Unilumin

UpanelS-L

PRODUCT MANUAL

Narrow Pixel
Pitch LED Display

UNILUMIN GROUP CO., LTD.

Revision Records

Version	Revised Content	Date
01	Initial release	March 30, 2020

The manual may be modified without any prior notice.

Instructions

Thank you for choosing our product. Please read the Product Manual carefully before using the product. The manual may contain errors despite all our efforts, and may be subject to change without prior notice. Contact us if you have any questions or suggestion when using the manual. We will try our best to help you resolve the problems in time, and highly appreciate your suggestions.

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Trademark

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Read the following content carefully to ensure correct use of the LED display products:

◆ WARNING!

The LED display may be damaged and become irreparable if you ignore the following warnings.

1) Do not place the LED display upside down or throw it during transport and storage.
2) Do not incline, scratch, or crash the LED display during installation.
3) Do not wet or submerge the LED display into water.
4) Do not direct the air outlet of an air conditioner to the LED display.
5) Do not place or use the LED display in an environment with volatile, corrosive or flammable chemical products.
6) Do not use the LED display outdoors in rainy days or when the humidity is higher than 80%.
7) Do not clean the LED display with water or chemical solvents.
8) Do not use any electrical accessories not approved by the equipment manufacturer.
9) Make sure the LED display and its auxiliary devices are grounded correctly and reliably before they are used.
10) Switch off the power immediately and contact the professional personnel when the LED display has any abnormal conditions such as peculiar smell, smoke, electric leakage, and abnormal temperature.

◆ CAUTION!

The optimum displaying effect may fail to be achieved if you ignore the following cautions.

1) Wear antistatic gloves when installing or repairing the product.
2) Ensure good ventilation for the LED display when designing the heat dissipation solution.
3) Keep the storage environment of the LED display well ventilated and dry, with a humidity not exceeding 85%.
4) Use single-phase power supply for an LED display with the total power consumption not exceeding 3 kW, and three-phase power supply for an LED display with the total power consumption exceeding 3 kW.
5) Ensure that the LED display is powered on at least twice per week, and at least 2 hours each time.
6) Installing the LED display in the following places may result in an equipment failure and reduce its lifespan: near the sea, in an area with salt and alkali or sulphurous gases, near a kitchen exhaust position, or at a place where the difference between indoor and outdoor temperatures is great. Consult our professional personnel at the service center if the LED display must be installed in any of these places.

Contents

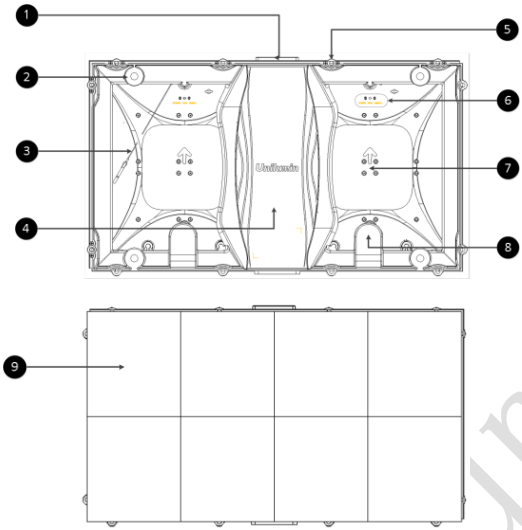
Chapter 1 Product Introduction

The UpanelS-L series is a pioneering product in the industry in that it is a small pitch LED display product that supports contactless smart maintenance. The UpanelS-L series is installed on the wall and the modules, control cards, power supply, and cables can be installed and removed from the front side of the LED display. No maintenance channel is reserved at the rear side of the LED display to saves spaces. The cabinets and modules are CNC processed and can be installed separately to ensure efficient heat dissipation performance and avoid unexpected damage caused by collisions between cabinets and modules during installation. The pioneering smart modules support automatic detection and correction. The UpanelS-L series is designed to have prominent safety performance and has been awarded the CE, UL, CB and CCC certifications. The UpanelS-L series can be assembled seamlessly into a screen of any size for different application environments.

1.1 Features

1) Wireless board-to-board connection between cabinets and between modules and cabinets.
2) Aspect ratio of 16:9, pixel to pixel full HD display, and can be assembled into a 2K, 4K, or 8K standard HD screen.
3) Lightweight and ultrathin structure, zero noise, as well as supports dual-system and dual power supply backups.
4) High-precision CNC processing to achieve flatness less than 0.15 mm and joint less than 0.1 mm.
5) Individual module with dustproof module bracket made of aluminium die castings to achieve a protection level up to IP50.
6) Supports detection of temperature, voltage, and connection line of individual module. Supports smart correction of the modules.
7) Supports front maintenance on the modules, power supplies, and receiving cards.
8) High contrast ratio, high gray scale, and high refresh.

1.2 Cabinet Appearance



1. Signal/power port
2. Cabinet mounting hole
3. Module safety rope
4. Power supply box
5. Positioning slot (with screw hole)
6. Operating status indicator light
7. Module bracket
8. Module ejection sensor
9. Module

Figure 1-1 Cabinet Appearance

1.3 Specification

Parameter		Upanel0.9S-L	Upanel1.2S-L	Upanel1.5S-L	Upanel1.9S-L
Physical Parameter	Pixel composition	1R1G1B			
	LED type	3-in-1 Black SMD			
	Pixels per panel(dots)	640x360	480x270	384x216	320x180
	Cabinet size (WxHxD) (mm)	609.92x343.08x71			
	Size ratio	16:9			
	Material	Die-casting aluminum（cabinet）/ Die-casting magnesium(module)			
	Planeness（mm）	≤0.15			
	Weight(kg)	6.8			
Electronic parameter	Grey scale(bits)	14			
	Refresh rate(Hz)	1920—3840			
	Drive type	1/30	1/27	1/27	1/30
	Frame frequency(Hz)	50/60			
	Data interconnection	Signal cable≤100m; Multi-mode fiber≤300m; Single-mode fiber≤10km			
Optical parameter	Brightness(nits)	600			
	Color temperature(K)	2,000~9,500 (adjustable)			
	Contrast ratio	3,000:1	5,000:1		
	Viewing angle(°)	160/160			
Electrical parameter	Input voltage(V)	AC 100~240			
	Input frequency(Hz)	50~60			
	Input power <max >(W/panel)	150±15	140±15		
	Input power < typical >(W/panel)	50±15	46±15		
Circumstance parameter	Storage temperature/ Humidity(℃/RH)	-20~+55/10%~85%			
	Working temperature/ Humidity(℃/RH)	-10~+45/10%~80%			

	Ingress protection	Rear IP50

Note：Specifications are for reference only and are subject to change without notice.

1.4 System Solution

The display system consists of the LED display, sending box, control PC, matrix, splicing controller and power distribution box (refer to the shipping list for details). The following shows a topology of the system for reference:

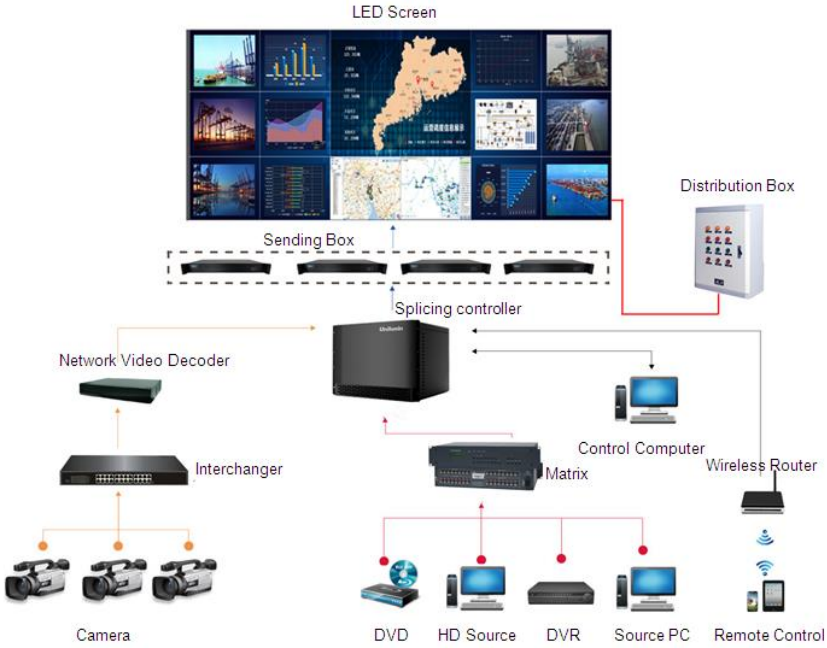
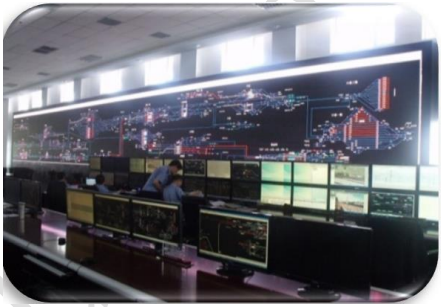


Figure 1-2 System Topology

1.5 Scope of Application

The UpanelS-L series products can be assembled seamlessly into a screen of any size, and are extensively used as fixed LED displays for advertisements in public places such as retail brand stores, shopping malls, hotels, banks, churches, airports, bus stations, theatres, cinemas, company lobbies, high-end clubs, museums, and large conference rooms.

Conference Center



Traffic Control Center

Chapter 2 Installation and Wiring

2.1 Out-of-Box Inspection

Check whether the packages are damaged. If the packages are intact, check the main components against the shipping list. If any inconsistency is found, contact us in time. The main components include cabinets, signal cable, power cable, USB cable, DVI cable, and sending box. For details about the components, refer to the shipping list.

2.2 General Installation

Screen calibration is performed on the UpanelS-L series product before shipment, and the product needs to be installed sequentially according to the cabinet number, as shown in Figure 2-1:

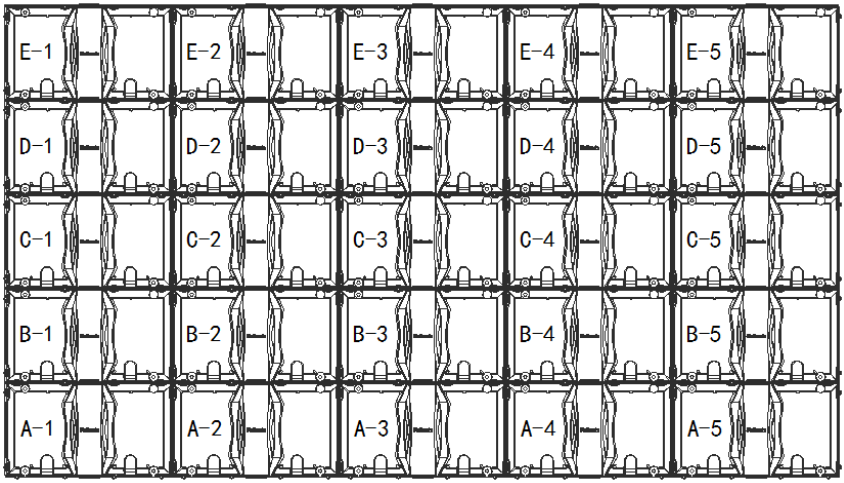


Figure 2-1 Rear View of the Display

1) Insert the nut piece into the aluminium profile.

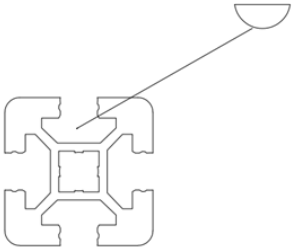


Figure 2-2 Installation Diagram 1

2) Mark and drill holes on the wall based on the installation drawing. Fasten the embedded plate onto the wall and install the aluminium profile onto the plate. Check the installed aluminium profile to ensure that its levelness is within ±1 mm.

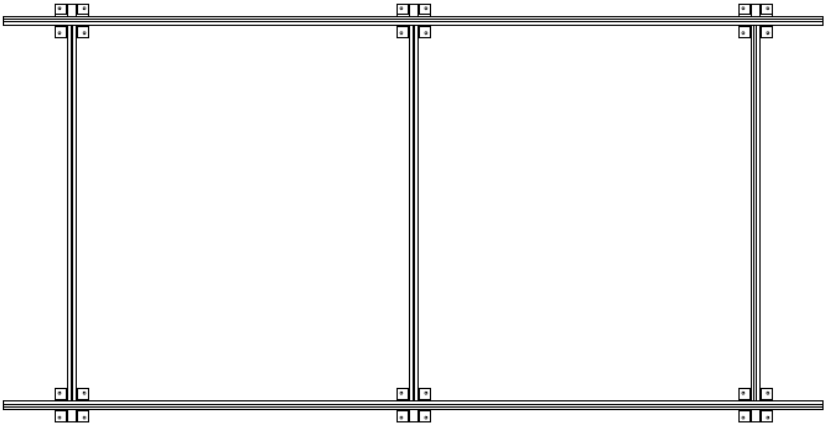


Figure 2-3 Installation Diagram 2

3) Install part of the vertical back frames without tightening the screws. Install 2*2 cabinets from the bottom and adjust the vertical back frames. Then tighten the screws on the vertical back frames. Install other vertical back frames in a similar way.

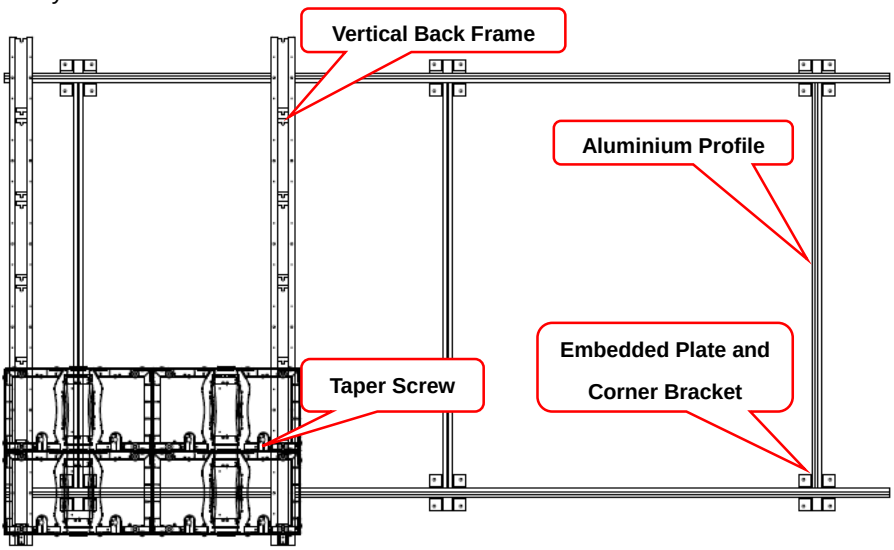


Figure 2-4 Installation Diagram 3

Figure 2-5 Taper Screw

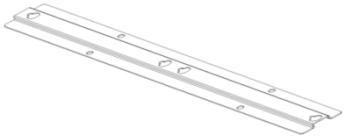


Figure 2-6 Vertical Back Frame

Figure 2-7 Aluminium Profile

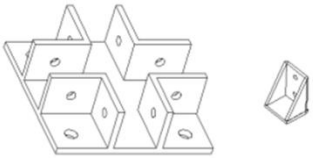


Figure 2-8 Embedded Plate and Corner Bracket

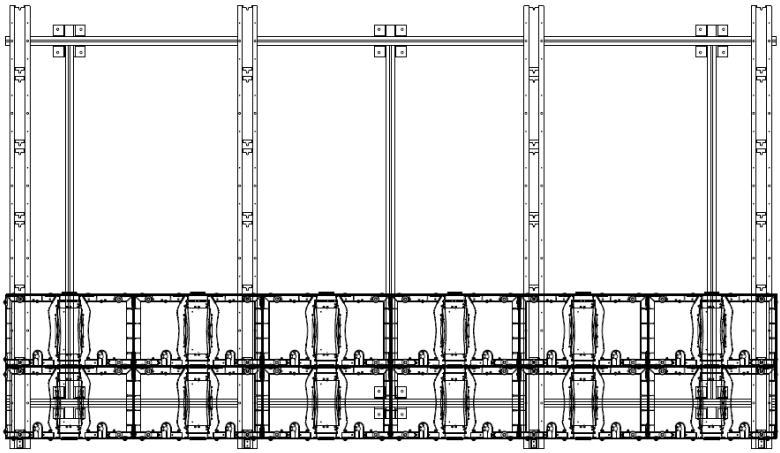


Figure 2-9 Installation Diagram 4

4) Connect the power cables and signal cables based on the wiring diagram for the delivered product. Turn on the power and check the power supply for each cabinet. Place the modules sequentially into the empty cabinets from right to left and from bottom to top based on the serial number indicated on each module (place Module A-1 to the bottom right corner viewed from the front side of the LED display). Check whether the modules are intact before placing them into the cabinets.

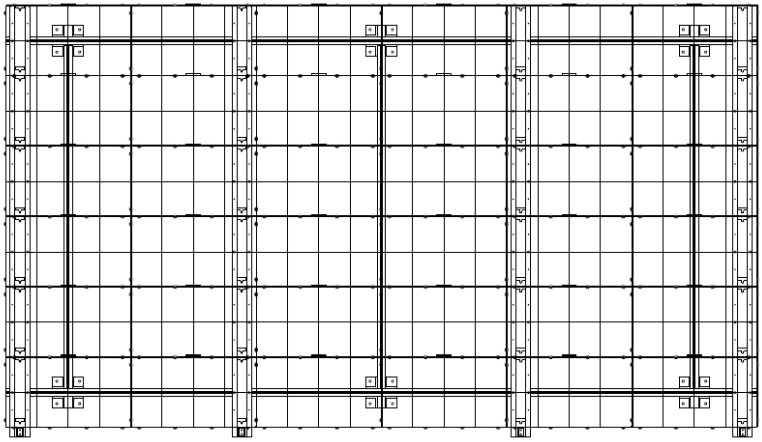


Figure 2-10 Installation Diagram 5

5) Wrap the edge cover of the LED display after the LED display operates normally.

