375 OUT STD

Outdoor Led display

User Manual

English v1.0

Index

Document version History

No.	Version	Update description	Date
1	Initial Edition	First published	13/07/2023

Copyright

Trademark

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Welcome to 375 Led

Dear customer, thank you very much for choosing our products.
In order to ensure the smooth use of the product, please kindly read this manual carefully before using it.

Even we have redacted this document meticulously to ensure the accuracy and reliability when compiling the manual, there still might be errors and flaws, therefore, please understand that we may update the content of the manual at any time without notice.

If you find any problem or suggestion in the process of use or in this document, please contact us and we will try our best to support you in time on the problems you have encountered. We sincerely appreciate your suggestions and will make assessment to adopt it to improve the product and the documentation.

The 375Led Support and documentation team
support@375led.us

Safety Guide

Warning!
Please read the safety instructions before installing, powering, operating and debugging the products.

The safety guides listed below are important safety signs marked in this manual and printed on the product.

Please read this manual carefully before installation, powering, operation and debugging . We maybe modify and change the contents of the manual at any time without any notice. Follow the safety guide in this manual. Any

LED lamp is easy susceptible to ESD (electrostatic discharge) to damage. Please do not touch lamp during screen working or when turn off screen.

Warning: The manufacturer is not responsible for any incorrect, improper, irresponsible and insecurity system assembly behavior.

Beware of electric shock!
In order to prevent the occurrence from electric shocking, you must connect it to the ground in right way. Otherwise shock hazard will happen.
※ On the thunder and lightning occasion, please switch off equipment's power supply, or provide other applicable lighting protection.
※ Please turn off the general switch before any installation or maintenance.
※ Please turn off the AC power supply when the product is not in use, or you dismantle, install the Product.
※ Applicable current power supply used should be comply with local building, electric specification standards and should be collocated with overload and ground fault protection.
※ The general power should be close to the product and easily to reach. Thus the power can be turned off once malfunction occurs.
※ Before operating the product, please ensure all the accessory equipments, cables and all connecting device comply with the current requirement.
※ Adopt suitable power cable after budgeting the power consumption and current, and ensure it is not damaged, aged or wet.
※ Please replace it once overheated

Beware of being hurt!

Warning: To avoid personal injury, please wear a helmet.

※ Make sure all the materials used to support, fix and connect can bear at least ten times weight of all equipments.

※ When pile up product, please grasp it to prevent tip-over or falling.

※ Make sure all the parts of product have been fixed tightly, including the steel construction.

※ In the process of installation, adjustment and remove product, make sure the work area is separated and the work plate is secure.

※ Don't look the lighted screen within one meter without any eyesight protection.

※ To avoid eyes burning, don't use any optical equipments with focusing function to look

Beware of fire!

※ To protect against fire resulted from power cable overload, each cable should be protected by a circuit breaker or fuses.

※ To protect against fire resulting from power cable overload， The maximum power consumption of the single screen is 2700 W/screen.

※ Keep ventilating and keep other goods at least 0.1m away from the screen, controller, power supply, etc.

※ Don't hang anything on the screen.

Disposing the product
The detailed information regarding to the collection, reuse and recycling, please contact the local or regional waste management units.
Please contact us for the detailed information about the environmental performance of our products.

Product Introduction

Product Description

OUT STD series is a high-end outdoor full color Led Display product with accessories that make it suitable for fixed installations and also for rental installations selecting the apropiate accessories.

With a high-precision die-casting aluminum design, lightweight ultra-thin, automatic cooling structure without fan design, good heat dissipation, zero noise, a cabinet with standard sizes, high-precision seamless splicing, power & signal interfaces outward 45°easy to plug, SMD lamps with black face to get a high contrast, wide viewing angle, soft images; cabinet to cabinet links with wrench-type lockers allows a convenient hand operation, enable one person handling, easy disassembly, to meet both fixed and rental installation scenarios.

You can use your screen with several installation methods like standup Bracket installation, floor ground stack Installation, truss hanging installation, steel-free structures, etc. to adapt the product to different application environments fitting your other needs.

The product components are replaceable with rear maintenance method and all the components (the modules, system receiving boards and PSUs) are safely fixed to the structure with screws that are accessible from the back side.
The simple and beautiful waterproof wiring air-plugs can support redundant dual backup scheme of signal with the display controller, making the product stable and reliable, maximizing the customer's experience and value in different application scenarios.

Product Applications

Product Features

a) Fully rear installation. Complete back maintenance, including a variety of two cabinet sizes

b) Waterproof wiring air-plugs (Aviation plugs)

d) Power supply, and standard receiving cards safely fixed with screws

e) Laterals and top/bottom positioning pin guides in cabinets and built-in positioning guides in modules to ensure the flatness of the screen construction;

f) Large-area power dissipation plate to improve heat dissipation efficiency;

g) Support rear installation, rear maintenance, convenient and fast installation and maintenance;

h) Support indoor and outdoor arc, right angle, hoisting, canopy, double-sided and other installation methods;

i) When the floor bracket is installed, it supports 30*30mm, 40*40mm, 50*50mm, and other specifications and sizes of steel structures

