Hisense

54DS012FE

USER MANUAL

Read the manual carefully and ensure you have fully understood its contents before operating this device for the first time.

20254388 A

English

Precautions for use

- **During the use of the product, moisture may also cause a short-circuit inside the device.**
- **If the device experiences the following situations during use, please carry out dehumidification treatment:**
  - **If the usage environment exceeds the requirements for using the device, that is, the indoor temperature goes beyond the range of 0°C - 40°C and the humidity goes beyond the range of 10% - 80%.**
  - **The screen has not been used for more than 10 days.**
- **If the device is damaged due to the usage environment exceeding the product standards, the warranty service will not be provided.**
- **Even if the usage environment meets the product standards, the rapid inflow of external hot and humid air can still cause condensation on the device surface. In this case, you should wait for the device to dry completely.**
- **Condensation will occur if the surface temperature of the product is lower than the ambient air temperature, or if the product surface is cooled in the presence of hot and humid air.**
- **If condensation occurs on the product, it may lead to product malfunctions. In this case, the warranty service cannot be provided.**
- **Please do not let the air outlet of the air conditioner blow directly on the screen surface.**
  - **If the air outlet of the air conditioner blows directly on the screen surface, it may cause condensation on the screen surface.**
  - **If the air outlet of the air conditioner is too close to the screen, you can install a wind deflector as shown in the following figure to prevent the air from the air - conditioner outlet from affecting the screen.**

Safety Precautions

Declaration

Any content and service accessed through this device shall be the property of the applicable third party and subject to protection by regulations and laws on copyright, patent, trademark and other intellectual property rights. No part of such content and service may be modified, duplicated, published, uploaded, distributed,translated, marketed, or used to make and distribute products derived from it without the prior permission of the content owner or service provider.

The manufacturer hereby declares explicitly that the manufacturer shall not be held liable for any guarantee and conditions implied related to this device and any content and service, including but not limited to warranty on marketability, satisfactory quality, fitness for a particular purpose, accuracy, quiet use and non-violation of any third party' s rights. To the maximum extent permitted by applicable law, the manufacturer gives no guarantee on the accuracy, validity, timeliness, legitimacy and completeness of any content or service provided through this device, or the fitness of such device, content or service for your particular requirement, or the protection from interruption and error during operation of such device, content or service.

To the maximum extent permitted by applicable law, in any case, including fault or neglect, the manufacturer shall not be held liable for legal actions or indemnity obligation arising from any consequence as a result of or related to any information loaded in this device or use of such device, content or service by you or any third party.

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Manufacturer reserves the rights to restrict the use or access of certain content or service. As the contents and services are transmitted through third party's network and transmission facilities, Manufacturer undertakes no customer service thereof or the obligation for such customer service.

Statement

- The pictures and instructions in this user manual are for reference only, and may be different from the actual product. Please subject to the actual product. (This statement is valid throughout the entire user manual.)
- Quality upgrades, product design and specifications are subject to change without notice.
- The software content service applicable to this product depends on the third party provider, and some software may not be used due to network, region, service cycle and other problems, which has nothing to do with the product quality. Please contact the third party provider for relevant details.

For the first time installation, if the light board has been stored for more than 6 months (calculated from the date of manufacture) without installation, or if the vacuum packaging is found to be damaged and leaking air, the light board needs to be baked in an oven before installation. Bake COB products at 80°C for 48 hours and GOB products at 60°C for 48 hours. If the equipment is damaged due to the use environment exceeding the product standards, failure to dehumidify as required, or product condensation, etc., warranty services will not be provided.

This symbol alerts user about the presence of a dangerous voltage not isolated inside the product which can be sufficiently powerful to constitute a risk of electrocution.

This symbol alerts user about the presence of important operating instructions and maintenance in the document enclosed in the package.

ATTENTION
RISK OF ELECTRIC SHOCK

Do not open the back cover.
In no case the user is allowed to operate inside the device. Only a qualified technician is entitled to operate.

AC voltage: This symbol indicates that the rated voltage marked with the symbol is AC voltage.

DC voltage: This symbol indicates that the rated voltage marked with the symbol is DC voltage.

Class I product: This symbol indicates that it requires a safety connection of protective earthing.

Disposal of Used Electrical & Electronic Equipment



Packaging and electrical goods should be recycled appropriately, and not treated as household waste. Please dispose of this equipment at your applicable collection point for the recycling of electrical & electronic equipment waste. By ensuring the correct disposal of this product, you will help prevent potentially hazardous to the environment and to human health, which could otherwise be caused by unsuitable waste handling of this product. The recycling of materials will help conserve natural resources. Please do not therefore dispose of your old electrical and electronic equipment with your household waste. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Important Notice

Paragraphs beginning with the symbol indicate important instructions, tips or conditions for the following settings.

For your own safety and the optimal performance of your screen, ensure to read the safety instructions before performing any installation.

Compatibility with 3rd party products, software and services are not guaranteed. We cannot be held liable for any damage or loss suffered whilst operating, using or connecting to incompatible devices or apps.

The recording and playback of content on this or any other device may require permission from the owner of the copyright or other such rights in that content. It is your responsibility to ensure that your use of this or any other device complies with applicable copyright legislation in your country. Please refer to that legislation for more information on the relevant laws and regulations involved or contact the owner of the rights of the content you wish to record or playback.

Read these instructions
Follow all instructions
Heed all warnings
Keep these instructions
All rights reserved.

⚠ WARNING
This product can expose you to chemicals including [Both Styrene and BPA] which are known to the State of California to Cause Cancer and Reproductive Harm. For more information go to www.P65Warnings.ca.gov.

Safeguards

Please read the following safeguards for your device and retain for future reference. Always follow all warnings and instructions marked on the device.

1. A note about safety and operating instructions
Read and follow all safety and operating instructions, and retain them safely for future reference.

2. Heed Warnings

Adhere to all warnings on the appliance and in the operating instructions.

3. Cleaning
Unplug the device from the wall outlet before cleaning. Do not use liquid, abrasive, alcohol, or aerosol cleaners. Cleaners can permanently damage the cabinet and screen. Use a lightly dampened cloth for cleaning.

4. Water and Moisture
Avoid dripping or splashing of liquids onto the product. Objects filled with liquids, such as vases, should not be placed on the product.

5. Ventilation
Slots and openings in the cabinet are provided for ventilation, to ensure reliable operation of the device and to protect it from overheating. Do not cover the ventilation openings in the cabinet and never place the set in a confined space such as built-in cabinet unless proper ventilation is provided. Leave a minimum 10cm gap all around the unit.

6. Power Source
This device should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your appliance dealer or local power company. The installation location is easy to operate and the power distribution box must be locked. Power and grounding requirements compliance professionals or consult your appliance dealer.

7. Power-Cord Protection
Power- supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plug, wall outlets, and the point where they exit from the device. Main plug is used as the disconnect device, the disconnect device shall remain readily operable.

8. Lightning
For added protection for this device during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the device due to lightning or power-line surge.

9. Overloading
Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

10. Object and Liquid Entry
Never push objects of any kind into this device through openings as they may touch dangerous voltage points or short-out parts that could result in fire or electric shock. Never spill liquid of any kind on or into the device.

11. Servicing
Do not attempt to service this device yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

12. Damage Requiring Service
Unplug the device from the wall outlet and refer servicing to qualified service personnel under the following conditions:
(a) When the power - supply cord or plug is damaged.
(b) If liquid has been spilled, or objects have fallen into the device.
(c) If the device has been exposed to rain or water.

(d) If the device does not operate normally by following the operating instructions. Adjust only that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the device to its normal operation.

(e) If the device has been dropped or the cabinet has been damaged.

(f) When the device exhibits a distinct change in performance - this indicates a need for service.

13. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

14. Safety Check

Upon completion of any service or repair to the device, ask the service technician to perform safety checks to determine that the device is in safe operating condition.

15. Heat

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

16. Fire

The product should be situated away from naked flame sources such as lighted candle.

17. Off-gassing

The device smells of plastic is normal and will dissipate over time.

18. Installation

(a) Professionals carry out installation and removal, and execute safety inspection after installation.

(b) The installed power cord should be hidden or protected to avoid tripping, crushing cause damage.

(c) The input/output adapter of this product are not designed as reliable disconnecting mechanism, and cannot be connected/disconnected when it is powered up.

(d) The input/output adapter must be hidden inside the product after installation is completed to avoid user misoperation (including misoperation in case of emergency).

(e) The LED screen should be fixed reliably onto the bracket.

(f) Upon the competition of installation, make sure the front LED light board is fixed reliably and cannot be removed directly by hand. The openings in the metal housing should be blocked effectively (but never by plastic parts without flame-resistant effect or other flammable materials).

(g) A circuit breaker must be installed as a reliable disconnecting mechanism.

(h) Make sure the power cord is at least 14AWG, and the input connector is fixed reliably to the product.

19.Usage environment requirements:

(a) indoor.

(b) The operation ambient temperature should be kept between 0˚C and 40˚C.

(c) The operation ambient humidity should be kept between 10% and 90%RH (no frost).

(d) waterproof.

(e) The operation altitude is less than 5 km.

20.Daily use

(a)Check the screen whether missing or not before powering on.

(b)Turn off the power when the LED display is not in use.

(c)When the AC power is turned off, wait at least 1 minute before turning it on again in order to prevent problems of the device.

⚠	Incorrect replacement of the battery may lead to the risk, including the replacement of another similar or the same type. Do not expose batteries to heat such as sun or fire or something like that.
⚠	The device should not be exposed to dripping and spraying and it cannot be placed under objects filled with liquids.
⚠	Main plug is used as the disconnect device, the disconnect device shall remain ready for operating.
⚠	Apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.

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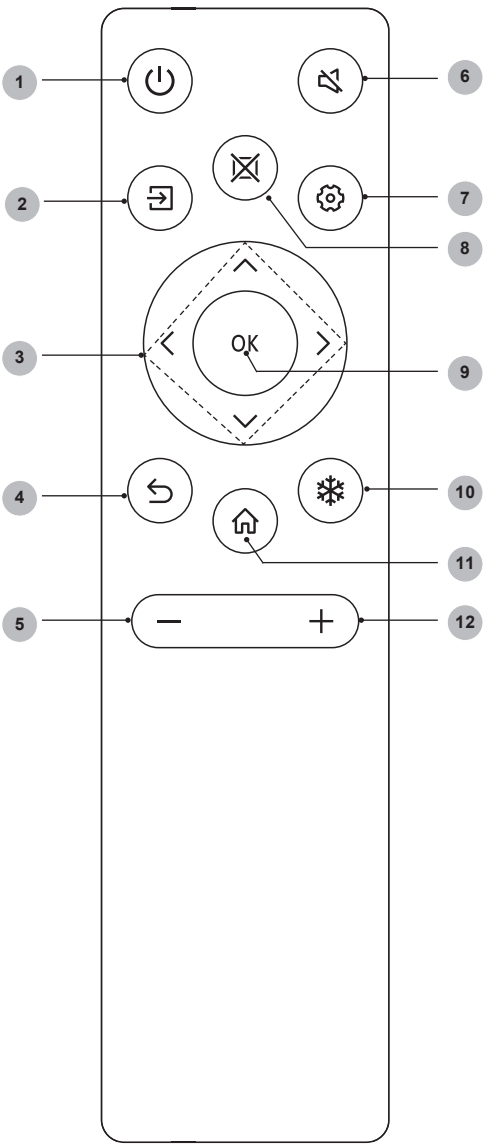
Accessories List

User Manual × 1 Power Cord × 1 Remote Control × 1 Battery × 2

NOTE

- The accessories may be different from the list above due to different models, countries / regions, please refer to the actual accessory bag.