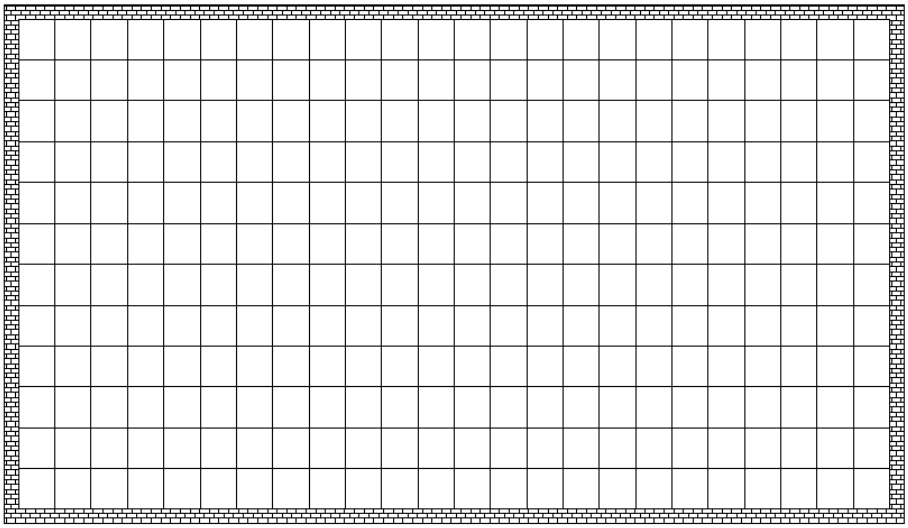


Figure 2-11 Installation Diagram 6

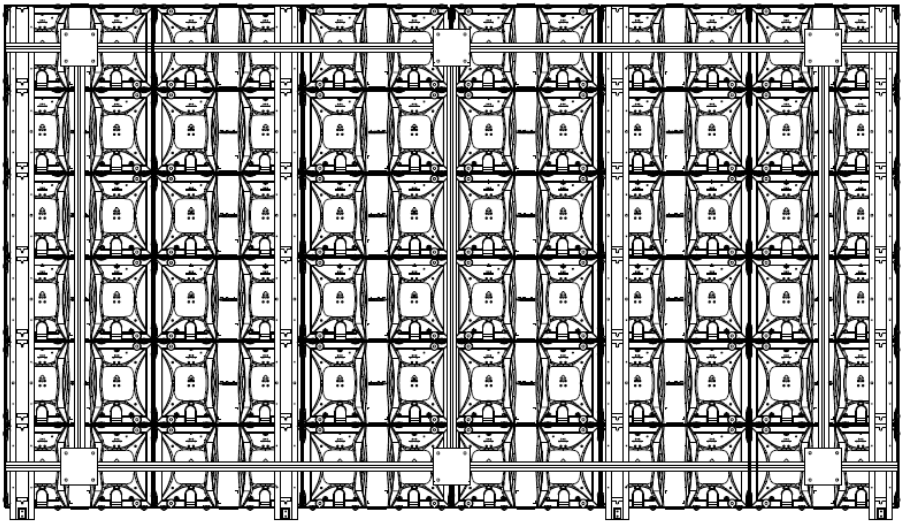


Figure 2-12 Installation Diagram 7

2.3 Concave Installation

1) Make sure that the bottom beam is horizontal, and the value is within ± 1mm;
2) Splice the specific trimming cabinet left and right; place the angle block at the connection of the two cabinets;

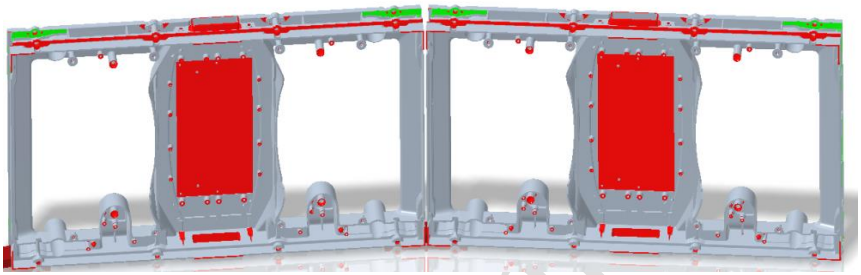


Figure 2-13 Concave installation diagram 1

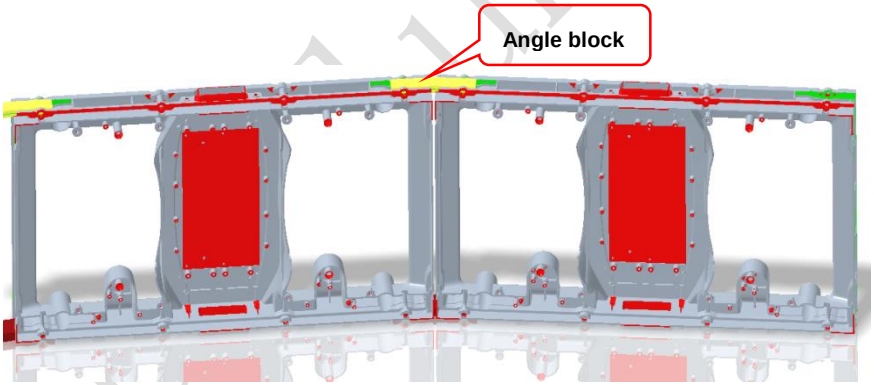


Figure 2-14 Concave installation diagram 2

Figure 2-15 Concave installation Angle block

3) Stack a row of cabinets again, and lock the upper and lower rows of boxes and angle blocks with tapered screws;

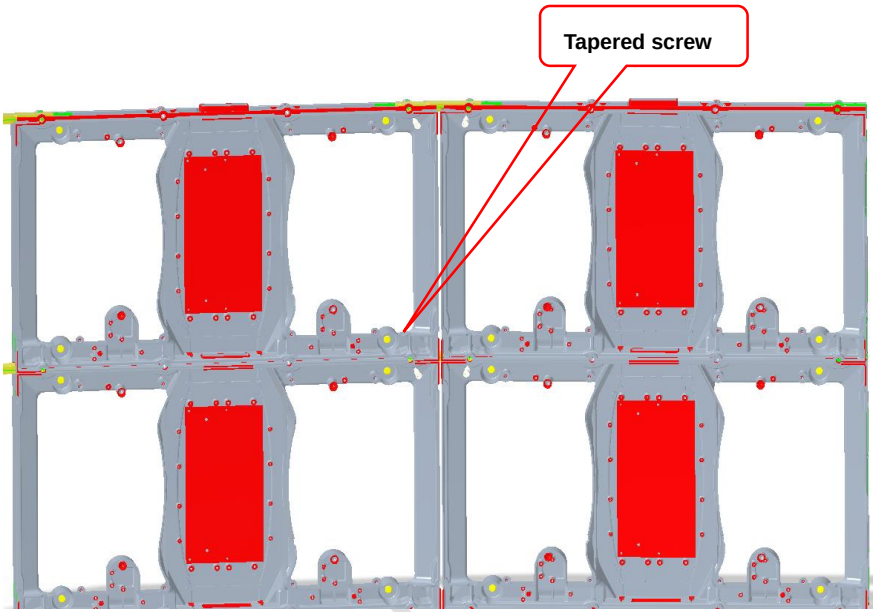


Figure 2-16 Concave installation diagram 3

4) Repeat the above installation actions to complete the Concave cabinet installation;
5) Install the modules from top to bottom, and note that the modules correspond to the cabinet number one by one;
6) In the process of installation, attention shall be paid to the seam clearance and flatness between cabinet and modules.

Figure 2-17 Concave installation completed

2.4 Six Direction Adjustment Of X / Y / Z Axis

2.4.1 X / Y axis seam adjustment

UpanelS-L series products support X / Y-axis seam adjustment. First, loosen the new tapered screw, then adjust the X / Y-axis seam according to the screw hole position in the adjustment diagram 1, using the tightness of the hexagon socket screw to adjust the X / Y-axis seam, supporting the adjustment in the front or back of the box. (it is recommended to adjust it from the back of the box)

Specification of socket head cap screw: M6 * 45mm

Figure 2-18 Taper screw diagram

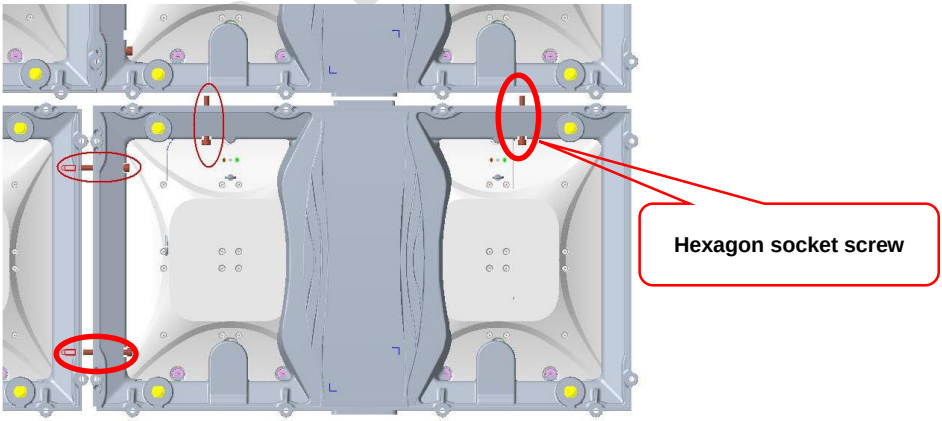


Figure 2-19 Adjustment diagram 1

2.4.2 Z axis seam adjustment

UpanelS-L series products support Z-axis seam adjustment. It is necessary to use a screwdriver to adjust the thread hole of the box, adjust the module back and forth, support the adjustment in front or back of the box, and a box has 10 thread adjusting holes. (it is recommended to adjust it from the back of the box)

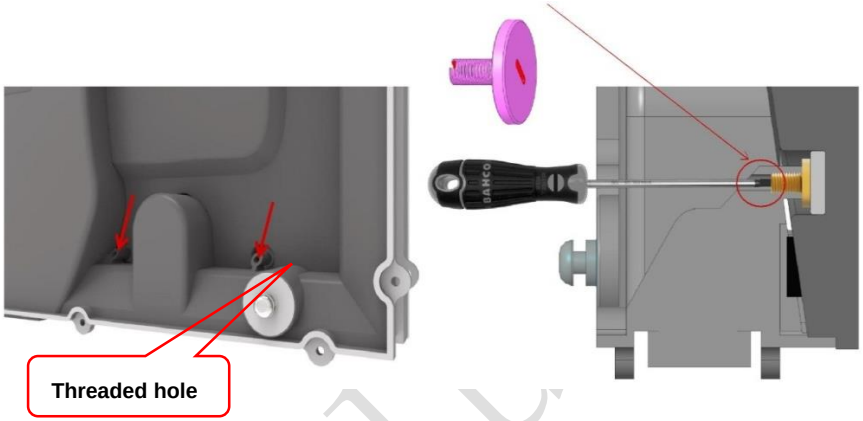


Figure 2-20 Adjustment diagram 2

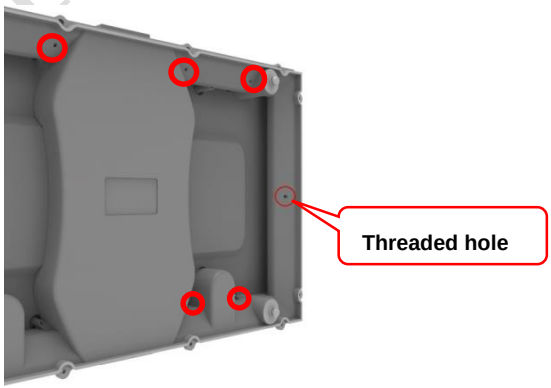


Figure 2-21 Hole location diagram

2.5 Wiring for LED Display

2.5.1 Common Cables

Incoming Power Cables

DVI Cable

USB Cable

Incoming Signal Cable

Power/Signal Incoming Cable Switching Board

2.5.2 Signal Cable Connection

Figure 2-22 ~ Figure 2-25 shows the signal cable connection for display with a resolution of 1920 x 1090. Signal cables shall be connected based on the wiring diagram of the delivered products for the project.

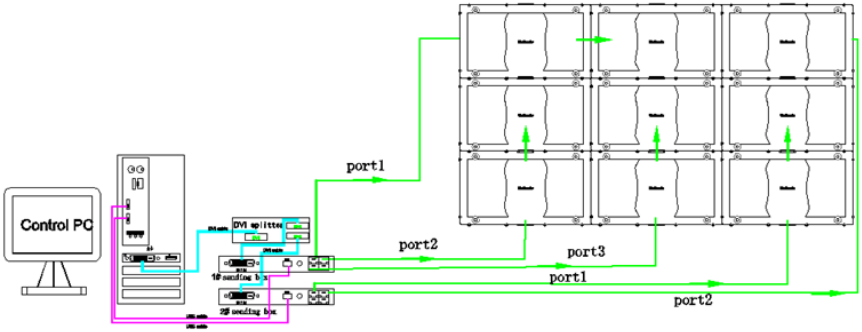


Figure 2-22 Signal Cable Connection Diagram of UpanelS-L 0.9

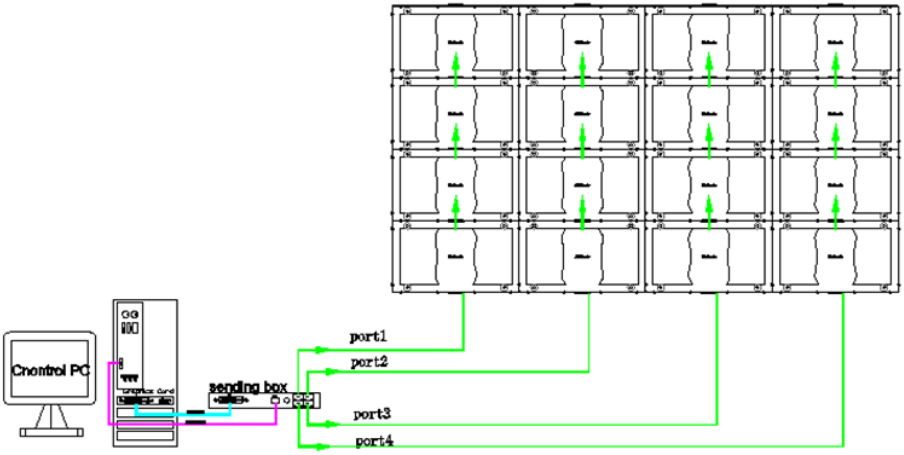


Figure 2-23 Signal Cable Connection Diagram of UpanelS-L 1.2

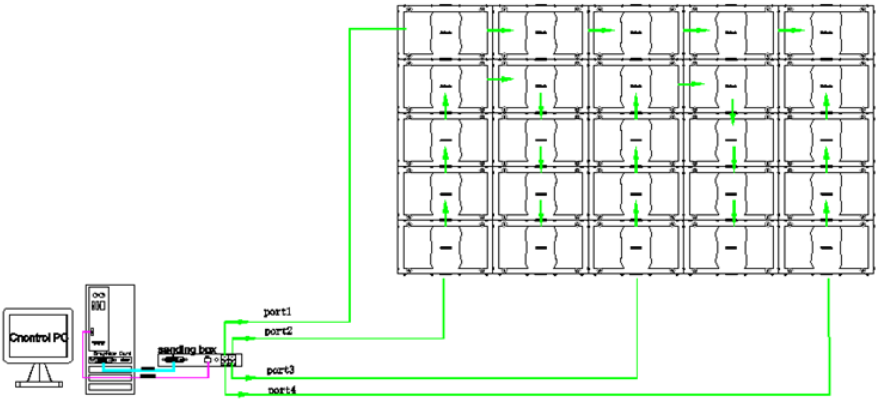


Figure 2-24 Signal Cable Connection Diagram of UpanelS-L 1.5

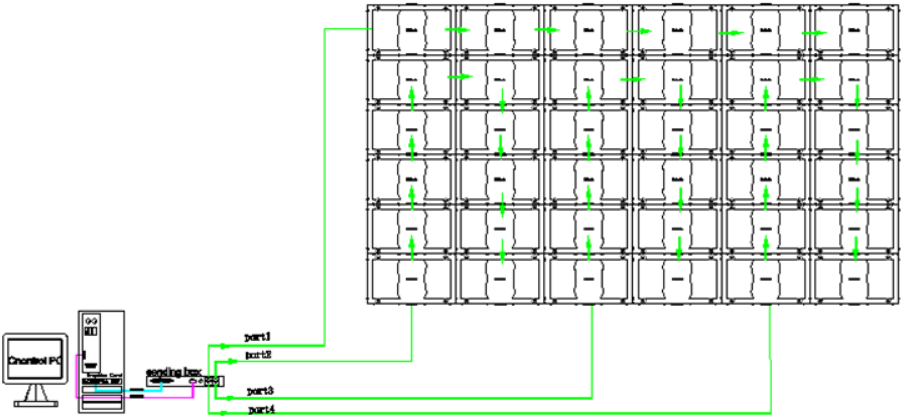


Figure 2-25 Signal Cable Connection Diagram of UpanelS-L 1.9

2.5.3 Power Cable Connection

Figure 2-26 ~ Figure 2-29 shows the power cable connection for display with a resolution of 1920 x 1090.Power cables shall be connected based on the wiring diagram of the delivered products for the project.

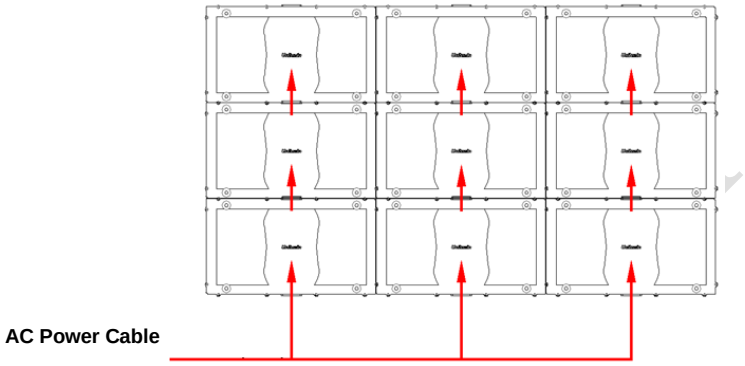


Figure 2-26 Power Cable Connection Diagram of UpanelS-L 0.9

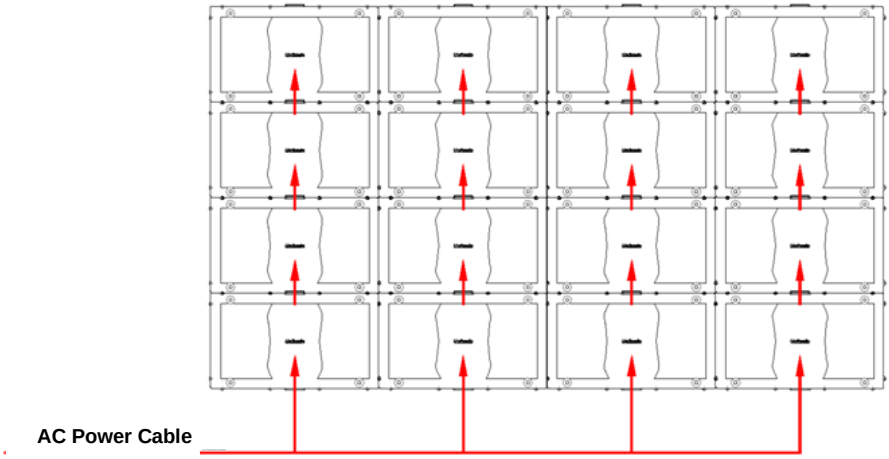


Figure 2-27 Power Cable Connection Diagram of UpanelS-L 1.2

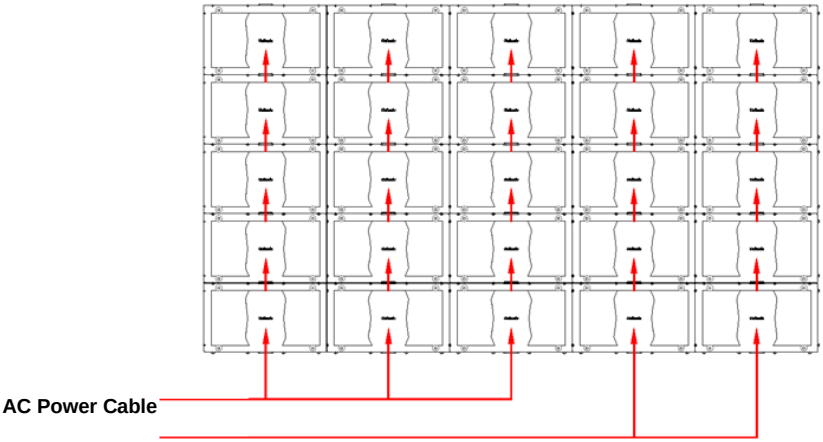


Figure 2-28 Power Cable Connection Diagram of UpanelS-L 1.5

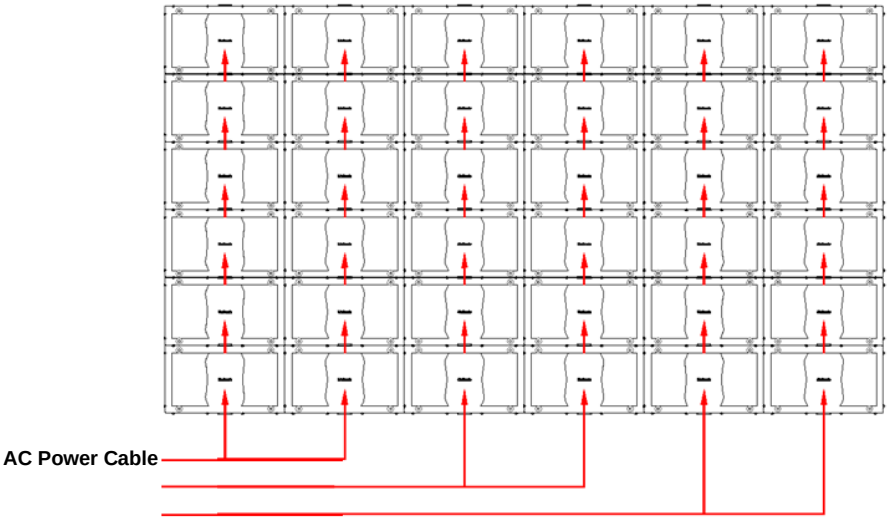


Figure 2-29 Power Cable Connection Diagram of UpanelS-L 1.9

2.5.4 Smart Control Distribution Box

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

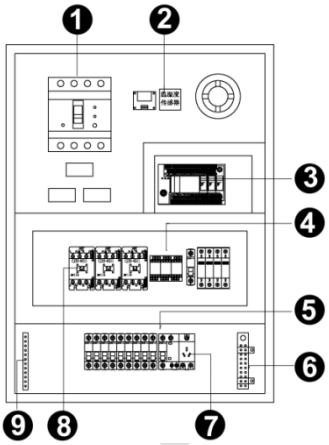


Figure 2-30 Internal Structure of Distribution Box

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

PLC connection of the smart control distribution box:

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

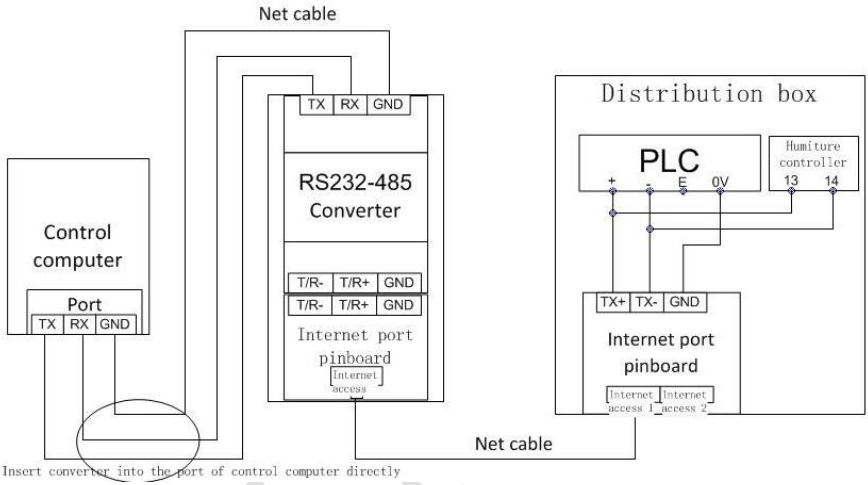


Figure 2-31 Distribution Box PLC Connection Diagram

Chapter 3 LED Display Control Setting

3.1 Power-on Testing

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

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

3.2 Preparation

3.2.1 Starting the Hardware

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

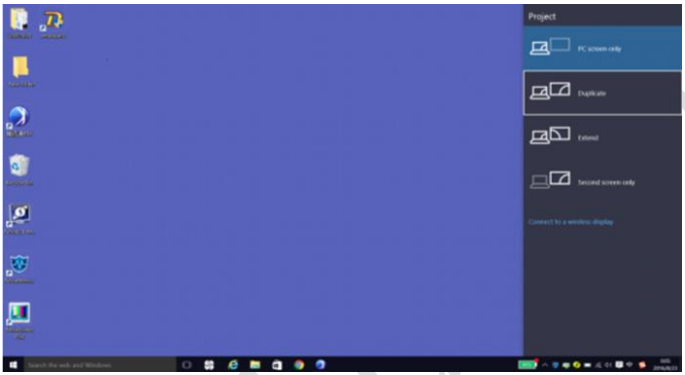


Figure 3-1 Replication Mode

3.2.2 Installing the Software

Open the optical disk provided for the delivered products. Install the LED control software UniLCT-Mars stored in the optical disk to the control PC. Then install UniStudio.

Fig 3-2 Software Installation

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

3.3 Display Configuration

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

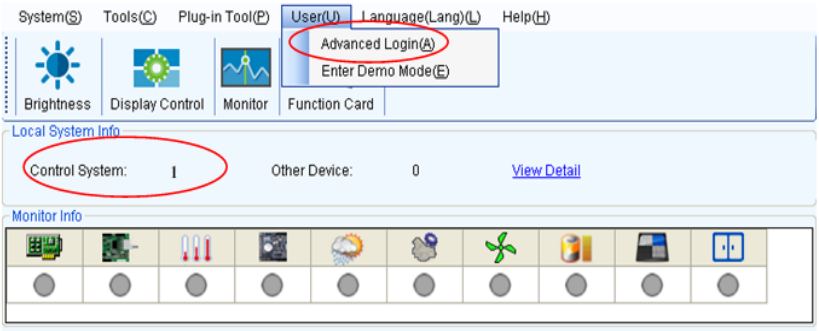


Figure 3-3 Main Window of UniLCT-Mars

Enter the initial password “admin”, as shown in Figure 3-4, to go to the advanced user window.

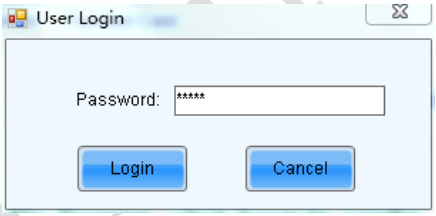


Figure 3-4 User Login

After login, click **Screen Config** on the main window, as shown in Figure 3-5:

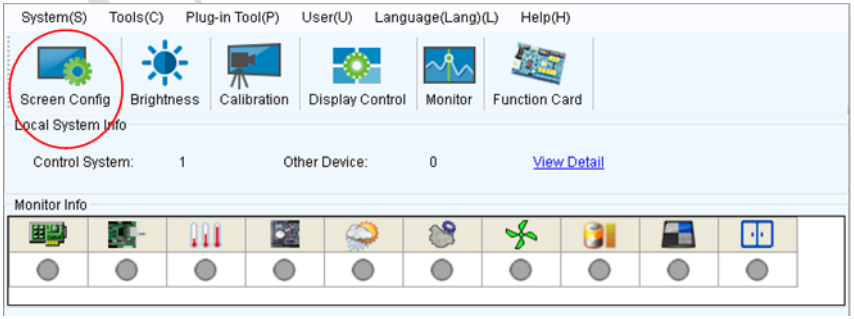


Figure 3-5 Main Window for Advanced User

Click **Next**, as shown in Figure 3-6:

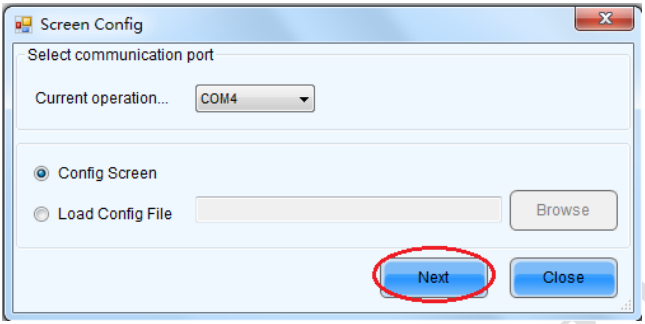


Figure 3-6 Screen Config

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

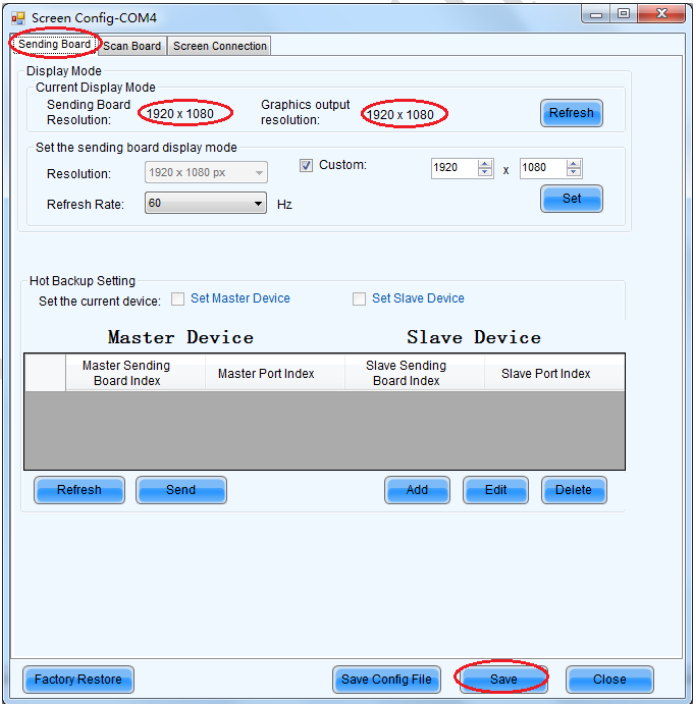


Figure 3-7 Sending Board Configuration

After configuring the parameters on the **Sending Board** page, click **Scan Board** to display the following window:

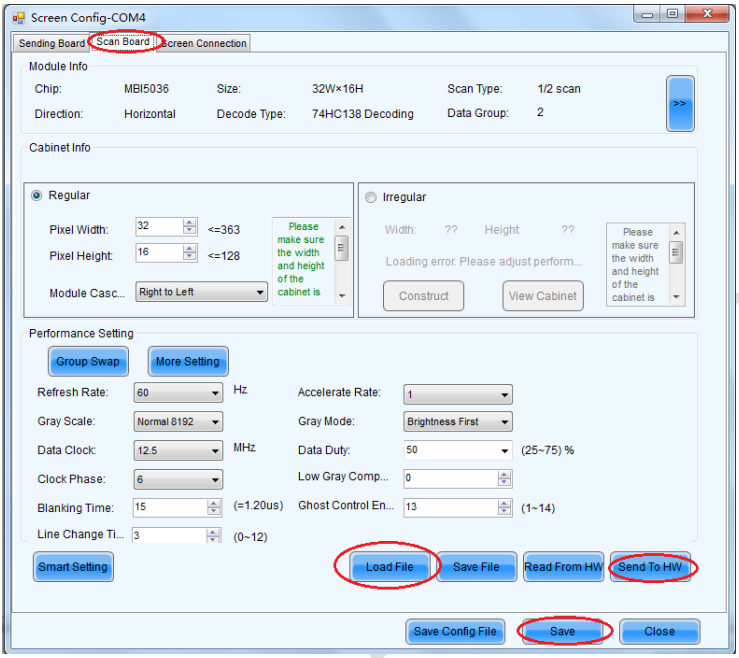


Figure 3-8 Scan Board Configuration

1) Click **Load File** to load the file xxxx.rcfg stored in the optical disk.
2) Click **Send to HW**.
3) After sending, confirm that the loaded picture received by scan board is normal on the screen. Then click **Save**.

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

1) Click **Read File** to load the file xxxx.scr stored in the optical disk, as shown in Figure 3-9.

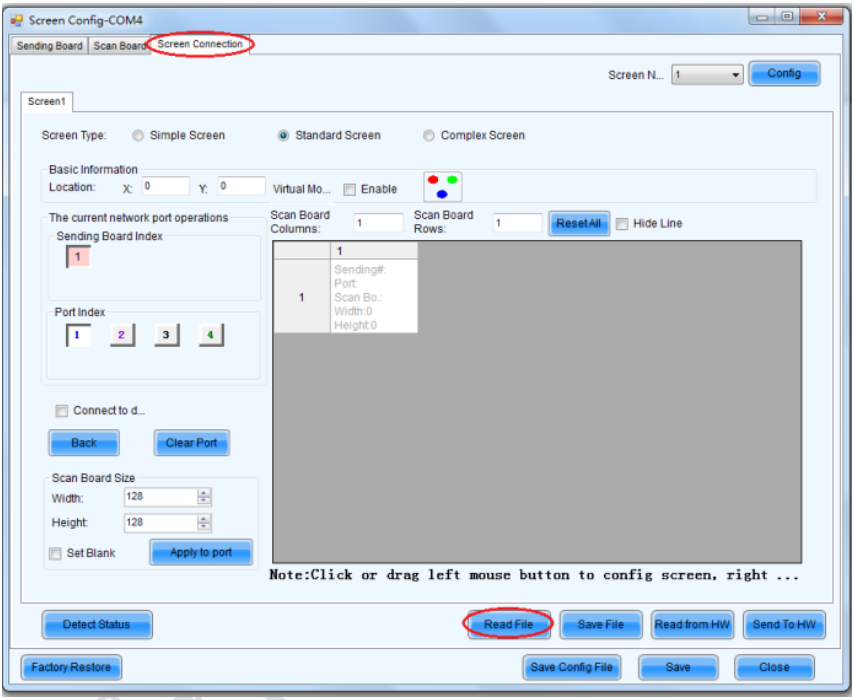


Figure 3-9 Screen Connection 1

2) Click **Send to HW**.

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

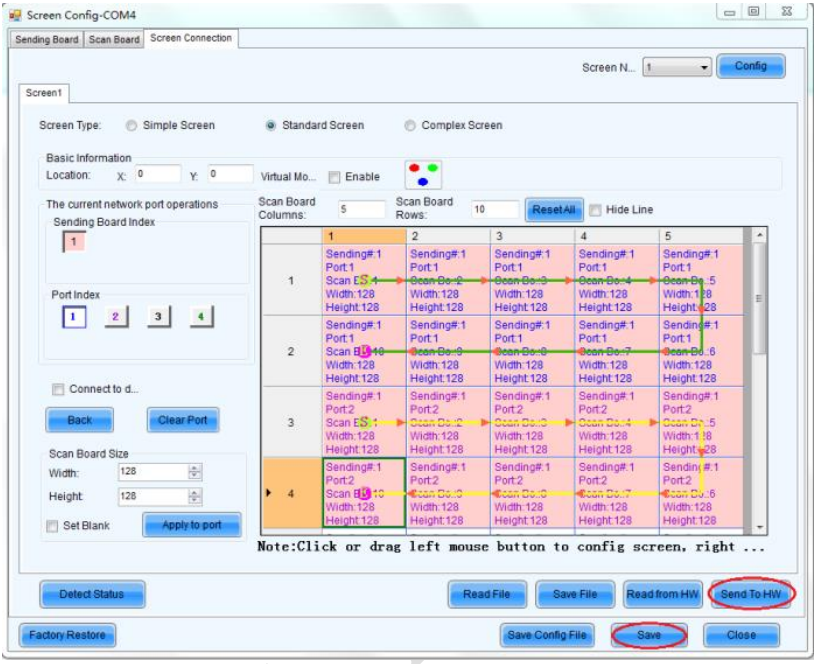


Figure 3-10 Screen Connection with Loaded File

3.4 Brightness Adjustment

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

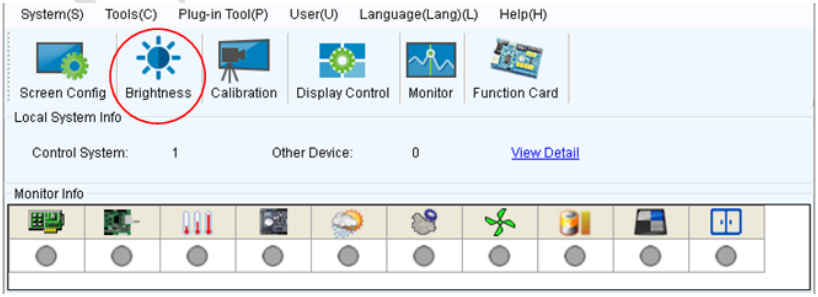


Figure 3-11 Main Window for Advanced User

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

1. Manual Adjustment

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

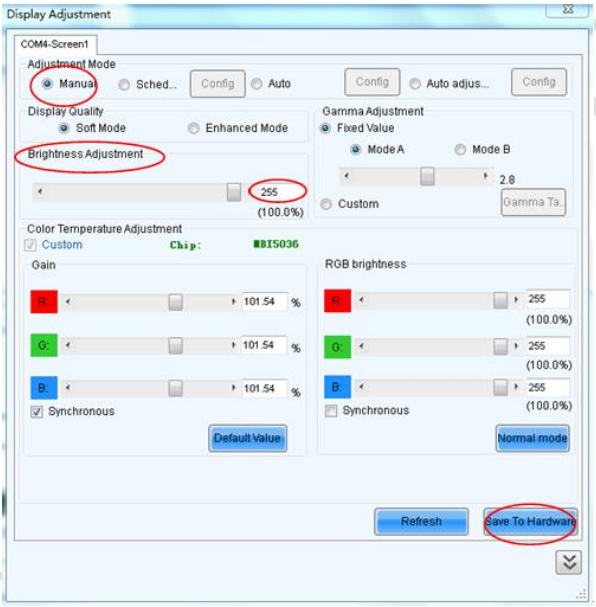


Figure 3-12 Manual Adjustment

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

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

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

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

2. Automatic Adjustment

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

3.5 Correction Coefficient Management

The UpanelS-L series products have been subject to correction before shipment. To ensure the optimum displaying effect of the screen, you need to activate the correction function when using the LED display, and to reload the correction coefficients after replacing the modules or receiving card. This Section introduces how to upload the correction coefficients after replacing the modules or receiving card.

On the main window, click **Calibration**, as shown in Figure 3-13, to display the screen calibration interface:

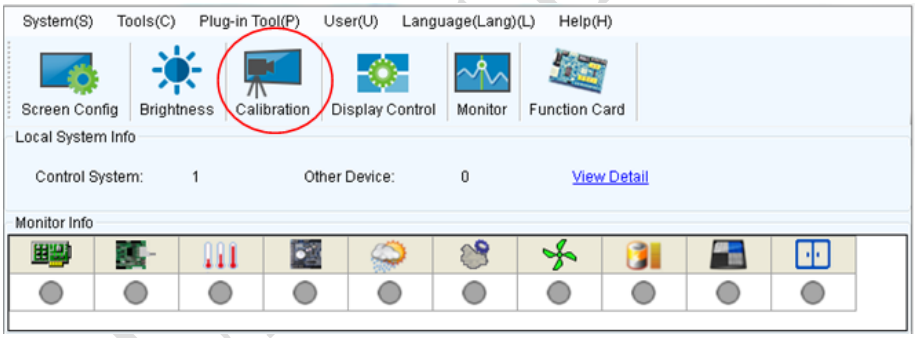


Figure 3-13 Main Window for Advanced User

Configure **Enable/Disable Calibration** to **Brightness**, click **Save**, and then click **Manage Coefficients** to display the following window:

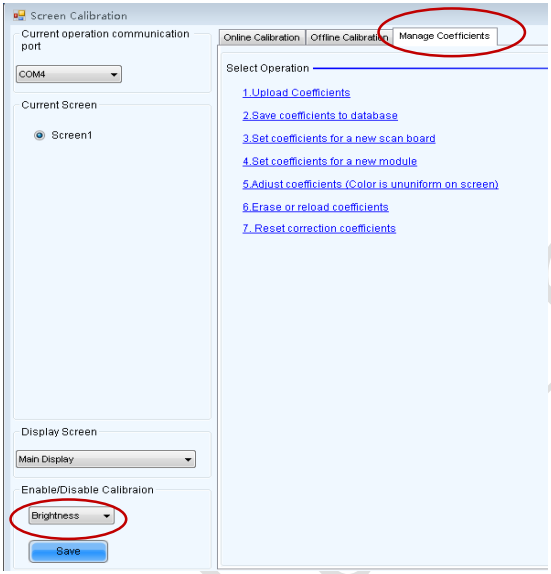


Figure 3-14 Manage Coefficients

Upload coefficients: Upload the correction coefficient database generated by the software or read back by the display screen to the screen.

Save coefficients to database: Read back and save the coefficients from the screen to the coefficient database.

Set coefficients for a new scan board: After replacing the scan board (receiving card), set the correction coefficients for the new receiving card.

Set coefficients for a new module: After replacing a module, set the correction coefficients for the new module.

Adjust Coefficients (Color is ununiform on screen): Adjust the correction coefficients for a selected area on the screen to achieve a satisfactory effect.

Erase or reload Coefficients: Erase or reload the correction coefficients for a selected area on the LED display.

Reset Correction Coefficients: Reset the calibration coefficients on whole or selected section of LED display.

3.5.1 Setting Coefficients for a New Receiving Card

1） As shown in Figure 3-15, select **Topology or List**. Select the position of the replaced receiving card. Click **Next**:

Figure 3-15 Selecting Area for New Receiving Card

2） Select the coefficient source. Click **Browse** at **Select Database**.