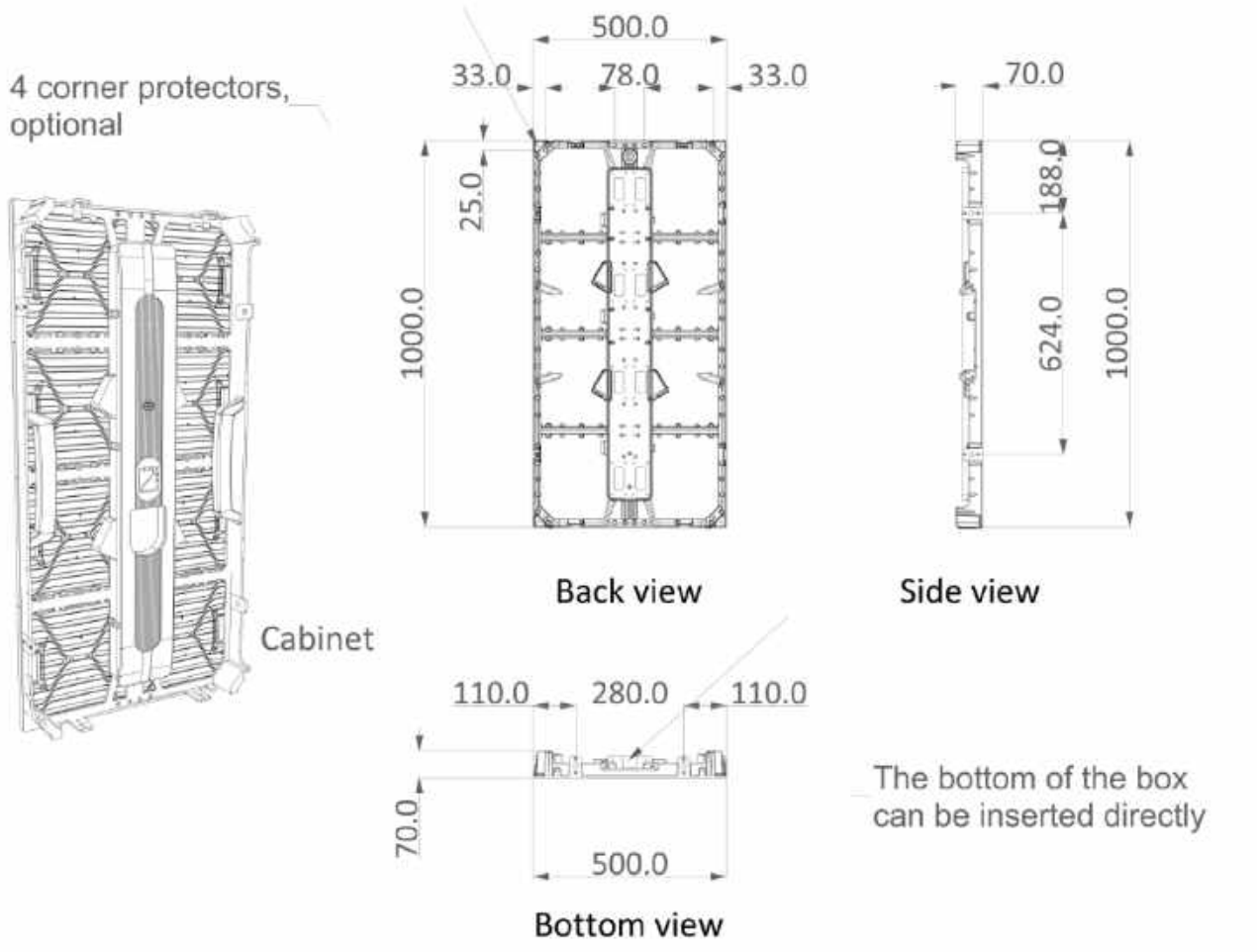
Dimensions

All dimensions are expressed in millimeters

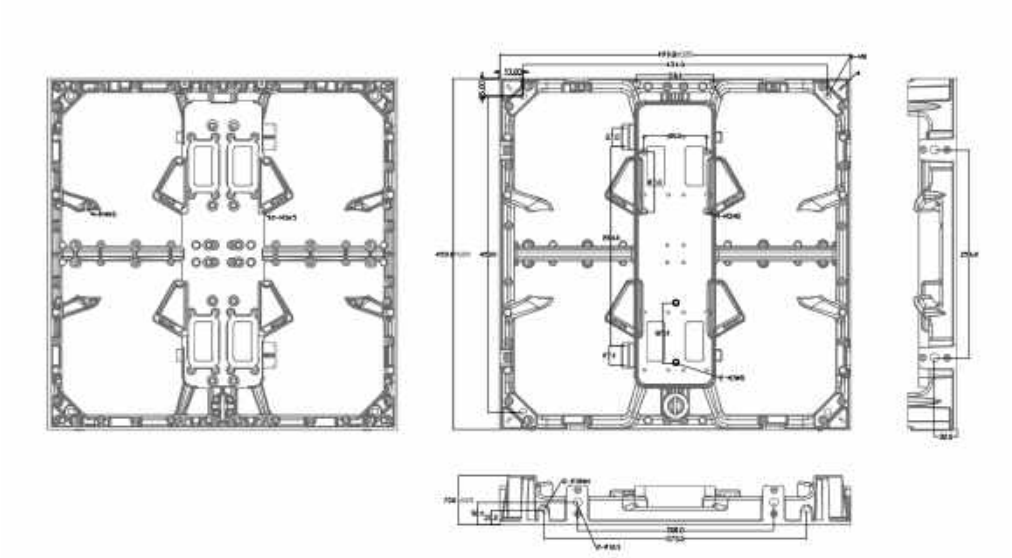
Note: 1. The design and specifications are subject to alteration without notice

