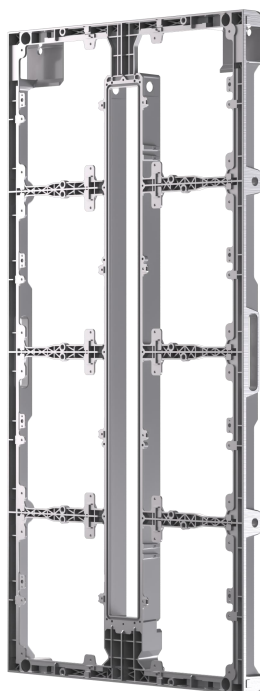


Step 4: Unlock the safety rope and complete the disassembly and removal of the maintenance module.

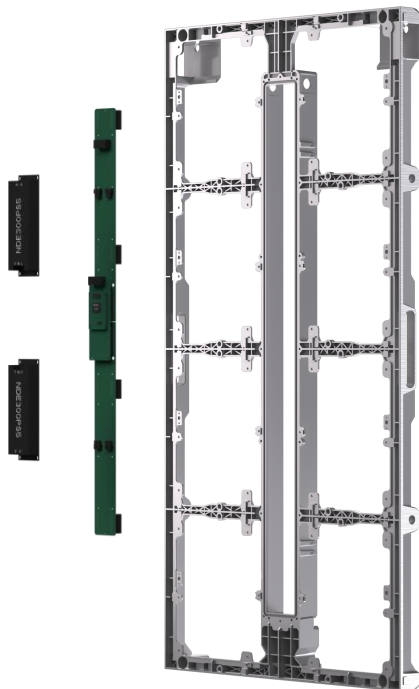


3.2 Receiver Card, Power Supply, HUB Board Front Maintenance

Step 1: After removing the module, use a screwdriver to remove the four screws of the front water deflector;



Step 2: After disassembling the front water deflector, you can remove the maintenance receiving card, power supply, and corresponding accessories of the HUB board;



3.3 Post-module maintenance

Step 1: Use a T-hexagonal 2 mm post-maintenance tool.

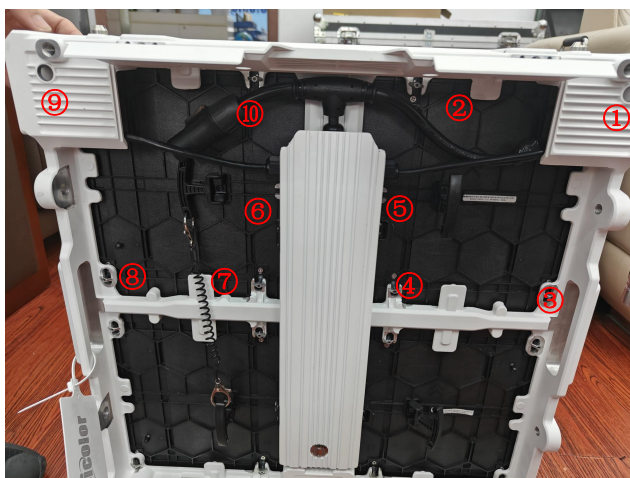
Post- Maintenance Tools



Step 2: Open the buckle lock on the back cover of the cabinet. There are two buckle locking holes below the left and right connecting plate locking holes, as shown in Figures ① and ⑨ below;



Step 3: Insert the post maintenance tool into the lock cylinder holes of the 10 module locking buckles as shown in the figure, rotate counterclockwise by 90 degrees until the edge locking buckles are in a vertical position, and then remove the module from behind.



