

# Outdoor High-brightness LCD Display Equipment

User Manual V1.0

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## 1. Precautions

- Choose materials and heat-control types for the equipment by local weather conditions such as windy and dusty, seaside, high temperature, low temperature, etc.
- Review contents and programs strictly following the local laws and rules. The equipment might not be allowed unless it's approved by government.
- Confirm in advance: ①If the base (foundation) is stable for the floor-standing equipments. ②If the strength is sufficient for the weight of the wall (hanging) equipments. Just in case of any safety accidents.
- Confirm in advance: ①If the power voltage is correct or not, in case any permanent damage to the interior components. ②If the ground wire is connected and effective, in case any electric shocks or the equipment not working normally. ③If the cable power can meet the requirements of the equipment running at full load, so to avoid unstable power supply voltage or excessive cable heat may cause fire.
- Set the Timer switch correctly for power on and off. Make sure the equipment keeping on with power especially when it's exposed in sunlight, or there is too much difference in temperature between day and night, so as to avoid heat accumulation in front of the screen or heat expansion and cold contraction of the material in the screen, resulting in permanent damage to the brightness module.
- Do not expose the equipment to sunlight when there is no power or power outage or midway stopping use. Take some protection so as to avoid direct sunlight and heat buildup in front of the monitor, which may cause permanent damage to the highlighting module.

- After commissioning or maintenance, keep the inside of the equipment clean.  
After power on, close the door of the cabinet quickly and lock it tightly to avoid the dust difficult to clean.
- Based on the current operating environment, replace the air filter regularly (for IP55 with fans cooling system). Or clean the air conditioning regularly (for IP65 with air-conditioner). So to help with the heat dissipation performance of the equipment, and to avoid the permanent damage to the display.

 **You are advised to read the User Manual and understand the installation and usage process.**

 **Please use the equipment in strict accordance with the User Manual. The Company is not responsible for any loss or injury caused by improper use of the user.**

## 2. Product Overview

### Introduction

2.1.The equipment is installed with outdoor high brightness LCD screen.

2.2.The equipment comes with automatic light sensor, and protected with tempered glass (①Super White Glass; ②AR Glass; ③AG Glass).

2.3.The internal structure is reinforced according to the requirements of the design, and the firmness of the whole machine structure can resist the typhoon of grade 12. The machine is made of galvanized steel plate, the painting process is made of double spraying outdoor powder, and the machine is fixed by cement base + bolts inserted into the base.

2.4.The whole machine adopts high quality fans for air cooling, plus lightning protection, overload, overvoltage, over current, over temperature protection

modules. The structure is designed particularly against rain, dust, sun exposure.

2.5.Function introduction: adopt industrial embedded motherboard, support Wi-Fi, RJ45, 4G (optional), support simultaneous control of all machines or single control of one, support various audio and video decoding modes.

### **Key Features**

- 1) Fashionable APPEARANCE: standard enclosure, according to customer needs professional shell design, style diversity, and color variety, high-grade and special.
- 2) Timing backlight: support 10 groups of time period backlight control, convenient and easy to operate.
- 3) Intelligent temperature control: smart temperature control system, to maintain a constant temperature and dry environment inside the fuselage, to prevent phenomena such as fog, condensation, etc.
- 4) Dustproof and waterproof: the sealed design of the whole machine prevents outside dust, insects and rain water from entering the interior, reaching standards of IP55 (air cooled series) / IP65 (air conditioner series).
- 5) Sun-proof and explosion-proof: the shell is galvanized steel plate, which is treated by special outdoor powder spray paint, waterproof, sun-proof, anti-corrosion and explosion-proof professional surface technology; It can be used outdoors for up to 10 years without fading.