Note 2. The figures for size shown in the chart is an approximation

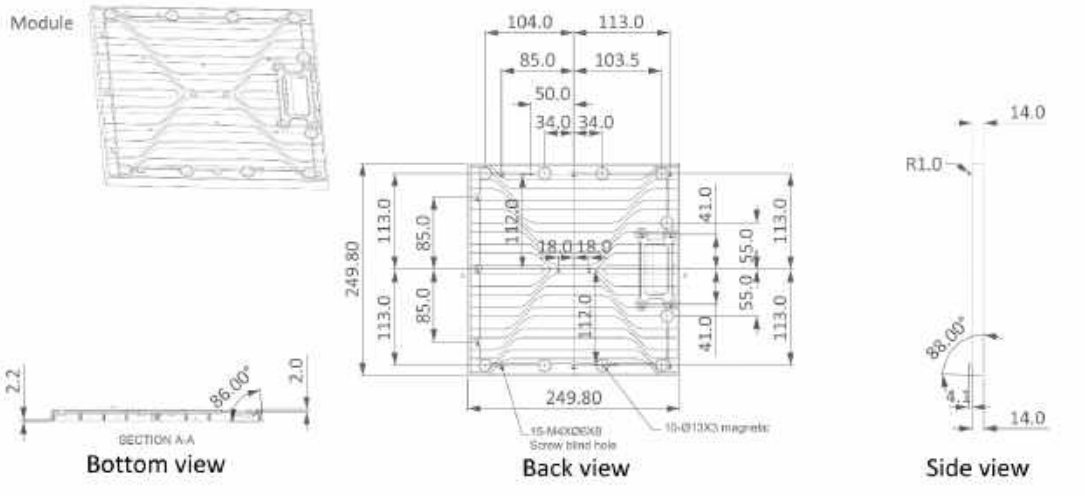
500x1000 CABINET



500x500 CABINET



MODULE



Product Specifications

	P3.91	P4.81
MODULE PARAMETERS		
Pixel pitch	P3.91	P4.81
Module size	250 x 250 mm	
LED type	SMD1820	
Module Weight	0,56 kg	0,56 kg
Module Resolution	W64 X H64	W52 X H52
CABINET SPECIFICATIONS		
Cabinet size	500 x 500 / 500 x 1000 mm	
Cabinet Resolution	128 x 128	128 x 256
Cabinet Materials	Aluminum	
TECHNICAL SPECIFICATIONS		
Weight	28 Kg/sqm	
Brightness	5000 nits	
Viewing Angle	160°V - 160°H	
Contrast Ratio	6,000:1	
Gray level	14	
Color temperature	3.500K - 9000K	
Refresh Rate	3,840 Hz	
Power Input	110 - 240 V AC 50 - 60 Hz	
Power comsuption Maximun	700 W	
Power comsuption Average	180 W	
Life--hours	> 100,000	
IP grade	IP65 Front / IP55 Back	
Certification	CE / RoHS / CCC	
Operating Temperature	from -20℃~60℃	
Storage Humidity	10% - 99% RH	
Maintenance access	Front / Rear	
ECOACTIVE FEATURES		
Nox & Sox Abatement	50,03%	
Certification of pollution abetment	ISO 22197 from Fraunhofer institut	
Antidust	Yes	
Self-cleaning	Yes	
Anti-bacterial	Yes	

Package / Transportation / Storage

Package

We have professional flight case mostly used for rental applications and plywood cases more cost effective for fixed installations.
The typical sizes and capacities are as following:

1. Flightcases
    1. Flightcase 1099*751*724mm 42kg 6 in 1 cabinets 500x1000
    2. Flightcase 1099*975*724mm 52kg 8 in 1 cabinets 500x500

2. Plywood-Box
    The dimensions are usually adapted depending of the volume of the order, to optimize the costs in logistics.Here an example for reference:
    1. Plywood case 1290*1100*700mm 153.5kg 10 in1 cabinets 500x1000mm
    2. Plywood case 1140×1060×680mm 160Kg 16 in 1 cabinets 500x500mm

Transportation

As long as finishing packaging, cabinet can be shipped out, prohibit turning upside down, lying down, wind, rain shower, sun exposure or access to the corrosive liquid, the maximum wooden stacking up to three layers.

Storage

Cabinet should be stored at - 22 ℃ to 55 ℃ and10% to 80% RH(indoor)/- 30 ℃ to 60 ℃ and10% to 90% RH(outdoor), prohibit placing under the volatile, corrosive, flammable chemical environment..

Flight Case

Wooden Case

Installation Manual

Package Checkout

First check whether the package is damaged, if the package is normal, then continue to check the main components according to the shipping list. If there are any discrepancies, please do not hesitate to contact us. Main parts: cabinet unit, signal cable, power cable, USB cable, DVI cable, sending card, control PC and accessory components, specific parts and their quantities can be found in the shipping list.

Requirement：

Weight: Please make sure the floor, truss, or wall are used to set screens can bear the weight of the whole screen.

Horizontal surface: The mounting surface and truss of the display screen must be kept level. Please do not install the display screen on the sloping surface and truss.

Note：

1, If you conduct the welding jobs while mounting or weld after mounting the screen, please carefully protect the screen components from welding slags, arc, etc. Otherwise damages to the modules may be caused. When framing the cabinets, you must mount the first row and make sure there's no obvious gap or mismatch. Only after that can you continue to frame the cabinets upwards. For other's safety, please block the possible drop out area during the installation or maintenance.

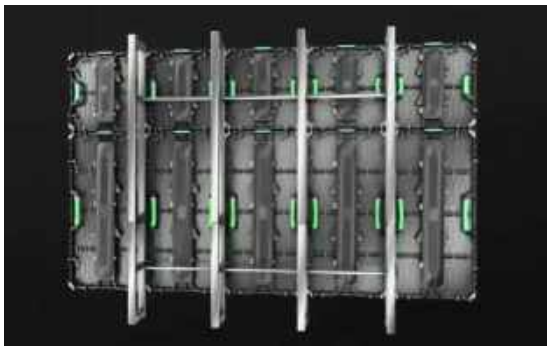
2, LED display has high consistency, please avoid paint, dust, welding slags or other dirt being glued into LEDs or on panel surface, or it will influence display effect.

3, It is not recommend to set the LED display is installed near seaside or water because high salt spray, high temperature, high humidity will easily damp, oxidize or corrode the screen. If it must be installed near such surroundings, please tell us so we can take special measures to protect the screen and pay more attention to ventilation, dehumidification and cooling.

Due to different products support different installation methods, the specific product installation method can refer to the Datasheet "specifications"to choose. If you have any questions about the product, please contact us feel free.

MECHANICAL INSTALLATION METHODS

Standup back stack installation

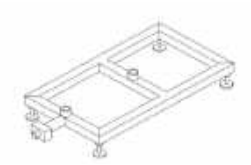


Floor Ground Stand up Bracket Stack Installation.

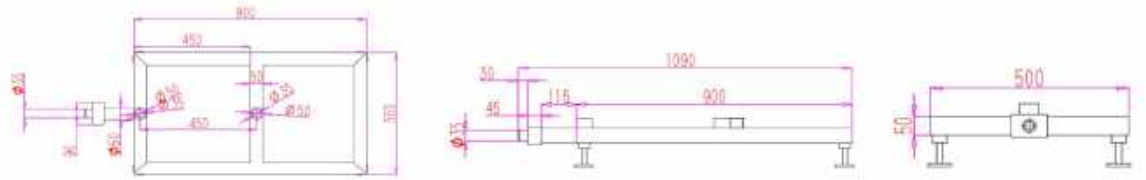
Straight Screen

For floor ground stack installation are used the following 6 elements:

1. BASE



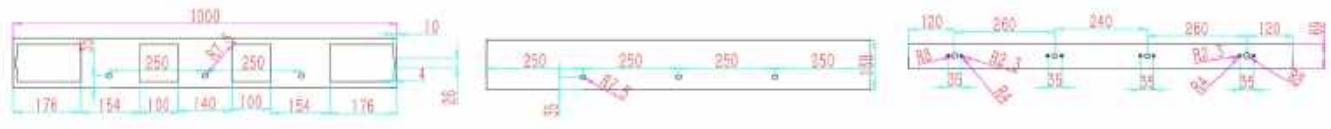
Material: Aluminun Alloy 6061
Measure:150x150x1000 mm With 4pcs
Adjustable Base and Quick Lock Support