Remote Control



Number	Description
1	Power Enter/exit standby
2	N/A (Not Supported)
3	∧ / ∨ Move focus up/down < / > Move focus left/right
4	Back Back to previous menu
5	N/A (Not Supported)
6	N/A (Not Supported)
7	Setting Open the Settings menu
8	N/A (Not Supported)
9	OK Confirm operation
10	Freeze Used only to enter 'Remote Control Controls the Specified Screen' mode (see Setup Menu)
11	N/A (Not Supported)
12	N/A (Not Supported)

Battery replacement method

1. Disconnect the battery cover from the remote control at the battery cover buckle and open the battery cover.
2. Insert two AAA 1.5V alkaline batteries. Note that the positive (+) and negative (-) terminals of the batteries must match the positive (+) and negative (-) terminals in the battery case.
3. Close the battery cover from top to bottom until it is fully aligned with the remote control.

Precautions

1. If the remote control is not working properly, is unstable, or can’t control the device, please replace the batteries.
2. If you do not use the remote control for a long time or the battery is exhausted, remove the battery. (Waste batteries pollute the environment and must be handled properly.)
3. In order to achieve the best remote control effect, please point the black launch window on the back of the remote control at the indicator light of the device.
4. Discard batteries in a designated disposal area. Do not throw them into a fire.
5. Remove old batteries immediately to prevent them from leaking into the battery compartment.
6. Battery chemicals can cause a rash. If the batteries leak, clean the battery compartment with a cloth. If chemicals touch your skin then wash it immediately.
7. Do not mix old and new batteries.
8. Do not mix alkaline, standard (carbon-zinc) or rechargeable (NiCd, NiMH, etc.) batteries.
9. Do not continue using the remote if it gets warm or hot.
10. If any of these issues occur, call our Support Center immediately on the support website.

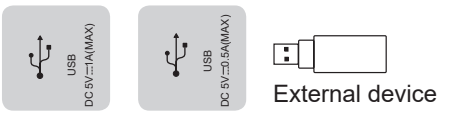
Effective range

1. Remote control distance: The distance from the front of the remote control is valid within 8m.
2. Remote control angle: With the remote control receiving window of the device as the apex, the angle in horizontal direction at the distance of 6m is at least ±30°, and the angle in vertical direction is at least ±15°.

Making Connections

Connect to USB interface device

The total current of all the USB output ports of the device when connected to external devices at the same time mustn't exceed 1,000mA, or else the device failure caused by overcurrent isn't covered by the warranty.



Device port

NOTE

This device is connected to wireless keyboard and mouse devices. If there is any insensitivity phenomenon during use, you can try to change the wireless receiver to another USB port, or use a USB extension cord to connect the wireless receiver in order to enhance the receiving range.

Connect to Signal input

Connect the Signal input connector of the device to the Signal output port of an external device.



Device port

Signal

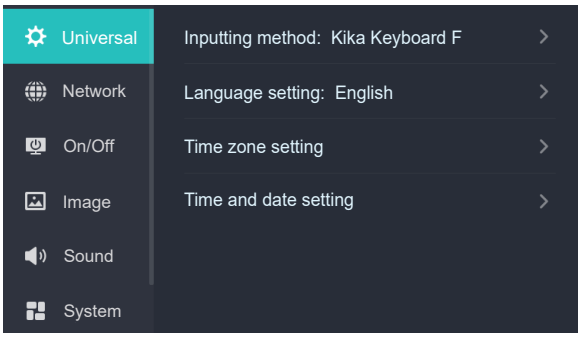
NOTE

The supported signal formats of the Signal port refer to Specifications.

Setup Menu

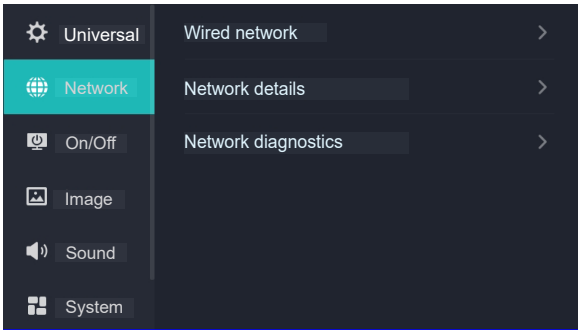
Menu

Universal



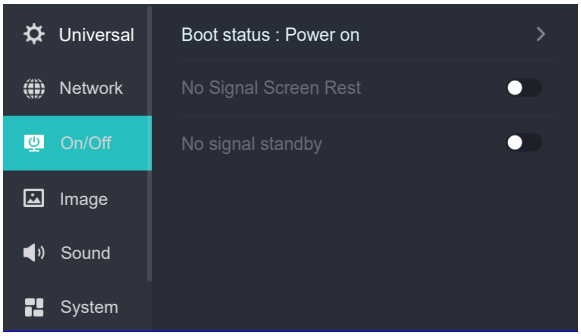
- **Inputting method:** Switch the input method. The default input method is Kika.
- **Language setting:** Select menu language as Chinese/English/Spanish/French/German/Italian/Polish/ Arabic/Russian.
- **Time zone setting:** Set the current time zone, which can be selected by the user according to the embedded region. The default is Netherlands time zone.
- **Time and date setting:** Set the date and time, you can select Network sync on / Network sync off / Date / Time.

Network



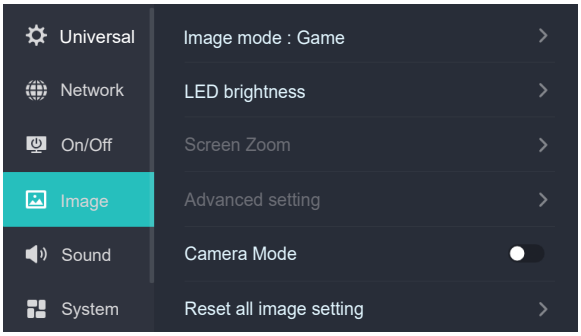
- **Wired network:** You can set to obtain IP automatically and input IP manually.
- **Network details:** You can view network details, such as connection status, IP address, Netmask, Gateway, DNS, wired MAC, and wireless MAC, etc.
- **Network diagnostics:** Test and diagnose the connection status of the current network.

On/Off



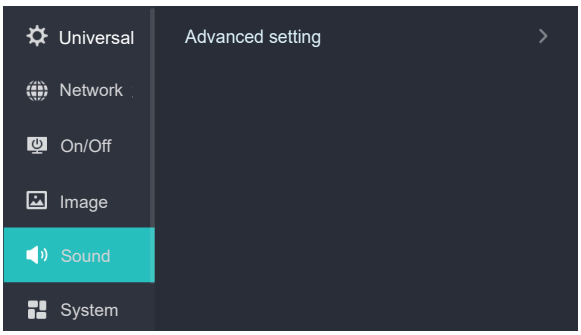
- **Boot status:** The boot status can be set to power on, standby or memory. On-by-default.
- **No Signal Screen Rest:** When the No Signal Screen Off function is turned on, the screen display is turned off after the No Signal input lasts for a few minutes.
- **No Signal Standby:** When the No Signal standby function is turned on, the no-signal input lasts for a few minutes before the display enters standby mode.

Image



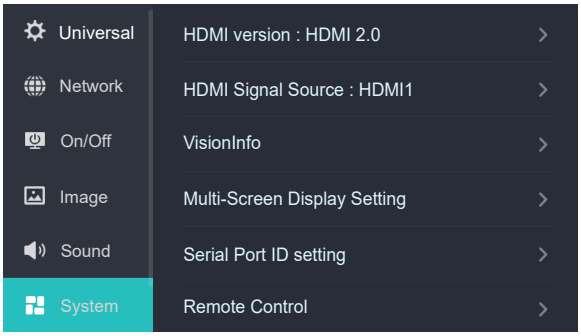
- **Image mode:** Select the appropriate picture effect according to the content you are watching. You can select Standard, Showroom, Meeting, Cinema, Game, HDR Standard, HDR showroom, and Default Game. (When playing HDR source, you can select HDR Standard and HDR showroom)
- **LED brightness:** Adjust the brightness value of the LED light. Select this function to enter user mode1-8 brightness adjustment.
- **Screen Zoom:** Select the screen zoom. You can select 1:1 and Full-screen.
- **Advanced setting:** Provide picture noise reduction, gamma and other parameter options to achieve fine adjustments of professional picture quality.
  1) Contrast: 0-100, the default is subject to the picture quality specification.
  2) Brightness: 0-100, the default is subject to the quality picture specification.
  3) Color: 0-100, the default is subject to the quality picture specification.
  4) Sharpness: 0-20, the default is subject to the quality picture specification.
  5) MEMC Mode: You can select OFF, Clear, Standard, Smooth, and the default is OFF.
  6) Dynamic contrast: You can select off, on and off-by-default.
  7) Luminance dynamic range: Auto, All, Limited can be selected, and the default is Auto.
  8) Image denoise: Select OFF, Low, Middle, High, and the default is OFF.
  9) Gamma: Select 2.2, 1.8, 2.5, and the default value is 2.2.
  10) Color temperature: Selectable 2000K, 3000K, 4000K, 5000K, 6000K, 6500K, 7000K, 7500K, 8000K, 9000K, 9300K, The default value is 6500K.
  11) White balance: Red gain, green gain, blue gain, red offset, green offset, blue offset can be selected, the adjustment range (-30------+30), the default is 0.
  13) Color correction: Red, green, blue, cyan, yellow, magenta, skin color can be selected. Adjustment range (- 15 ------ + 15), default as 0.
- **Camera Mode:** When turned on, start the “Scan Pattern” function; You can choose to turn it on, off, and off by default.
- **Reset all image setting:** Reset all changes in image settings to default values.

Sound



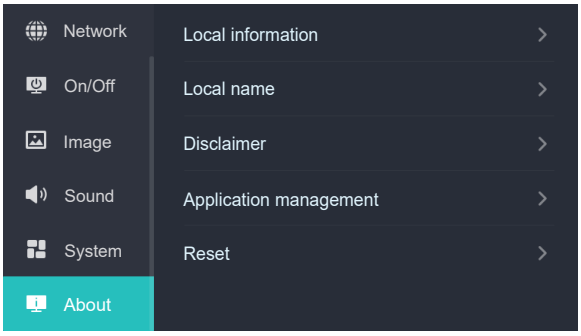
- **Advanced setting:** Balance: Selectable (-10--10), default is 0.

System



- **HDMI version:** HDMI1.4, HDMI2.0.
- **HDMI Signal Source:** Switch to HDMI signal source.
- **VisionInfo:** Launch VisionInfo.
- **Multi-Screen Display Setting:** Set the number of rows and columns of cabinet and the screen position of this cabinet. The number of rows and columns of cabinet can be set from 1 to 4, default to 1. The screen position of this cabinet can be set from 1 to 16, default to 1.
- **Serial Port ID Setting:** Set the value of serial port id.
- **Remote Control:** Launch REST API.
- **IP Control:** Launch IP Control.
- **Wake-on-LAN:** After switched, you can wake the TV via a wired network. You can choose ON or OFF, the default is OFF.