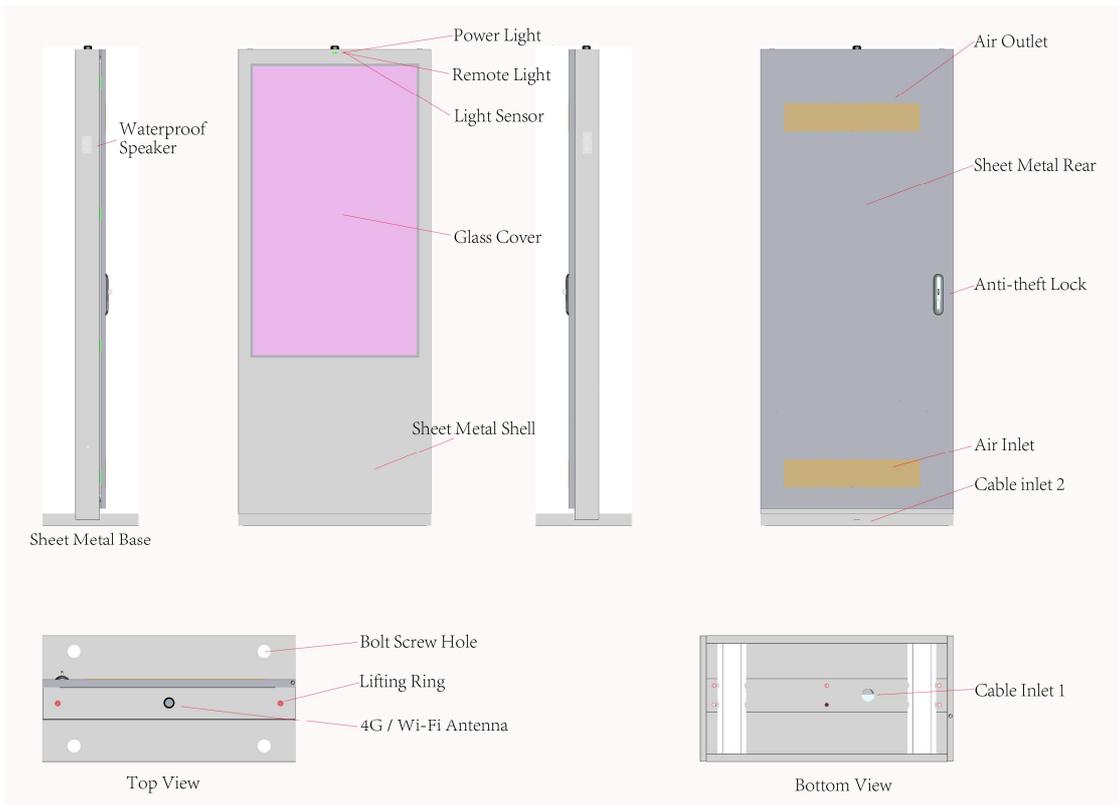
### **Components (Four types of the products)**

- 1) Floor-standing with fans cooling system;
- 2) Wall (Hanging) with fans cooling system;

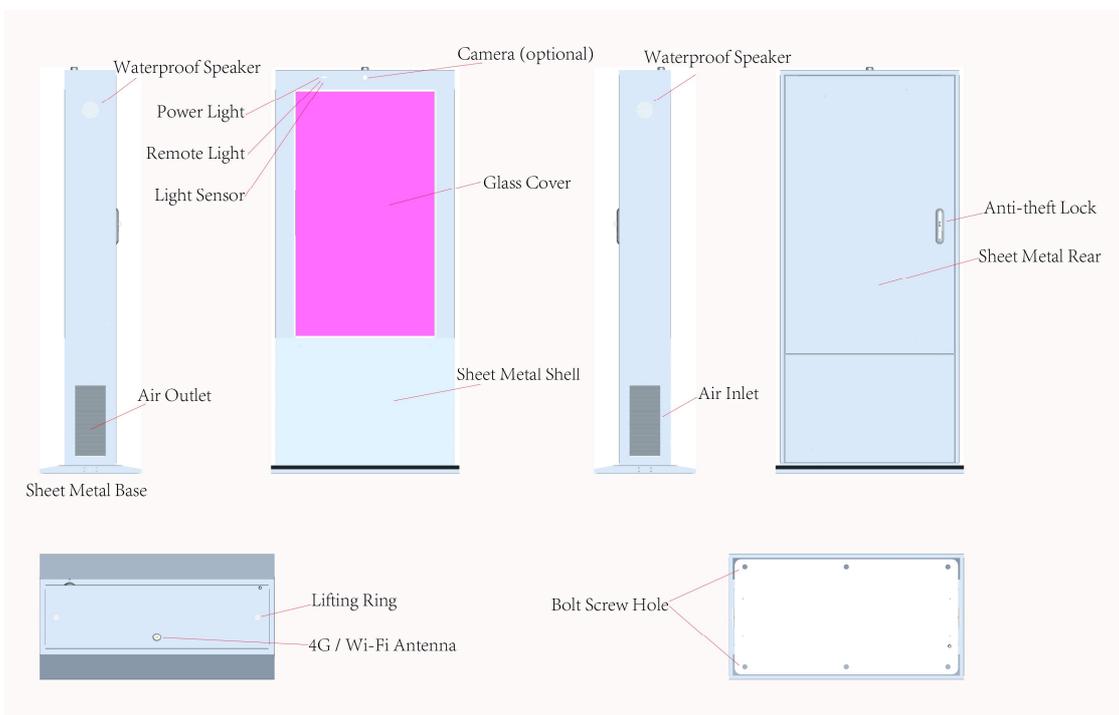
- 3) Floor-standing with air conditioner system;
- 4) Wall (Hanging) with air conditioner system.