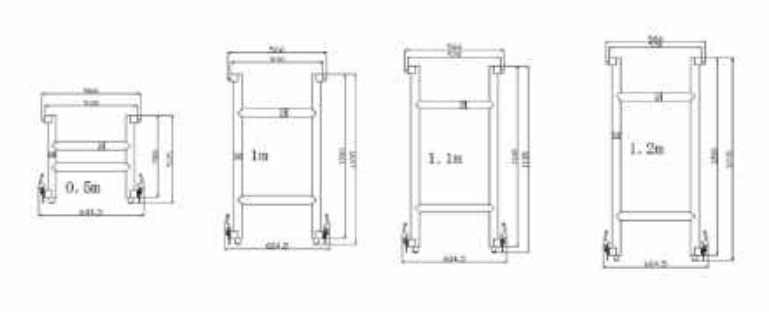
Custom-made Wheels

2. GROUND BEAM

Material: Aluminun Alloy 6061
MatrEial Measure:69x138x6 mm
Product size: 1000x200x69 mm
Custom-made length according to cabinet Support Custom-made Wheels

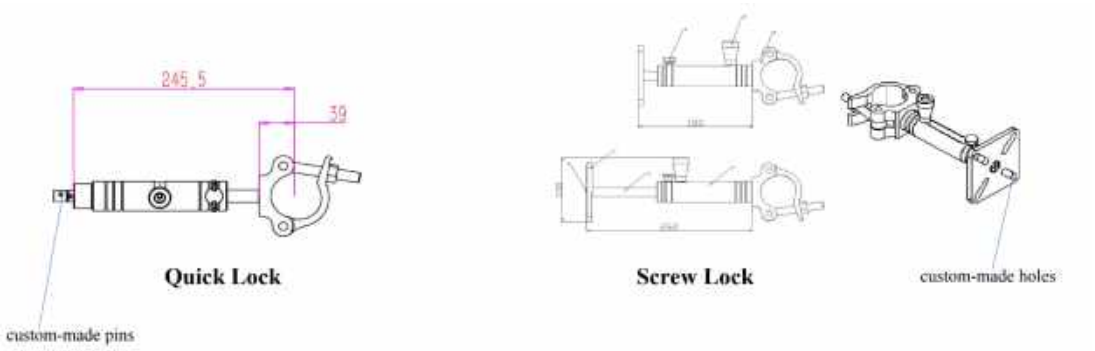


3. LADDER TRUSS

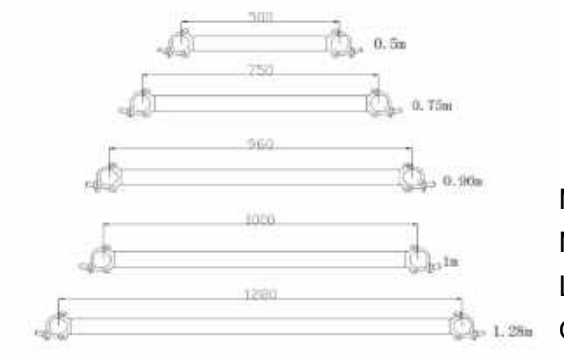


Material: aluminum alloy 6061
T6 Main Tube: 50x3 mm
Measure: 50x500 mm
Custom Length 0.5M, 0.8M, 0.9M, 1M, 1.1M, 1.2M

4. LOCK

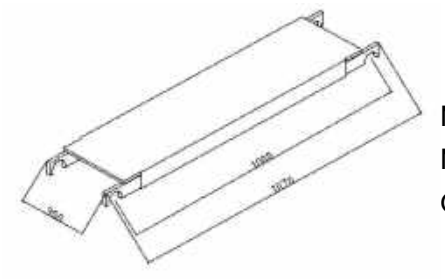


5. SUPPORT PIPE



Material: aluminun alloy
Measure: 50x50 mm
Length: 0.5M, 0.75M, 0.96M, 1M, 1.28M
Custom-made Length according to Cabinet

6. FOOTBOARD



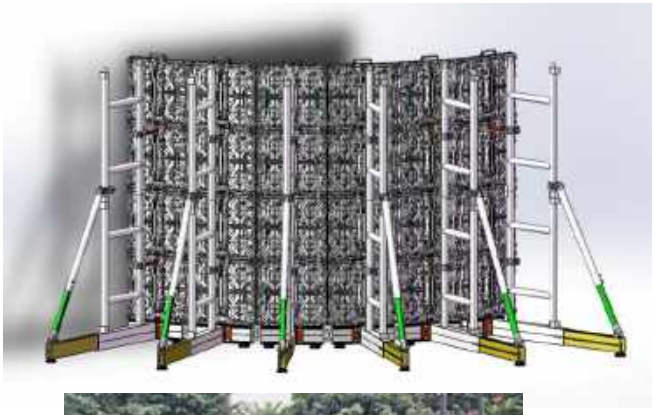
Material: Aluminum alloy and 9mm plywood
Measure: 380x85x1000 mm
Custom-made Length according to Cabinet

Depending on the installation needs, there are different mounting alternatives.
Floor ground stack installation starting at ground level, adjustable height ground support and curved ground support.

For adjustable height ground support are necesary two aditional accesories and a second row of beams. The top beam clamp, to bind the elevate ground beam to the ladder truss. And the adjustable pipe that support the elevate row beams.

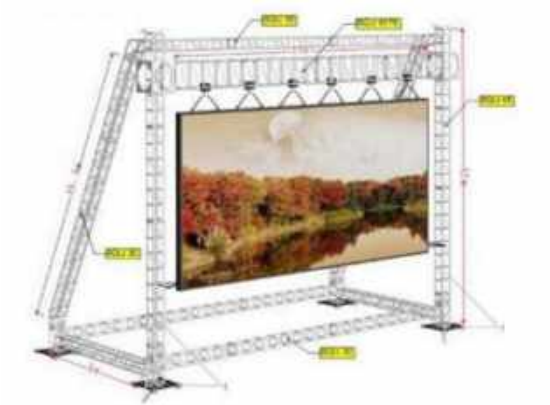
Curved with arc lokcs

For curved screens, inner or outer curved, is necesary to use the curved ground beams that allows enter a rotation angle between cabinets and the arc lockers to join cabinets.