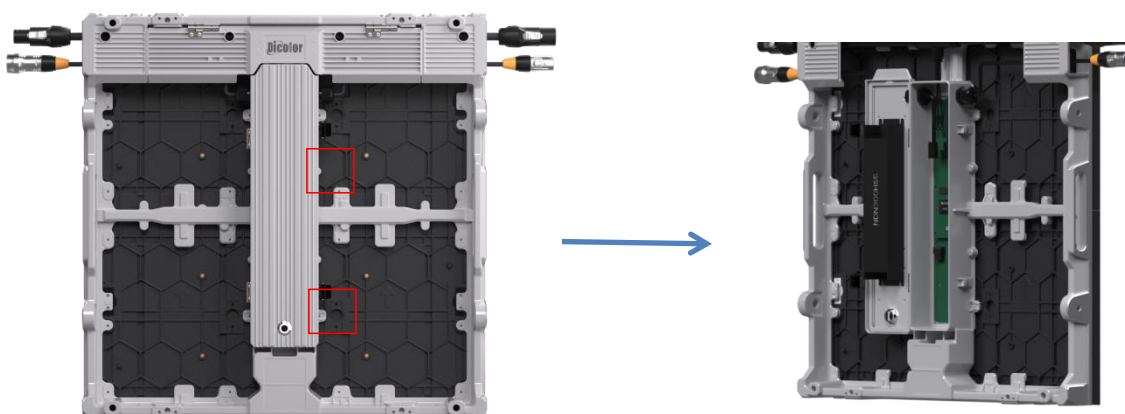
transverse

vertical

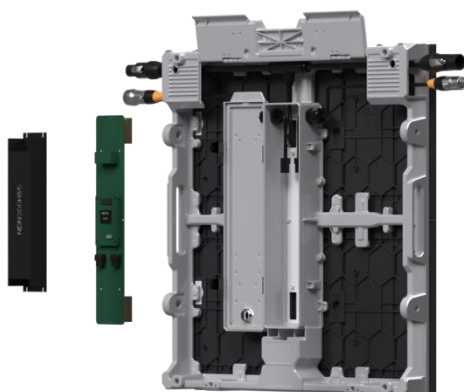


3.4 Receiver card, power supply, HUB board after maintenance

Step 1: Open the latch lock on the back cover of the cabinet.



Step 2: Remove the corresponding screw positions of the fixed power supply, HUB board, and receiver card to easily remove the corresponding accessories;



Chapter 4 Product System

Description

This chapter includes.

Mainly introduces the LED display system description.

4. 1 System connection requirements



LED display power supply voltage requirements: need to be consistent with the display power supply logo voltage, 110V/220V $\pm$ 10%; frequency: 50HZ ~ 60HZ.

LED display total power less than 5 KW, you can use single-phase voltage power supply; when greater than 5 KW, require the use of power distribution box three-phase five-wire voltage supply, and each phase of the load as evenly as possible; distribution box must have ground access, and reliable contact with the earth, do not short the ground and zero wire; distribution box needs to do a good job leakage protection, need to access the lightning arrester and other protective devices, access to the power supply should be far from high-power power equipment.

Before powering on the screen, you must check the connection between the box cable lines, main cable lines and other places, there can be no wrong connection, reverse connection, short circuit, broken circuit, loose, etc., and test and verify with multimeter and other tools, before any maintenance work on the screen, please disconnect all the power in the screen to ensure the safety of you and the equipment, all equipment and connection lines, etc. are prohibited to operate with electricity.

In unplugging the row of wires, power cables, network cables and other wires can not be pulled directly, row of wires: two fingers press the row of wires pressure head, slowly pull out, power cables and network cables need to press the snap before pulling out, aviation head wire is generally snap type, please carefully check the direction of the instructions and male and female head pairing when unplugging, can not be placed on the power cables, signal lines, communication lines and other cable pressure, should avoid the cable is stepped on or squeezed, the screen body can not be connected inside the private pull cable.

System connection steps

- 1 、 Turn off the power of all screens and devices before connecting.
- 2 、 Connect the DVI signal from the computer (or other devices) to the video processor through the DVI cable.
- 3 、 Connect the output signal on the video processor to the screen with a signal access cable.
- 4 、 When all connections are completed, power the video processor and computer first, then connect the LED screen body power.