About



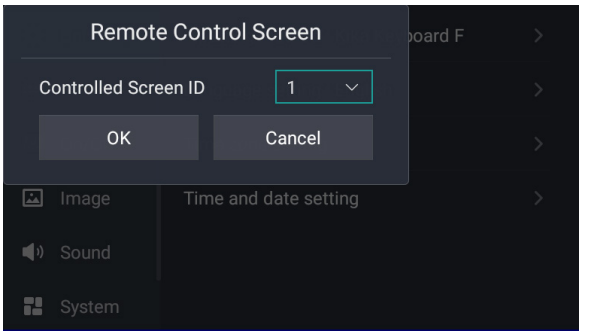
- **Local information:** Display information. Software Version, Device ID, Machine Number, and System Capacity can be selected.
- **Local name:** Select or customize the local name to facilitate the discovery of devices during Bluetooth pairing, screen projection and other operations. The default name of this unit is DS-XX, and XX is the last two digits of the MAC address.
- **Disclaimer:** Display the local service agreement and disclaimer.
- **Application management:** Manage local application software, check the used space and remaining space. You can select Application Name, Version, Size, Used Space, Remaining Space.
- **Reset:** Reset all changes in the system settings to the default values.

Multi screen display settings

Enter the multi-screen display setting sub-menu through the system menu, and set the parameters of each cabinet according to the actual number of installed cabinet.
Set the number of rows and columns of cabinet and the screen position of this cabinet.
After the setting is completed, the screen position of this cabinet is fixed through the pixel coordinate reset option.

Remote control controls the specified screen

- **Enter Specified Screen Mode**
  On Setting interface, use the remote control key combination (freeze up freeze up) to bring up the dialog. Select the ID of the screen you want to control, default 00 represents all screens, 01-16 are individual screen ID.
- **Exit Specified Screen Mode**
  Use the remote control key combination (freeze down freeze down) to exit.



Serial Protocol

IP Control Function

The IP Control function supports device local area network (LAN) deployment. The server and client must be in the same LAN. The IP control software acts as a server, supporting the TCP/IP network protocol and using ASCII string command format.

Key Information About LAN Control:

- When controlling via LAN, the command content is directly sent in ASCII format. LAN control transmits commands in ASCII character format. This makes it easier to input and send commands over the network, offering a more straightforward implementation for various devices or software.
- LAN control commands are plain text (ASCII), simplifying the communication process. This means commands are easier to read and input.

Operation steps are as below:

1. Open the IP Control App

Start the “IP Control” from Apps on the monitor. Open the APK and show as below.

2. IP Address Set

IP Address (192.168.1.2) cannot be edited on the App. It needs to be edited via the setting menu on the monitor.

3. Set Port Number

The default port number is 8000. If port 8000 is occupied, please change the port (5000-12000).

4. Start the IP Control (Server)

Click “Start” Button, it will show “Stop”; Click “Stop” Button, it will show “Start”.

5. Client App Connect to IP Control (Server)

You can use the Net Assist software. Select “TCP Client” from the Protocol on the setting, and set the server IP and server port. Finally, click the connect button. Please refer to the picture as below.

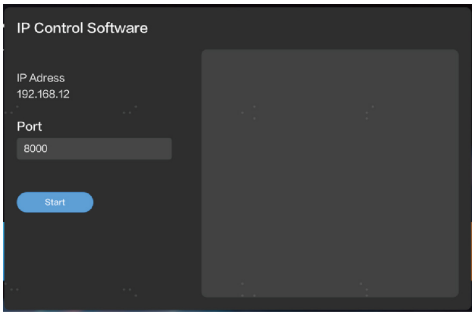
6. Send Command

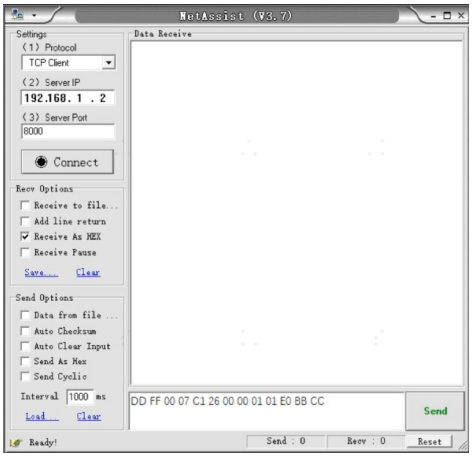
Connect successfully, you can input the hex string command and click “Send” button.

For example:

Mute Control Command - Mute ON

DDFF0007C12600000101E0BBCC





			Header		Length		Command				Monitor ID	DaTa	Checksum	End	
Power off	PC → TV		DD	FF	00	08	C1	15	00	00	01	AA AA	XX	BB	CC
	TV → PC		AB	AB	00	08	C1	15	00	00	01	AA AA	XX	CD	CD
Screen on/off	Screen on	PC→TV	DD	FF	00	07	C1	31	00	00	01	01	XX	BB	CC
		TV→PC	AB	AB	00	07	C1	31	00	00	01	01	XX	CD	CD
	Screen off	PC→TV	DD	FF	00	07	C1	31	00	00	01	00	XX	BB	CC
		TV→PC	AB	AB	00	07	C1	31	00	00	01	00	XX	CD	CD
Reboot	PC→TV		DD	FF	00	06	C1	1E	00	00	01		XX	BB	CC
	TV→PC		AB	AB	00	06	C1	1E	00	00	01		XX	CD	CD

NOTE:

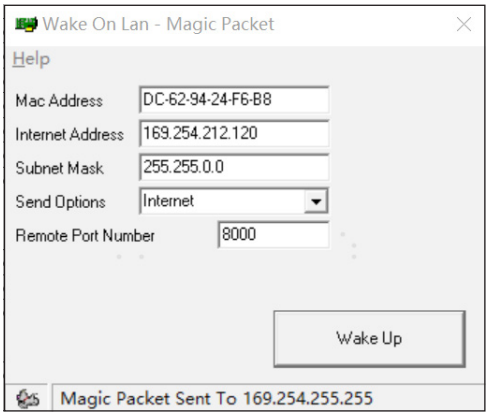
1. Length is the number of bytes of Command, Data and Checksum.
2. Checksum is XOR of Length, Command, Monitor ID and Data.

Wake on Lan command

Wake On Command (Only Support Wired Network) need Wake on Lan software or send command according to the magic packet format.

Wake On Lan software wake up steps are as follows:

1. Switch on “Wake-on LAN”, Setting > Switch on/off > Wake-on LAN.
2. Make sure the monitor and PC are in the same Lan, and the monitor connect with wire.
3. Remember the wired MAC, IP address, Subnet Mask and the port number(IP control port).
4. Make sure IP Control working well.
5. Open Wake on Lan software, input the mac, IP, subnet mask and port, then click “Wake Up”, the monitor will be waked up.



Other Information

Recycling/Licenses

WEEE (Waste Electronic Electric Equipment)

European Directive 2012/19/EU



This symbol on the product or on its packaging indicates that this product must not be disposed of with your household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment.

The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Batteries



In accordance with the Battery Directive, used batteries should not be disposed of in the domestic waste. Dispose your batteries in the collection containers specific for this purpose in retail stores.

ROHS (Restriction of Hazardous Substance)
European Directive 2011/65/EU



This European directive limits the use of dangerous and hazardous substances which are difficult to recycle.

This allows recycling easily the EEE and contributes to the safeguard of the environment.

Substances included in this product match to the RoHS directive.

Troubleshooting

Before preparing for repair, check according to the table below to see if you can find the cause of the problem. If you strictly follow the instructions but still can't resolve the problem, you can turn to professional servicemen for help.

Problem	Solution
The screen cannot be powered on.	• Check whether the power supply is connected. • Check whether the power supply plug is properly connected. • Check whether the power outlet has electricity. • Check whether the AC switch is enabled. • Press the reset switch and start the system again.
The unit turns off unexpectedly.	• Check whether standby mode is enabled. • Check if there is a power outage in your area. • Turn on the display and see if the problem is with the signal and control system.
There is no signal when the signal channel is used.	• Remove and insert the Signal cable again.

- **LED Display Maintenance**

  The maintenance of LED display system mainly includes the maintenance of LED display system, communication system and power system.

Precautions for LED display screen

Small pitch LED display screens are high-precision, high-density electronic products, which belongs to precision protection products category. It needs special protections in daily use such as protections from static electricity, dust, moisture and physical impact.

1. Static electricity

LED is an electroluminescence device, which is very sensitive to current. Human body carries static electricity which can break down the internal PN junction. Do not touch the LED display screen without wearing gloves.

2. Dust

The LED display screen is designed according to the indoor IP3X standard, but it contains high-density electronic circuit inside the LED cabinet. So it is very important that the LED display screen is dust proof and clean it regularly.

3. Water vapor and oil fume

LED beads surface can not be treated with water proofing due to its density and sizing, Moisture environment and water vapor can cause short circuit easily which may resulting product failure or even resulting fire that may burnt the LED display screen in the worst case. Therefore, LED display screen needs protection from water vapor and moisture.

4. Physical impact

The LED display screen is a very delicate device. It needs protection from any kind of physical impact, as it may resulting damage to LED beads or circuit board.

Maintenance of LED display screen

1. The control PC, video processor and other equipment shall be placed in a dry and clean environment with good ventilation. Avoid direct sunlight to all the equipment. The ambient temperature should be kept between 18˚C and 25˚C.

2. Do not place any container which containing fluid on the screen, to prevent water damage to the product.

3. Turn off the power supply of the corresponding equipment before unplug the cables to prevent damage to the interface components.

4. Avoid the interference of electromagnetic field (such as non magnetic speaker, loudspeaker, etc.).

5. In order to prevent the instantaneous current pulse from affecting the computer, it is advised to turn on the power of the LED display screen first and then the power of the computer. Turn off the power of the computer before the power of the LED display screen when it is shutting down.

6. Always back up important data and files.

7. Do not plug and unplug the communication plugs to prevent damages.

8. External protection measures shall be taken when laying communication cables.

9. Advice on air-conditioner on site: On-site conditioning and other equipment outlet can not be blown against the product. The temperature shall set at 25± 1˚C.

10. The LED display shall be well ventilated. The temperature and humidity differences between the inside and outside shall not be greater than 5 degrees;

Maintenance of power system

1. Daily inspection on power supply system is advised to detect any problems on time.

2. Clean the interior of the distribution cabinet with leather blower or air pressure gun regularly. Fasten any loose screws in the distribution cabinet, it is advised to clean it once a month.

3. Shut off the power supply of the system during thunderstorm season or when it is not being used for a long time.

4. The maintenance of power system shall be carried out only by certified electricians.

Transportation and storage

1. Transportation

The LED display is required to be transported after packaging. During transportation, it is strictly prohibited to put the packaging upside down; Avoid rain and snow; Keep out of long time sun exposure; Do not contact with corrosive gas and mechanical damage; Strictly stacking limitation applied(up to three layers). The transportation of PC and power distribution cabinet should be stable, handle with care. Do not put it upside down, keep out of rain and moisture, avoid mechanical damage as well.

2. Storage

The storage temperature of the display module is :- 20 ˚C - 60 ˚C, and the relative humidity is: 10%-80% RH, without condensation. No acid-base and corrosive gas at the storage place, No strong mechanical vibration and do not close to magnetic field. Free of fire and explosion hazards. The storage time shall not exceed 3 months.

