pixelplus™

Uncompromised Visual Performance

Innovative, multi-functional LED display solutions
where picture quality is no compromise.

www.pixelplus.co.za
1 Midway Park, 61 Old Pretoria Road,
Halfway House, Midrand, 1685, South Africa

pixelplus™

xtend

Fixed Installation

Our Pixel Plus Xtend panel is tailored made for outdoor fixed
installation applications in a compact, light, portable and fully customizable cabinet,
allowing easy assembly and multiple mounting modes.

Pixel Plus Xtend Series User Manual. EN Version 1

Safety Information

WARNING!
Read the safety precautions in this section before installing, powering, operating or servicing this product.

The following sysmbols are used to identify important safety information in this RC outdoor manual.

- This product is for professional use only, not for household.
- Improper operation may lead to severe injury or death due to electric shock, fire hazard and falls.
- Read this manual before installing, powering or maintaining this product, follow the safety precautions listed below and observe all warnings in this manual.
- If you have any question about how to operate safely, please contact your PIXEL PLUS supplier.

PROTECTION FROM ELECTRIC SHOCK

- Connect the product to AC mains power within the range of 100-120V /110-220V/100-240V nominal at 50 or 60 Hz only.
- Disconnect the product from power when not in use.
- Always ground (earth) the product electrically.
- Before using the product, check all power distribution equipment and cables in perfect condition and rate for the current requirements of all connected devices.
- Do not use the product if the power cable or power plug is in any way damaged, defective or showing signs of overheating.
- Do not attempt to open any cover.
- Refer any service operations not mentioned in this manual to our PIXEL PLUS technician.

PROTECTION FROM FIRE

- Keep the products away from inflammables, explosives when installing or operating, and according to the PIXEL PLUS XTEND User Manual
- Do not block the vent or near heat source like radiator, heater, stove or other heat generation device when installing.

User Manual for Pixel Plus **Xtend**
A full and thorough understanding of this manual and its specific information is crucial to the assembly and maintenance of the Pixel Plus led display.

- Do not put or stick any materials directly onto LED modules.
- Do not modify the product in any way not described in this manual.
- Install only genuine PIXEL PLUS parts in or on the prodoucts unless an alternative is described in this manual
- Do not operate the product if the ambient temperature of power units (Ta) exceeds 50°C (122° F) or less than -20°C (-4° F).

PROTECTION FROM INJURY

- Create an installation by installing hanging construction at the top and working downwards.
- Disassemble an installation by removing cabinet at the bottom and working upwards, vice versa.
- Check all external covers and rigging hardware are securely fastened.
- Block access below the work area and work from a stable platform whenever installing, servicing or moving the product.
- Strictly observe the load of hanging or stacking construction

IMPORTANT WARNINGS

Maximum and minimum ambient temperature:
The maximum ambient temperature for the LED wall is 50 °C; the minimum temperature is (-20°C.)

High leakage current:
The combination of power boxes in an installation results in increased levels of Leakage current.
In order to avoid risk of electric shock due to high leakage current, proper grounding of the installation is required.

This equipment MUST be earthed:
In order to protect against risk of electric shock, the installation should be properly grounded.
Defeating the purpose of the grounding type plug will expose you to the risk of electric shock.

POWER SYSTEM

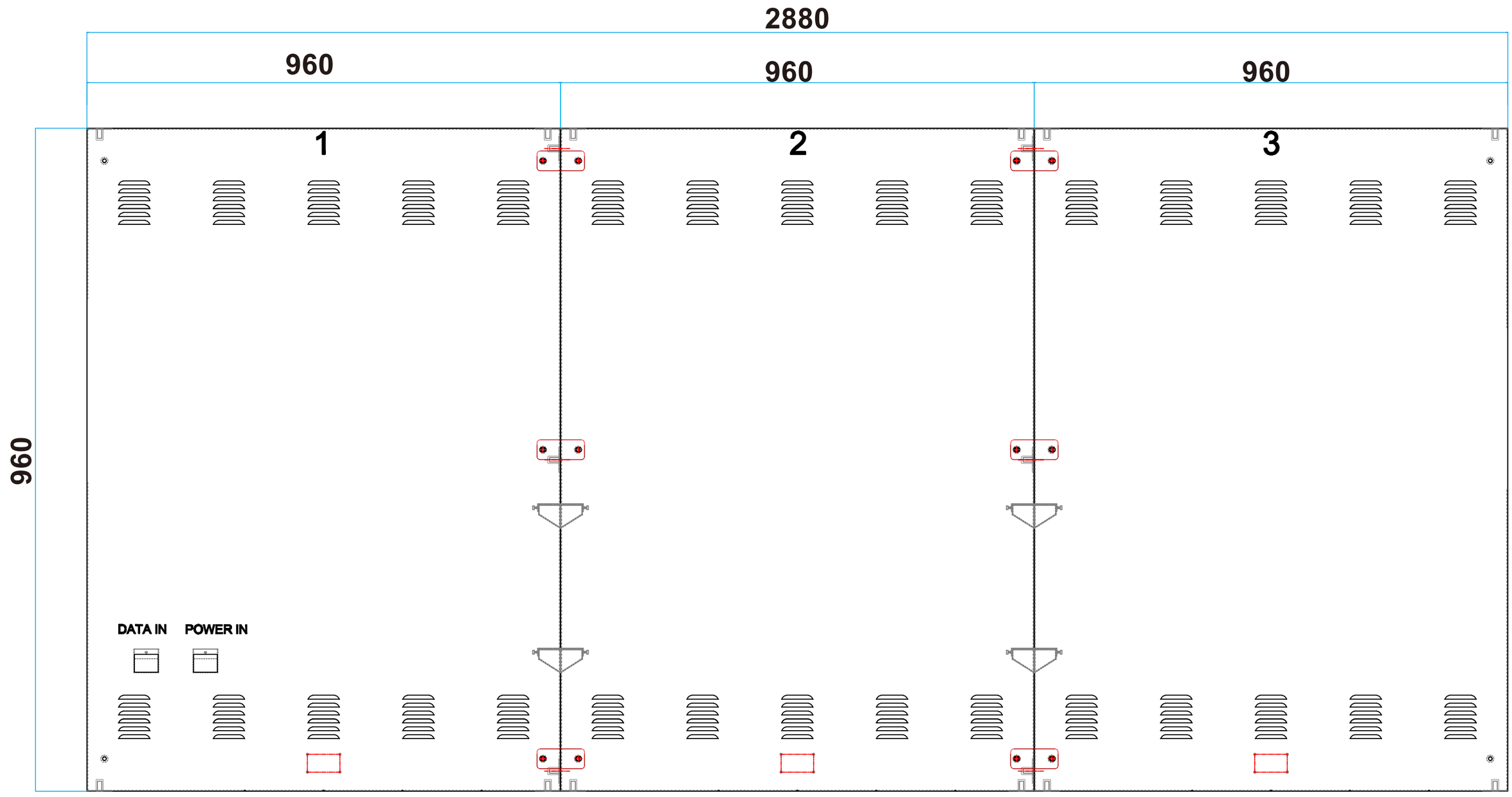
Mains cords:
The power cords delivered with this system have special properties for safety. They are not user Serviceable. If the power cords are damaged, replace them only with new ones. Never try to repair a power cord.