**Exterior Components:**

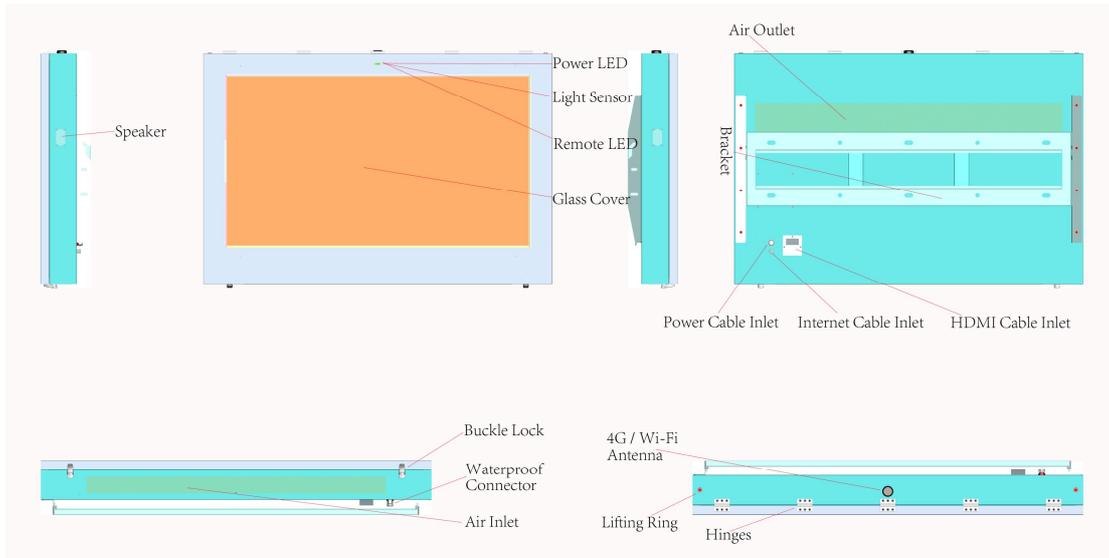
**Exterior Components for Floor-standing with Fans ↓**



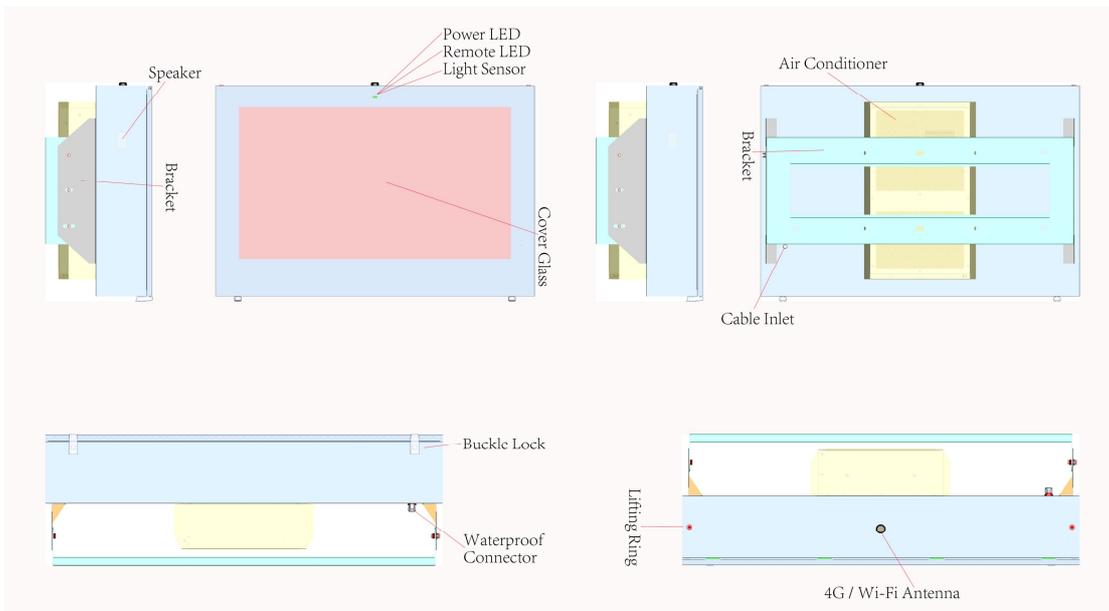
**Exterior Components for Floor-standing with Air Conditioner ↓**