TRUSS HANGING INSTALLATION

Another option of installation is hanging the screen from a truss structure. In this case there are another two options, hanging straight screen and hanging curved screen. For straight screen are necesary the straight hanging bars that can be hanged on the truss with truss clamp or steel cable. For curved screen are available the curved hanging bars that can be hanged on the truss with truss clamp or steel cable too.



Straigt Hanging Bar

Curved Hanging Bar

Mechannical details of cabinets

500x500 Cabinet

Size: 500(W) x 500 (H) x 70 (D)mm
Weight: 3,6 Kg
Material: Aluminum alloy
Installation Method: Hoisting, Base mounting,
Fixed installation.
Color: black
Including acccessories: Quicklock (Rental versión),
Handle,Up pins, Lateral pins, Corners protectors,
Power plate, Card plate, Installation plate

Quicklock *Handle* *Up pins* *Lateral pins* *Corner protect* *Power plate* *Card plate* *Installation plate*

500x1000 Cabinet

Size: 500(W) x 1000 (H) x 70 (D)mm
Weight: 6,1 Kg
Material: Aluminum alloy
Installation Method: Hoisting, Base mounting,
Fixed installation.
Color: black
Including acccessories: Quicklock (Rental versión),
Handle,Up pins, Lateral pins, Corners protectors,
Power plate, Card plate, Installation plate

Quicklock *Handle* *Up pins* *Lateral pins* *Corner protect* *Power plate* *Card plate* *Installation plate*

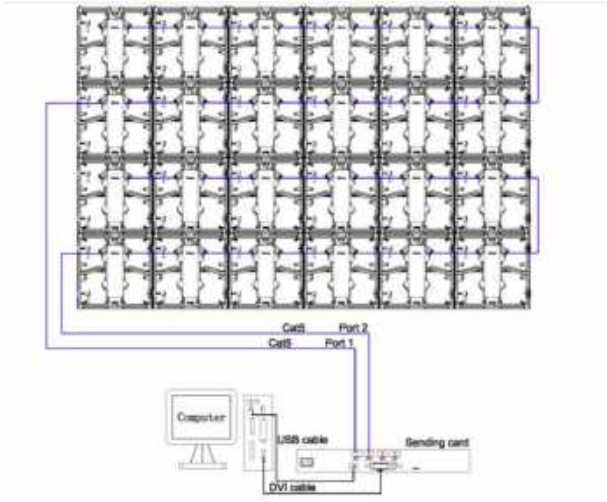
All cabinets brings four corners protectors to take care of corner modules during transportation. During installation process only is necesary push the spring to retract it.

For cabinets assembly thera are two methods depending of screen type. In standards cabinets they are assembled using first the guide pins (upper and lateral) and subsequently using two M6 screws in each lateral between cabinets. In rental cabinets there are straight quick lockers to assembly between cabinets and arc lockers to assembly with angle (curved screens).

PRODUCT WIRING

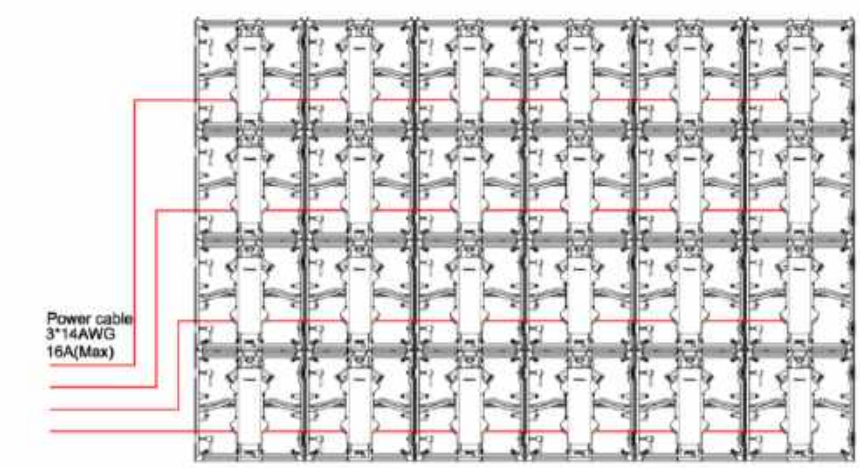
SIGNAL WIRING

All screen cabinets must be interconnected with ethernet cable (Cat5 or superior). The method of connection is very flexible but is typical begin in upper right side cabinet and continue allways with consecutive cabinet. Is important note that there´s a maximum numbers of pixels per each ethernet cable. This number depends of sending card so is important calculate the pixels per cabinet as not to exceed the limit. Below is a typical example of screen signal wiring.



POWER WIRING

All screen cabinets must be interconnected with power cable (3x2,5mm). The method of connection is very flexible begining in one cabinet and allways interconnecting with consecutive cabinet. Is important note that there´s a maximum power support per each power cable. Typicaly the maximum power per line (16A) is 3600 watts but is important never past 80% of maximum power support. To calculate the maximun cabinets in power line must consider the maximun power consumption of each cabinet and add for each cabinet. Below is a typical example of screen power wiring.



COMMON WIRING

Input AC Power Cable and Power Cable between Cabinets

Signal Input Cable and Signal Input Cable between Cabinets

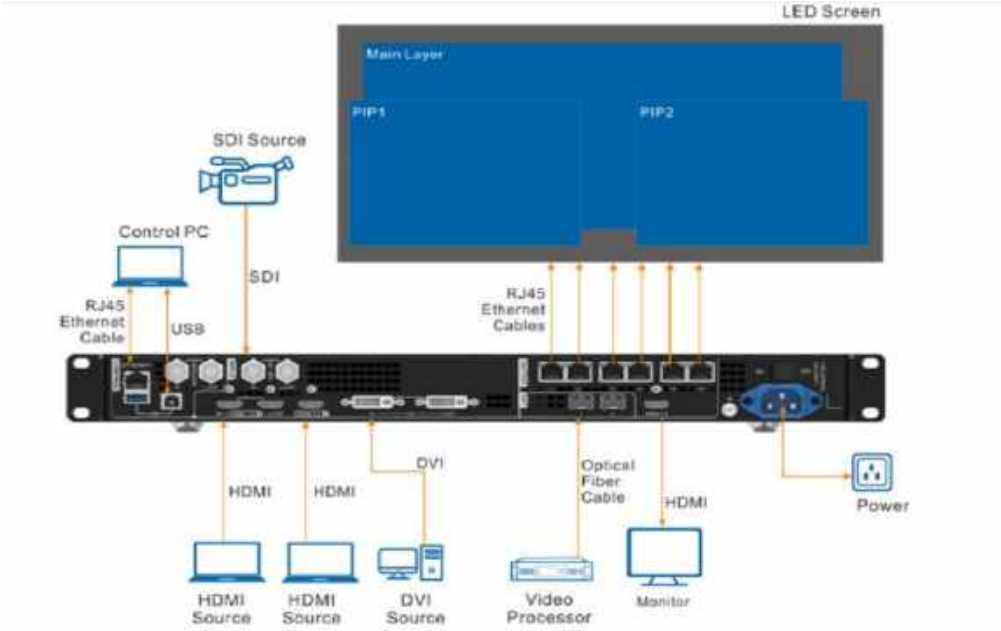
DVI Cable

UBS Cable

CONFIGURATION MANUAL

Display control system connectivity

Bellow is a typical example of connection between the different elements that make up the whole screen. Depending on the type of controller, the number of inputs or outputs can vary.