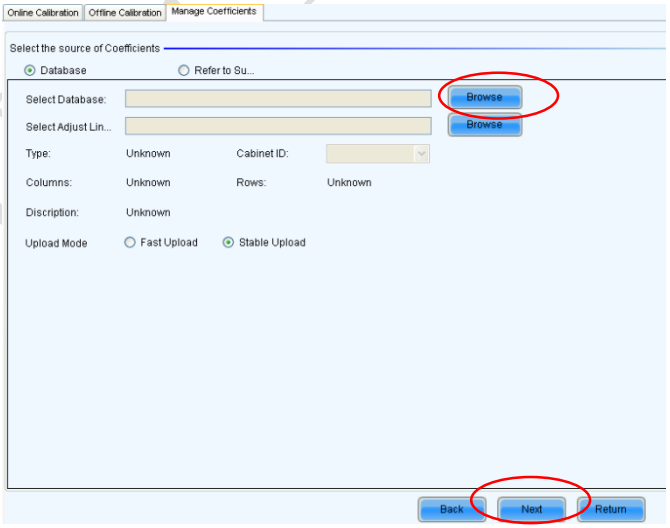


Figure 3-16 Obtaining Correction Coefficients for Receiving Card

3) Select the corresponding correction coefficients:

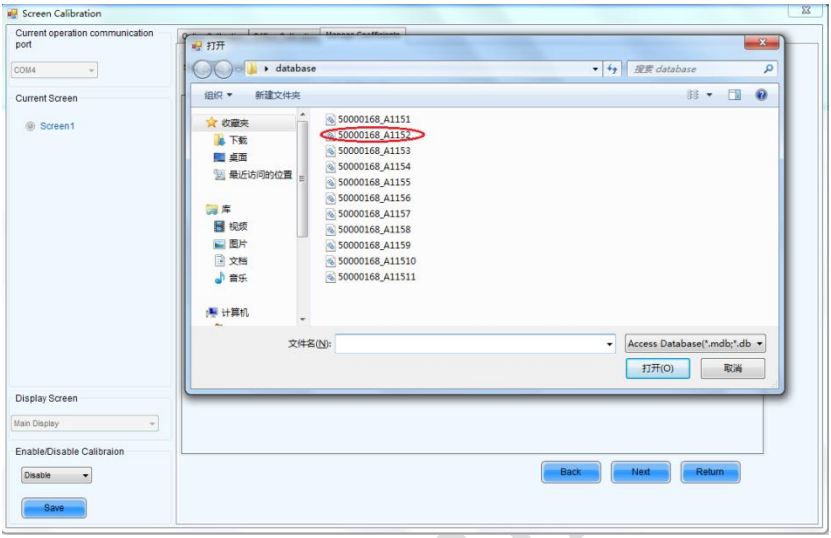


Figure 3-17 Selecting Correction Coefficients for Receiving Card

4) Select **Stable Upload** and click **Next**:

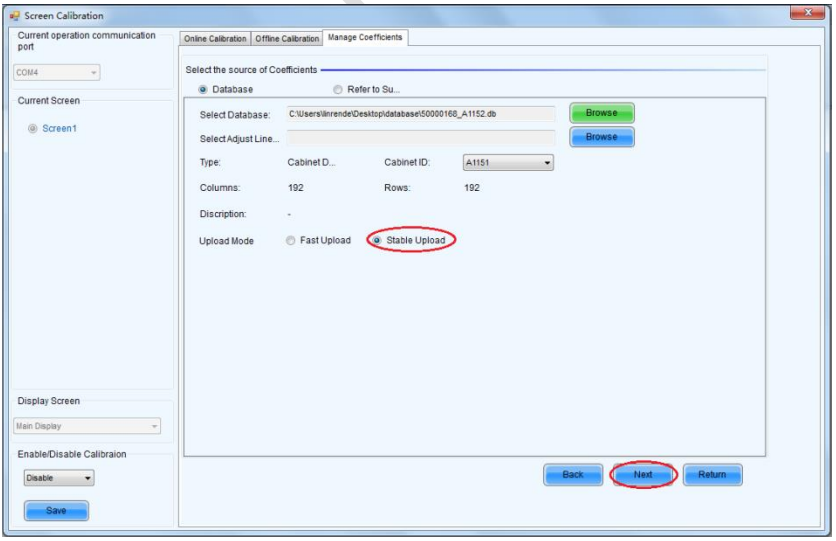


Figure 3-18 Uploading Correction Coefficients

5) Adjust Coefficient: Perform a simple adjustment if the displaying effect is not good enough after you upload the coefficient. Then click **Next**.

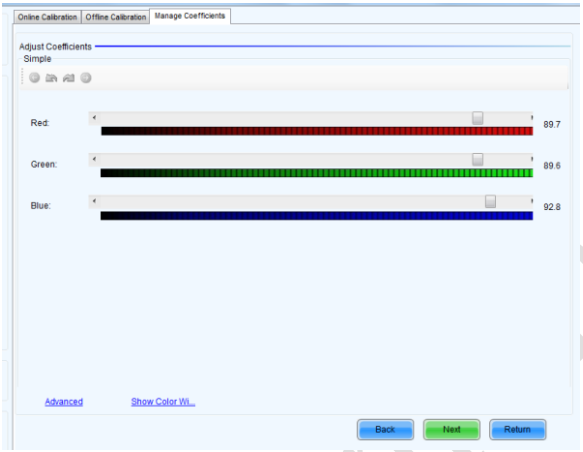


Figure 3-19 Simple Adjustment

Red：Adjust the red brightness value of calibration coefficients.

Green：Adjust the green brightness value of calibration coefficients.

Blue：Adjust the blue brightness value of calibration coefficients.

6) Save Coefficients: Click **Save** to save the correction coefficients to the hardware. The saved coefficients are retentive even after a power failure. Then click **Finish**.

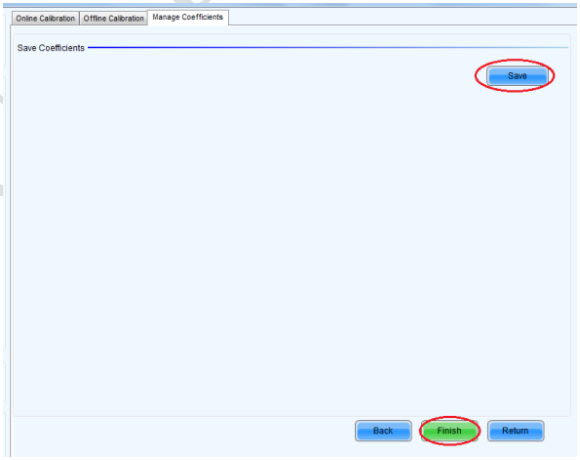


Figure 3-20 Saving Correction Coefficients

3.5.2 Setting Coefficients for a New Module

1) Select Position of the New Module: Select **Topology or List**. Then select the position of the receiving card where the new module is located. Double click the selected position:

Figure 3-21 Selecting Cabinet for the New Module

2) Choose **Display Mode** to **Modules**. Select the position of the new module and click **Next**.

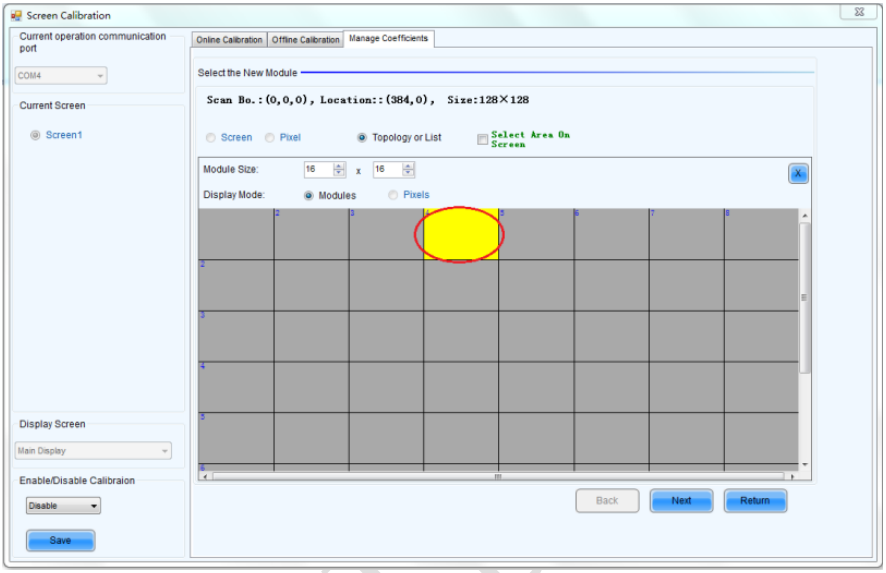


Figure 3-22 Selecting Position of New Module

Module Size： Set the size of the module in a cabinet. The software determines each module arrangement based on module size and cabinet size.

3) Adjust the coefficients (similar to the steps of coefficient adjustment in setting coefficients for a new receiving card). For details, refer to Step 2 and Step 3 in Section 3.5.1).

4) Save the correction coefficients to the hardware (Use similar steps in setting coefficients for a new receiving card. For details, refer to Step 4, Step 5, and Step 6 in Section 3.5.1) so that they are retentive after a power failure.

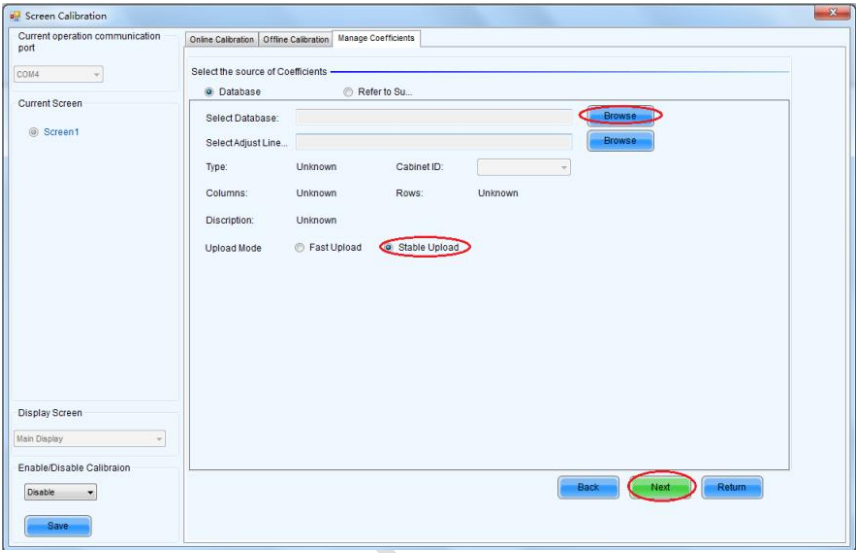


Figure 3-23 Obtaining Correction Coefficients for a New Module

3.6 Pre-storing Picture

On the Prestore Picture interface, you can save a picture as the prestored picture for the screen. This prestored picture can be set as a screen displayed upon booting, signal cable disconnection, or DVI signal absence.

On the main window, click **Tool** and select **Prestore Picture**, as shown in Figure 3-24.

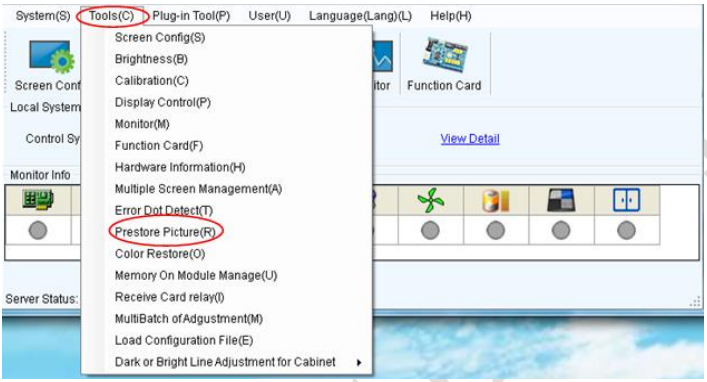


Figure 3-24 Prestore Picture

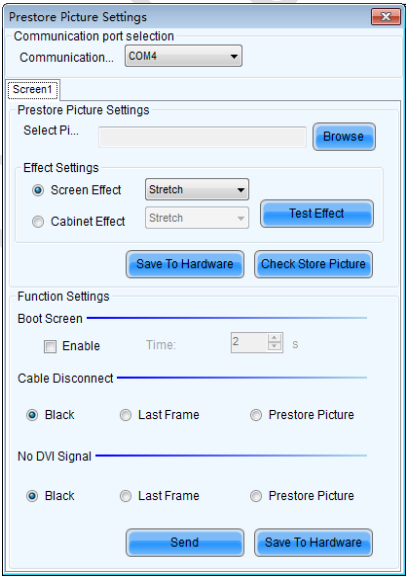


Figure 3-25 Prestore Picture Settings

1） Prestore Picture Settings

Select Picture: Click **Browse** to select the directory of the picture.

Screen Effect: Set the selected picture to be displayed on the whole screen by means of stretching, tiling, or centering.

Cabinet Effect: Set the selected picture to be displayed on each cabinet of the screen by means of stretching, tiling, or centering (the number of pictures displayed by each cabinet shall be equal to the number of receiving cards in the cabinet).

Click **Test Effect** to display the selected picture on the screen.

Click **Save to Hardware** to save the picture as a prestored picture to the hardware.

Click **Check Store Picture** to display the stored picture on the screen to check its effect.

2） Function Settings

Boot Screen: Set whether to use the prestored picture and set the displaying time of the prestored picture when the screen is powered on.

Cable Disconnect: Set the picture to be displayed by the cabinet whose signal cable is disconnected.

No DVI Signal: Set the picture to be displayed in the period in which the screen does not receive any DVI signals.

Click **Send** to the settings to the hardware (the settings will be lost if you do not click **Save to Hardware**).

Click **Save to Hardware** to save the current settings so that these settings are retained even if there is a power failure

3.7 Dehumidification Mode

In the main window, click "Tools" - "SD600E Dehumidification" to enter the dehumidification interface.

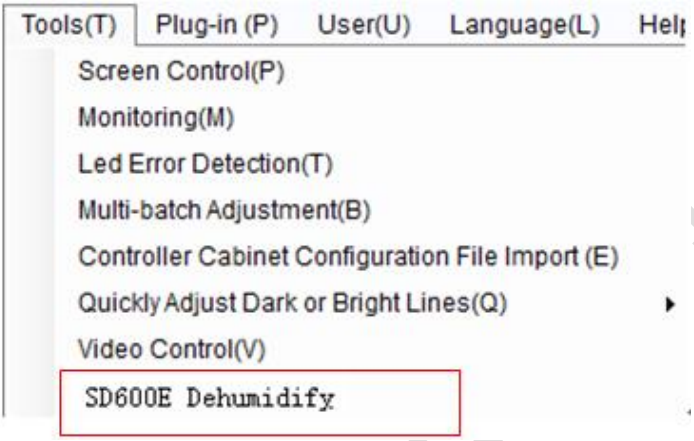


Figure 3-26 Dehumidification Setting

Select the corresponding dehumidification module and click “Settings” to enter the corresponding dehumidification mode.

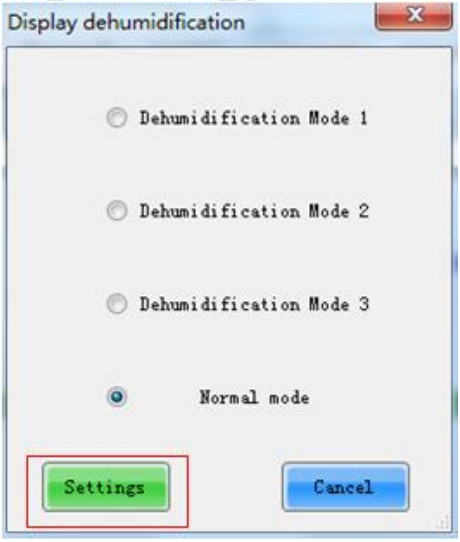


Figure 3-27 Dehumidification Interface

There are three dehumidification mode levels, and the dehumidification time corresponding to different dehumidification levels is different. Exit the dehumidification mode and select the normal mode. The default brightness value is 60% after exiting the dehumidification mode.

1) Dehumidification Mode 1 (low gear): The brightness gradually changes to 100% within 1 hour, and the change process is 0-18 minutes, brightness is 10%, 18-36 minutes brightness is 20%, and 36-50 minutes brightness is 50%, 50-60 minutes 100%.
2) Dehumidification Mode 2 (mid-range): The brightness gradually changes to 100% within 2 hours, and the change process is 0-36 minutes, brightness is 10%, 36-72 minutes brightness is 20%, and 72-96 minutes brightness is 50%. %, 96-108 minutes brightness is 80%, 108-120 minutes 100%.
3) Dehumidification Mode 3 (high grade): The brightness gradually becomes 100% within 4 hours, the change process is 0% for 0-72 minutes, the brightness for 20-72 minutes is 20%, and the brightness for 144-192 minutes is 50%, 192- The brightness is 75% in 216 minutes and 100% in 216-240 minutes.

Chapter 4 LED Display Playing Setting

4.1 Selecting a Playing Solution

The playing software UniStudio has three playing modes, namely Simple playing program, Professional playing program, and Priority programs of the page. Professional playing program is used most commonly. This Section introduces the Professional playing program only.

Run the software to enter the main window. Click **Setting** > **Switch schedule mode**. On the editing mode setting window, select **Professional playing program** and click **OK**. As showed in Figure 4-1 and Figure 4-2.

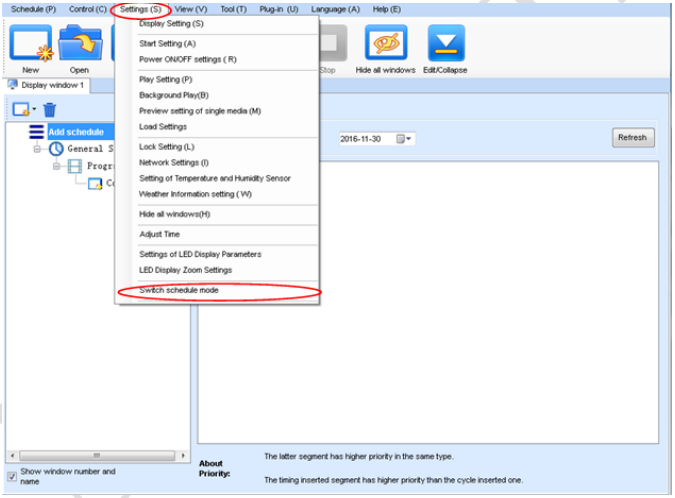


Figure 4-1 Switching Schedule Mode

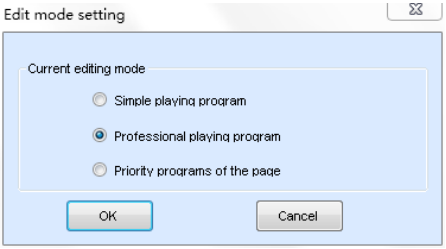


Figure 4-2 Edit Mode Setting

4.2 Playing Setting

4.2.1 Display Window Setting

Run the UniStudio, click **Settings** and select **Display Setting**, as in following fig:

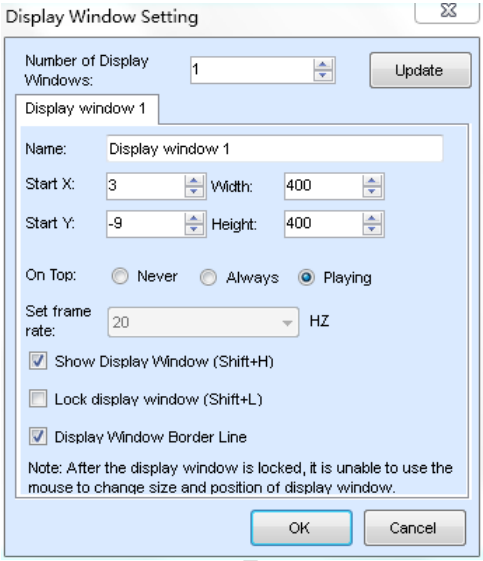


Figure 4-3 Display Window Setting

Number of Display Windows: Indicates the number of display windows. To increase or decrease the number of display windows, re-enter the number of display windows in the box next to **Number of Display Windows** and then click **Update**.