## Exterior Components for Wall (Hanging) with Fans ↓

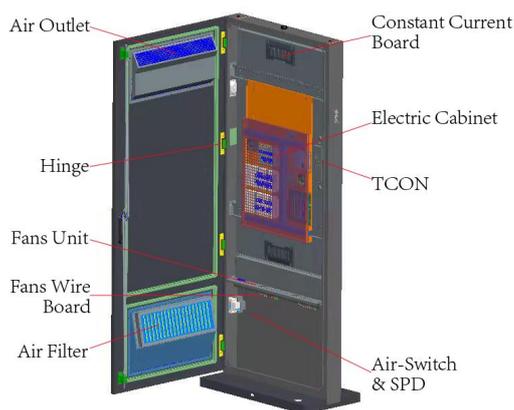


## Exterior Components for Wall (Hanging) with Air Conditioner ↓

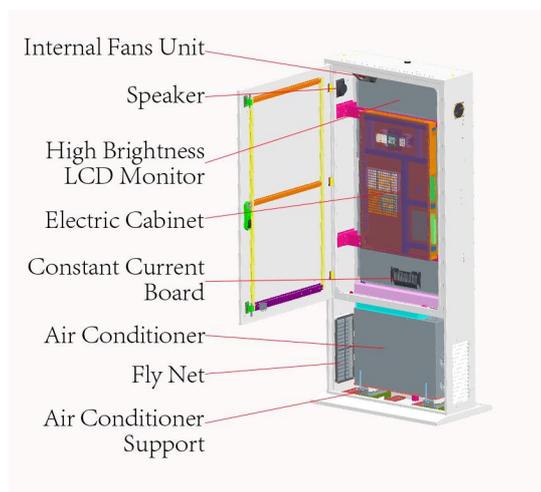


## Interior Components:

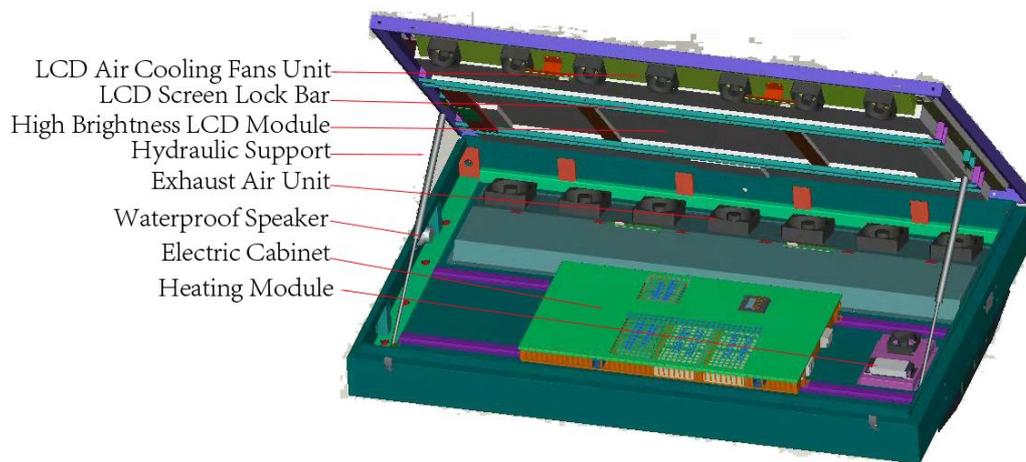
### Floor-standing with Fans



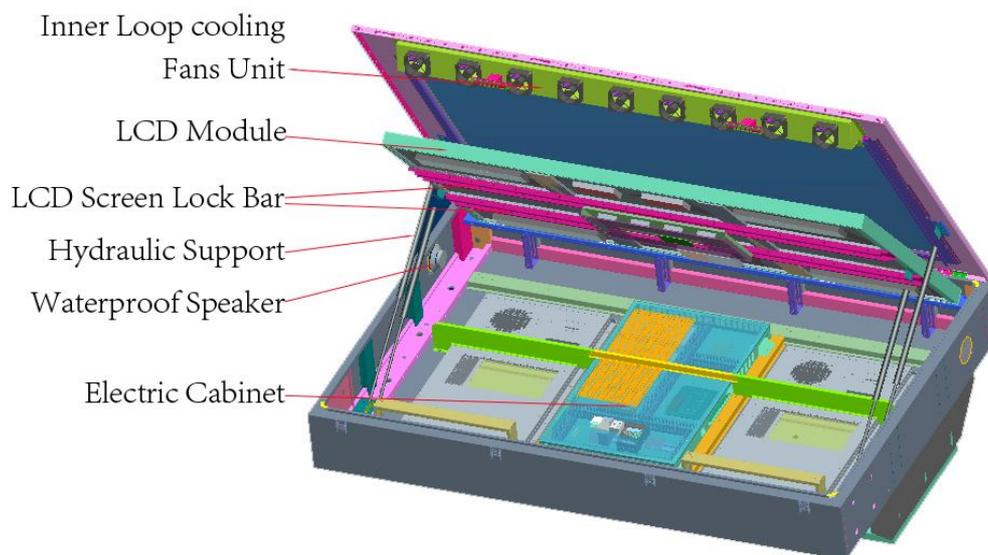
### Floor-standing with Air Conditioner



## Interior Components for Wall (Hanging) with Fans



## Interior Components for Wall (Hanging) with Air Conditioner



## 3. Equipment Installation

### Equipment Fixed

#### 3.1 Floor-standing Installation

##### 3.1.1 Concrete Base

(1) Dig a 600 MM deep pit in the ground.

(2) Place the pre-welded rebar into the pit as required (Rebar according to

GB1499.2-2007 standard).

(3) Bury the cable. The buried cable is required to be 2 Meters out of the ground, able to carry the maximum power consumption of the equipment and leave a margin.

(4) Fill with concrete, and the concrete shall be in accordance with GBT-50107-2010 standard.

(5) Stay dry for 12 hours, and cover the beaten concrete base with plastic sheet.

### **3.1.2 Tools prepared for installation**

- (1) Crane (capable of lifting 5 Tons)
- (2) Wrench or Socket
- (3) Level Ruler

### **3.1.3 Equipment Installation**

(1) Remove the outer package of the equipment and install the hanging rings;

(2) Slip the steel rope of the crane into the holes of the hanging ring;

(3) When the equipment is lowered, align the screw threads of the embedded concrete base. (Note that the power cord must be inserted into the cabinet.);

(4) After the equipment is docked with the screws, set the nuts, adjust the level and tighten the nuts;

(5) Remove the hanging rings and put the waterproof caps back into the ring holes.