Specifications

Item		54DS012FE
Physical parameters	Pixel structure	Flip COB
	Pixel pitch (mm)	1.25
	Module resolution (W × H)	120 × 270
	Module size (mm)	150 × 337.5 (W × H)
	Modules in cabinet (W × H)	8 × 2
	Cabinet resolution (W × H)	960 × 540
	Cabinet size (mm)	1,204 × 679 (W × H)
	Cabinet area (m^2)	0.8175
	Aspect ratio	16:9
	Maintenance type	Front maintenance
	Cabinet material	Aluminum die casting
Photoelectric parameters	Brightness (cd/m^2)	Typ 600nits(100-1,000 Adjustable)/peak 1,200nits
	Color temperature (K)	6,500±500K
	Horizontal angle of view (°)	165±10
	Vertical angle of view (°)	150±10
	Max. contrast	25,000:1
	Frame rate (Hz)	60
	Refresh rate (Hz)	3,840
	Bit depth (bits)	14
	Brightness control	Manual
	Drive type	Common-cathode drive
	Rated power (W)	200W@600nits 280W@1,000nits
	Power supply	100-240V ~ 50-60Hz
Operating conditions	Working/storage temperature (℃)	0~40 / -20~60
	Working/storage RH	10~70 % / 10~80 %

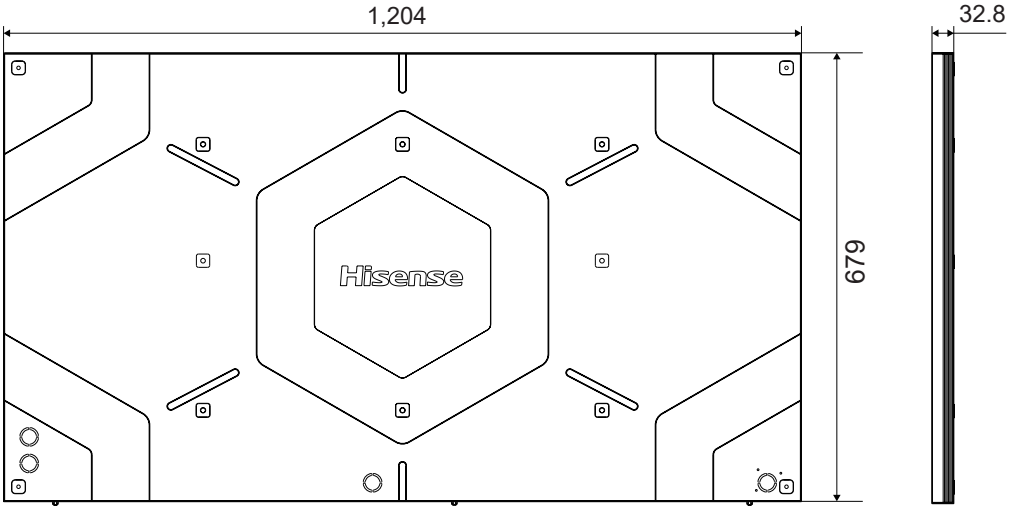
Signal formats supported by Signal input port	
RGB / 60 Hz	640 × 480 / 800 × 600 / 1,024 × 768
YUV / 60 Hz	480p / 720p / 1,080p
YUV420 / 60 Hz	3,840 × 2,160 / 4,096 × 2,160
YUV444 / 60 Hz	3,840 × 2,160 / 4,096 × 2,160
RGB444 / 60 Hz	3,840 × 2,160 / 4,096 × 2,160

Product Installation

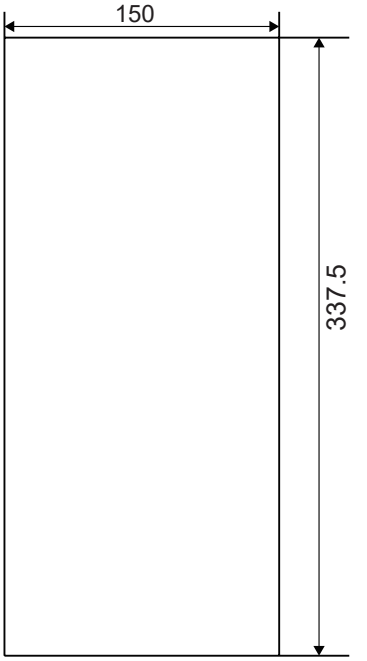
Cabinet Assembly

Cabinet size (mm) (W × H × D)	1,204 × 679 × 32.8
Cabinet weight (kg)	18.0
Module size (mm) (W × H)	150 × 337.5

1. Cabinet Assembly Dimensions (mm)

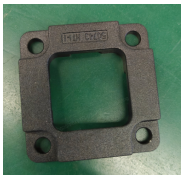


2. Module Dimensions (mm)



Accessories

1. Product Accessories



Connection piece A



Connection piece B



M6 Step screw



Connection screw M6×16



Front shell screw M3



Front shell



Front shell plug

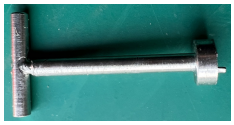


Cable protection grommet

2. Installation Tool Kit



Suction cup



Magnetic adjustment tool



Anti-static gloves



Tool handle



Hex key



7mm Open-end wrench

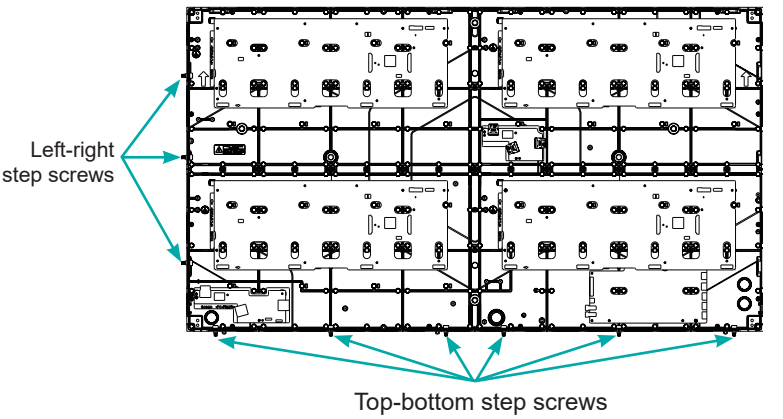
NOTE:

- Shipped with the product; a standard Phillips screwdriver is not included.
- The installation tool kit may not be included with the unit. Please consult your local distributor for more details.

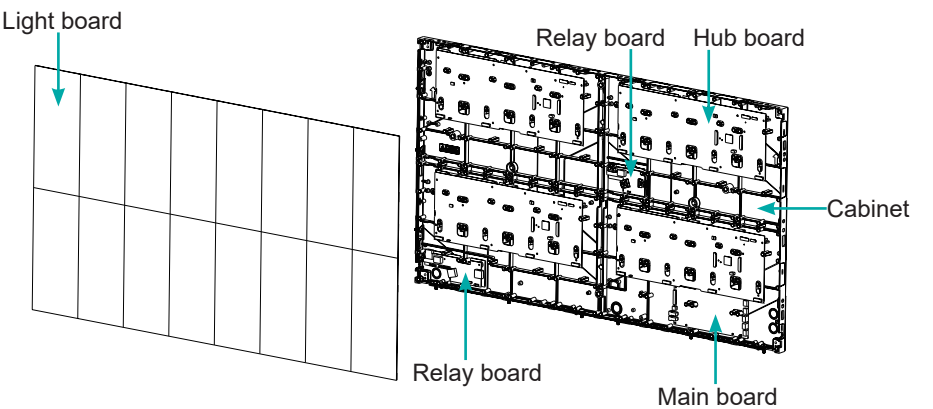
Product Components

1. Cabinet

Mounting position of M6 stepped screws for cabinet assembly.



2. Introduction to the Display Unit Assembly

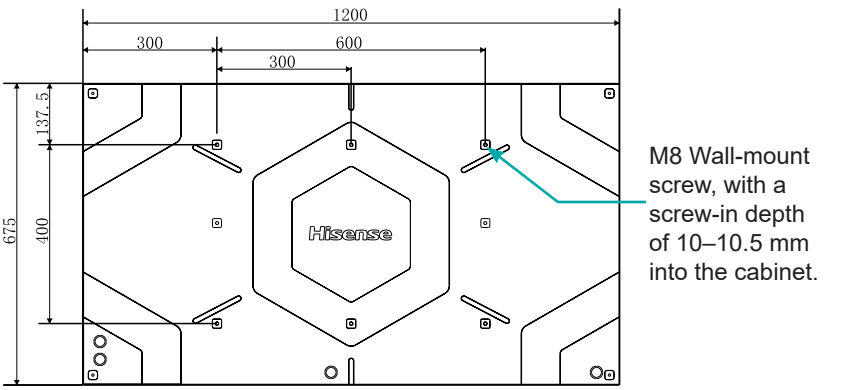


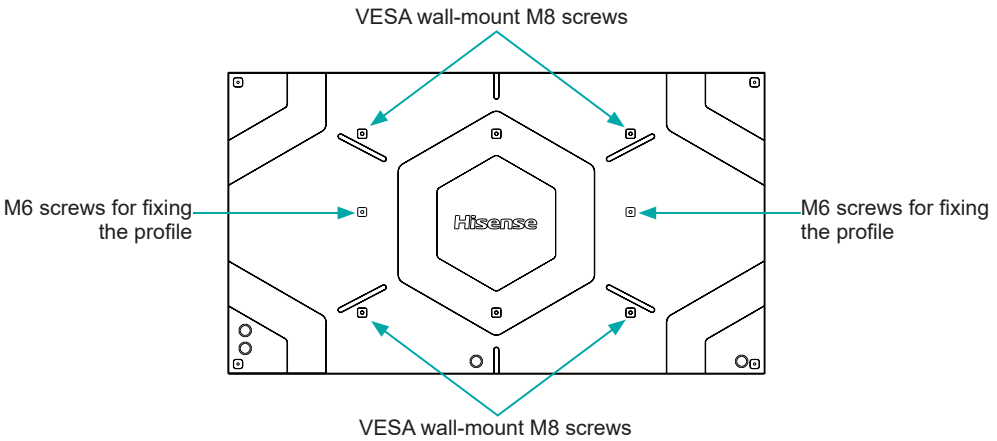
Light board×16; Hub board×4; Relay board×2; Main board×1; Cabinet×1

This product is compatible with two types of wall-mounting methods for the cabinet.

A: Similar to the LCD splicing installation method

The wall-mount screw fixing positions adopt VESA standard holes, allowing the continued use of the installation method for LCD video walls. The wall-mount screws are fixed at the wall-mount holes on the cabinet, as shown in the diagram. Use M8 screws for fixing, with a screw-in depth of 10–10.5 mm into the cabinet.