Display control software configuration

Is necesary install NovaLCT Mars in a computer to connect with led controller and configure the screen. Download the last version in www.novastar.tech/downloads/

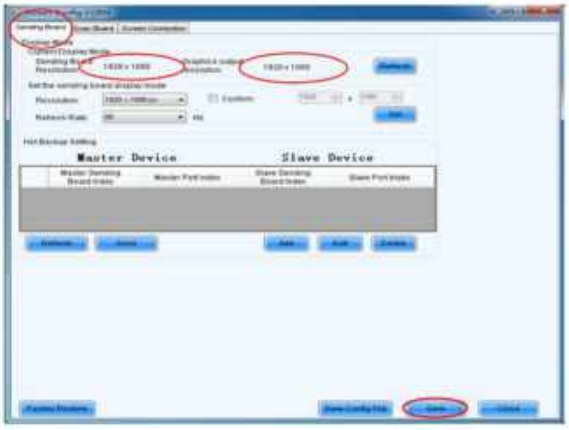
Run NovaLCT control software. Connect your Pc with NovaLCT software with a USB wire into the USB porto f the controller. Be sure that the interface *Control system* is *1* and click *User,* then select *Advanced User Login* as show below.

Input password *666* to get into Advanced User Login interface:

Then click Screen Config at the main interface:

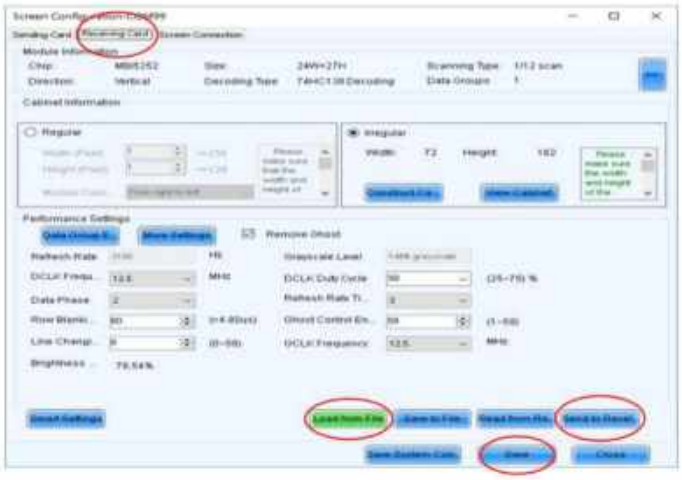
Click Next buttom:

In the following window, set up sending card resolution that must be he same as the computer graphics output (recommended 1920x1080). Click *Save* after setting:

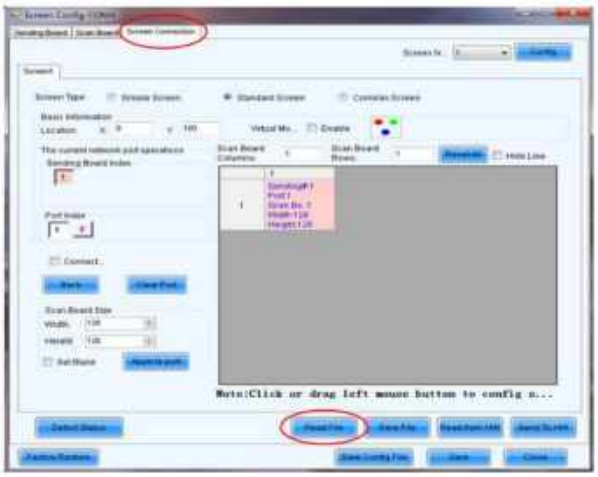


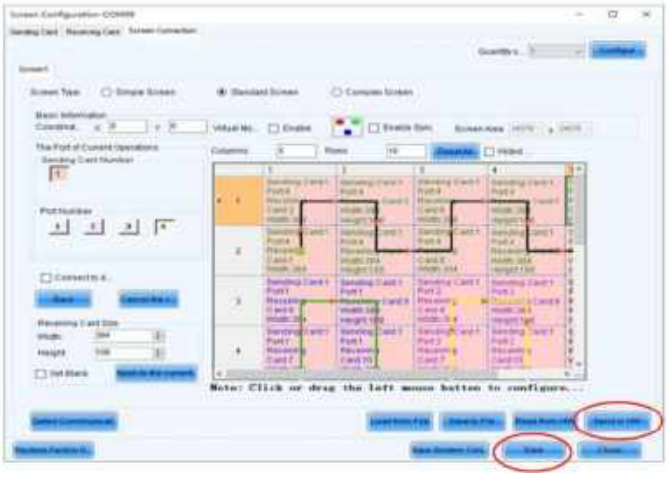
After finishing the sending Card setting, save it and then click on *Receiving Card*, then:

1) Click *Load from File*, then choose the file *xxx.rcfg* for this cabinets.
2) Click *Send to Receiving Card*.
3) Make sure every receiving card works normally, after that, please click *Save*.



After the receiving card setting click Screen Connection as the picture:





1) Click *Load from File*, then chose the file *xxxx.scr* for this screen.
2) Click *Send to HW*.
3) Make sure the waole LED display is working normally, after that, please click *Save*.

Video source connection to the controller

Connect the player video output (almost case HDMI) into the controller video input with an adecuate video cable (HDMI-HDMI, HDMI-DVI, DVI-DVI, Display Port-HDMI, etc.)

By default the video start coordinates are 0.0 so it will start playing the player video from the top left corner.