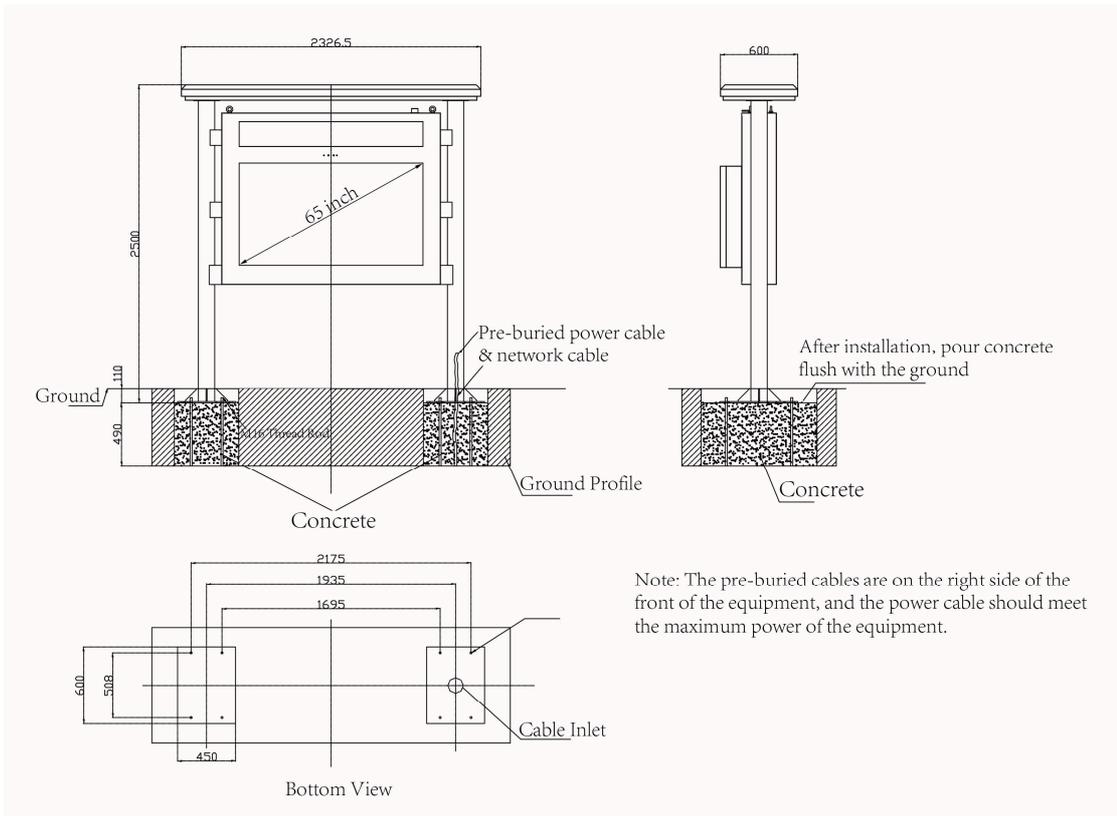
### **3.1.4 Site Cleaning**

(1) Sort out the site tools and the debris left behind.

(2) Clean up any residual dross on the ground.

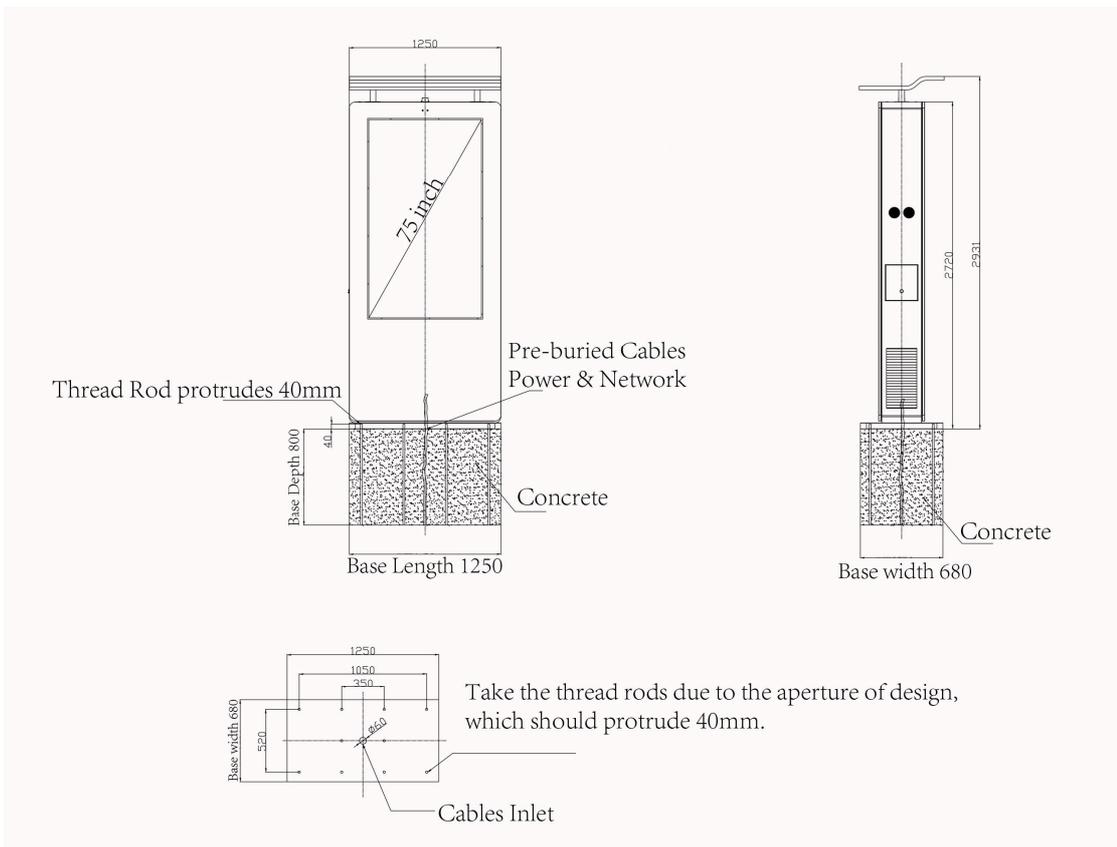
(3) Rinse the ground to clean the residue on the ground.