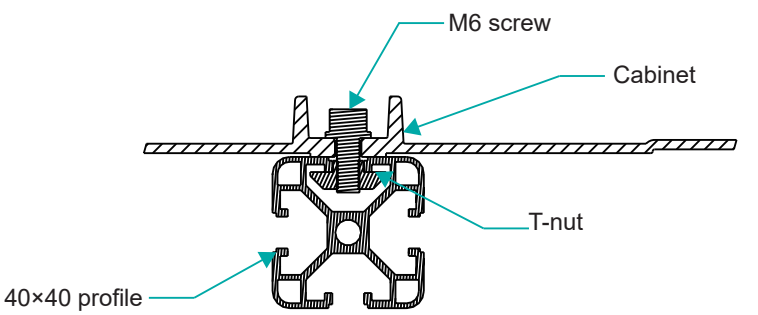




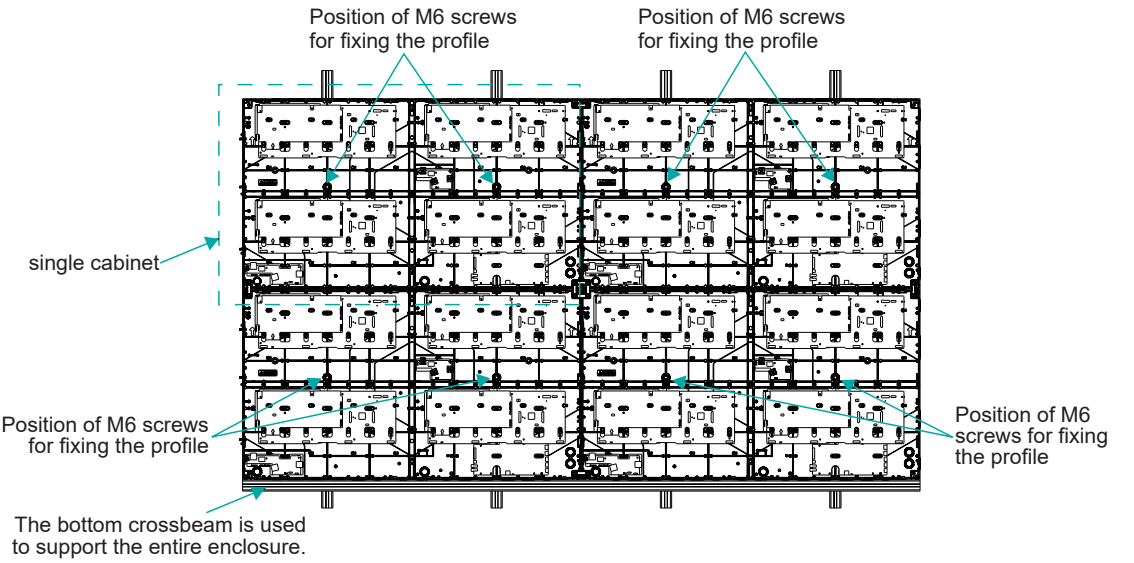
NOTE: Unlike LCD video wall installations, this product only requires the cabinet to be installed and fixed to the rear structure individually. The internal wiring is then used to connect the units, and finally, the LED modules are safely and securely mounted onto the cabinet. (For details, please refer to the cabinet splicing installation instructions below.)

B: Installation using universal LED profile structure

1. Profile frame assembly: recommended profile specification is 40x40.
   Flatness confirmation: After the structure assembly is completed, use a laser level to check whether the installation surface of the cabinet is flat. If it is not flat, fine adjustments must be made to meet the requirements. If unevenness is encountered during installation and shimming is needed, do not use wood or other easily deformed materials as shims.
   Frame verticality confirmation: Use a vertical ruler or laser level to measure whether the frame is vertical, ensuring that the installation holes of the cabinet will not interfere with the European standard profiles during installation.
2. Explanation of cabinet and profile fixation
   From the front of the cabinet, insert M6 screws through the cabinet and pre-install them onto the T-nuts without fully tightening. Then, insert the T-nuts into the slots of the profile and tighten the M6 screws so that the T-nuts securely fasten the profile. Tighten each M6 screw in sequence to ensure that the cabinet and the profile are securely locked together, and that the flatness of the cabinet meets the installation requirements.
   NOTE: The profiles, M6 screws, and T-nuts used during the installation process are all to be purchased by the customer. The listed specifications are for reference only.

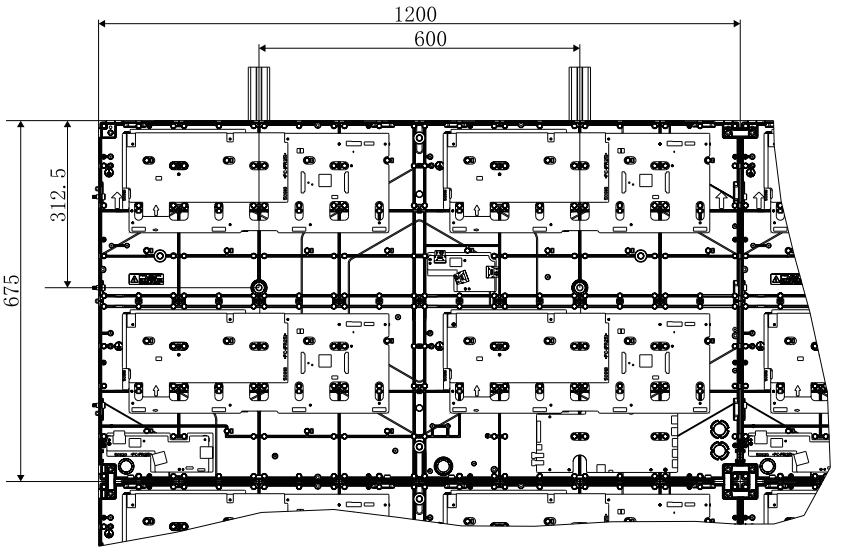


T-nut installation



2×2 Assembly diagram

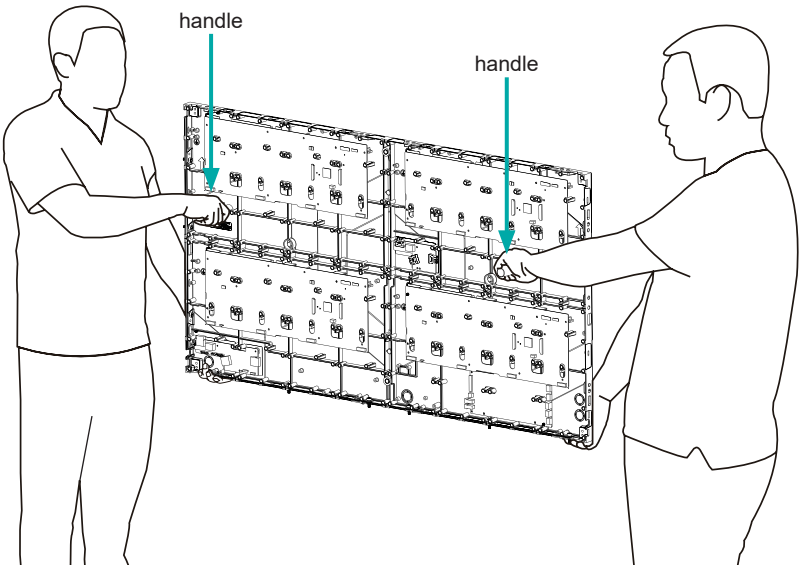
3. Fixing position reference between cabinet and profile



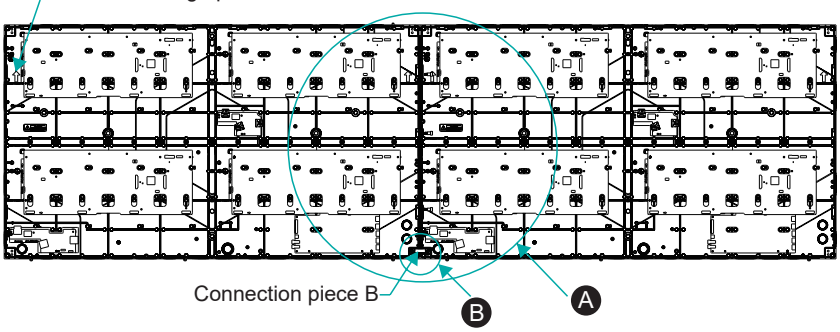
You can check "Remote control controls the specified screen" on page 7.

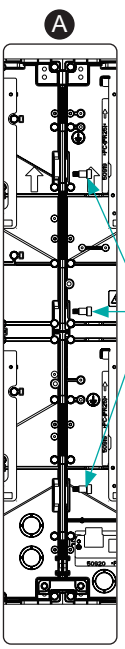
3. Instructions for cabinet splicing for front maintenance: splice from the middle of the product towards both sides (applicable to both Scheme A and Scheme B for cabinet wall-mounting)

1. Left and right cabinet splicing: After splicing, the gap between cabinets should be ≤0.1mm, and the step difference should be ≤0.1mm.
   ① Use the handle from the tool kit and tighten it onto the cabinet. Then, use the handle as a tool to lift and move the assembled cabinet module. Place the cabinet with the arrow facing up, aligning the short sides of the cabinets together.
   ② Use three M6 step screws to secure the two cabinets together from right to left at the screw holes, but do not tighten them yet.
   ③ Take one connection piece B and use an M6 screw to pre-fix it to the cabinet, but do not tighten the screw yet.

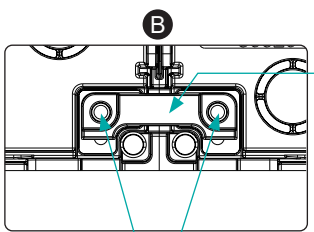


Place with the arrow facing up.



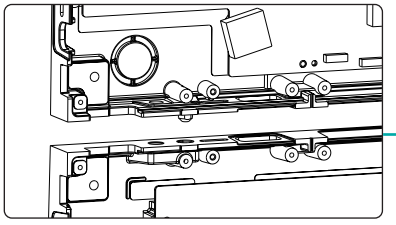


Secure the step screws from the side, from right to left, but do not tighten them yet.

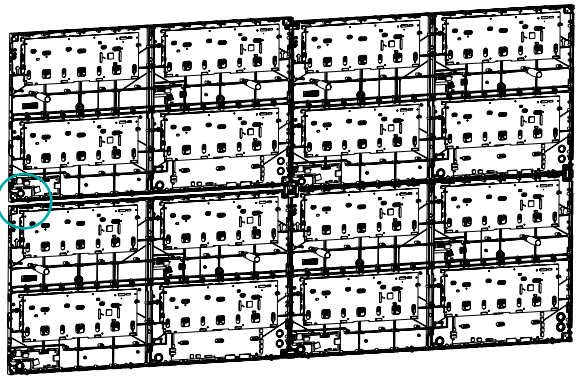


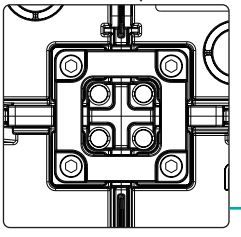
Connection piece fixing screw M6

2. Upper and lower cabinet assembly: After assembling the cabinets, the gap between cabinets should be ≤0.1mm, and the step difference should be ≤0.1mm.
① Use the handle from the toolkit. After tightening the handle onto the cabinet, use the handle as a tool to lift the assembled third cabinet module. Align the long side of its bottom with the long side of the lower cabinet for placement. Insert the guiding structures of the cabinets into each other, and ensure all cabinet arrows are facing upward.
② Use six M6 step screws to pre-fix the cabinet below from top to bottom, but do not tighten the screws yet.
③ Take one connection piece B and use an M6 screw to pre-fix it onto the cabinet, but do not tighten the screw yet.
④ Use the handle from the toolkit. After tightening the handle onto the cabinet, use the handle as a tool to lift the assembled fourth cabinet module. Align the long side of its bottom with the long side of the lower cabinet for placement. Insert the guiding structures of the cabinets into each other, and ensure all cabinet arrows are facing upward.
⑤ Use six M6 step screws to pre-fix them to the lower cabinet from top to bottom. Do not tighten the screws yet.
⑥ Use three M6 step screws to pre-fix them to the side cabinet from right to left. Do not tighten the screws yet.
⑦ Take two connection piece B and one connection piece A, and use M6 screws to pre-fix them onto the cabinet. Do not tighten the screws yet.
⑧ After confirming that there is no obvious misalignment or gap between the sides of the two adjacent cabinets, first tighten the M6 fixing screws on the connection piece, and then tighten the M6 step screws.
⑨ Remove the handles connected to the cabinet. Use the 7mm open-end wrench from the toolkit to remove the positioning pins at the bottom of the cabinet to avoid structural interference when installing the light panel and the front shell.