Signal cables:
The signal cables provided with this system have special properties for safety. They are not user serviceable. If the signal cables are damaged, replace them only with new ones. Never try to repair a signal cable. Per requirements of the National Electrical Code in the USA, the length of a signal cable must not exceed 100 m (332 feet). Avoid exposure of signal cables to accidental contact with lightning or power conductors.

Stage Audio Works - phone: 0861 6888 68 (SA), +27 11 791 7829 (Jhb.) +27 21 934 3661 (CT) www.stageaudioworks.com
Every effort has been made to ensure the accuracy of this manual; no liability will be accepted for unseen errors.
Stage Audio Works reserves the right to adapt, change, and/or alter this manual without prior notification.

Cabinet size view

Xtend Series Cabinet Size



User Manual for Pixel Plus **Xtend**
A full and thorough understanding of this manual and its specific information
is crucial to the assembly and maintenance of the Pixel Plus led display.

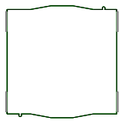
Stage Audio Works - phone: 0861 6888 68 (SA), +27 11 791 7829 (Jhb.) +27 21 934 3661 (CT) www.stageaudioworks.com
Every effort has been made to ensure the accuracy of this manual; no liability will be accepted for unseen errors.
Stage Audio Works reserves the right to adapt, change, and/or alter this manual without prior notification.

Internal construction

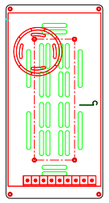
Xtend Series Cabinet internal construction structure reference

Internal structure of
the three cabinets is the same

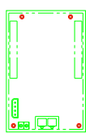
Front service by opening the
relevant module following internal structure



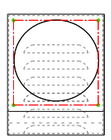
Module



Power



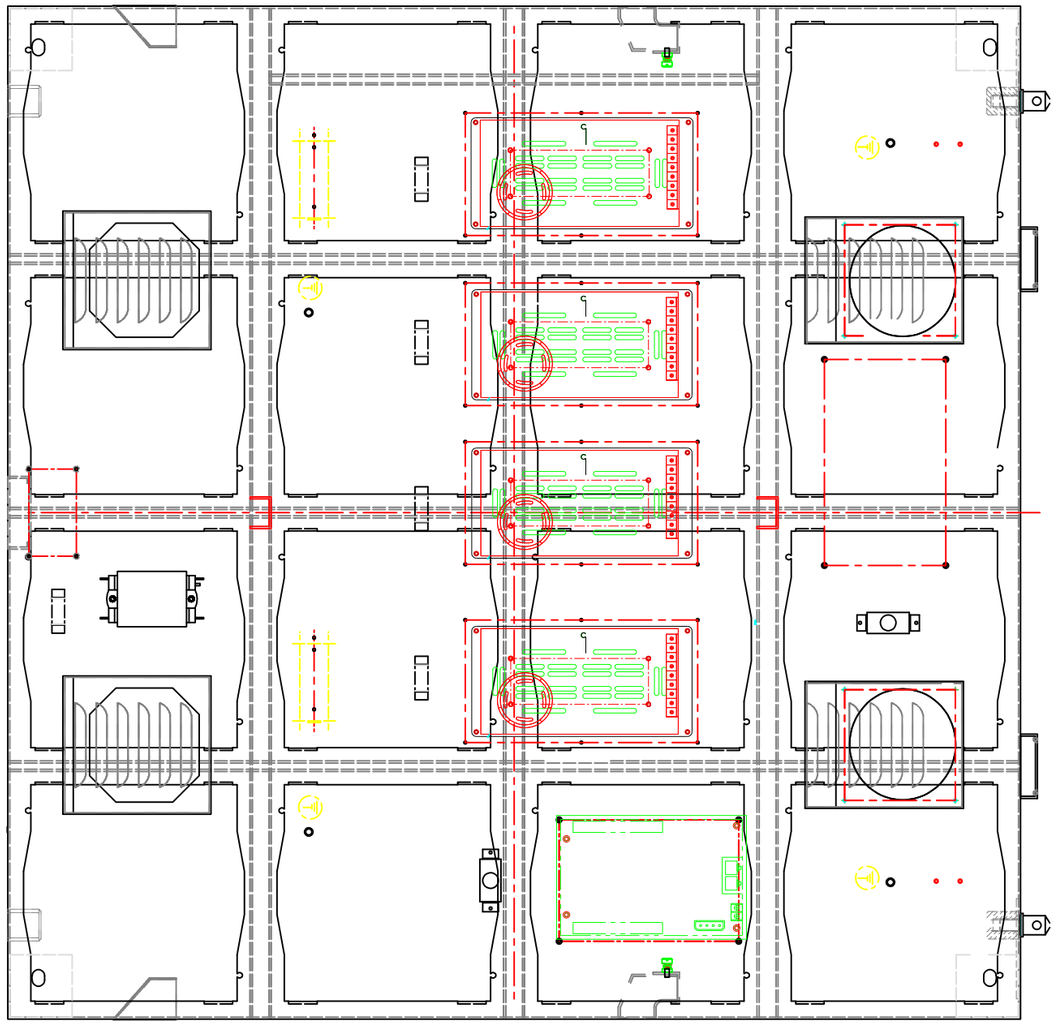
Receiving Card



Fan

User Manual for Pixel Plus **Xtend**
A full and thorough understanding of this manual and its specific information
is crucial to the assembly and maintenance of the Pixel Plus led display.