### 3.1.5 Installation for the equipment horizontal with column Stands (PIC a)



PIC a

### 3.1.6 Installation for the equipment floor-standing in Portrait (PIC b)



PIC b

Technical points:

- 1) The Base is made in reinforced concrete structure, with strength grade C30.
- 2) The Base is buried with threaded rods (stainless steel). Some equipment can be fixed with pull-out screws.
- 3) Threaded rods must be positioned following instruction drawing. Distance between two threaded rods must be measured carefully. Location tolerance must be controlled within 1mm. And the thread rod comes 40 mm out of the base!
- 4) Pay attention to the diameter and material of the incoming cable. The power supply should be greater than the maximum power of the equipment.
- 5) The unremarked points follow local standards.

### **3.2 Wall (Hanging) Installation**

#### **3.2.1 Tools prepared for installation**

- (1) Percussion Drill, Wrench or Socket
- (2) Cross Screwdriver and Wire Stripper
- (3) Crane (capable of lifting 5 Tons)
- (4) Level Ruler

#### **3.2.2 Equipment Installation**

- (1) Check the installation situation and see if the carrier is strong enough to meet the requirements;
- (2) Measure the level of the wall rack with a level, and mark the mounting positions;
- (3) After drilling the hole, install the wall rack, lock the expansion screw, and confirm whether the screw length affects the installation of the main machine. Cut the screw to the appropriate length if it's too long;

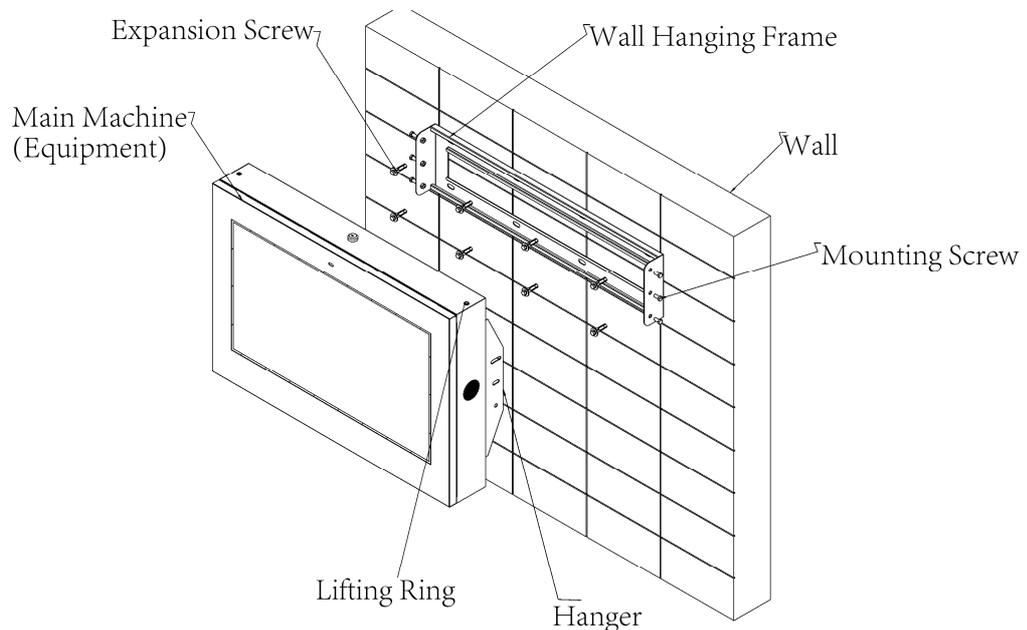
(4) The main machine equipment is installed with hanging rings, and the crane lifts the main machine, so that the main machine hangers and the wall hanging frame are accurately docked, adjusted to the appropriate installation Angle, and fixed with screws;

(5) Remove the hanging rings and put the waterproof caps back into the ring holes.