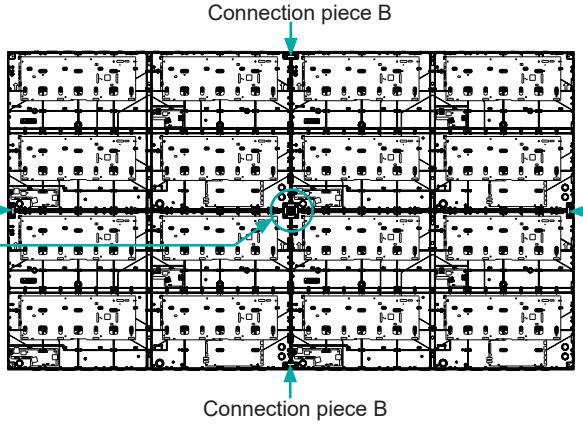


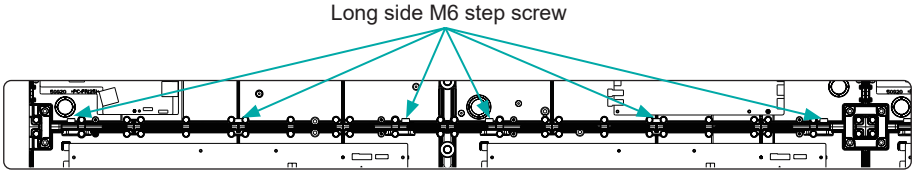
The guide plug-in structure between the cabinets.

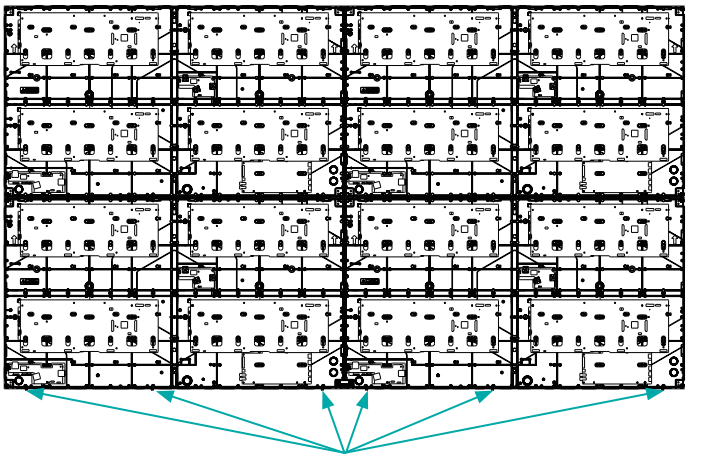




Confirming that there is no obvious misalignment or gap between the sides of the two adjacent cabinets, first tighten the M6 fixing screws on the connection piece, and then tighten the M6 step screws.

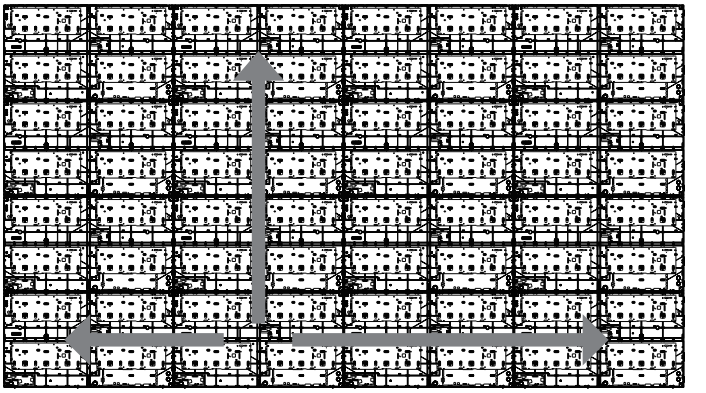






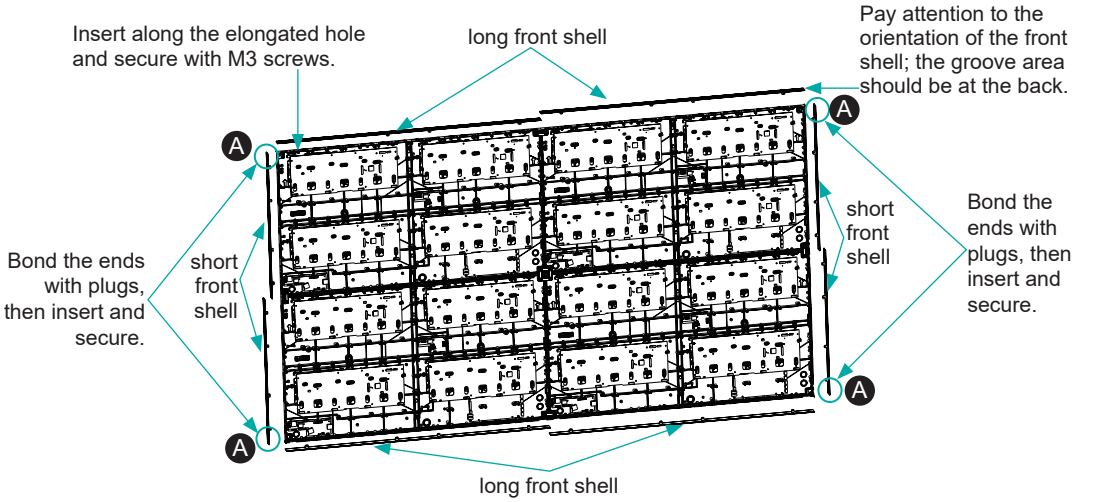
Remove the outermost protruding positioning pin.

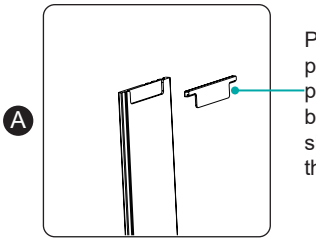
The cabinets should be assembled in sequence from the middle to both sides and from bottom to top. A schematic diagram after assembly is shown below:



Front shell installation

1. Take the long front shell out of the packaging, insert it along the cabinet opening, and secure it with the M3 screws provided in the accessory.
2. Take the short front shell out of the packaging. After bonding and securing the ends of the short front shell located at the four corners with the plugs provided in the accessory kit, insert it along the cabinet opening and fasten it with the M3 screws. Note that the plugs are only required at the corner positions.

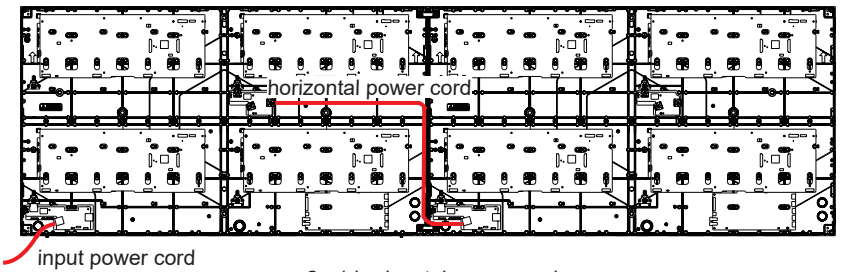




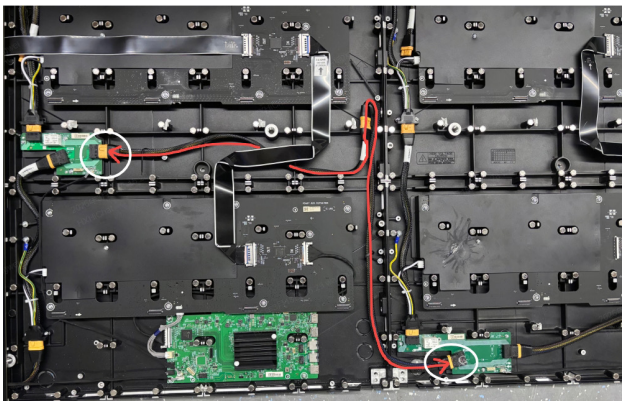
Peel off the release paper from the plug, and firmly bond the end of the short front shell to the plug.

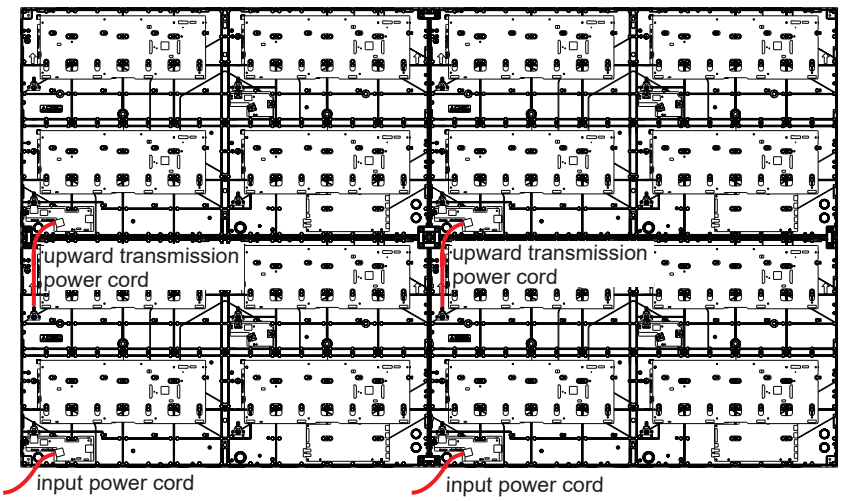
Connect the power cord

The following diagrams illustrate the two methods of routing the power cable: horizontal routing and vertical routing.

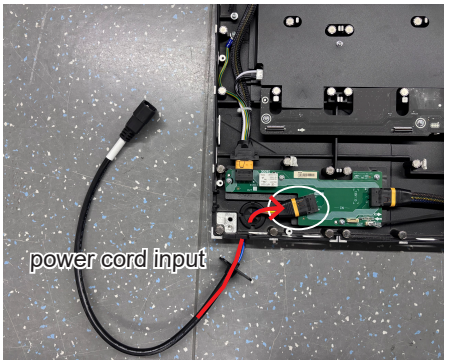


2 ×1 horizontal power cord



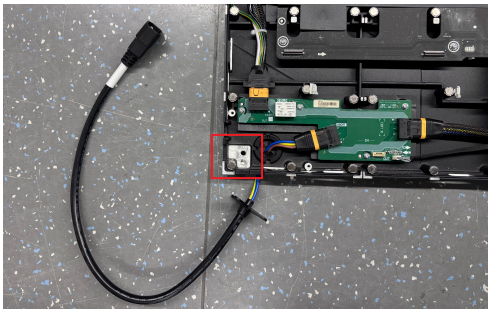


2×2 vertical power cord





The accessory power cord needs to pass through the round hole at the lower left corner of the enclosure and plug into the relay control board.
NOTE: Please make sure that the cable protection grommet has been installed.