Start X: Indicates the horizontal start point of the display window.

Start Y: Indicates the vertical start point of the display window.

Width: Indicates the horizontal pixel value of the display.

Height: Indicates the vertical pixel value of the display.

Other configuration items are set to the default values.

4.2.2 Startup Setting

On the main window of the software, click **Setting** > **Start Setting** to enable the software to run automatically upon startup of the PC and to automatically activate a playing solution. See Figure 4-4:

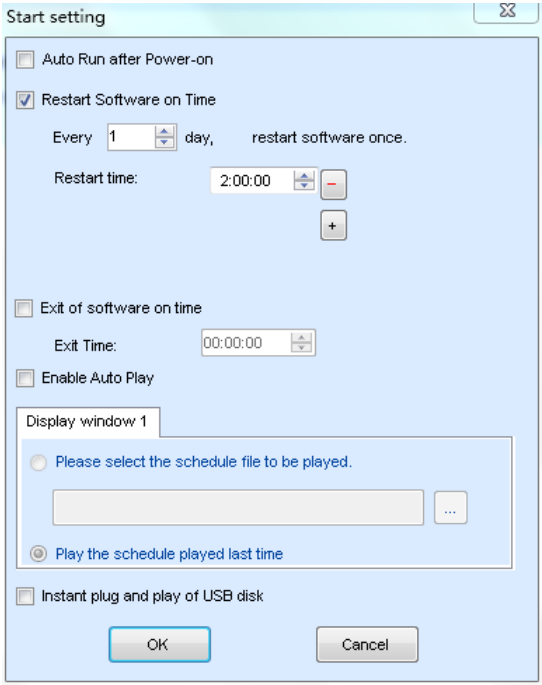


Figure 4-4 Startup Setting

Auto Run after Power-on: If you enable this function, UniStudio will run automatically the next time when the PC is started.

Restart Software on Time: If you enable this function, set the restart interval and time, and click **OK**, UniStudio will be automatically restarted after the PC time reaches the preset restart time. After the software is restarted, the window information and playing status before restart will be automatically recovered.

Exit of software on time: If you enable this function and set the exit time, the software will exit automatically upon the preset time. This function can prevent damages to the uploaded data caused by forcible exit of the software.

Enable Auto Play: If you enable this function and specify a playing solution for the screen, the software will automatically activate the specified playing solution once the software is started.

Instant plug and play of USB disk: If you enable this function, the PC will automatically read and activate the playing solution once the USB flash drive is inserted to the PC. If you do disable this function, the PC cannot implement the plug-and-play function even though you have inserted the USB flash drive to the PC.

4.3 Editing Professional Playing Solution

4.3.1 Editing the Time Segment

1) Creating a playing solution

On the main window of the software, click **Schedule** > **New**, as shown in Figure 4-5:

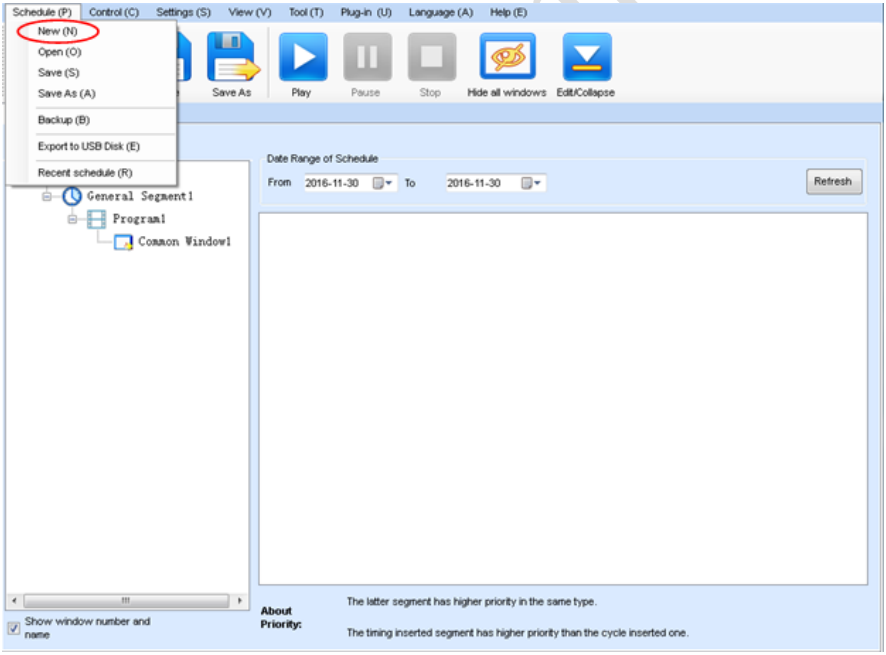


Figure 4-5 Creating a Playing Solution

2) Editing the properties of the playing solution

After adding a general time segment or interstitial segment, click **General Segment 1** to edit the properties displayed in the segment editing area on the right side, as shown in Figure 4-6:

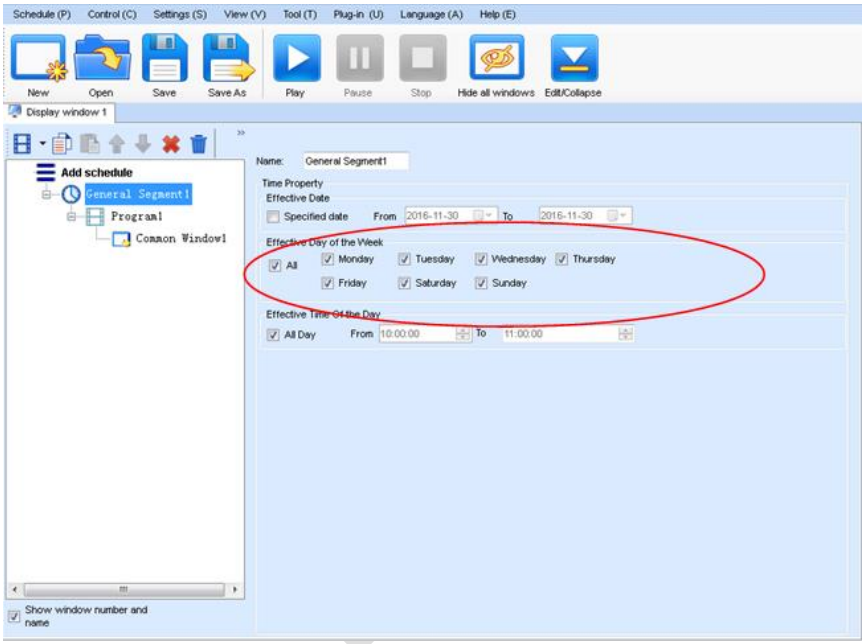


Figure 4-6 Properties of General Time Segment

4.3.2 Editing the Program Page

1) Creating a program page

As shown in Figure 4-7, right click **General Segment** or click the **Add Program Page** button in the toolbar to create a program page:

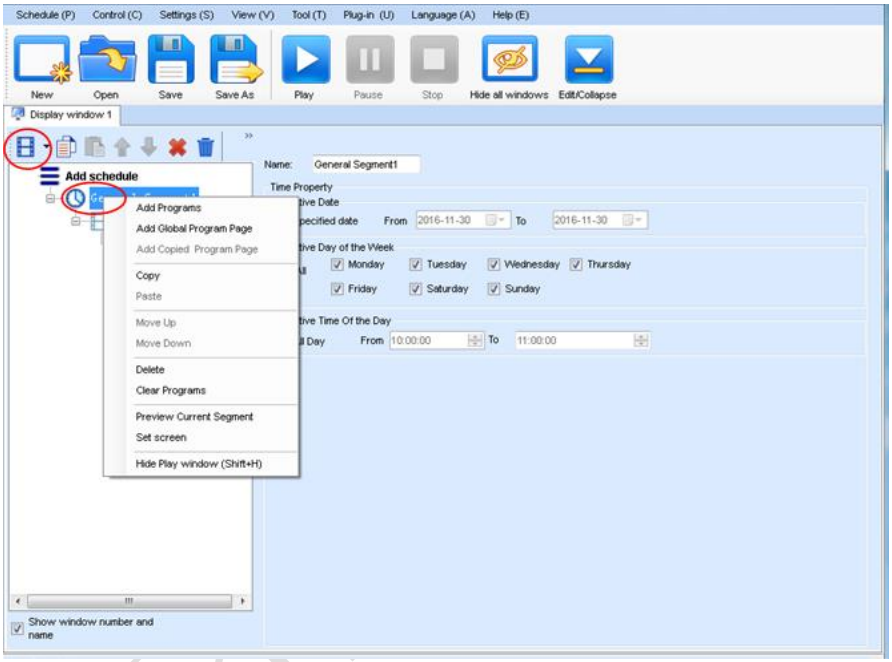


Figure 4-7 Creating a Program Page

2) Setting the properties

After creating the program page, click **Program 1** and set the background, displaying mode, and other properties displayed on the property page on the right side. See Figure 4-8:

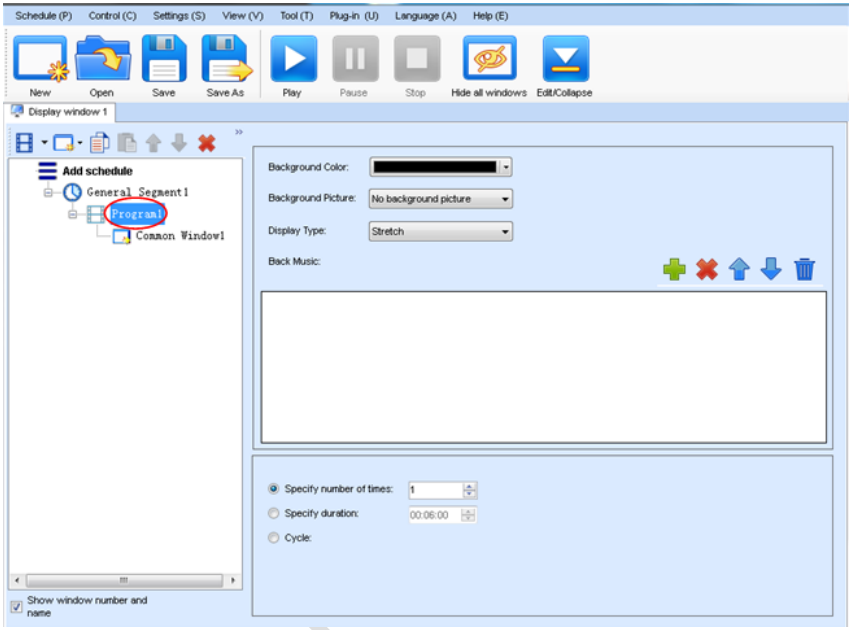


Figure 4-8 Properties of Program Page

If you select **Specify Number of Times**, the next general program page is played after the preset **Times to Play** for the display window with the longest playing time on the current program page has been reached.

If you select **Specify Duration**, the next program page is played after the preset **Play Duration** for the current program page has been reached.

If you select **Cycle**, the current program page will be played cyclically all the time.

When the current program page is played, the background picture or colour of the program page is displayed in the area not covered by the display window, as shown in Figure 4-9:

Figure 4-9 Background of Program Page

After adding the program page, you can move, copy, paste, or delete the program page by using the toolbar in the program page editing area, or by using the short-cut menu, as shown in Figure 4-10.

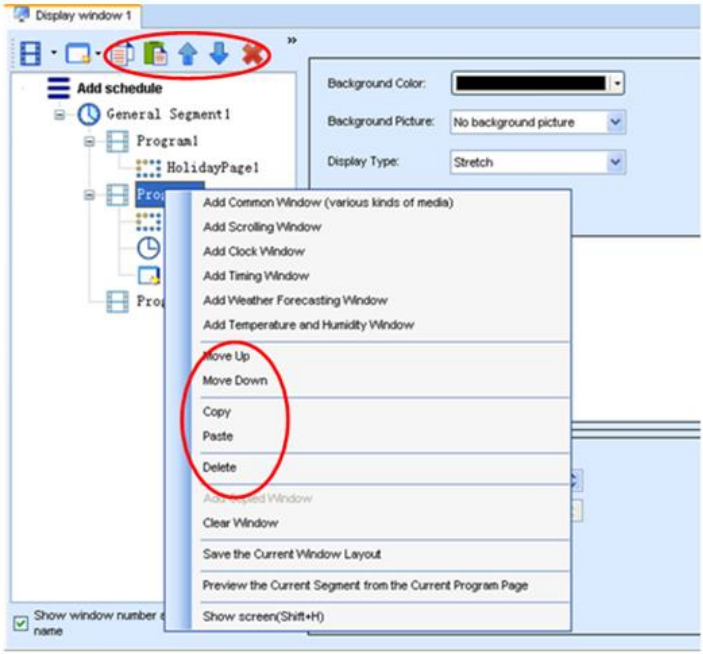


Figure 4-10 Program Page Operation Menu

4.3.3 Editing the Display Window

1) Adding a display window

After adding a program page, you need to add a display window to this program page. Click **Add Window** on the toolbar of the program page to add a window to the current program page. See Figure 4-11:

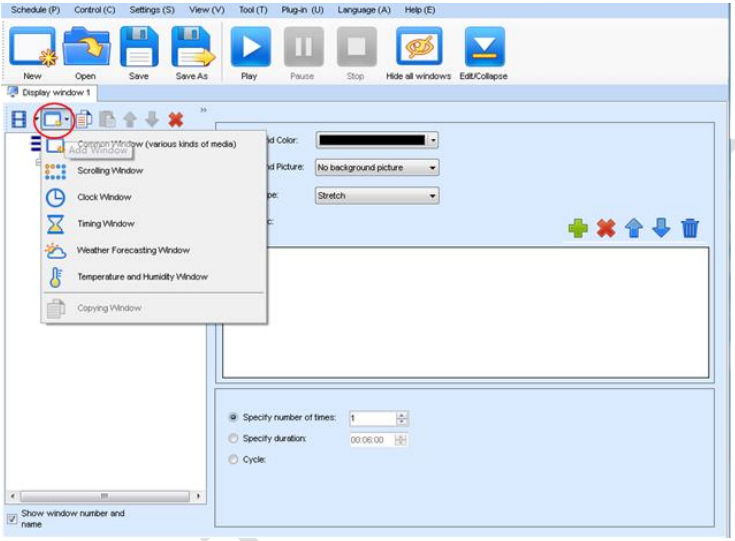


Figure 4-11 Adding a Window to Program Page

After the window is added, the added window is selected and displayed on the screen, as shown in Figure 4-12:

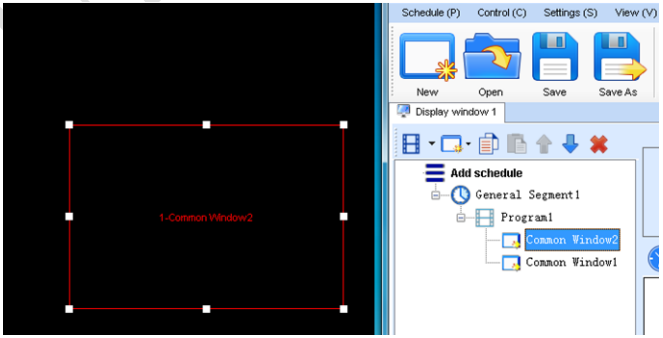


Figure 4-12 Added Window

2) Setting the location and size of the display window

The location and size of the new window is generated randomly and can be adjusted based on actual conditions by using either of the following two methods:

a) Directly specify the new location and size in the setting pane, as shown in Figure 4-13:

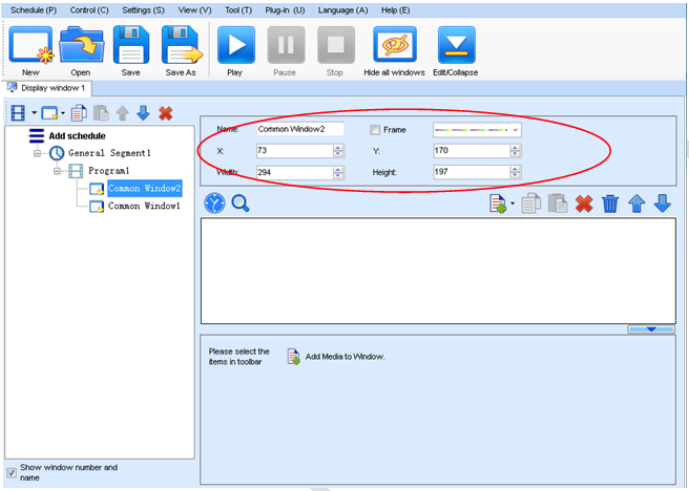


Figure 4-13 Setting the Window Size

b) Click the display window on the screen and adjust its size by using the mouse, as shown in Figure 4-14:

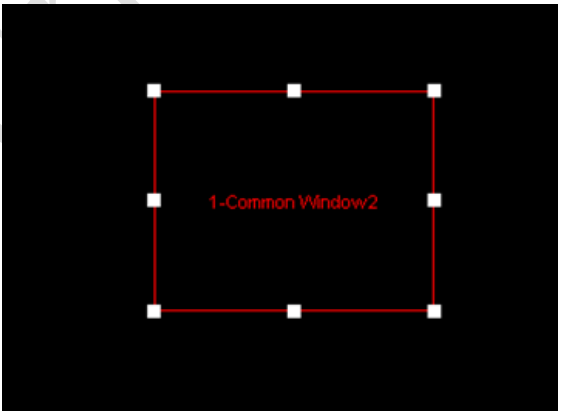


Figure 4-14 Adjusting the Window Size Using the Mouse

3) Deleting a display window

Select the window to be deleted. Click the delete key to delete the window, as shown in Figure 4-15:

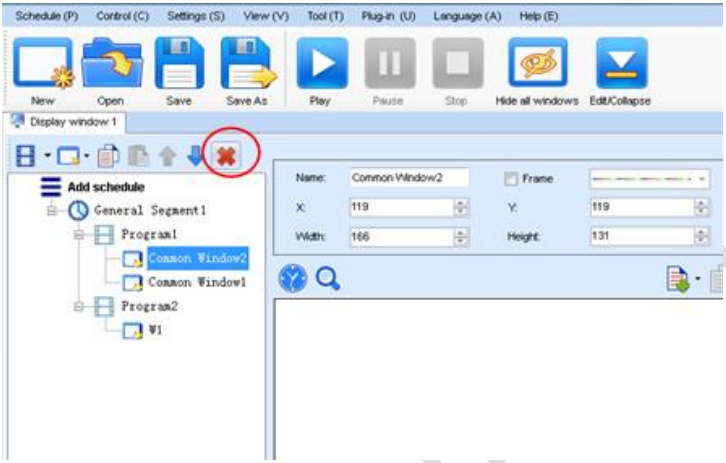


Figure 4-15 Deleting the Display Window

4) Moving a display window

Select the program or window. Click the direction key to adjust the playing sequence, as shown in Figure 4-16:

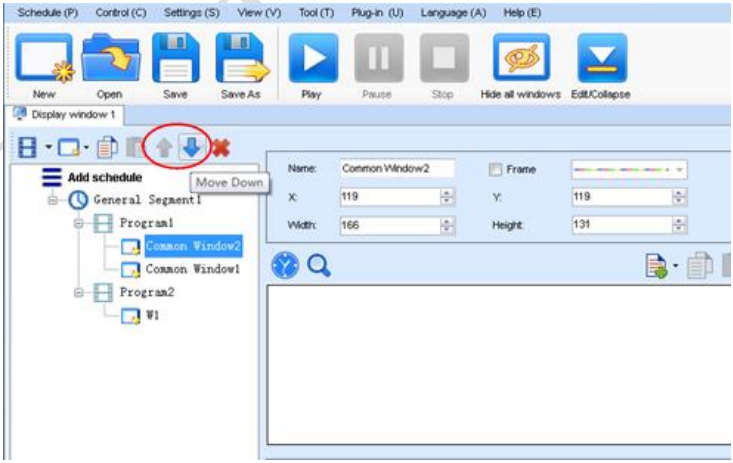


Figure 4-16 Moving a Display Window

4.3.4 Editing the Media

1) Adding the media

The type of window for adding the media is **Common Window**. Click the **Add Media** button of a common window to select media of different types to be added into the media list. See Figure 4-17:

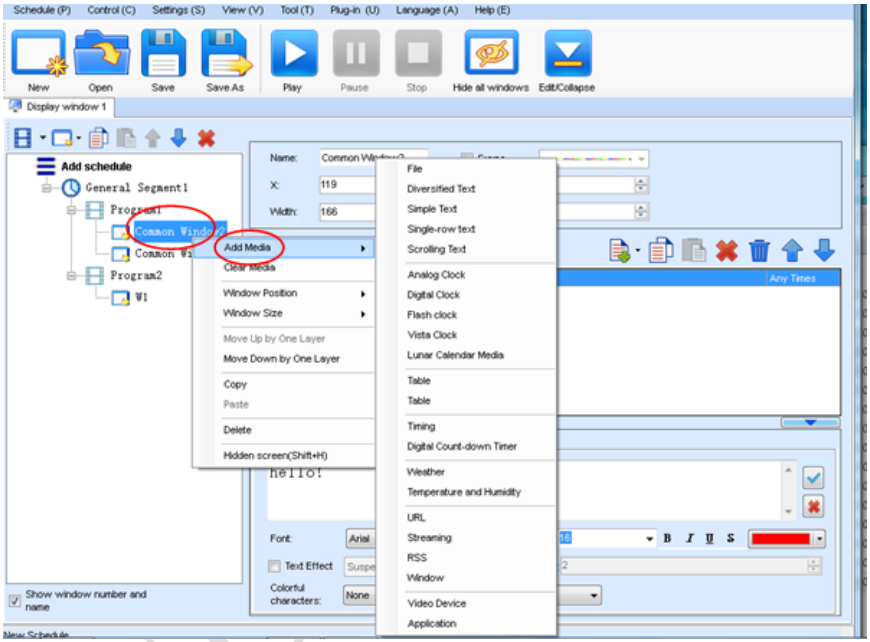


Figure 4-17 Adding the Media

After adding the media, you can set the media texts and properties, as shown in Figure 4-18.