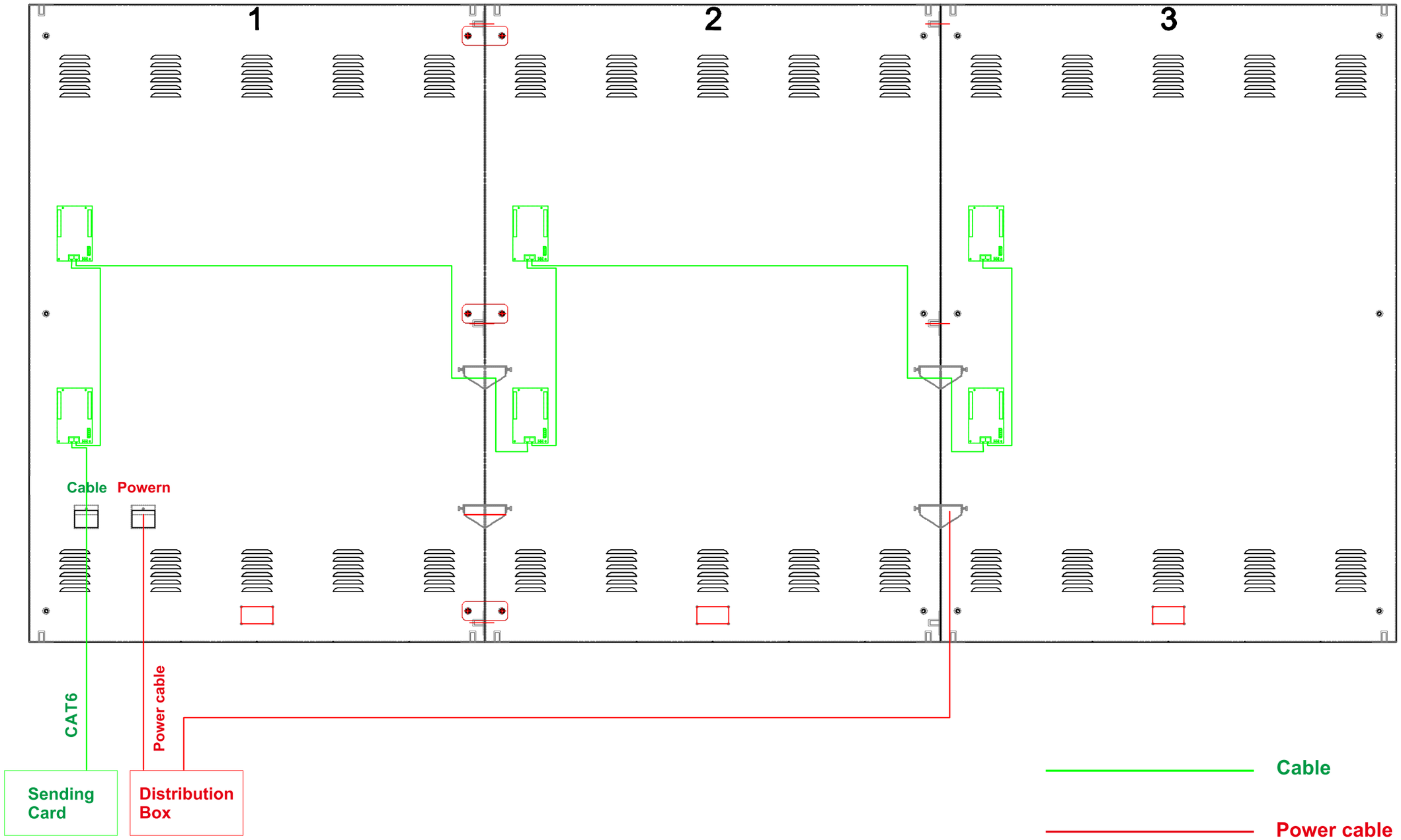
Xtend Series Cabinet internal



Stage Audio Works - phone: 0861 6888 68 (SA), +27 11 791 7829 (Jhb.) +27 21 934 3661 (CT) www.stageaudioworks.com
Every effort has been made to ensure the accuracy of this manual; no liability will be accepted for unseen errors.
Stage Audio Works reserves the right to adapt, change, and/or alter this manual without prior notification.

Cabinet cable view

Xtend signal and power cable view



User Manual for Pixel Plus **Xtend**
A full and thorough understanding of this manual and its specific information is crucial to the assembly and maintenance of the Pixel Plus led display.

Stage Audio Works - phone: 0861 6888 68 (SA), +27 11 791 7829 (Jhb.) +27 21 934 3661 (CT) www.stageaudioworks.com
Every effort has been made to ensure the accuracy of this manual; no liability will be accepted for unseen errors.
Stage Audio Works reserves the right to adapt, change, and/or alter this manual without prior notification.

Cabinet cable view

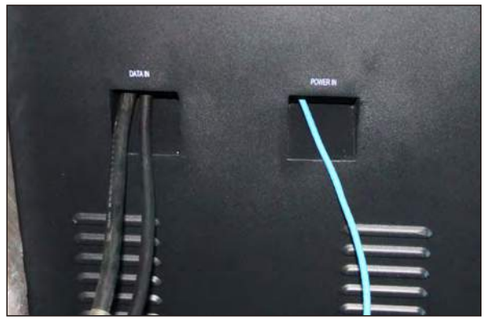
Xtend signal and power cable view

Step 1:
Install the cabinet

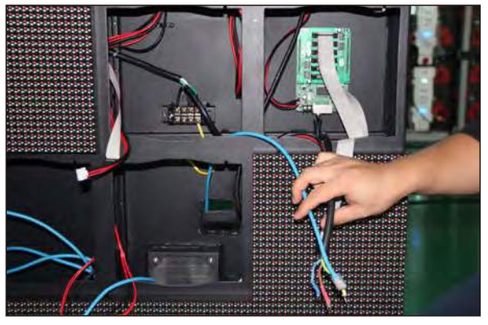
Step 2:
Joint the fixed screws

Step 3:
Fix the screws and adjust the uniformity and gap

Step 4:
Find the port of signal and power



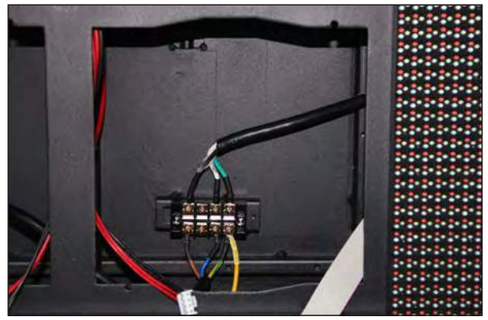
Step 5:
Insert the net cable and power cable to cabinet separately



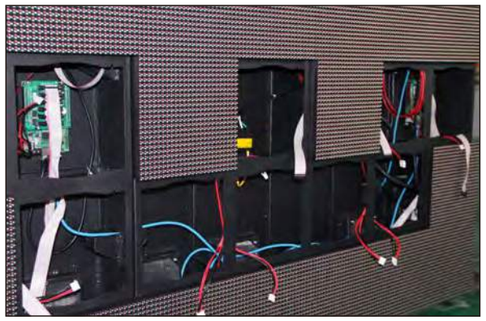
Step 6:
Open the module and find the net and power cable

User Manual for Pixel Plus **Xtend**
A full and thorough understanding of this manual and its specific information is crucial to the assembly and maintenance of the Pixel Plus led display.