### 3.2.3 Site Cleaning

- (1) Sort out the site tools and the debris left behind.
- (2) Sweep away any residual dross on the ground.
- (3) Rinse the ground to clean the residue on the ground.

### 3.2.4 Installation for the Wall (Hanging) equipment (PIC c)



PIC c

#### Installation Instructions

- 1) Fix the wall mounting bracket to the wall with expansion screws.
- 2) Align the mounting holes at both ends of the equipment with the mounting hangers and the holes on the wall mounting bracket and fasten them with

screws.

 **Before installation, check if the base is stable (for vertical models) or if the weight of the machine exceeds the safe bearing range (for wall, side, or hanging models) according to the actual weight and installation method of the machine so as to avoid safety accidents.**

### **Power ON**

A 1.5-meter power cable is reserved without a plug and a cable entrance is reserved for the cabinet. The cable can be used or replaced with cables of different lengths based on site requirements, but ensure that the cable diameter is not smaller than the standard cable, and the cable material is not lower than the factory standard material. When connecting the cable to the external power supply, press (brown - Live wire; Blue -- zero line; Yellow-green - ground) corresponding to wiring, and ensure reliable grounding. The wiring must be under guidance by professional electricians.

After the cable of the equipment is connected properly and the circuit is connected correctly, turn on the main switch and set the timer correctly.



 **Please ensure that the power connector is waterproof and the cable body is protected, so to prevent wire damage and electric leakage and other safety accidents.**

## 4. How to Use

### 4.1 Timer Setting



**⚠ Set the on-off time correctly. During the period of sunlight or when the temperature difference between day and night is huge, please set the device in the power working state to avoid heat accumulation in front of the screen, or heat expansion and cold contraction of the materials in the screen, which may cause permanent damage to the highlight display module as a result.**

#### 4.1.1 Adjust the Time

Before using this device, please check whether the clock display is consistent with the current time and calibrate it.

While holding down the "Clock" key, press the "Time", "Minute", and "Week" keys respectively to set the clock to the current accurate time and date (day of the week).

#### 4.1.2 Timing Set Up

If the setting is incorrect or the setting is canceled, press the Cancel/Restore key so that -- : -- -- is displayed (indicates that there is no scheduled program, not 00:00). Press the key again to restore the original setting.

Working mode: Same every day, Different every day, Six Days, Mon-Wed-Fri, Tur-Thu-Sat, Mon-Tur-Wed, Thu-Fri-Sat, Mon-Tur-Wed-Thu-Fri, ...

Set the starting time, it must be relevant to the time corresponding to it.

4.1.3 **Check:** Keep pressing the "Timing" button to check whether the set time is correct;

4.1.4 **Modify:** If a timing error is detected, press Timing to reset the time, press Cancel/Restore to clear it, and then press Hour, Minute, and Week to reset it;

4.1.5 **End check:** Press "Clock" button to end timing setting and return to clock running state.

4.1.6 **Manual control:** Press the "Manual/Automatic" button to realize the manual switch control of the load.

## 4.2 Program Release

 There are two types of motherboards commonly used in equipment, one is Android motherboard, the other is PC motherboard.

 Since there are many types of motherboards used by the equipment, and the advertising software is different, the users should consult the suppliers for the production and release process of the program.

## 5. Maintenance

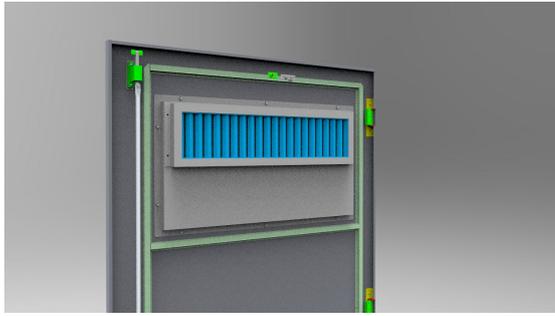
### 5.1. Air Filter Replacement

Check the filter periodically. If the filter is dirty or blocked, perform the following **steps** to replace it.

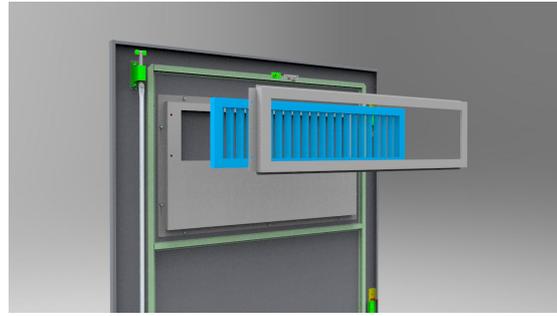
**Step 1.** Disconnect the main power switch, locate the filter installation positions, and remove the filter bar fixing screws.

**Step 2.** Remove the filter bar then remove the filter.

**Step 3.** Install the new filter, reinstall the filter bar, and tighten the fixing screws.



Air Filter Installation



Air Filter Replacement

💡 Users who use air-cooling equipment can replace it by themselves according to the instructions. The replacement time should be determined according to the equipment environment. Normally, it should be replaced once every two to three months.