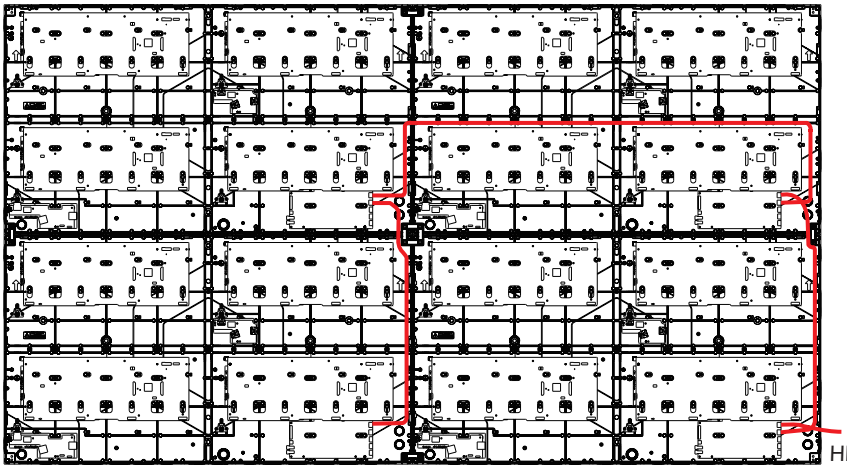


For enclosures without 3 screw holes at the power cord input circular hole position, after plugging in the C14 power cord, the part of the power cord exposed outside the enclosure needs to be wrapped with insulating tape.

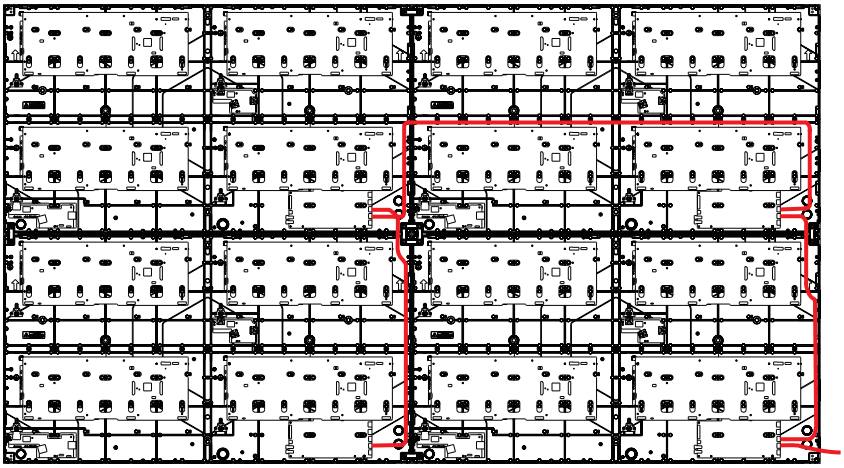
NOTE:
The input power cord can be connected upwards to seven cabinets maximum @220V input and three cabinets maximum @110V input.

Connect the signal cable

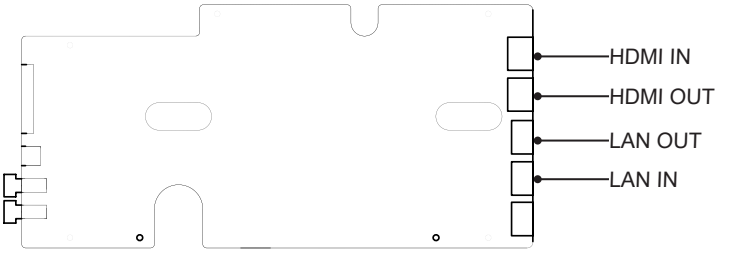
The diagrams below respectively illustrate the connection methods for HDMI and LAN.



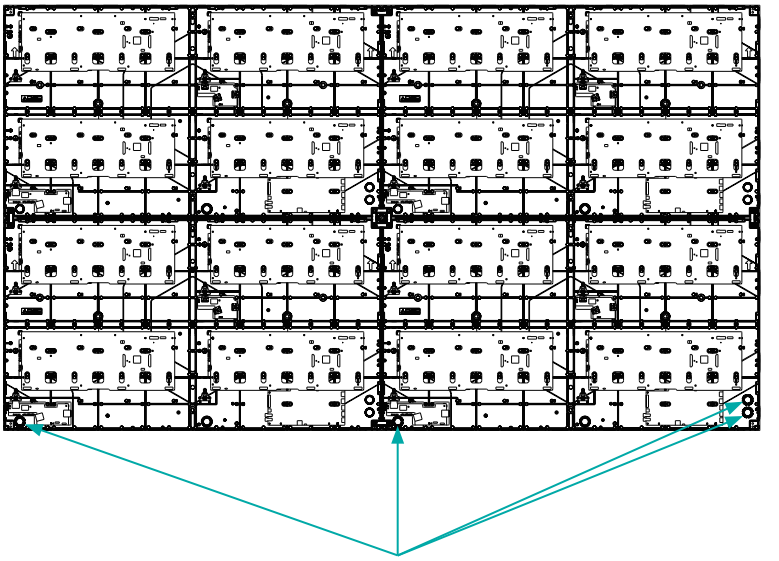
HDMI cable routing



LAN cable routing



Mainboard side signal cable interface location





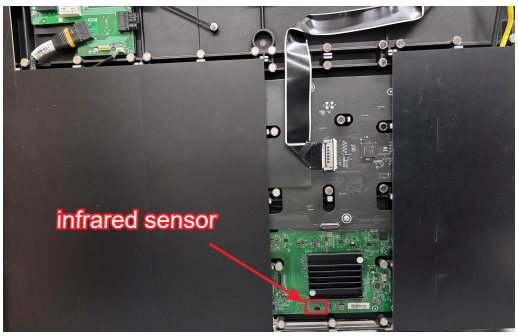
Cable protection grommet

The cable entry position on the back of the cabinet requires the installation of the cable protection grommet included in the accessories.

Power-on inspection. Proceed to the next step after all HUB boards are powered on.

Infrared receiver

When you need to operate the screen with a remote control for a long time, you can consider using an infrared receiver for control.



You can check "Remote control controls the specified screen" on page 7.

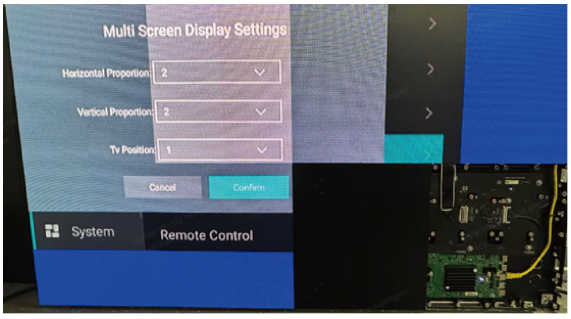
Take a 2×2 display as an example:

1	2
3	4

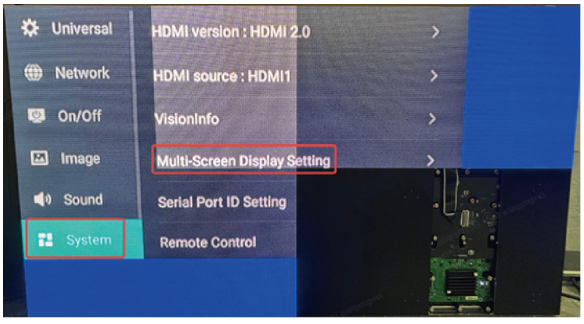
After installing the 4 screens, it is necessary to perform remote control debugging for display coordinates 1-2-3-4.

Operation steps:

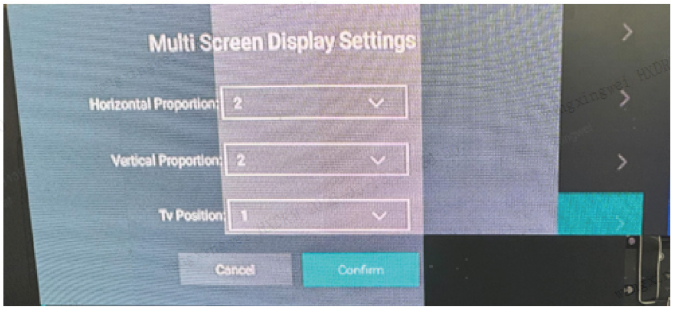
1. Remove the two light boards at the bottom right corner of the upper left 54-inch screen and unplug the HDMI cable connected to HDMI OUT, then you can remotely control only the upper right screen.



2. Press the settings button on the remote control, and the following menu will appear. Select System→Multi-Screen Display Setting.



3. Remotely select on the pop-up menu.
   Horizontal proportion: fill in 2
   Vertical proportion: fill in 2
   Tv position: fill in 1
   Click Confirm to confirm, and the setup for the upper left 54-inch screen (Screen 1) is completed.



4. Plug in the HDMI OUT cable and install the two light boards at the bottom right corner.
5. The setup method for other enclosures is the same. After completing the position settings 1-2-3-4 for the four 54-inch screens, connect the HDMI signal to display the complete image.

The photos of commercially available infrared receivers are as follows:



Infrared receiver with a 3.5mm plug that meet the pin definition shown in the image can be used. And it is plugged into the 3.5mm interface on the mainboard.





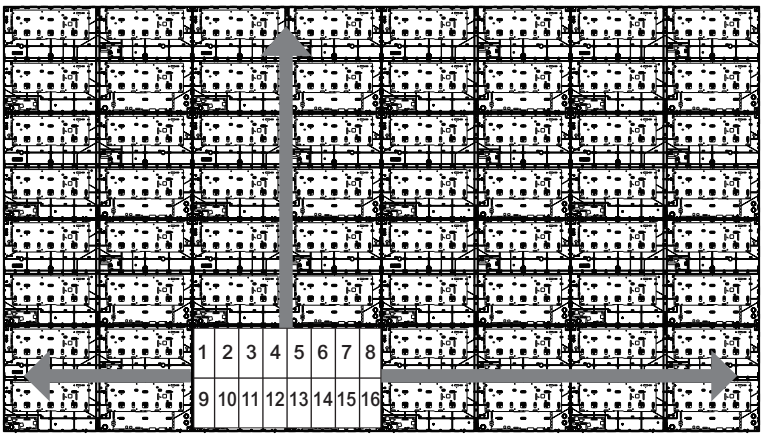
A single 54-inch product with an infrared receiver connected can be remotely controlled via the infrared receiver. Multiple 54-inch products cascaded via HDMI cables can also be remotely controlled simultaneously by connecting the infrared receiver to the first 54-inch product. There may be a delay, so slow remote control operation is required.

NOTE:
The infrared receiver needs to be purchased separately and is not provided with the product.