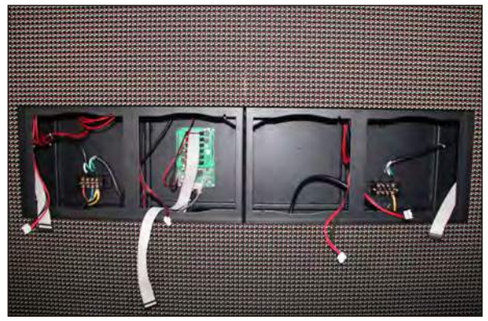
Step 7:
Connect the main net cable to the receiving card



Step 8:
Joint the main power cable to the connector



Step 9:
input to another cabinet by jointing short net cable and insert receiving card

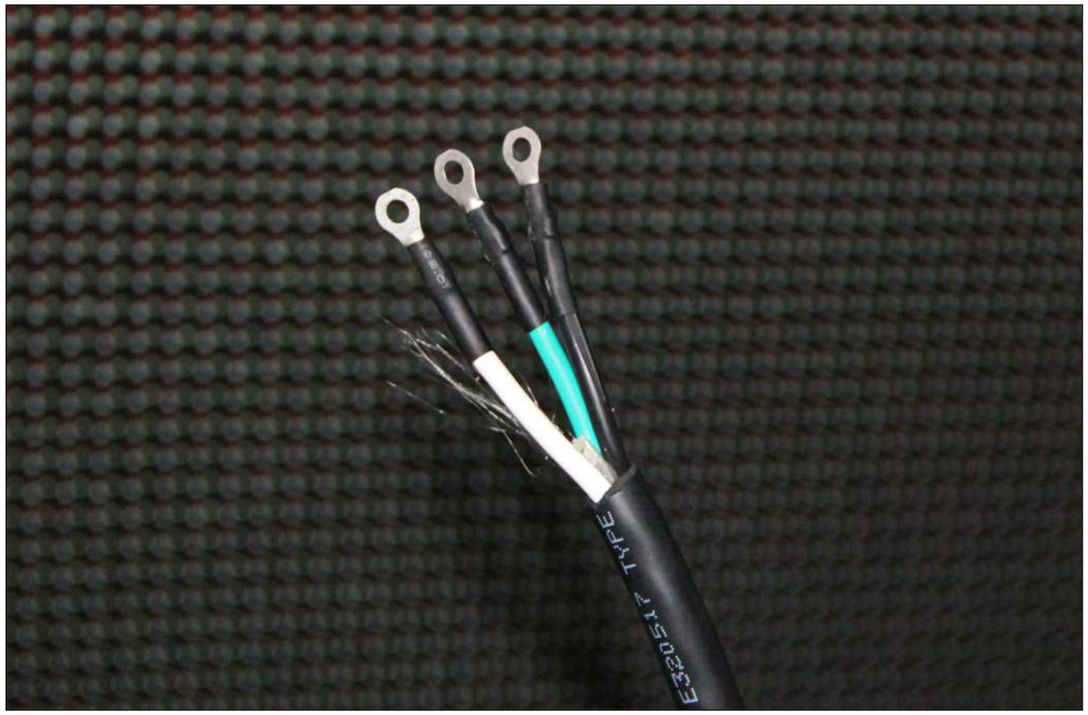


Step 10:
Connect another cabinet with power connecting cable, pay attention to the way of connecting cable in case of wrong connecting

Stage Audio Works - phone: 0861 6888 68 (SA), +27 11 791 7829 (Jhb.) +27 21 934 3661 (CT) www.stageaudioworks.com
Every effort has been made to ensure the accuracy of this manual; no liability will be accepted for unseen errors.
Stage Audio Works reserves the right to adapt, change, and/or alter this manual without prior notification.

Precautions

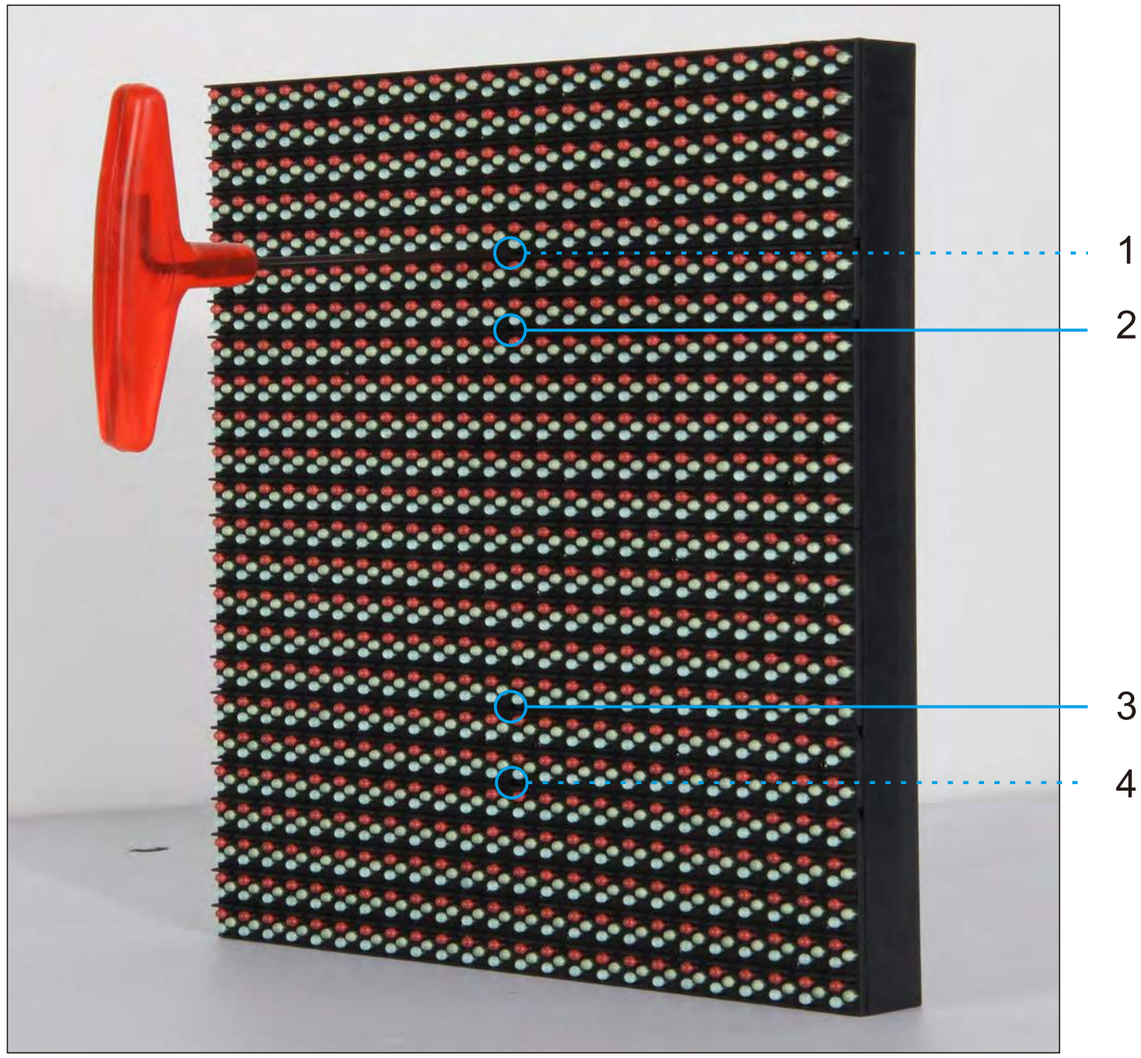
Identification power cable



Black is phase wire
White is neutral wire
Green is earth wire

User Manual for Pixel Plus **Xtend**
A full and thorough understanding of this manual and its specific information
is crucial to the assembly and maintenance of the Pixel Plus led display.