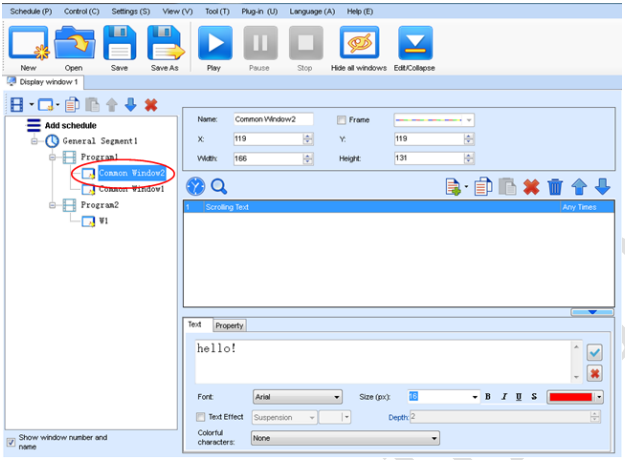


Figure 4-18 Media Setting Window

2) Setting the media properties

Different media have different properties. After a medium in the media list is selected, the property page of this medium is displayed below the selected medium. On this property page, you can change the properties of the medium. See Figure 4-19:

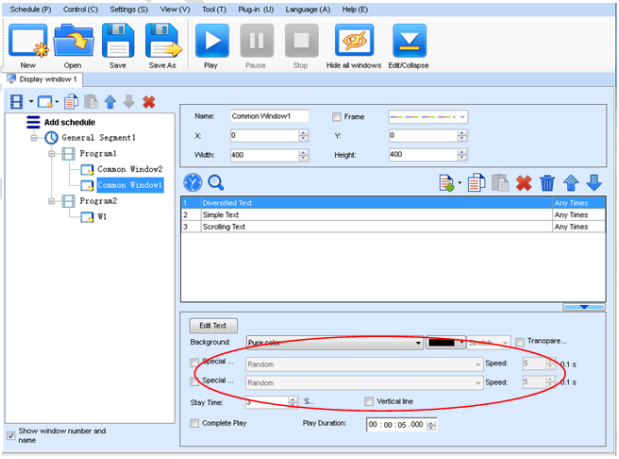


Figure 4-19 properties of Medium

3) Editing the media in the common window

In an actual application, if different playing times are required for different media, you can select the media in the media list and then double click **Times to Play** to modify the playing times by either entering a new value or selecting a value from the drop-down list. See Figure 4-20:

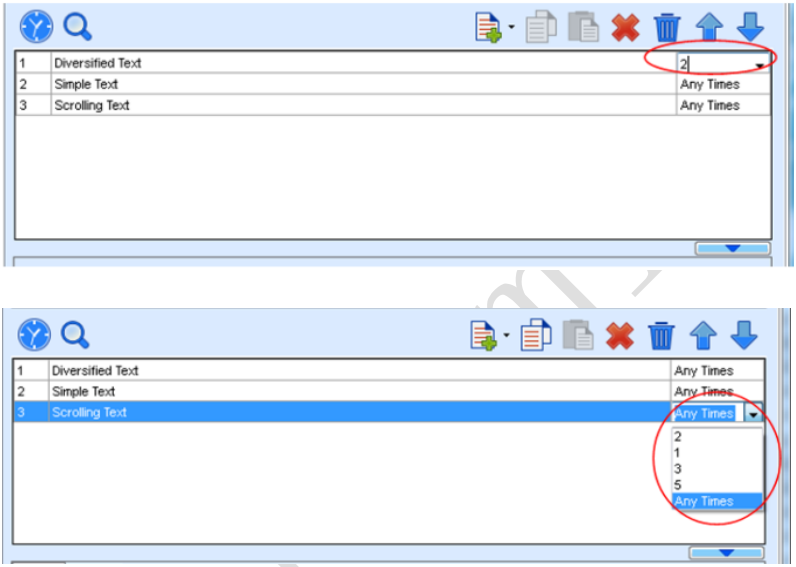


Figure 4-20 Changing the Media Playing Times

Right click the media to perform operations on the selected media, as shown in Figure 4-21:

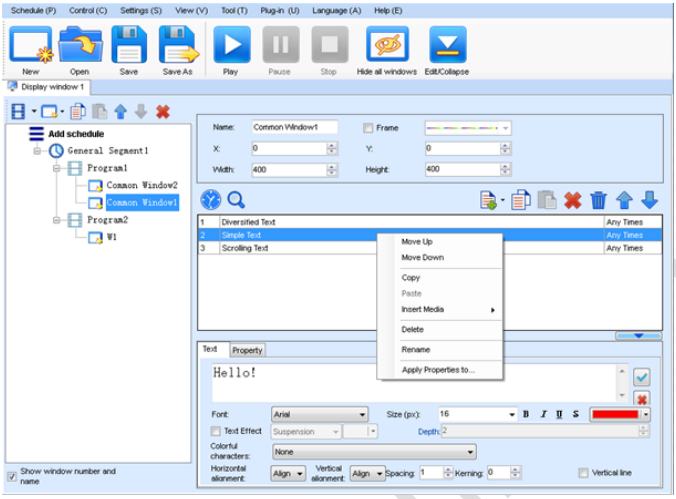


Figure 4-21 Media Operation Menu

Right click a blank area in the media playlist. A media playing menu is displayed, as shown in Figure 4-22:

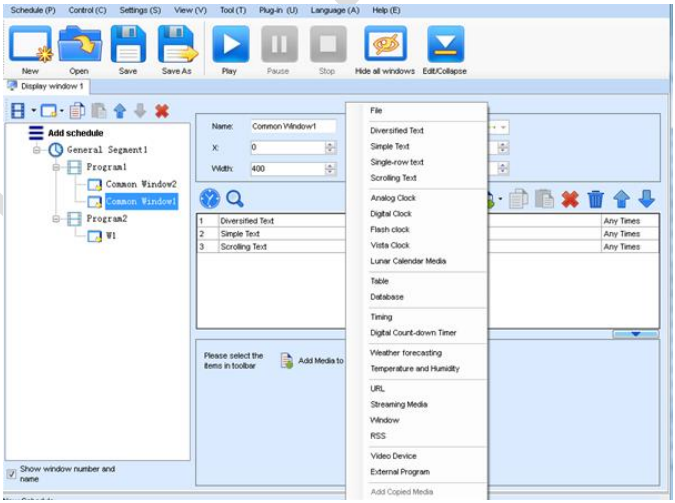


Figure 4-22 Media Playing Menu

4.3.5 Playing the Media

After the playing mode is edited or loaded, click the play key on the main toolbar to start the current playing mode, as shown in Figure 4-23:

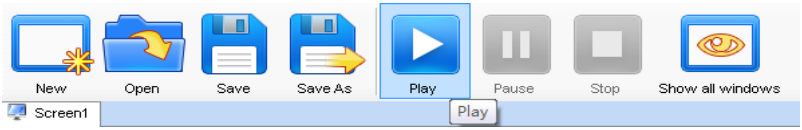


Figure 4-23 Play Key on the Toolbar

After play is activated, the editing page is switched to the playing page, as shown in Figure 4-24:

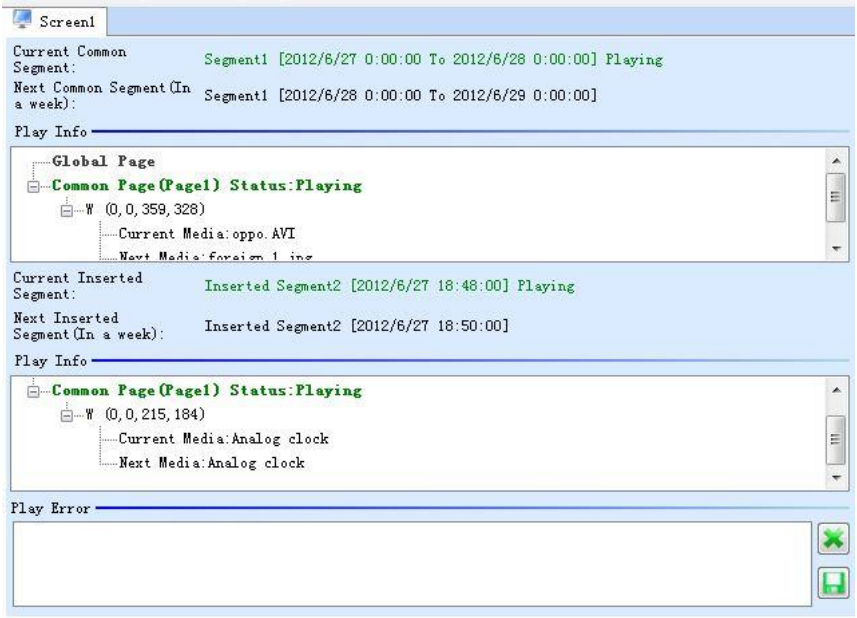


Figure 4-24 Play Information Page

Clicking **Pause** or **Stop** on the toolbar can pause or stop the currently played program. You can also perform this operation by using the operation menu that appears when you right click the display window. See Figure 4-25:

Figure 4-25 Short-cut Menu

All display windows on the same program page plays simultaneously. If the display windows overlap with each other, the upper-layer windows will cover the lower-layer windows. For example, if you add a common window and then a clock window of the same size and coordinate, the common window will cover the clock window when they are playing. If you want to display the clock window, you need to click **Pause**, perform the **Move Up** operation to move the clock window to the front side of the common window, and then click **Play**. If the clock is displayed transparently, the clock will overlay the media of the common window when the playing solution is played upon the moving operation. Figure 4-26 shows the displaying effect:

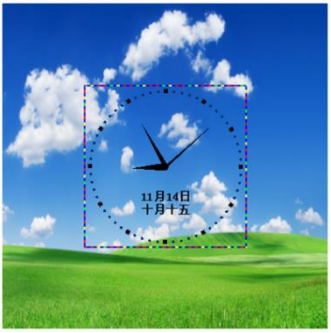


Figure 4-26 Transparent Displaying Effect of the Clock

4.4 Saving and Opening a Playing Solution

Save: After a playing solution is created, you can click **Schedule** on the toolbar and select **Save** or **Save As** to save the playing solution in the format of **xxxx.plym**. See Figure 4-27:

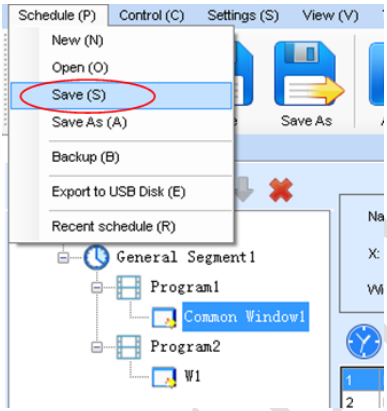


Figure 4-27 Saving a Playing Solution File

Open: After a playing solution is saved, you can directly click **Schedule** in the toolbar and select **Open** to open the playing solution. See Figure 4-28:

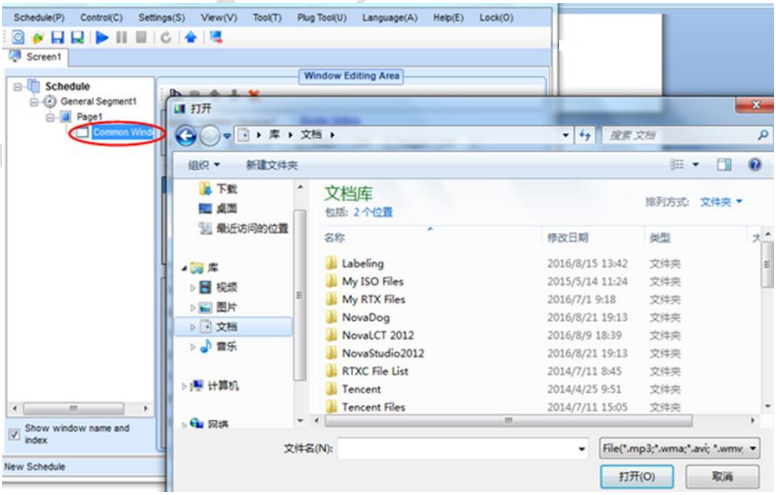


Figure 4-28 Opening a Playing Solution File

Chapter 5 Startup, Shutdown, and Maintenance

5.1 Startup Sequence

1) Start the distribution box for the LED display.
2) Start the control computer.
3) Start the video processor.
4) Start the sending box.

5.2 Shutdown Sequence

1) Shut down the video processor.
2) Shut down the sending box.
3) Shut down the control PC.
4) Shut down the distribution box for the LED display.

5.3 Daily Maintenance

1) Check whether ambient temperature and humidity meet the operating conditions for the LED display on a daily basis.
2) Use the LED display and its auxiliary devices at least twice a week and two hours each time. Before using the LED display, perform warm-up operations if it has been idle for 14 days (for details about warm-up operations, see Section 5.4).
3) It is recommended that you should use a soft antistatic brush to clear dust on the screen surface monthly in order to achieve an optimum displaying effect.
4) Check the parts in the distribution box quarterly. Check whether the power cables and signal cables for the LED display are connected securely and safely, and whether the display is grounded reliably.
5) Check whether the steel structure is secure on a yearly basis.

5.4 Warm-up Operation

If the LED display has been idle for a long period of time, perform warm-up operations before using the LED display. Set the prestored picture as follows when you initially start the LED display. This setting is for warm-up operation only. You do not need to set the prestored picture if the LED display is used frequently.

5.4.1 Setting the Prestored Picture

For details about how to set the prestored picture, refer to Section 3.6. Select a black background picture. Set **Boot Screen** to 60 seconds. Set both **Cable Disconnect** and **No DVI Signal** to **Prestored Picture**. Then click **Save to Hardware**. See Figure 5-1.

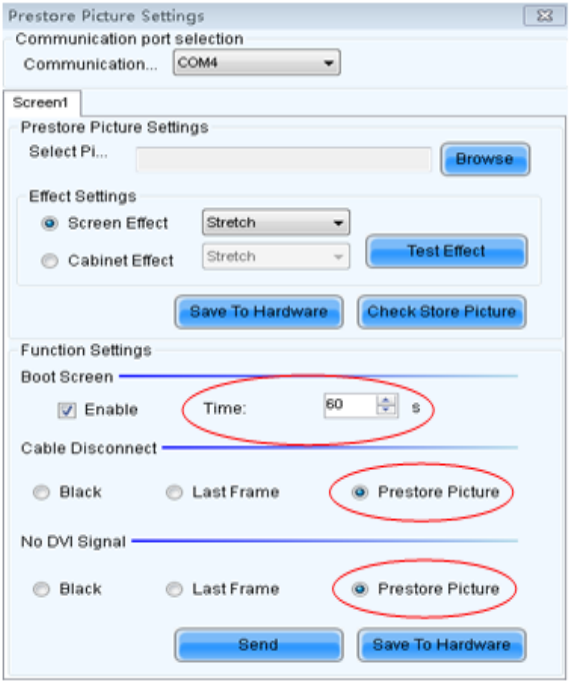


Figure 5-1: Prestore Picture Setting

5.4.2 Ageing

On the main window, click **Brightness** to enter the brightness adjustment interface, as shown in Figure 5-2:

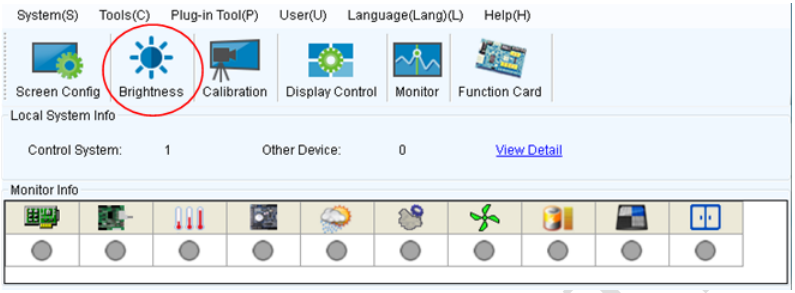


Figure 5-2 Main Window for Advanced User

Select **Manual** and set the brightness to 26 (the brightness is about 10%) by dragging the scroll bar below **Brightness Adjustment**. See Figure 5-3:

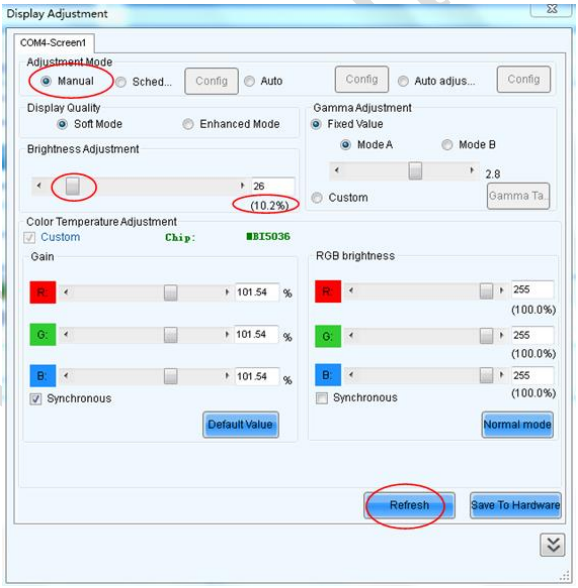


Figure 5-3 Manual Adjustment

NOTE: It is recommended that manual brightness adjustment be finished within 60 seconds.

Return to the main window. Click **Display Control** to enter the **Screen Control** interface. Set **Self Test** to **White**. Click **Send** to finish the operation. As showed in Figure 5-4 and Figure 5-5.