4.2 Product common wire



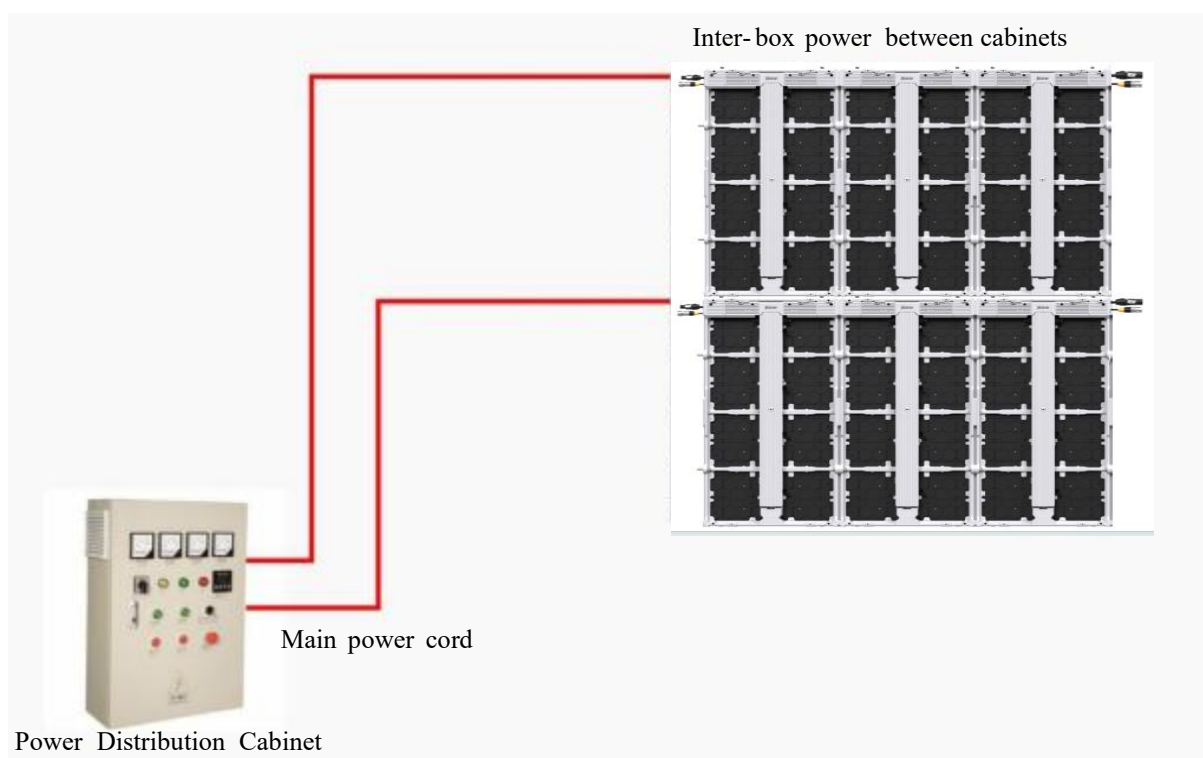
Main power cord



Main Network Cable

4.3 Power connection diagram

4 (width) * 2 (height) arrangement box power line connection schematic diagram is as follows, specific items should be in accordance with the project connection standards.





To avoid fire due to overload of power cable, please do not overload the load.

Please refer to the maximum power of the product. You should avoid turning on all load switches at the same time, otherwise it will easily cause high peak current and avoid fire hazards due to overload of power cables.

Power system requirements:

- The supply voltage must be within the specification value.
- Distribution system recommended (distribution system has separate neutral and grounding conductors to avoid large ground current loops due to voltage differences in the neutral conductor)
- The total electrical installation should be protected by circuit breakers with appropriate ratings, circuit breakers. The electrical installation must be performed by an electrician with the appropriate credentials.
- Electrical connections must comply with all applicable state and local codes.

Cabling and connection requirements:

- All internal wiring must be properly connected and in place.
- All power wires must come from circuit breaker protected circuits. Do not connect to an unprotected circuit.
- Do not lay out power and communication lines in the same circuit. Separate lines must be created for the communications cable and the power cable. Fiber optic cables may be run in the power line.

Grounding requirements:

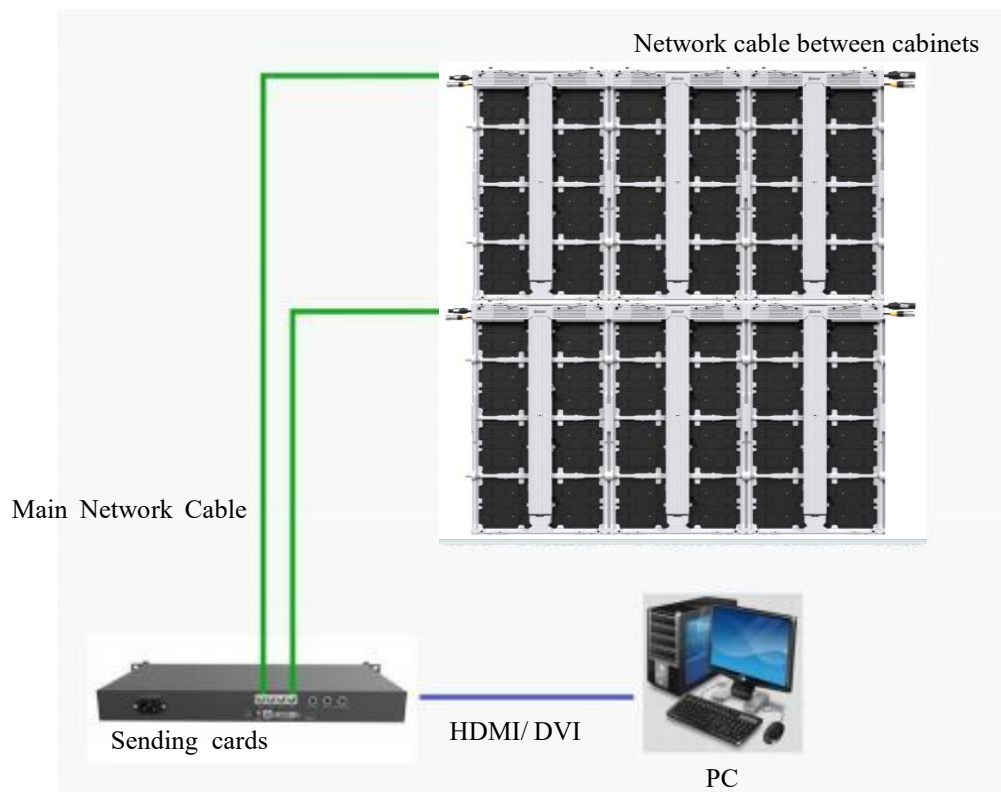
- LED displays must be properly grounded in accordance with applicable state and local codes.
- Each display must be properly grounded because it must be protected from shock, electric shock hazards, and fire hazards.

Lightning protection requirements:

- The LED display case is grounded and designed to eliminate high voltage and lightning strikes. The resistance of the grounding electrode must be as low as possible. Otherwise the LED display electronics may still be damaged by lightning.

4.4 Signal connection diagram

4 (width) * 2 (height) arrangement box signal connection diagram is as follows, specific items should be in accordance with the project connection standard implementation.



4.5 System Composition

LED display system includes the following basic components.

- LED display: LED display screen, power cable, signal cable.
- control system: control computer, LED display controller, control system software.
- Power distribution system: distribution boxes, power supply cables.
- Peripheral equipment: video processor, splicer, fiber optic transceiver, etc..

*Note: The actual configuration of accessories according to the order requirements.

Chapter 5 Display switch and maintenance

Description

This chapter covers.

Mainly introduces the LED display switch and maintenance.

5.1 Opening screen operation sequence

- › Activation of the display distribution box.
- › Activation of the control computer.
- › Starting the transmitter box.
- › Start the video processor.

5.2 Screen off operation sequence

- › Turning off the video processor.
- › Turning off the transmitter box.
- › Shutting down the control computer.
- › Closing the display distribution box.

5.3 Daily Maintenance

- (1) Daily check the display environment temperature and humidity is in line with the working conditions.
- (2) Use the display and supporting equipment at least 2 times a week, 2 hours each time; if the display is not used for 14 consecutive natural days, please carry out warm-up operation before using again.
- (3) In order to achieve the best display effect, it is recommended to use anti-static soft brush to clean the surface dust of the display every month.
- (4) Periodic maintenance and annual inspection of the control computer, peripheral equipment and screen body, with a periodic maintenance cycle of about one month.
- (5) Quarterly inspection of power distribution box components, check the display power signal line contact solidity and safety, check whether the display grounding is good.
- (6) Check the steel structure solidity every year.

5.4 Saving of the display

- 1 、 Save the display and spare modules that have not yet been installed

- (1) The storage place should be properly protected from moisture, and the humidity requirement is: relative humidity less than 90%.
- (2) The storage place should be at the right temperature, the temperature requirement is: ambient temperature $-40^{\circ}\text{C}\leq t\leq 60^{\circ}\text{C}$.
- (3) The storage place should avoid insect and rodent damage, if necessary, should place anti-rodent medicine, installed screen should also pay attention to this point.
- (4) storage to avoid rain or other liquids into the screen body or contact with the module.
- (5) The storage place should be cleaned well to prevent dust and debris accumulation.