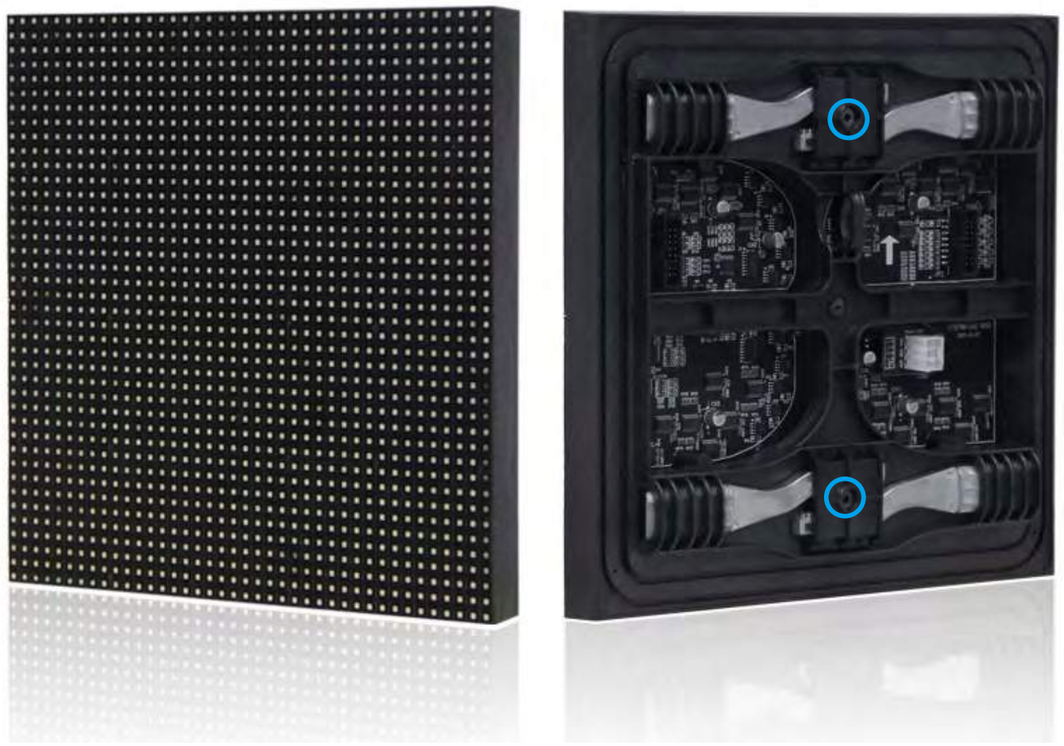
Model Disassembly



Hole1 & 4 Insert tool to loosen/tighten module
Hole 2 & 3 Don't try to insert any tool.

Maintenance

Special Tools For Fron Service



XTEND

SMD

P3.75 P4.8 P6 P8 P10

Before and after maintenance

User Manual for Pixel Plus **Xtend**
A full and thorough understanding of this manual and its specific information is crucial to the assembly and maintenance of the Pixel Plus led display.

XTEND

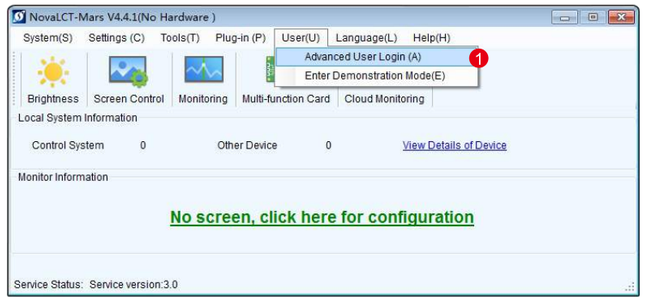
DIP

P10 P15 P20

Before and after maintenance

NovaLCT-Mars

Procedures of sending led display parameter



1 Open “NovaLCT-Mars”, click “User(U)” →“Advanced User Login(A)” (Password:666)

2 Open the “Screen Configuration” interface

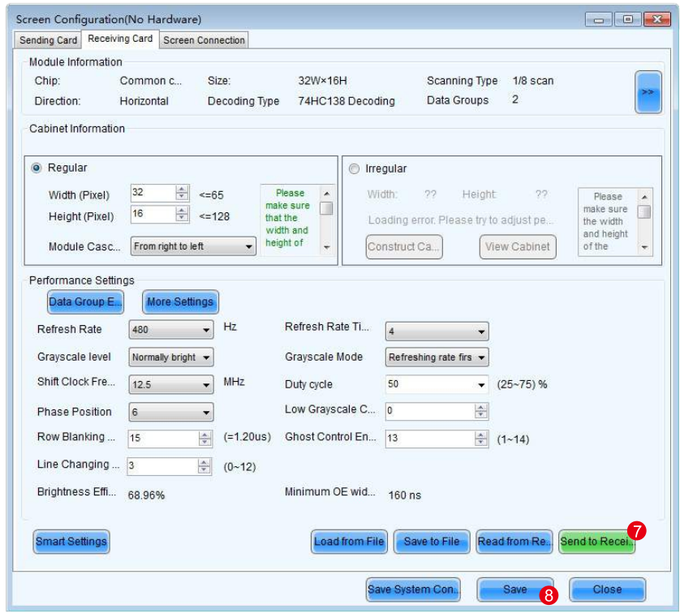
3 Click “Receiving Card”

4 Click “Load from File” and find the file which the parameter lies in.

5 Find the led display parameter in the file(*rcfg)

6 Click “open” to upload the parameter file to the control system

User Manual for Pixel Plus **Xtend**
A full and thorough understanding of this manual and its specific information is crucial to the assembly and maintenance of the Pixel Plus led display.



7 Click “Send to Receiving Card” to send the parameter file to the receiving card

8 Click “save” to save the parameter file in the receiving card without lose even power off

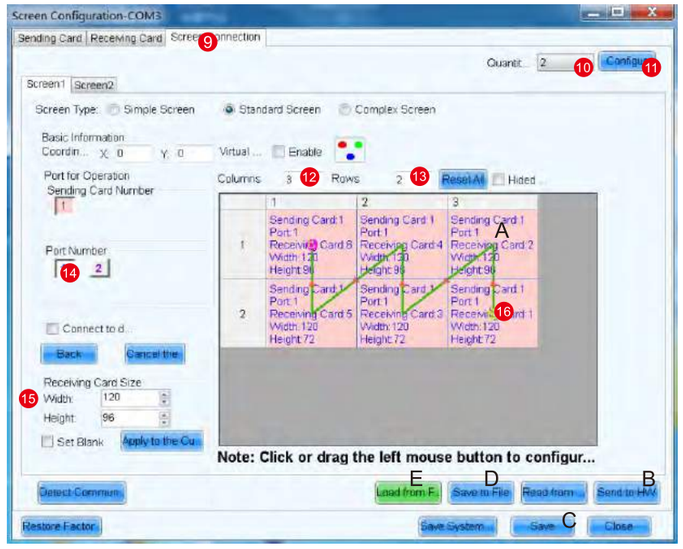
9 Open “Screen Connection” board

10 11 Select the quantity of led display and click “Configuration” to check

12 13 Fill in the quantity of receiving cards in “Columns” and “Rows” respectively.