LED panel splicing

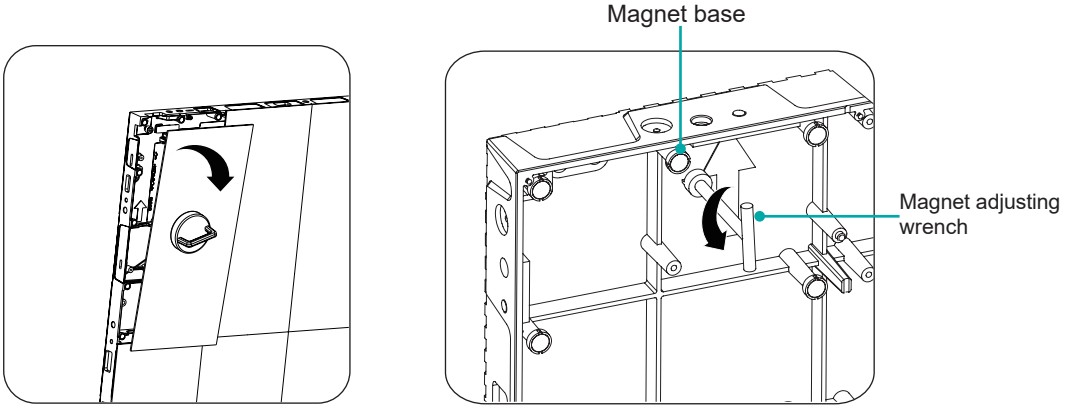
The LED panels are spliced together by cabinet units, with the overall splicing direction proceeding from the center to both sides.

1. Schematic diagram and requirements for LED panel splicing.
   Start from one or two columns of cabinets in the center of the entire project. Install the LED panels by cabinet units according to the numbering, and then splice outward from the center to both sides.
   NOTE: During LED panel installation, workers must wear gloves and are not allowed to touch the panels directly with hands.



After the LED panels are spliced, the gap between panels should be ≤0.1mm, and the height difference should be ≤0.1mm, subject to customer acceptance.

2. LED Panel Adjustment Diagram
   When it is necessary to adjust the height of the LED panel, use the suction cup from the installation toolkit to remove the panel, and use the magnet adjustment tool to adjust the magnet base, as shown in the following diagram.



NOTE:
All operations involving the removal of the light panel must be performed using a suction cup.

Maintenance

1. Dehumidification

LED displays are products sensitive to temperature and humidity. During use, the temperature and humidity of the environment need to be controlled:

① When the environmental humidity is within the range of 35% - 55%RH, it is recommended to turn on the display screen once a week and use it normally for more than 4 hours each time to remove the moisture from the display screen.

② When the environmental humidity is above 55%RH, dehumidification treatment of the environment is required. It is recommended to use the display screen normally for more than 8 hours per week to prevent the display screen from being affected by moisture, which may cause malfunctions.

③ When the display screen has not been used for a long time, pre-heating and dehumidifying the display screen are necessary before use to avoid malfunctions of the light tubes caused by moisture. The specific method is as follows: light up the screen at 0% brightness for 2 hours, then at 10% brightness for 2 hours, 20% brightness for 2 hours, 40% brightness for 2 hours, 60% brightness for 2 hours, and gradually increase the brightness for aging. This product can perform the automatic dehumidification function to assist in achieving dehumidification.

2. Screen cleaning

Cleaning tools

Tools	Recommended choices	No use
Wiping cloth	Lint-free and soft microfiber cloths (such as lint-free cleaning cloths and eyeglass cleaning cloths); they must be brand - new or thoroughly cleaned to avoid adhering hard particles.	Rough towels, paper tissues, chemical fiber fabrics.
Cleaning fluid	Special screen cleaner or distilled water (tap water should not be used as water scale will remain).	Solutions containing alcohol, ammonia, strong acids or strong alkalis.
Auxiliary tools	Soft brush, compressed air canister (cold air).	Hard brush, heat gun, blade, high-pressure water gun, etc.

Necessary preparations before cleaning

Power off and cool down: Turn off the power, unplug the plug, and wait for the screen to cool down completely (at least 30 minutes). This helps avoid the risks of static electricity or short-circuits and prevents the cleaning agent from evaporating and leaving marks.

Environment selection

Operate in a dust-free and low-humidity environment to avoid secondary pollution during the cleaning process.

Screen cleaning

1. Cleaning of surface dust
   Use a soft brush or a compressed air canister (keep a distance of ≥ 20 cm from the screen) to gently remove the dust in the gaps and on the surface. Direct wiping is prohibited! Dust particles may scratch the screen.
2. Wet wiping for stain removal
   Step 1: Fold a slightly damp cleaning cloth and gently wipe the screen in one direction (e.g., horizontally).
   Step 2: For stubborn stains, dip the cloth in a small amount of cleaning agent and soften the dirt by making small circles. Then wipe it clean in one direction.
   Step 3: Immediately dry the water marks with a dry microfiber cloth to avoid leaving stains after drying.
   Notes:
   - The cleaning agent or distilled water must be sprayed on the microfiber cloth (never spray directly on the screen).
   - Gently wipe in one direction (e.g., horizontally), avoiding circular motions or pressing hard.
   - For stubborn stains, you can increase the amount of cleaning agent, but make sure the cloth is slightly damp rather than dripping wet.
3. Drying and inspection
   Let it air - dry naturally for 5 minutes, or pat dry the remaining water marks with another dry microfiber cloth. Check for water stains or scratches under strong light.

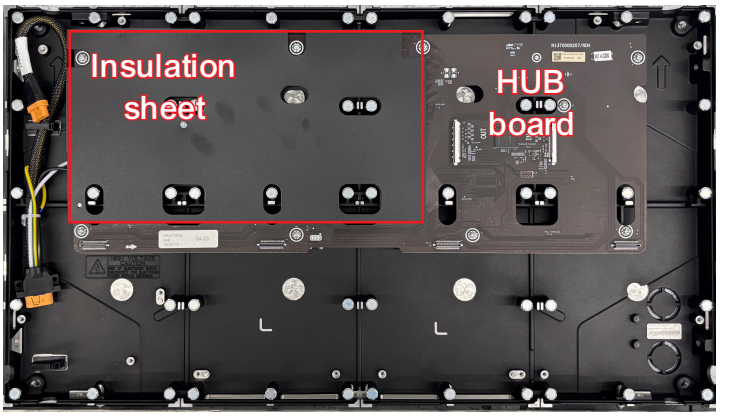
3. HUB Board Replacement Precautions

Safety Precautions

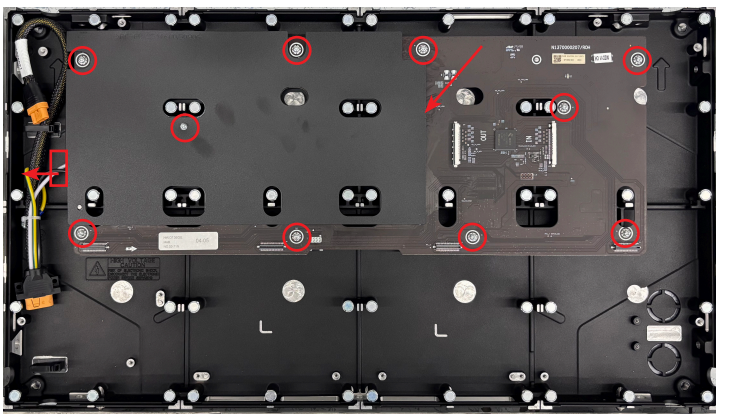
- Power off the equipment and unplug the power cord before replacement.
- Wear anti-static wrist strap to prevent ESD damage.
- Ensure adequate lighting and proper workspace.

Installation Guidelines

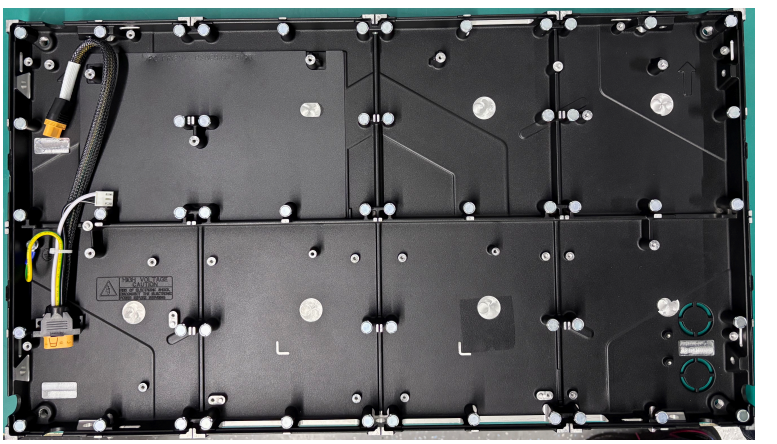
Before replacing the HUB board, please power off the machine and unplug the power cord.



Step1: Unplug the power connector, unscrew ten screws and remove the insulation sheet.

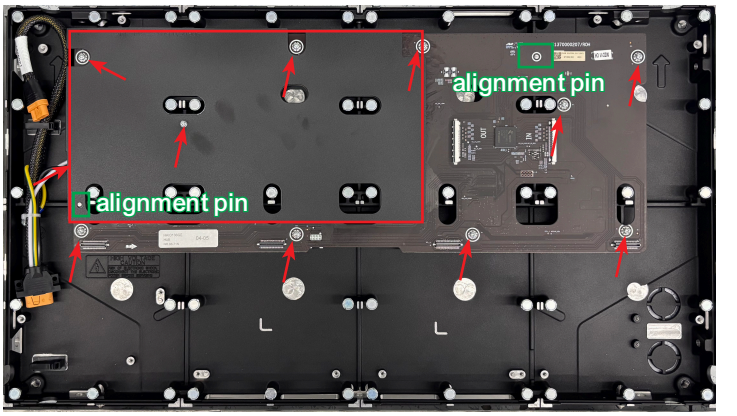


Step2: Remove the HUB board.



Step3: Replace the HUB board, insert the power cable connector, apply the insulation sheet, and secure with ten screws.

- Handle the HUB board carefully, avoid bending or touching circuit components.
- Align the board with positioning pins before installation.
- Apply insulation sheet where required.
- Secure with ten screws evenly (do not overtighten).
- Ensure insert the power cable connector.
- Verify power cable connection is secure.



This warning indicates that after replacing the HUB board and powering on again, the corresponding cabinet will have no image display for a period because the HUB board needs to reload the light board data. It is crucial not to power off during this power-on process. This is to ensure the successful loading of data and avoid potential issues caused by interrupting the process.

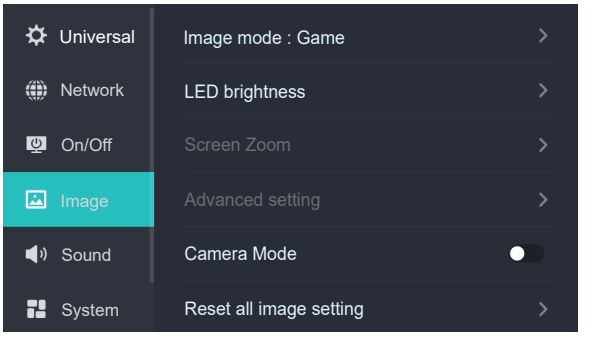
4. LED Cabinet Brightness Inconsistency - Operating Instructions

If the LED cabinet brightness appears different from others during the first power-on or after HUB replacement, adjust according to the following steps.

Step1: Take out the remote control and press the SET button.



Step2: Select in the following menu order. Image→LED Brightness, then adjust the LED Brightness value increase or decrease it, then return to the original.



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