2 、 The use and preservation of the display under special circumstances

- (1) outdoor display should take appropriate lightning protection measures to ensure the timely release of strong electricity and strong magnetic caused by lightning, in extreme lightning weather, should temporarily close the display and control computer;.
- (2) display installation site should try to avoid the occurrence of water, in the event of extreme convective weather, including typhoons, heavy rain, snowstorms, hail weather, should temporarily close the display.
- (3) coastal areas display should pay attention to the salt in the air on the exposed metal parts of the display corrosion, column screen in the installation should consider the column of the typhoon level;.
- (4) some countries and regions may cause the display screen can not start normally because of the low temperature in winter, so low-temperature power supply and anti-low temperature cabinet should be used, if necessary, add a hot air curtain;.
- (5) when the ambient temperature is too high or heat dissipation conditions are not good, care should be taken not to open the screen for a long time, and install additional heat dissipation equipment such as exhaust fans, air conditioners, etc..

Chapter 6 Common fault check

Description

This chapter covers.

Mainly introduces the common troubleshooting of LED display.

6.1 Common screen troubleshooting

The back cover of the case is opened and there are two status LEDs on the adapter board, which are green and red. Both status LEDs are located in the upper part of the case (on the receiver card). The red LED indicates the power status. The green LED indicates the communication status of the box. Click the test button as shown in the figure, the test button in the absence of a video processor in turn press the display will appear on the red, green, blue, slash these test screen.



Indicator light	Status	Diagnosis	Operation
Red LED indicator	ON	The power supply of the case is working properly	-
	OFF	The power supply of the box is not working properly	<ul style="list-style-type: none"> - If the box is connected to the main power supply, check whether the power access line is plugged in, whether the power input port of the box is normal and whether the main power supply is energized. - If the box is not connected to the main power supply, but from the previous box to get power, check the power cascade line and the power output of the previous box and the box power input is normal, and then replace it.
Green LED indicator	slow flash	Communication with adjacent boxes or video processors is not normal	<ul style="list-style-type: none"> - If the box is connected to the video processor, check whether the signal access line is plugged in and whether the signal input port of the box is normal. - If the box is from the previous box to get the signal then check the signal cascade line and the signal output of the previous box and the box signal input is normal, and then replace.
	Flash Mob	Normal communication with adjacent modules or video processors	-

6.2 Common faults in the control system

Failure	Solutions
The software shows No Hardware	Please check if the hardware device is powered on and if the serial cable is connected properly.
The software displays "No screen information" .	If the display was originally configured with screen information, try reading it from hardware on the display connection page. If the display was not originally configured, first configure the screen information.
The display shows an error	Please first check if the resolution of the transmitter card on the transmitter card page is the same as the display output resolution, if not, please set them to the same resolution.
	If the resolution is the same, then please check if the parameters of the Smart Setup Wizard are filled in correctly.

6.3 Video processor (ifused) common troubleshooting

Failure	Solutions
Uncontrolled screen	Check whether the video processor output network port indicator is normal, if the yellow light is blinking and the green light is not on, check whether the computer to the video processor DVI is plugged in and whether the computer is set to copy. If the yellow light blinks and the green light is always on, the video processor is working properly.
	If the video processor indicator is normal, check whether the power access line is plugged in and energized, and whether the video processor to screen signal line is in good contact.
Failed to send data	Check that the USB cable from the video processor to the computer is plugged in.
Graphics card settings do not see the copy option	Is the video processor powered
	Reinsert the DVI cable
	Check if the computer DVI or HDMI is damaged

Description

This product is designed and developed using high quality materials and components that can be recycled and reused. Electrical and electronic equipment should be disposed of separately from conventional waste at the end of its useful life, and this product should be disposed of appropriately according to local regulations when it is disposed of.



【让显示技术创意美好生活】

Display Technology Creates A Better Life



Shenzhen Dicolor Group Co.,Ltd

Address: No.13 Huiye Road, Tangjia Community, Fenghuang Street,
Guangming District, Shenzhen, China

Tel:0755-33691736

Web: www.dicolorled.com