14 Select the corresponding port number in accordance with the real connection port between the main signal cable and the sending card

15 Fill in the resolution in width and height supported by per receiving card in each cabinet



16 Look in front of the led display, if the main signal cable starts to connect with first cabinet in the right corner, then draw the screen connection from the start cabinet to the end. (according to the real connection way)

A Click from the first grid “S” to the last one “E” as the illustration shows.

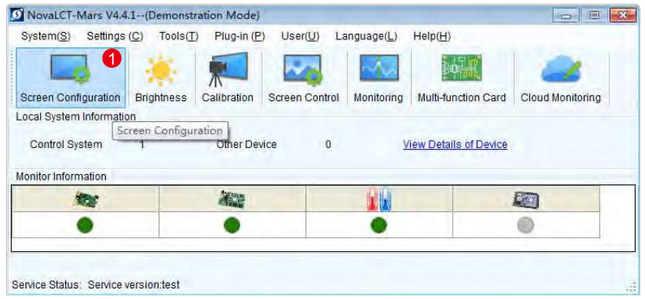
B C Click “Send to HW” and “Save” to send the parameter and then save it to receiving card

D E Click “Save to File” to save the connection parameter file(*.scr) to the computer for the convenience of next utilization. (To upload this file by click “Load from File”)

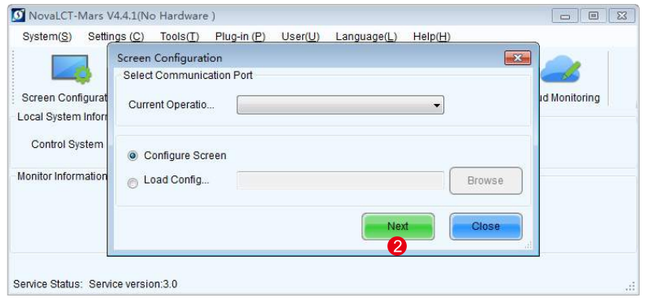
Stage Audio Works - phone: 0861 6888 68 (SA), +27 11 791 7829 (Jhb.) +27 21 934 3661 (CT) www.stageaudioworks.com
Every effort has been made to ensure the accuracy of this manual; no liability will be accepted for unseen errors.
Stage Audio Works reserves the right to adapt, change, and/or alter this manual without prior notification.

NovaLCT-Mars

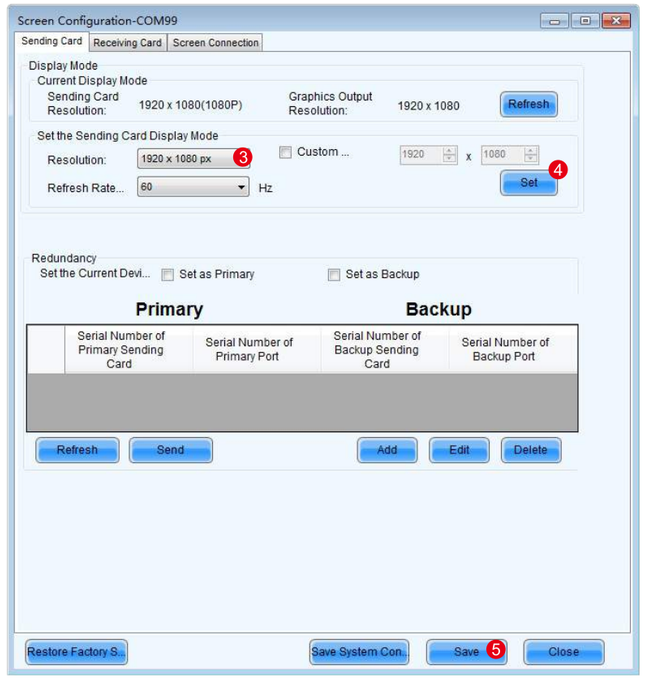
Smart Setting



1 Click “Screen Configuration” in the main interface and click “Next”



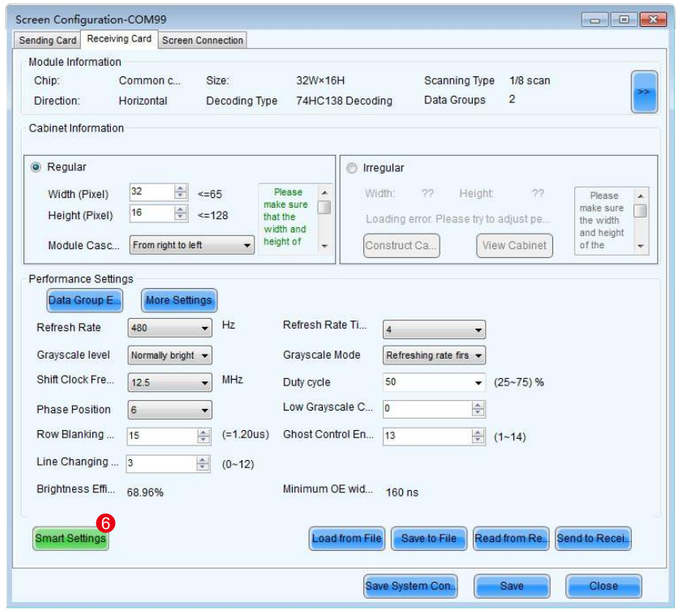
2 Click “Next” in the pop-up dialog.



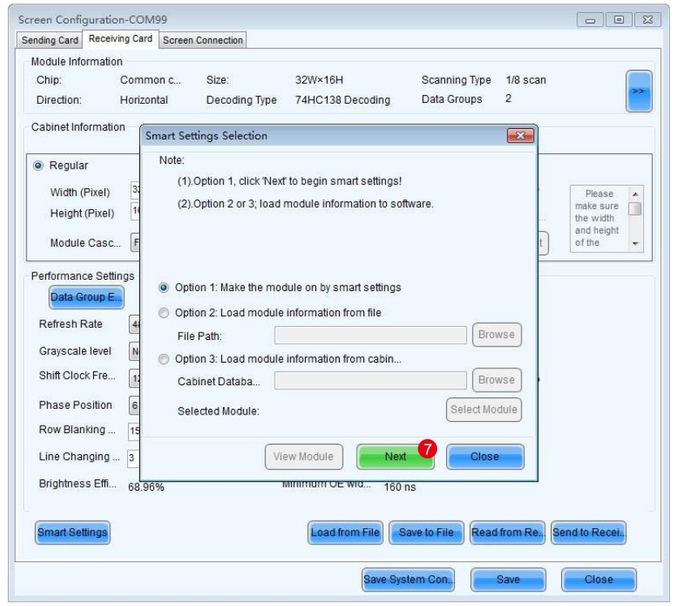
3 Select “Resolution” ,which should
4 surpass the resolution of the led display and set it same with the

5 Then click “Save”

User Manual for Pixel Plus **Xtend**
A full and thorough understanding of this manual and its specific information is crucial to the assembly and maintenance of the Pixel Plus led display.