💡 If you use the air conditioner equipment and want to clean the air conditioner filter, please consult the supplier first. Do not replace the filter by yourself.

## 5.2. Timer Battery Replacement

When the timer indicator light is not on after the power gets on, it may be because the battery in the timer is loose and shifted (caused by transportation or vibration) or the battery power is insufficient. In this case, check the battery power by the following **steps**.

Step 1. Disconnect the main power switch.

Step 2. Mark each wire of the timer with tags and loosen the wire terminal of the timer.

Step 3. Knock down the timer rail clamp to disentangle it from the rail and remove the timer.

Step 4. The battery compartment can be seen on the back of the timer.

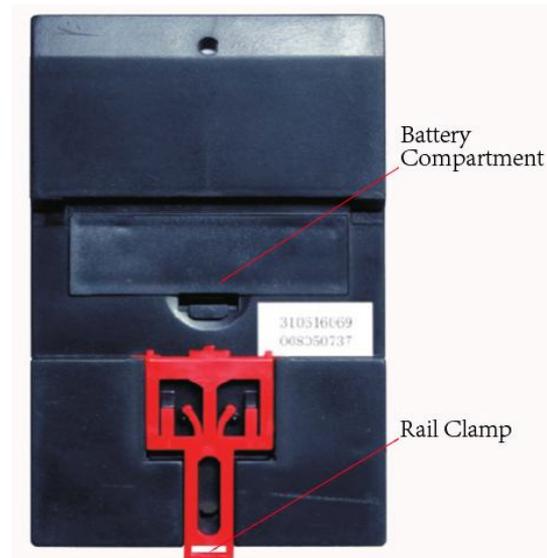
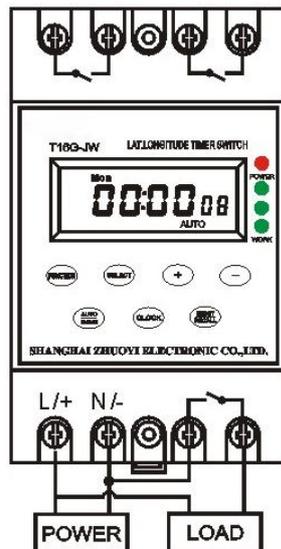
Open the battery compartment cover, remove the battery, and test the

battery voltage. If the battery is low, please replace the battery of the same

type. If the battery level is normal, please put it back into the battery compartment correctly.

Step 5. After replacing the battery, cover the battery compartment, put the timer back in place, and connect each wire as marked.

Step 6. Reset the on-off time.



## 6. Troubleshooting

### 6.1 The screen is black after the power is on (the backlight does not light up).

Method of Treatment:

- 1) Check if the external power supply is normal (220V or 110V).
- 2) When the power is on, check if the indicator light of the timer is red and green (that is, whether the timer is damaged, whether the power on is normal).
- 3) Check if the indicator light of each internal power supply is normally on (that is, whether the indicator light will blink, or turn off, etc., and whether the power supply voltage output is normal).
- 4) Check whether the motherboard is working normally and whether the 5V voltage output of the screen switch is normal.
- 5) Connect the negative electrodes of the internal power supply of the device in

series with wires.

If the above points are all normal, it cannot be solved, however, replace the constant current boards.

**6.2 After power-on, the equipment displays normally, but the partial backlight is not bright.**

Method of Treatment:

- 1) Check if the wiring connections of the constant current board are loose.
- 2) Check if the indicator light of each internal power supply is normally on (that is, whether the indicator light will blink, or turn off, etc., and whether the power supply voltage output is normal).

If the above points are all normal, it cannot be solved, however, replace the constant current boards.

**6.3 After power on, the backlight is on, the LCD panel is not. The motherboard has sound, and works normally.**

Method of Treatment:

- 1) Check if the screen signal wire is normal, or replace it.
- 2) For equipment with 4K driver board, check if the 4K driver board is normal, or replace it.
- 3) Check whether there is a fault with the logic board of the screen (TCON), or replace it.

**6.4 When the power is on, the backlight flashes.**

Method of Treatment:

- 1) Check if the input voltage is stable (220V or 110V).
- 2) Check the indicator light of each power supply inside the equipment and see if there is a flashing phenomenon. (If the external input voltage is stable and normal,

while the power indicator is flashing, the corresponding power supply should be replaced).

3) Connect the negative electrodes of the internal power supply of the device in series with wires.

## 7. ABOUT SUNTUNE

SUNTUNE is a branded digital advertising display supplier in Shenzhen, China. The products cover high brightness monitors, outdoor digital signage, outdoor TVs, waterproof screens, large format displays, touch screen kiosks, galvanized steel cabinets, and more.

**Mindset:** Grow up with a global view. Beneficial worldwide!

**Talents:** Creative, Valuable, Profitable, Improvable, Reliable!

**Management:** Modern philosophy, Efficient organization, Professional team.

**Mission:** Create core value for customers and promote the industry technologies and become a premium brand.

### *CONTACT*

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