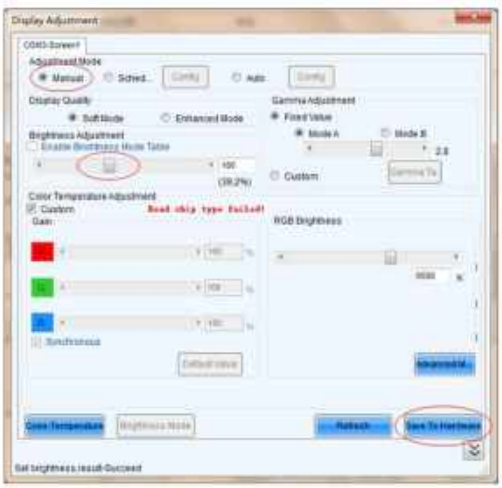
Brightness settings

For Brightness control click Brightness at the main interface for brightness, gamma and color temperature adjustment, as the follow image:

The brightness adjustment has three options, Manually Adjustment, Shedule Adjustment and Automatically Adjustment. Allways after adjustment please click *Save on Hardware*.

1) Manually Adjustment.
   After adjusting brightness value, click *Save to Hardware* for save the setting.

2) Shedule Adjustment.
   Select "Schedule" in the "Adjustment Mode" panel to open schedule adjustment page. Schedule adjustment is to generate a time table and the LED display brightness, Gamma, color temperature and brightness mode will be adjusted according to the time table, as in following fig:



Click "Config" button according to the instruction and the "Config Schedule File" window will be opened. Create the schedule (time table) for adjustment and NovaLCT-Mars will perform the adjustment operations automatically according to the schedule, as in following fig:

Note： a) The time of the computer on which NovaLCT-Mars is running is the base of the schedule. If the computer time is not correct, the adjustment operation will not be performed at the expected time. b) The "Enable Bright Mode" option can be selected only when the "Bright Mode Table" is configured in the "Manual Adjust Page".

3) Automatically Adjustment Not recommended to use automatically adjustment. If you want to active this function, please click "Automatically Adjustment" then follow on display instruction to complete the setting.

OPERATION MANUAL

Power On & Power Off

1. Switching on Power Sequence
    1. Turn on the LED display Power Distribution Box;
    2. Turn on the control computer;
    3. Turn on the sending card;
    4. Turn on the video processor power.

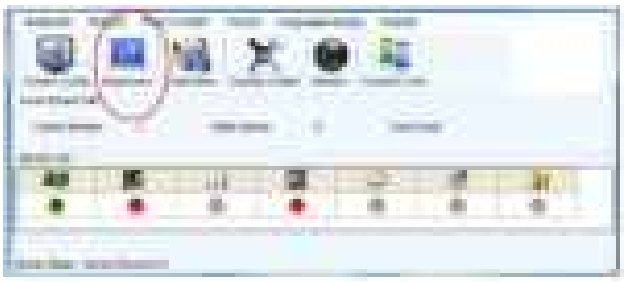
2. Switching off Power Sequence
    1. Turn off the video processor power;
    2. Turn off the sending card;
    3. Turn off the control computer;
    4. Turn off the LED display Power Distribution Box.

Product Maintenance

1. Regular Maintenance
    1. Check out the display temperature with the software monitoring system every day.
    2. Turn on the display at least twice a week and for 2 hours each time;
    3. Ensure to clean the display carefully using a antistatic soft brush if the screen is very dirty by mud dropped by strong rainy days. Your screen have a nanocoating protection system that add autocleaning ani-dust features to the screen, but the strongest rainy days may drop bigger size elements that need to be cleaned manually every month during rainy seasons.
    4. Inspect the devices and cable is tied on Power Distribution Box and make sure are in good condition, and that are connected to earth properly without getting hot by quarterly.
    5. Inspect the display structure frame every year.

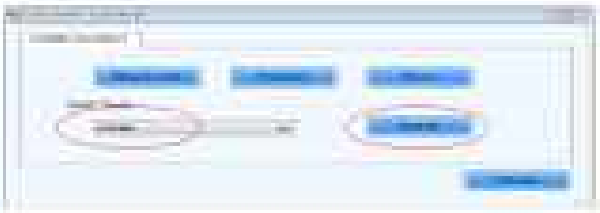
2. Maintenance after more than 15 days without use
   If the display in not being used for more than 15 days, before using your screen again, increase brightness gradually according to operation steps below described, to ensure the long term life of the product.