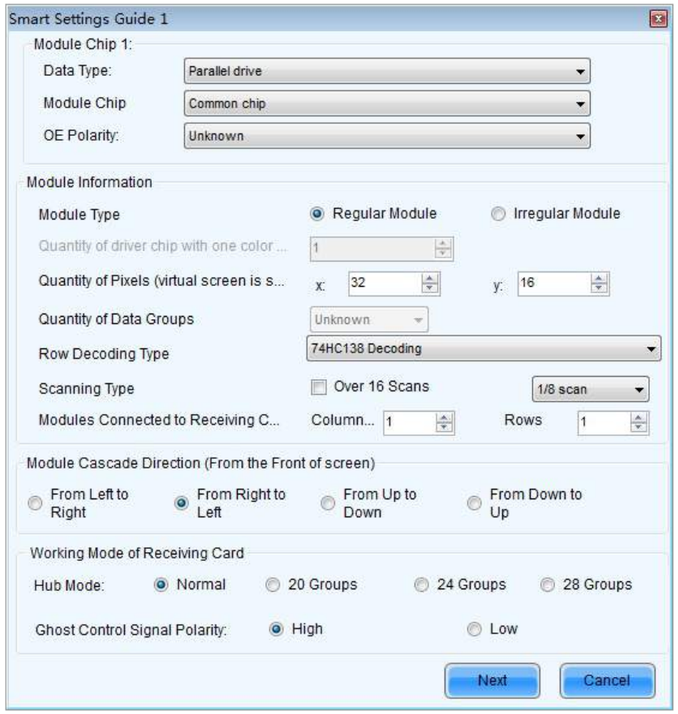


6 Enter into the “Receiving Card” board, click “Smart Settings”



7 Cick “Next” in the pop-up dialog.

Stage Audio Works - phone: 0861 6888 68 (SA), +27 11 791 7829 (Jhb.) +27 21 934 3661 (CT) www.stageaudioworks.com
Every effort has been made to ensure the accuracy of this manual; no liability will be accepted for unseen errors.
Stage Audio Works reserves the right to adapt, change, and/or alter this manual without prior notification.



Chip Type

Select the driver chip type from the list according to what is actually used for the cabinets.

OE Polarity

This option can be High Effective, Low Effective or Unknown.
Module type
The option can be regular module or irregular module. If it is set to be irregular module, the counts of driver chips for one data set and one color should be given.

Actual Pixel

This is the size of the real pixel array of a module. X represents the width and Y the height.

Decoding type

The options can be Static, 74HC138 Code，Decode595，LXY695x，Straight Decoding.

Scan Type

The options could be any scan rate between 1 scan and 16 scan or unknown.

Rows and columns of the Module in one scan board (also named receiver card)

This is the size of the module array in the cabinet which is being configured by smart setting.

Module Cascade Type

Select the corresponding option according to the module connection routing. Note that the cabinet should be observed from the front when considering the cascade direction.

Working Mode of Receiving Card

Hub mode: Select the Hub mode of the receiving card, which could be divided into normal, 20 group, 24 group and 28 group.

Ghost control signal polarity: the polarity of the signal shall be selected according to the design of the afterglow circuit

Note

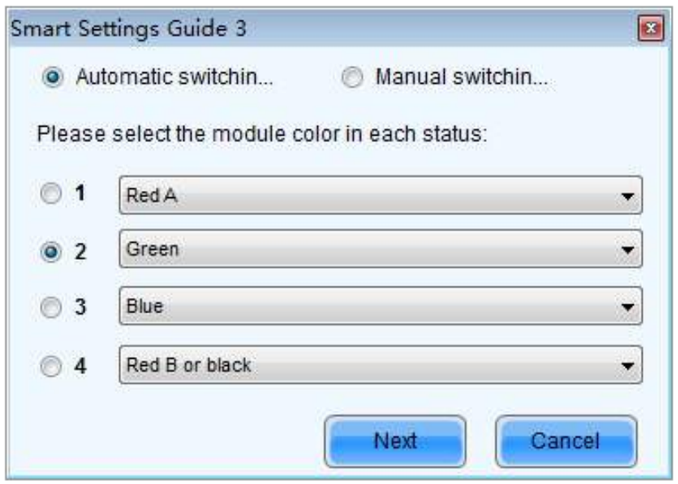
(1) If the module array size is set as the default (1 column, 1 row), the modules in the first rows of the module arrays of all cabinets will be lightened (LED lights on).

(2) Or if the module array size is set as the real numbers, the last module of each first row of the module arrays of all cabinets will be lightened (LED lights on).

8 Select “Current Module”

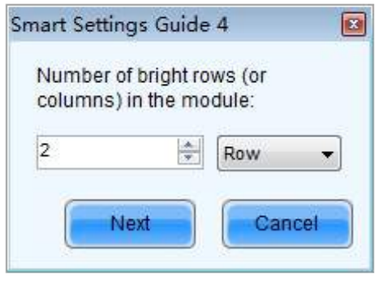
(Choose in line with the real situation and click “Next)

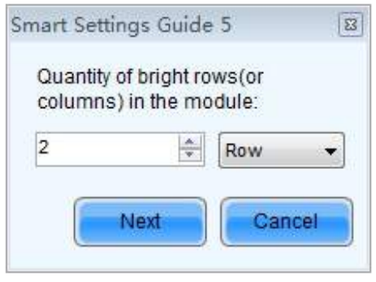
9 Choose the module color in each status



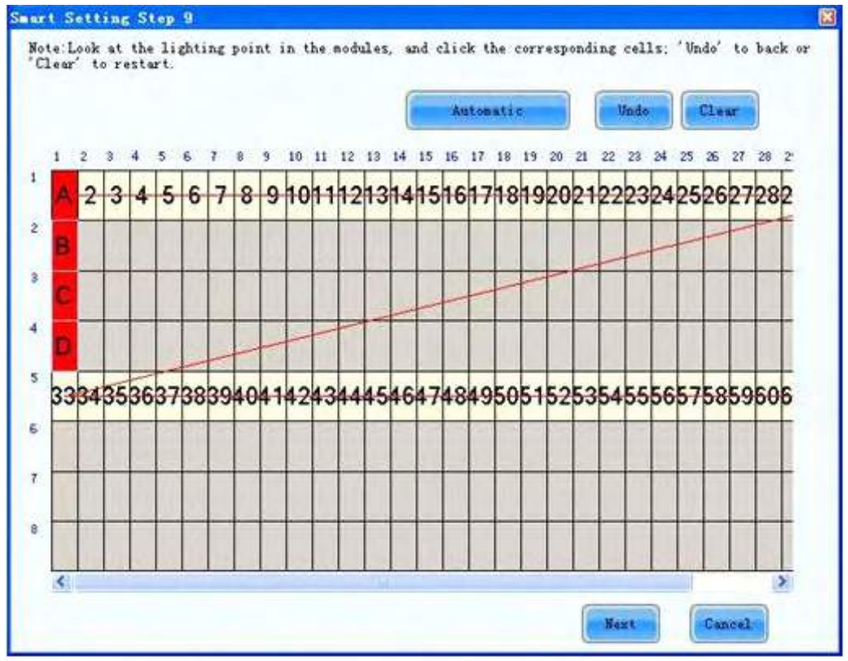
(Choose in line with the real led display showing)

10 11 Choose number of bright rows or columns in line with the real led display showing, and click “Next”.