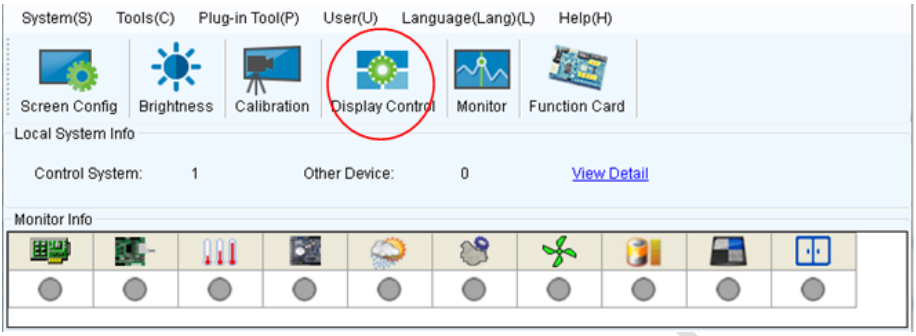


Figure 5-4 Display Control

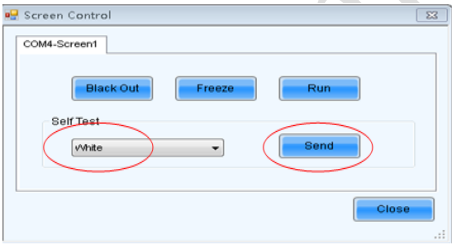


Figure 5-5 Display Control

5.4.3 Display Brightness and Ageing Time table

Adjust the screen brightness and perform ageing based on the steps described in Section 5.5.2.

SN	Display Brightness	Ageing time
1	10%	1 h
2	30%	2 h
3	60%	2 h
4	80%	2.5 h
5	100%	0.5 h

Chapter 6 Troubleshooting and Component Replacement

6.1 Common Faults and Troubleshooting Methods

6.1.1 Failure in Lighting up the Display

Causes:

1) No power is supplied to the display or the control devices.
2) The LED display does not have input signals.
3) The control PC is in sleep mode or the graphics card is set incorrectly.

Troubleshooting method:

1) Check AC power input of the display and the control devices.
2) Check cables between the sending box and the receiving card. Check whether the DVI cable between the control PC and the sending box is connected reliably.
3) Check whether the control PC is in sleep mode or monitor protection mode. If the control PC is not in sleep mode, check whether the graphics card is configured properly on the software.

6.1.2 Incomplete Picture or Incorrect Position of Picture Displayed

Causes:

1) The connecting file for the screen is incorrect.
2) Receiving card signal cables between cabinets do not contact properly.
3) The displaying position and screen size are set incorrectly.

Troubleshooting method:

1) Check whether the display's signal cable connection method is same to that of the loaded file xxxx.scr.
2) Check whether the signal cable is connected to the cabinet receiving card. If the receiving card is faulty, replace the receiving card.
3) Check whether Displaying Position and Screen Size on the software are set to actual screen size.

6.1.3 Screen Blinking

Causes:

1) The ports on the sending box are loose, or the signal cables are too long.
2) The output resolution of the playing device or sending box is set incorrectly.

Troubleshooting method:

1) Check whether the DVI cable and signal cable are connected to the display and devices, or whether the length of signal cables exceeds the maximum transmission distance (the effective transmission distance shall not exceed 10 m for DVI cable, 100 m for signal cable, 300 m for multi-mode optical fiber, and 15 km for single-mode optical fiber).
2) Check whether the resolution of the playing device and the sending box is greater than or equal to the resolution of the screen.

6.1.4 Blinking of a Cabinet in the Display

Causes:

1) The output of receiving card or hub card is faulty.
2) The receiving card program is incorrect.

Troubleshooting method:

1) Check whether the receiving card signal cable and hub card in the cabinet are connected correctly.
2) Check the receiving card program for the cabinet or check the receiving card.

6.1.5 Failure in Lighting up of a Cabinet in the Display

Causes:

1) The power supply, receiving card, or hub card for the cabinet is faulty.
2) Signal output of the previous cabinet is faulty.

Troubleshooting method:

1) Check voltage at the DC side of the power supply and the receiving card power supply. Check the receiving card signal indicator light in the cabinet. Check whether the hub card contacts properly with the receiving card.
2) Check output signals of the receiving card of the previous cabinet, or replace the signal cable.

6.1.6 Failure in Lighting up Part of the Modules in the Cabinet

Causes:

1) Output of the power supply for the modules is faulty.
2) Output of signal which controls the related modules is faulty.

Troubleshooting method:

1) Check DC voltage for the modules.
2) Check the hub card ports or flat cables that control the modules.

6.2 Replacement of Main Components

Before performing maintenance on the LED display, cut off the power supply to ensure your personal safety and equipment safety.

6.2.1 Replacement of Module

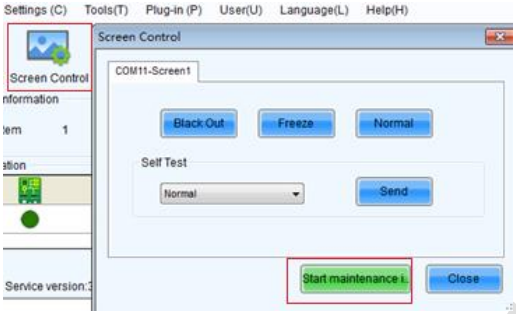
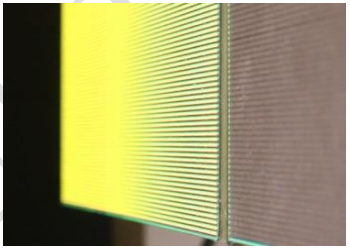
Module replacement under power-on:

Method 1: Use smart bracelet to induce pop-up:

Step	Picture	Description
1		Find out the faulty module.
2		With induction hand ring approaching the module (module two-thirds height position in the middle of the area)

3		Wait the module popup out gently.
4		Hold the module bottom and remove the module from front side slowly, loose the back rope and replace a new one.

Method 2: Software Control Pops the Module:

Step	Picture Instruction	Operation
1		Log in to the software, click on the screen control → start the maintenance interface → enter the password: unilumin or admin
2		Select the faulty module, click the right mouse button, and click the pop-up option
3		Wait the module pop-up out gently.
4		Hold the module bottom and remove the module from front side slowly, loose the back rope and replace a new one.

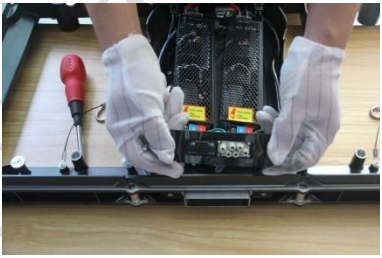
6.2.2 Replacement of Power Supply

Replace a power supply of the LED display based on the following steps:

Step	Picture Instruction	Operation
1		Switch off the power, remove the four screws at the corner of cabinet.
2		Replace the power supply.

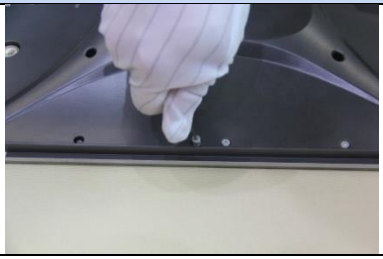
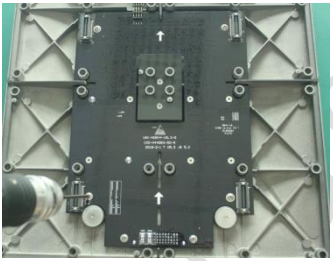
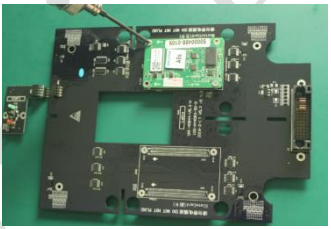
6.2.3 Replacement of Power/Signal Input Cable Switching Board

Replace switching board of the LED display based on the following steps:

Step	Picture Instruction	Operation
1		Disconnect the signal cable, remove the fixed screws of power cable and signal switching board.
2		Pull it down gently to take it out of cabinet hole.
3		Maintenance or replace the power and signal interface.

6.2.4 Replacement of Receiving Card

Replace receiving card of the LED display based on the following steps:

Step	Picture Instruction	Operation
1		Put the modules on the soft and dry mat, then remove all the spring screws.
2		Remove the rear screws then take out the front module, remove the screws which fixed on the HUB card.
3		Turn over the HUB card. remove the screws which fixed on the receiving card
4		Take out the receiving card and replace a new one.

Chapter 7 Packaging Transportation and Storage

7.1 Packaging

The UpanelS-L series products would be packed in carton, and the carton is vacuum-packed in an anti-static bag, and finally packed in heavy-duty carton, as shown below:

Figure 7-1 Package in Carton

Figure 7-2 Package in Heavy-Duty Carton

7.2 Transportation

The cabinets must be packaged before transportation. The product shall not be placed upside down or horizontally, and must be protected against the wind, rain, direct sunlight, and corrosive liquid during transportation. The stacking layers shall not exceed three layers for plywood cases.

7.3 Storage

The cabinets shall be stored in an environment with an ambient temperature ranging from -20°C to +55°C and a relative humidity ranging from 10% to 85% RH. Do not store the cabinets in an environment with volatile, corrosive, or flammable chemical products.

Chapter 8 Customized Products

8.1 UpanelS-R

8.1.1 Product Introduction

UpanelS-R is a derivative product of the UpanelS-L series. On the basis of UpanelS, it adds the function of remote centralized power supply control, supports the remote control rectifier module at the PC end, and realizes the remote power-off function of the screen. In addition to customization on the cabinet, the UpanelS-R also needs to add MC2600 remote centralized power supply equipment.

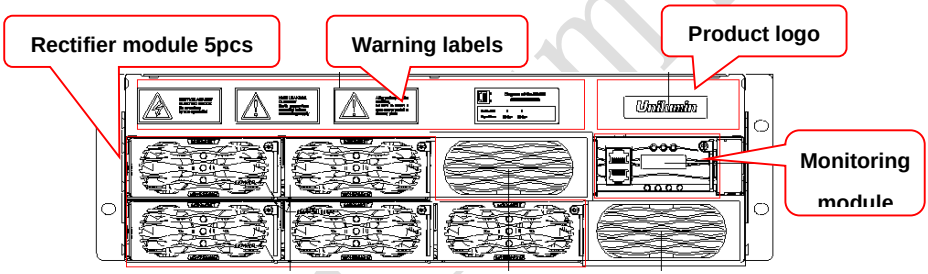


Figure 8-1 Front view of MC2600

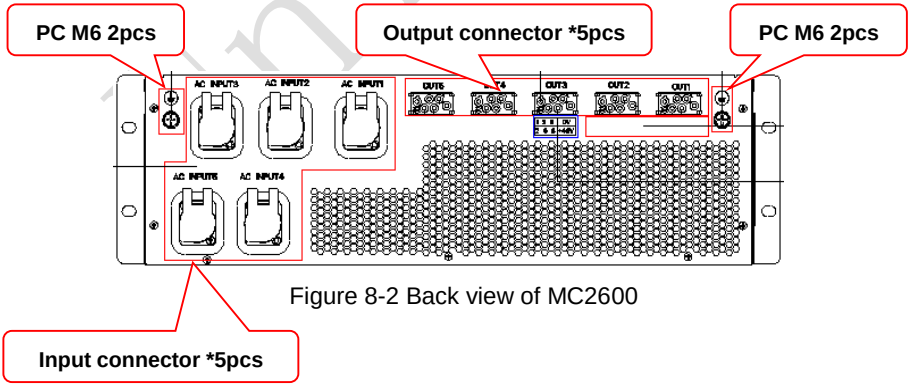


Figure 8-2 Back view of MC2600

8.1.2 Schematic Diagram Of Remote Centralized Power Supply Monitoring Scheme

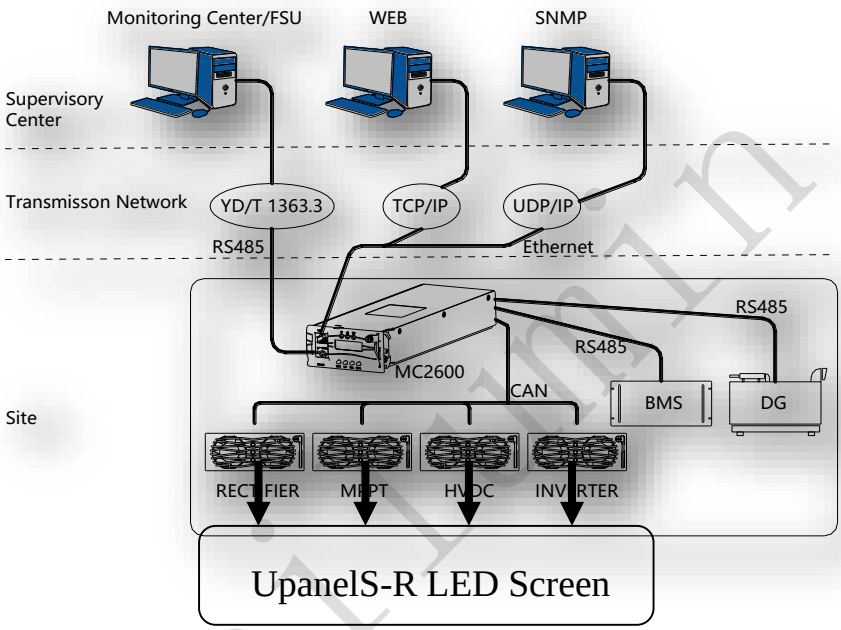


Figure 8-3 Schematic diagram of remote centralized power supply monitoring scheme

8.2 UpanelS-SE（9:16）

8.2.1 Product Introduction

UpanelS-SE is a derivative product of UpanelS-L series. The cabinet size is 343.08 (W) x 609.92 (H), 9:16 cabinet design, which meets the design of multi scene and multi size screen.

UpanelS-SE has all the functions of UpanelS series at the same time. The cabinet and module has a separate structure and high-precision cabinet design. The intelligent module can support automatic detection and automatic correction. The module maintenance supports non-contact intelligent maintenance and software maintenance.

The wall mounting mode is supported. The module, control card, power supply, wire rod, etc. Can be installed and removed on the front of the display screen. There is no need to reserve a maintenance channel behind the display screen, which greatly saves the use space and creates more value for customers.

8.2.2 Product Features

1) Cabinet proportion 9:16;
2) Module, power supply and receiving card support front maintenance;
3) Board to board wireless connection is adopted between cabinet and cabinet, module and cabinet;
4) High precision CNC machining, die-casting magnesium aluminum bottom shell, dust-proof up to IP50;
5) Single module supports temperature, voltage and communication line detection, and supports module intelligent correction.

8.2.3 Product Pictures

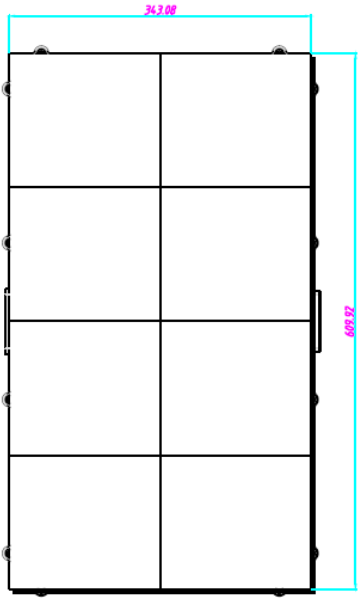


Figure 8-4 Front view of UpanelS-SE

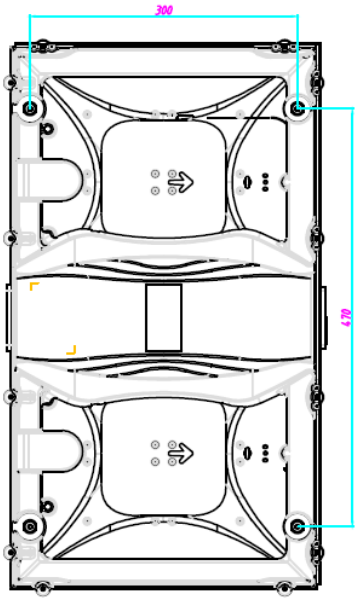


Figure 8-5 Back view of UpanelS-SE

8.2.4 Specification

Parameter		Upanel0.9S-SE	Upanel1.2S-SE	Upanel1.5S-SE
Physical Parameter	Pixel composition	1R1G1B		
	LED type	3-in-1 Black SMD		
	Pixels per panel(dots)	360*640	270*480	216*384
	Cabinet size (WxHxD) (mm)	343.08*609.92*71		
	Material	Die-casting aluminum（cabinet）/ Die-casting magnesium(module)		
	Planeness（mm）	≤0.15		
	Weight(kg)	7.5		
Electronic parameter	Grey scale(bits)	14		
	Refresh rate(Hz)	≥1920		
	Drive type	1/30	1/27	1/27
	Frame frequency(Hz)	50/60		
	Data interconnection	Signal cable≤100m; Multi-mode fiber≤300m; Single-mode fiber≤10km		
Optical parameter	Brightness(nits)	600		
	Color temperature(K)	2,000~9,500 (adjustable)		
	Contrast ratio	3,000:1	5,000:1	
	Viewing angle(°)	160/160		
Electrical parameter	Input voltage(V)	AC 100~240		
	Input frequency(Hz)	50~60		
	Input power <max >(W/panel)	150±15	130±15	
	Input power <typical >(W/panel)	50±15	43±15	
Circumstance parameter	Storage temperature/ Humidity(℃/RH)	-20~+55/10%~85%		
	Working temperature/ Humidity(℃/RH)	-10~+45/10%~80%		
	Ingress protection	Rear IP50		

Note：Specifications are for reference only and are subject to change without notice.

Parameter		Upanel1.9S-SE	Upanel2.5S-SE
Physical Parameter	Pixel composition	1R1G1B	
	LED type	3-in-1 Black SMD	
	Pixels per panel(dots)	180*320	135*240
	Cabinet size (WxHxD) (mm)	343.08*609.92*71	
	Material	Die-casting aluminum (cabinet) / Die-casting magnesium(module)	
	Planeness (mm)	≤0.15	
	Weight(kg)	7.5	
Electronic parameter	Grey scale(bits)	14	
	Refresh rate(Hz)	≥1920	
	Drive type	1/30	1/27
	Frame frequency(Hz)	50/60	
	Data interconnection	Signal cable≤100m; Multi-mode fiber≤300m; Single-mode fiber≤10km	
Optical parameter	Brightness(nits)	600	
	Color temperature(K)	2,000~9,500 (adjustable)	
	Contrast ratio	5,000:1	
	Viewing angle(°)	160/160	
Electrical parameter	Input voltage(V)	AC 100~240	
	Input frequency(Hz)	50~60	
	Input power <max >(W/panel)	130±15	120±15
	Input power < typical >(W/panel)	43±15	40±15
Circumstance parameter	Storage temperature/ Humidity(℃/RH)	-20~+55/10%~85%	
	Working temperature/ Humidity(℃/RH)	-10~+45/10%~80%	
	Ingress protection	Rear IP50	

Note：Specifications are for reference only and are subject to change without notice.

8.3 UpanelS-SE4（Horizontal）

8.3.1 Product Introduction

UpanelS-SE4 is a derivative product of UpanelS-L series. The cabinet size is 609.92 (W) x 171.54(H). It can meet the application of multi scene and multi screen size.High precision die-casting aluminum cabinet design, board to board wireless connection between the cabinet and the cabinet , safer and faster installation and use; the module supports automatic correction; supports wall mounting mode, module, control card, power supply, wire, etc. can be installed and removed on the front of the display screen, and there is no need to reserve maintenance channel behind the display screen, which greatly saves the use space and creates more prices for customers Value.

8.3.2 Product Features

1) Board to board wireless connection is adopted between cabinet and cabinet, module and cabinet;
2) High precision CNC machining, die-casting magnesium aluminum bottom shell, dust-proof up to IP50;
3) Single module supports temperature, voltage and communication line detection, and supports module intelligent correction.