1. Click over "brightness" in the main menu interface of the software LCT-Mars to

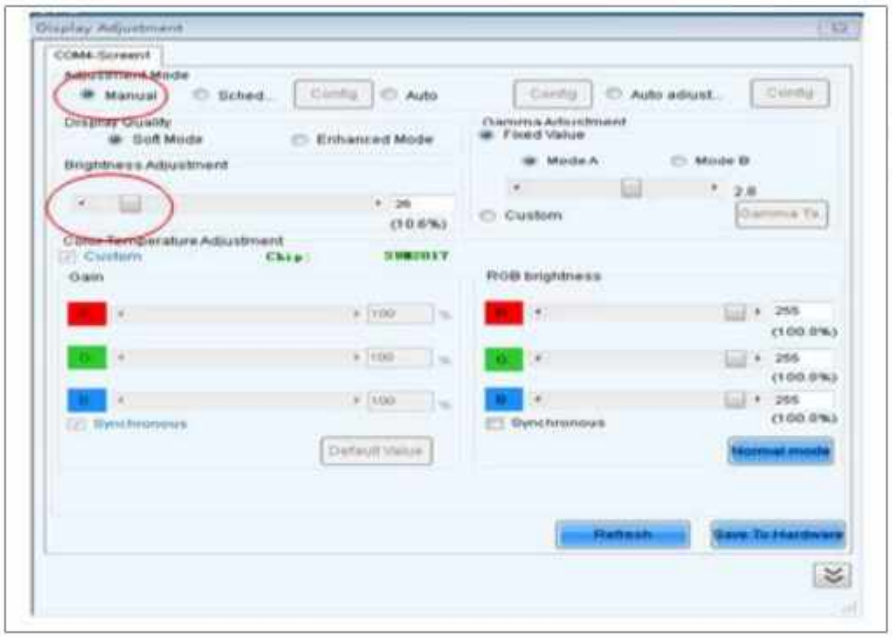


proceed with brightness adjustment

2. Display full white color in the whole screen.



3. Click over "brightness" and set up a value of 10% of the total brightness.



4. Adjust display brightness gradually accordingly to the following time-table

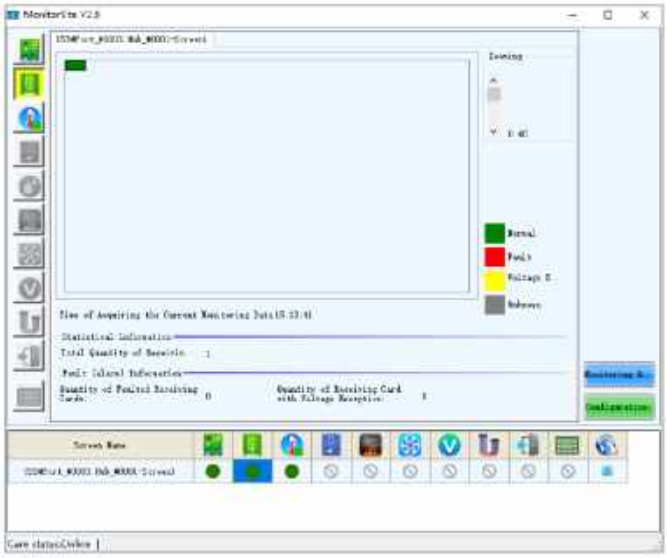
Number	Brightness	Aging time
1	10%	1 hour
2	30%	2 hours
3	60%	2 hours
4	80%	2.5 hours
5	100%	0.5 hour

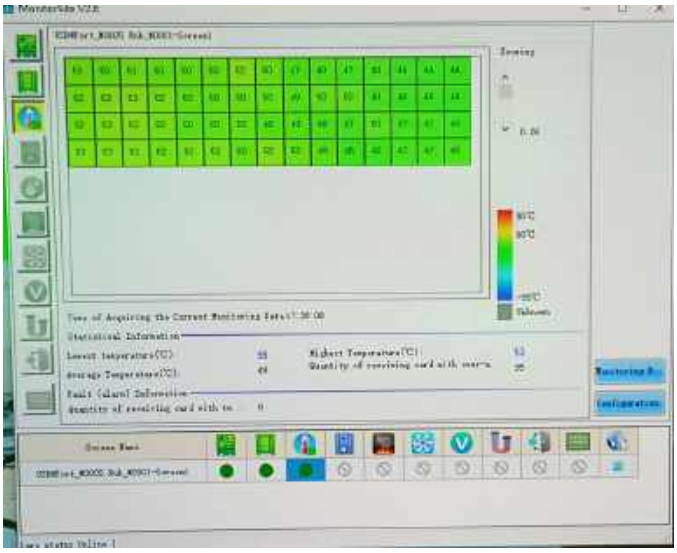
Monitoring

1. General Status
   1. Screen General Health Status
      1. Video input signal link status
         Health statrus of the video signal between the player output and the video input of the display controller.
      2. Temperature of cabinets status
         Normal temperature status inside the power box of the cabinets
      3. AC Power input and input signal status in cabinets
         Health status of all the receiving controllers of the screen, checking network signal

cable and input power.

2. Monitoring status of cabinets and detail of temperature





3. Troubleshooting and malfunction diagnosis

1. The whole screen do not display any image and display black out
    1. Possible causes analysis:
        1. The display or control system has no power.
        2. The display has no signal input.
        3. Control computer is in sleep mode or the graphic card settings are not correct.
    2. Possible Solutions:
        1. Make sure the AC power input is working well and voltage is correct.
        2. Make sure the connection between receiving card and sending card is correct, and that all cables are correclty connected.
        3. Make sure the control computer already disable sleep mode.
        4. Make sure the graphic card settings are correct.

2. The display output Image Is Incomplete or shifted or displayed in wrong position.
    1. Posible cause analysis:
        1. Incorrect rcgx configuration files loaded in the receiving cards of the screen.
        2. Unstable signal cables connection between cabinets.
        3. Wrong set-up of the display position or size in the display parameters.
    2. Posible solutions:
        1. Check the display connection settings of the receiving cards and make sure the RCFGX configuration file loaded is correct.
        2. Ensure that the signal cables between cabinets and the signal cables inside the

receiving cards are securely plugged in card (The receiving card Led lamp indicator on the cabinet shoulkd be lit and glowing a blink green)

3. Make sure that the parameters of the display position and size (SCR file) are correclty setup in the software accordingly with the same size and resolution of the display.

3. Display output image is blinking
    1. Possible cause analysis:
        1. Loose signal cable or too much long transmission distance.
        2. The display controller receives a defective or not supported input signal (DVI/HDMI/...)
    2. Posible solutions:
        1. Check the signal cable connection between sending card and the display and be sure the signal cables installed are not too much long over beyond the effective transmission distance (DVI fiber≤10m, UTP network cables ≤100m, multi-mode fiber lines≤300m, single-mode fiber lines ≤15 km)
        2. Be sure that the graphic card settings are setup with the right resolution and that the video output is working well.

4. Individual Cabinet display wrong Images or is flickering
    1. Possible cause analysis:
        1. Damaged output of ports in the hub of the receiving card.
        2. A not correct firmware version is recorded in the receiving card.
    2. Posible solutions:
        1. Be sure the receiving card and the hub ports are connected and plugged properly and check if data cable is loose.
        2. Be sure the firmware version is recorded correclty in the receiving card with the right firmware version, and that the receiving card is not damaged.

5. An individual cabinet is not displaying any image
    1. Possible cause analysis:
        1. A power supply or receiving card is failing and need to be replaced.
        2. The former signal input of cabinet has something wrong.
    2. Posible solutions:
        1. Be sure the cabinet DC power output is + 5V and check if the receiving card red Led-lamp is lighting indicating that the DC power is received.
        2. Be sure the HUB card and receiving card and the data cables are safely connected in the right position and that are not damaged.
        3. Be sure the former cabinet output signal is normal.

6. A specific row of the module or an individual module does not light
    1. Possible cause analysis:
        1. The DC power input cable that connects the module yto the PSU is damaged.
        2. The flat cable input signal that conects the module and the receiving is damaged.
    2. Posible solutions:
        1. Check out the DC terminal block of power supply.
        2. Make sure the HUB card interface port involved is connected to the module with a flat cable in perfect conditions.

Repair and Operation

1. Internal main parts replacement
    1. Module replacement
    2. Power Supply and Receiving Card replacement
2. External main parts replacement
    1. Straight-locker replacement
    2. Arc-Locker replacement
    3. Top/Bottom pin guides replacement