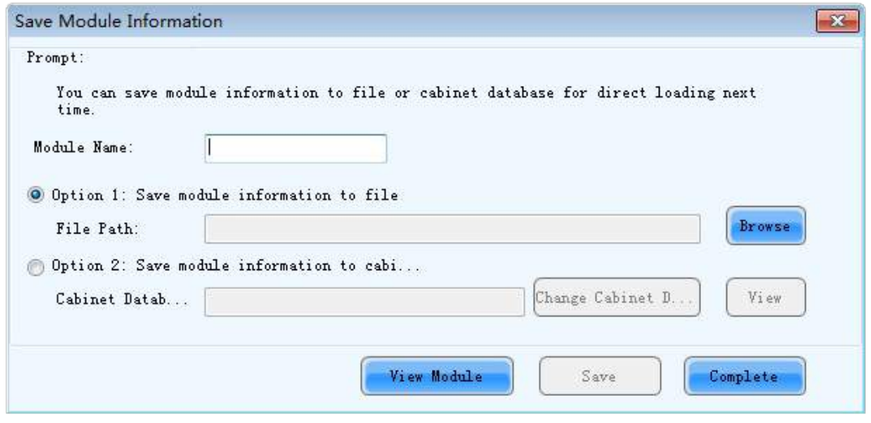




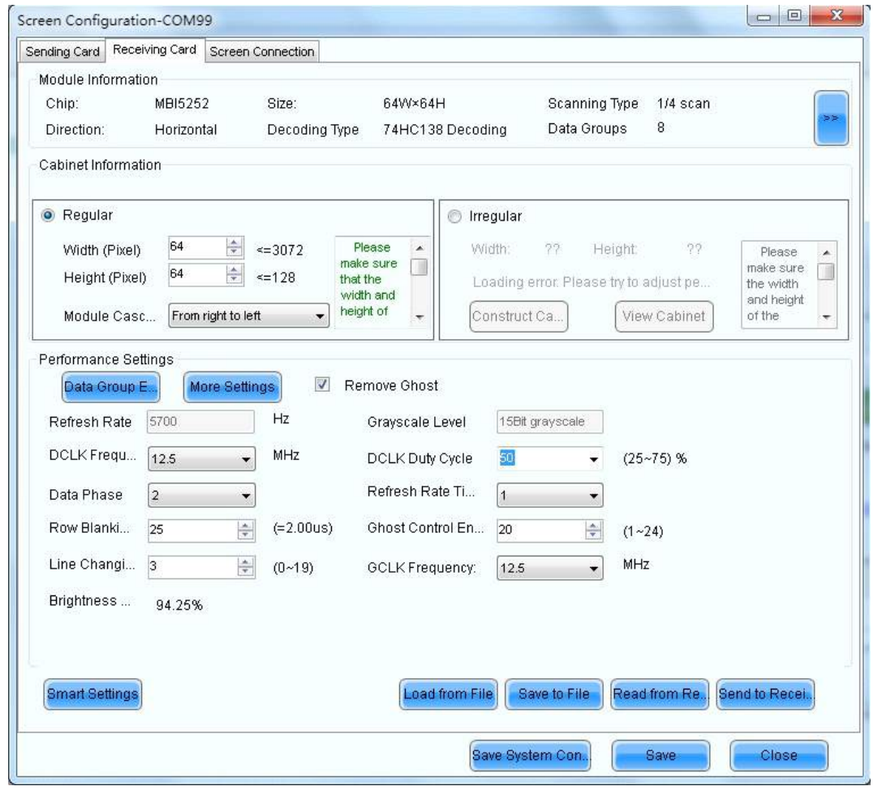
12 Click the corresponding grids according to the position of the lightened lights until no light is lightened any more. A line of the lightened lights routing will be drawn at the same time. A message indicating the finish of the Smart Setting Step will be shown when enough lights have been processed



13 Click “Complete”



14 To achieve the best performance, performance parameters should be set properly. Performance parameters setting can be through the performance setting panel.



Refresh Rate
This is the rate that images shown on a LED display are update. The higher the refresh rate is, the more stable the video is for watching.

Gray Scale
Normally, 256 levels of gray scale is enough for two-color LED displays, 4096 levels enough for indoor full color LED displays, and 16384 levels enough for outdoor full color LED displays. And apparently, the more levels the gray scale is divided into, the more exquisite the shown images will be.

Gray Mode
There are four options for Gray Mode, Brightness First, Refresh Rate First ,Gray Firsthand Performance balance.

Brightness First: Brightness First mode is for normal use and it has lower brightness loss.

Refresh Rate First : image refresh rate can be greatly increased, but the cost is 8% of brightness loss.

Gray First : Gray First mode will cost 50% brightness to get a better gray when display with low bright.

Performance balance : Balance between gray scale and refreshing, and promote refresh rate of low gray level.

Accelerate Rate
This parameter is used to increase the refresh rate. If N is selected, the refresh rate will be increased by N times.

Data Clock
This is the shift clock frequency. The shift clock frequency depends on the performance of driver chips and the circuit design of the modules. The higher the driver chip performance is and the better the module circuit is designed, the higher the shift clock frequency can be. A higher shift clock frequency will results in a larger pixel array, more gray levels or higher refresh rate that a receiver card can support.

Data Duty
This is the duty cycle for the shift clock. The shift clock frequency can be increased by changing this parameter. Normally, the duty cycle should be set as 50%.

Data Phase
By phase here refers to the time relation between the shift clock and the corresponding data to be shifted. This parameter can be used to eliminate the errors due to the phase, such as image dislocation and flashing pixels.

Low Gray Compensation
For driver chips that cannot respond to narrow pulse signals, the Low Gray Compensation parameter can be used to improve the image quality of low gray levels.

Blanking Time
This is the line blanking interval. This parameter can be used to weaken the decoy. Increase the value of this parameter if decoy is serious.

Ghost Control
This refers to the time to end the process for weakening decoy. It is used in conjunction with Blanking Time and Line Change Time to weaken the decoy.

Line Change Time
This parameter refers to the time to switch to the next row. It is used in conjunction with Blanking Time to weaken the decoy of scan mode LED displays.

(Adjust the parameters in the Performance Setting pane until the Maximum Width and Height shown in the Cabinet Info panel are larger than the pixel array size of the cabinet).

15 Click “Send to HW”(①)and “Save” (②)after configuring all the parameters,
Click “Save to File” (③)after checking the led display working properly,
and for the convenience of next utilization.