8.3.3 Product Pictures

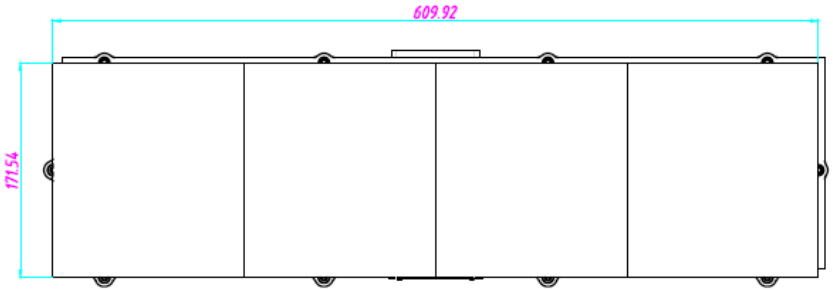


Figure 8-6 Front view of UpanelS-SE4

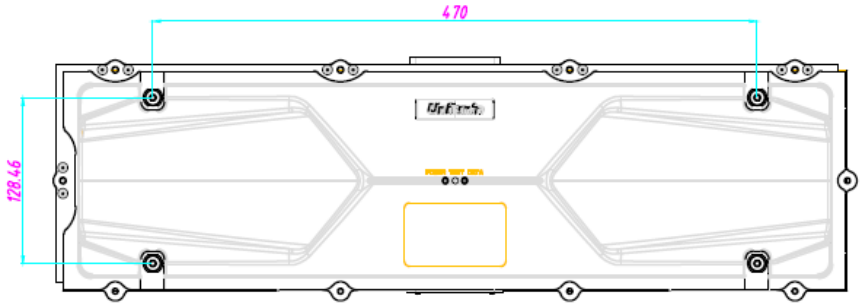


Figure 8-7 Back view of UpanelS-SE4

8.3.4 Specification

Parameter		Upanel0.9S-SE4	Upanel1.2S-SE4	Upanel1.5S-SE4	Upanel1.9S-SE4
Physical Parameter	Pixel composition	1R1G1B			
	LED type	3-in-1 Black SMD			
	Pixels per panel(dots)	640*180	480*135	384*108	320*90
	Cabinet size (WxHxD) (mm)	609.92*171.54*71			
	Material	Die-casting aluminum			
	Planeness（mm）	≤0.15			
	Weight(kg)	4			
Electronic parameter	Grey scale(bits)	14			
	Refresh rate(Hz)	≥1920			
	Drive type	1/30	1/27	1/27	1/30
	Frame frequency(Hz)	50/60			
	Data interconnection	Signal cable≤100m; Multi-mode fiber≤300m; Single-mode fiber≤10km			
Optical parameter	Brightness(nits)	600			
	Color temperature(K)	2,000~9,500 (adjustable)			
	Contrast ratio	3,000:1		5,000:1	
	Viewing angle(°)	160/160			
Electrical parameter	Input voltage(V)	AC 100~240			
	Input frequency(Hz)	50~60			
	Input power <max >(W/panel)	100±15	90±15		60±15
	Input power < typical >(W/panel)	33±15	30±15		20±15
Circumstance parameter	Storage temperature/ Humidity(℃/RH)	-20~+55/10%~85%			
	Working temperature/ Humidity(℃/RH)	-10~+45/10%~80%			
	Ingress protection	Rear IP50			

Note：Specifications are for reference only and are subject to change without notice.

8.4 UpanelS-CR4（Vertical）

8.4.1 Product Introduction

UpanelS-CR4 is a derivative product of UpanelS-L series. The cabinet size is 171.54 (W) x 609.92 (H). It can meet the application of multi scene and multi screen size.High precision die-casting aluminum cabinet design, board to board wireless connection between the cabinet and the cabinet , safer and faster installation and use; the module supports automatic correction; supports wall mounting mode, module, control card, power supply, wire, etc. can be installed and removed on the front of the display screen, and there is no need to reserve maintenance channel behind the display screen, which greatly saves the use space and creates more prices for customers Value.

8.4.2 Product Features

1) Board to board wireless connection is adopted between cabinet and cabinet, module and cabinet;
2) High precision CNC machining, die-casting magnesium aluminum bottom shell, dust-proof up to IP50;
3) Single module supports temperature, voltage and communication line detection, and supports module intelligent correction.

8.4.3 Product Pictures

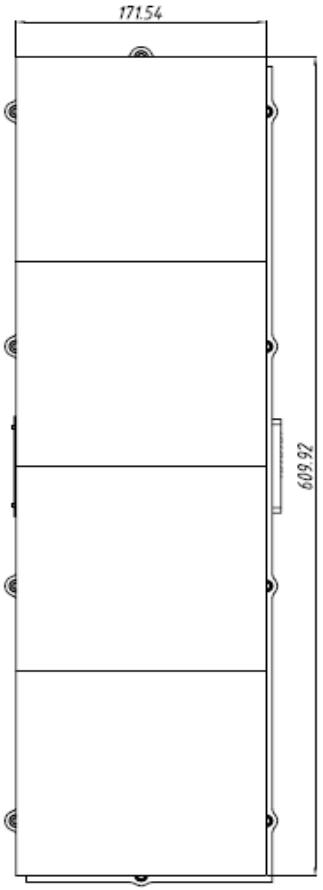


Figure 8-8 Front view of UpanelS-CR4

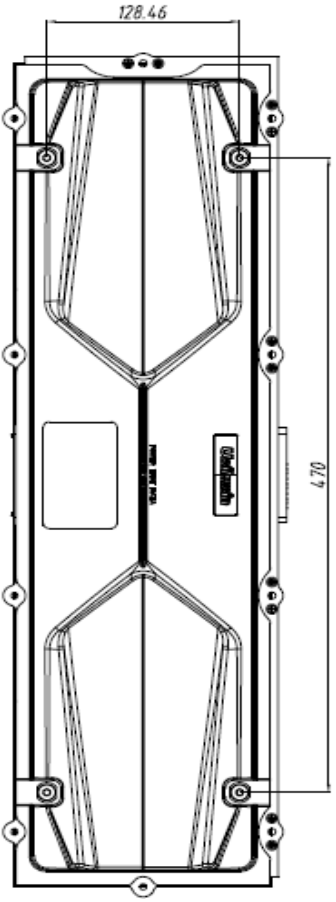


Figure 8-9 Back view of UpanelS-CR4

8.4.4 Specification

Parameter		Upanel0.9S-CR4	Upanel1.2S-CR4	Upanel1.5S-CR4	Upanel1.9S-CR4
Physical Parameter	Pixel composition	1R1G1B			
	LED type	3-in-1 Black SMD			
	Pixels per panel(dots)	180*640	135*480	108*384	90*320
	Cabinet size (WxHxD) (mm)	171.54*609.92*71			
	Material	Die-casting aluminum			
	Planeness（mm）	≤0.15			
	Weight(kg)	4			
Electronic parameter	Grey scale(bits)	14			
	Refresh rate(Hz)	≥1920			
	Drive type	1/30	1/27	1/27	1/30
	Frame frequency(Hz)	50/60			
	Data interconnection	Signal cable≤100m; Multi-mode fiber≤300m; Single-mode fiber≤10km			
Optical parameter	Brightness(nits)	600			
	Color temperature(K)	2,000~9,500 (adjustable)			
	Contrast ratio	3,000:1		5,000:1	
	Viewing angle(°)	160/160			
Electrical parameter	Input voltage(V)	AC 100~240			
	Input frequency(Hz)	50~60			
	Input power <max >(W/panel)	100±15	90±15		60±15
	Input power < typical >(W/panel)	33±15	30±15		20±15
Circumstance parameter	Storage temperature/ Humidity(℃/RH)	-20~+55/10%~85%			
	Working temperature/ Humidity(℃/RH)	-10~+45/10%~80%			
	Ingress protection	Rear IP50			

Note：Specifications are for reference only and are subject to change without notice.

8.5 UpanelS（Half Cabinet）

8.5.1 Product Introduction

The UpanelS (half cabinet) is a derivative product of the UpanelS-L series. The cabinet size is 304.96 (W) x 343.08 (H), which is divided into two product series: the left cabinet and the right half cabinet .It can meet the application of multi scene and multi screen size. High precision die-casting aluminum cabinet design; the module supports automatic correction; supports wall mounting mode, module, control card, power supply, wire, etc. can be installed and removed on the front of the display screen, and there is no need to reserve maintenance channel behind the display screen, which greatly saves the use space and creates more prices for customers Value.

8.5.2 Product Pictures

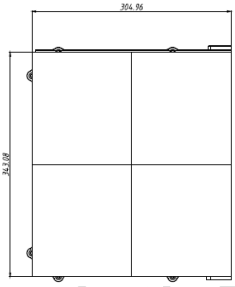


Figure 8-10 Front view of UpanelS-Left Cabinet

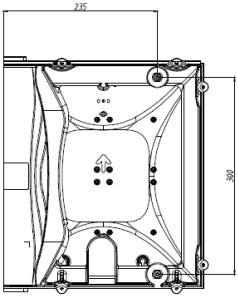


Figure 8-11 Back view of UpanelS-Left Cabinet

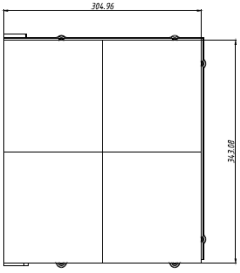


Figure 8-12 Front view of UpanelS-Right Cabinet

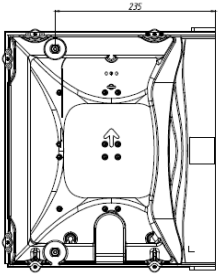


Figure 8-13 Back view of UpanelS-Right Cabinet

8.5.3 Specification

Parameter		Upanel0.9S-Half Cabinet	Upanel1.2S-Half Cabinet	Upanel1.5S-Half Cabinet
Physical Parameter	Pixel composition	1R1G1B		
	LED type	3-in-1 Black SMD		
	Pixels per panel(dots)	320*360	240*270	192*216
	Cabinet size (WxHxD) (mm)	304.96*343.08*71		
	Material	Die-casting aluminum		
	Planeness（mm）	≤0.15		
	Weight(kg)	4		
Electronic parameter	Grey scale(bits)	14		
	Refresh rate(Hz)	≥1920		
	Drive type	1/30	1/27	1/27
	Frame frequency(Hz)	50/60		
	Data interconnection	Signal cable≤100m; Multi-mode fiber≤300m; Single-mode fiber≤10km		
Optical parameter	Brightness(nits)	600		
	Color temperature(K)	2,000~9,500 (adjustable)		
	Contrast ratio	3,000:1	5,000:1	
	Viewing angle(°)	160/160		
Electrical parameter	Input voltage(V)	AC 100~240		
	Input frequency(Hz)	50~60		
	Input power <max >(W/panel)	100±15	90±15	
	Input power < typical >(W/panel)	33±15	30±15	
Circumstance parameter	Storage temperature/ Humidity(℃/RH)	-20~+55/10%~85%		
	Working temperature/ Humidity(℃/RH)	-10~+45/10%~80%		
	Ingress protection	Rear IP50		

Note：Specifications are for reference only and are subject to change without notice.

Parameter		Upanel1.9S-Half Cabinet	Upanel12.5S-Half Cabinet
Physical Parameter	Pixel composition	1R1G1B	
	LED type	3-in-1 Black SMD	
	Pixels per panel(dots)	160*180	120*135
	Cabinet size (WxHxD) (mm)	304.96*343.08*71	
	Material	Die-casting aluminum	
	Planeness (mm)	≤0.15	
	Weight(kg)	4	
Electronic parameter	Grey scale(bits)	14	
	Refresh rate(Hz)	≥1920	
	Drive type	1/30	1/27
	Frame frequency(Hz)	50/60	
	Data interconnection	Signal cable≤100m; Multi-mode fiber≤300m; Single-mode fiber≤10km	
Optical parameter	Brightness(nits)	600	
	Color temperature(K)	2,000~9,500 (adjustable)	
	Contrast ratio	5,000:1	
	Viewing angle(°)	160/160	
Electrical parameter	Input voltage(V)	AC 100~240	
	Input frequency(Hz)	50~60	
	Input power <max >(W/panel)	90±15	60±15
	Input power < typical >(W/panel)	30±15	20±15
Circumstance parameter	Storage temperature/ Humidity(℃/RH)	-20~+55/10%~85%	
	Working temperature/ Humidity(℃/RH)	-10~+45/10%~80%	
	Ingress protection	Rear IP50	

Note：Specifications are for reference only and are subject to change without notice.

Chapter 9 After-Sales and Warranty

9.1 Warranty Scope

This Warranty Policy applies to LED display products (hereinafter referred to as “Products”) purchased directly from Unilumin Group Co., Ltd. (hereinafter referred to as “Unilumin”) and within Warranty Period. Any products not purchased directly from Unilumin does not apply to this Warranty Policy.

9.2 Warranty Period

The warranty period shall be in accordance with the specific sales contract. Please make sure warranty card or other valid warranty documents are in safekeeping.

9.3 Warranty Service

Products shall be installed and used strictly aligned with the Installment Instructions and Cautions for Use stated in the product manual. If Products have defects of quality, materials, and manufacturing during normal use, Unilumin provides warranty service for Products under this Warranty Policy.

9.3.1 Warranty Service Types

1) Online Remote Free Technical Service:

The remote technical guidance provided through instant messaging tools such as telephone, mail, and other means to help solve simple and common technical problems. This service is applicable for technical problems including but not limited to the connection issue of signal cable and power cable, system software issue of software use and parameter settings, and replacement issue of the module, power supply, system card, etc.

2) Return to Factory Repair Service:

For problems of Products that cannot be solved by online remote service, Unilumin will confirm with the customers whether to provide returning to the factory repair service. If factory repair service is needed, customer shall bear the freight, insurance, tariff and customs clearance for return delivery of the returned products or parts to Unilumin’s service station. And Unilumin will send back the repaired products or parts to customer

and only bear one-way freight. Unilumin will reject unauthorized return delivery via pay upon arrival and will not be liable for any tariffs and custom clearance fees. Unilumin shall not be held liable for any defects, damages or losses of the repaired products or parts due to transportation or improper package.

3) Provide On-site Engineer Service for Quality Issues:

If there is a quality issue as stipulated in Article 5 of this Warranty Policy, and Unilumin believes the condition is necessary, on-site engineer service free of charge will be provided. In this case, customer shall provide a fault report to Unilumin for on-site service application. The content of the fault report shall include but not limited to photos, videos, number of faults, etc., to enable Unilumin to conduct preliminary fault judgment. If the quality problems is not covered by this Warranty Policy after the on-site investigation of Unilumin's engineer, customer shall pay travel expenses and technical service fees as per Article 7.4. Defective parts replaced by Unilumin's on-site engineers shall be the property of Unilumin.

9.4 Disclaimer

No warranty liability shall be assumed by Unilumin for defects or damages due to the following conditions:

1) Unless written agreed otherwise, this Warranty Policy does not apply to consumables, including but not limited to connectors, networks, fiber optic cables, cables, power cables, signal cables, aviation connectors, and other wire and connections.
2) Defects, malfunctions or damages caused by improper use, improper handling, improper operation, improper installation/disassembly of the display or any other customer misconduct. Defects, malfunctions or damages caused during transportation.
3) Unauthorized disassembly and repair without permission of Unilumin.
4) Improper use or improper maintenance not in accordance with the product manual.
5) Man-made damages, physical damages, accident damages and product misuse, such as component defect damage, PCB board defect, etc.
6) Product damage or malfunction caused by Force Majeure Events, including but not limited to war, terrorist activities, floods, fires, earthquakes, lightning, etc.

7) The product shall be stored in a dry, ventilated environment. Any product defects, malfunctions or damages caused by storage in an external environment that does not comply with the product manual, including but not limited to extreme weather, humidity, salt haze, pressure, lightning, sealed environment, compressed space storage etc.
8) Products used in conditions not meeting product parameters including, but not limited to lower or higher voltage, extreme or excessive power surges, improper power conditions.
9) Defects, malfunctions, or damages caused by non-compliance with technical guidelines, instructions, or precautions during the installation.
10) Natural loss of brightness and color under normal conditions. Normal degradation in the performance of the Product, normal wear and tear.
11) Lack of necessary maintenance.
12) Other repairs not caused by product quality, design, and manufacturing.
13) Valid warranty documents cannot be provided. Product serial number is torn or damaged. Product shell or other external parts are damaged.
14) Repairs after Warranty Period.
15) Products which have too significant damages caused by mishandling, accidents, improper maintenance, and failure to comply with product manual to be prepared.
16) Products malfunctions caused by unmatched play or control devices that are not provided by Unilumin. If Products are damaged arising out of the aforementioned unmatched devices and require Unilumin's repair, charging rate shall be as per Article 7.4.

9.5 Warranty Service Process

1) Remote Service Process:

Submit service requirements through website, email, telephone and other service channels of Unilumin with warranty card or contract number. Specific content of the service and contact information shall be provided.

2) Product Return to Repair Process:

Submit service requirements through the website, email, telephone and other service channels of Unilumin with warranty card or contract number. Packing list of the returned product and postal information to receive the repaired product shall be provided.

Unilumin's postal information is stipulated in Article 11.

Customer instructions:

a) Shall provide a brief fault report (can be attached to the surface of the repaired item)
b) Shall provide packing list (including contract number, model and quantity of the repaired item)
c) Shall provide receipt postal information (company name, address, consignee, contact information, etc.)
d) To avoid damages of the returned products during transportation, please be cautious about the package and protection of the products. Unilumin is not responsible for any damages to the returned products or parts during delivery.

3) On-site Engineer Service Process:

Submit service requirements through the website, email, telephone and other service channels of Unilumin with warranty card or contract number. Service content, site address, contact information, and visa application information shall be provided.

9.6 Other

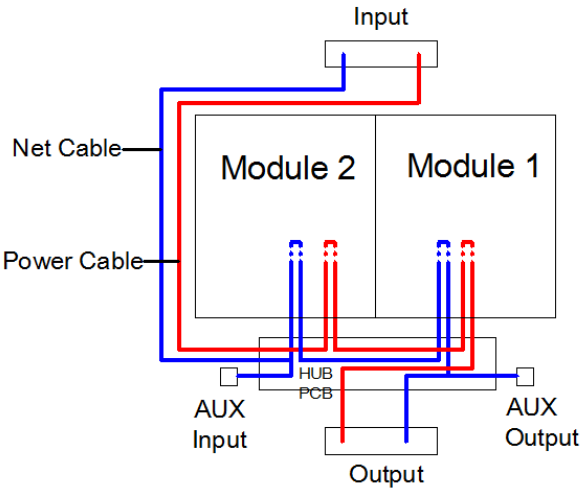
This Warranty Policy is a standard application of Unilumin. No other third party (including any agent, distributor or sales representative) is authorized to make any representations or warranties that are different from this Warranty Policy. Unless otherwise confirmed by Unilumin in written forms of contract or other documents, any warranty clauses that conflict with this Warranty Policy shall be deemed to be automatically invalid. Final power of interpretation of this Warranty Policy shall be be vested in Unilumin.

9.7 Product Warranty Card

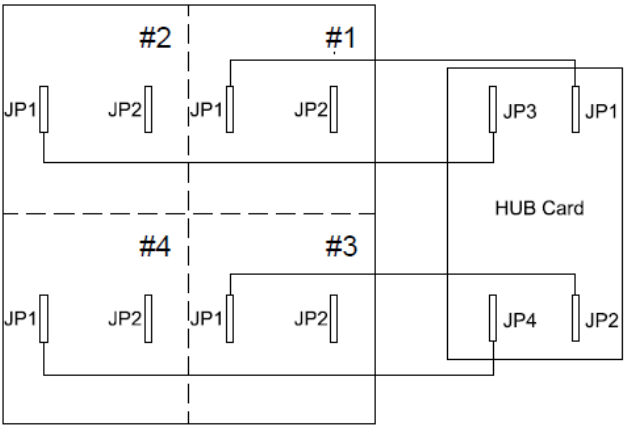
Product Warranty Card					
Order No.		**Shipment Date**		**Warranty Period**	
Product Model				**Product Quantity**	
Customer Name		**Contact Information**			
Customer Address:					
Remark(s):					
Warranty Record					
Warranty Date	**Fault and Troubleshooting**		**Completion Date**	**Signature of Customer**	

Attachment 1 - Path of Signal Cable inside the Cabinet

Cabinet Cable Connection Diagram of UpanelS-L (Front View)



Receiving card Signal Cable Connection Diagram of UpanelS-L (Front View)



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Unilumin

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