CRN PCON 200 PRO
LED Display Controller
User Manual

（V1.1）

October 2022

CONTENTS

This manual systematically introduces the CRN PCON 200 PRO product components, ports, specifications and other product contents, as well as function applications and other instructions, aiming at guiding you to start an efficient experience with CRN PCON 200 PRO;

***Note：This product will not come with a WiFi module. The application scenarios with Wifi connection in this manual shall be achieved with Wifi module provided by the client.**

The version of this manual is V1.1.

◆ WARNING ◆

This is a class A product. In a domestic environment this product may cause radio interference.

The possibility of damage to the product and the inability to recover due to ignoring the following contents of the warning is extremely high.

1) Do not invert and throw the product during handling and storage;
2) Do not tilt and collide to scratch the product during the installation process;
3) Do not drench and immerse the product in water;
4) Do not place or use the product in an environment with volatile, corrosive or flammable chemicals;
5) Do not use the product in humidity above 80% or in outdoor rainy days;
6) Do not clean the display equipment with water and chemical solvents;
7) Do not use electrical accessories that are not certified by the product manufacturer.
8) It must be ensured that the product is properly and reliably grounded before use;
9) If abnormality occurs to the product, such as abnormal smell, smoke, electric leakage or temperature happens, please cut off the power immediately and then contact the professional;
10) Please use single-phase three wire AC 220V power supply with protective ground, and ensure that all equipment use the same protective ground. No unprotected power supply shall be used, and the grounding anchor of power cord shall not be damaged.
11) There is high-voltage power inside the equipment. Nonprofessional maintenance personnel shall not open the chassis to avoid danger;
12) The power plug of the equipment shall be unplugged and handled by professional maintenance personnel under the following conditions:
    a) When the plug power cord is damaged or worn;
    b) When liquid splashes into the equipment;
    c) When the equipment falls or the chassis is damaged;
    d) When the equipment has obvious abnormal function or performance change.

1.Summary

1.1 Preface Product Introduction

CRN PCON 200 PRO is a new generation of LED display controller launched by QSTECH for LED full-color display. It integrates functions of both displaying and sending, enabling program publishing and screen control via various terminals including PC, mobile phone and pad, and supports access to the central control and operation & maintenance system to easily achieve distributed cluster management of display screens.

Featured with safety and stability, user-friendly operation, intelligent control, CRN PCON 200 PRO can be widely used in LED commercial display, radio and television broadcasting, security monitoring, enterprise service, exhibition, smart city and etc.

1.2 Product Features

1.2.1 ARM Processor Performance

- CPU: 2 x Cortex-A72 + 4 x Cortex-A53, 2.0GHz
- 4G RAM, 32G flash memory
- Mainstream video formats: MPEG1, MPEG2, MPEG4, H.264, WMV, MKV, TS, flv and etc.; Audio formats: MP3 and etc.; Image formats: JPG, JPEG, BMP, PNG, GIF and etc.
- System: Android 9.0

1.2.2 Major Functions

(1) Support maximum resolution 1920*1200@60Hz,the maximum loading area of a single device is 2.3 million pixels;

(2) Support HDMI 1.4 IN*2,HDMI 2.0 OUT*1;

(3) The widest range and the highest range both can up to 3840;

(4) Support small-screen-control-large-screen function, which enables mobile terminals to realize touch pad operation and remote control;

(5) Support screen settings including screen brightness, contrast, color temperature and current gain;

(6) Support screen parameter setting and storage;

(7) Support multi-unit cascade output, realizing splicing display of ultra-wide screen;

(8) Support audio output;

(9) Support access to the central control system that meets the RS232/UDP protocol.

2.Product Structure

2.1 Front Panel

Diagram 1 Front Panel

No.	Name	Function
1	Power button	Power-off state: short press to turn on Standby state: short press to wake up the screen Power-on state: short press to start standby mode (rest screen) Power-on state: long press for 3-5 seconds to turn down

2.2 Rear Panel

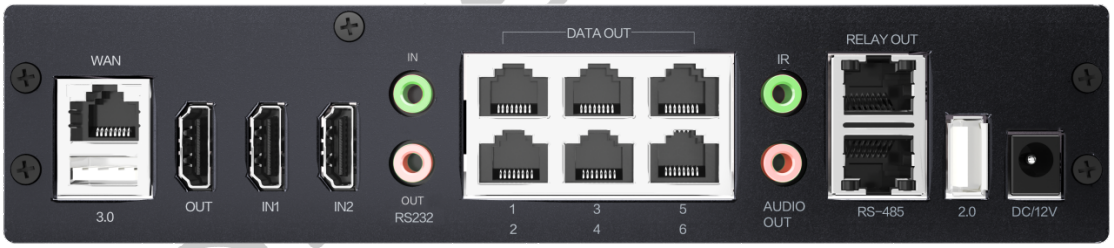
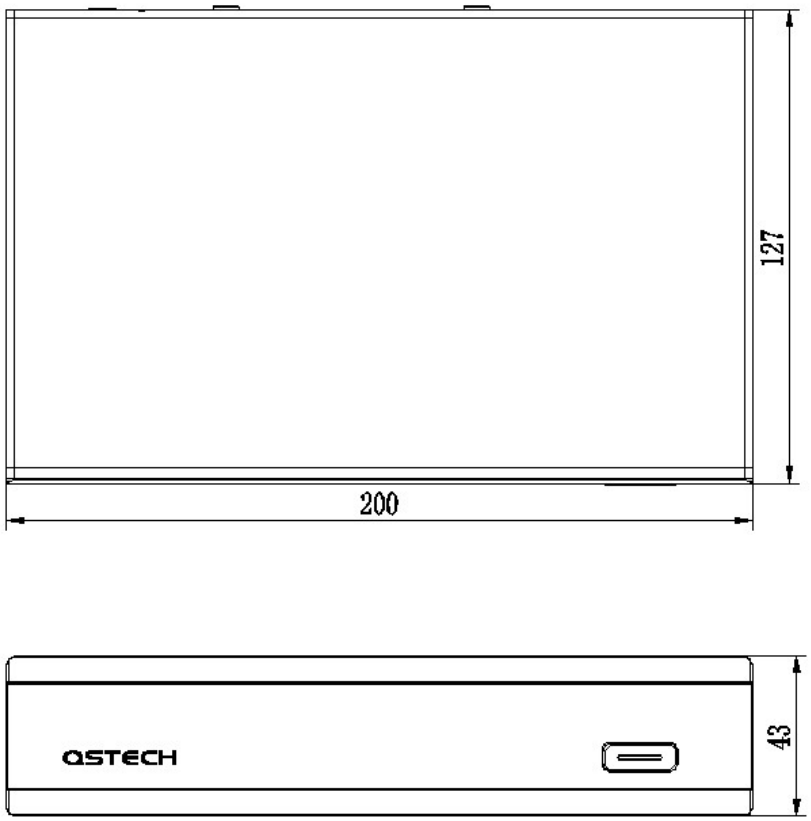


Diagram 2 Rear Panel

Input Port		
Type	Quantity	Description
HDMI IN	2	HDMI 1.4 input
Output Port		
Type	Quantity	Description
HDMI OUT	1	HDMI 2.0 Output

Network port	6	6-way Gigabit Ethernet port output, using standard RJ45 interface Single network port loading area: 650,000 pixel dots
Control Port		
Type	Quantity	Description
IR	1	Use standard 3.5mm headphone jack to realize long-distance IR signal transmission through audio male-to-female extension cable
AUDIO OUT	1	3.5mm audio output port
WAN	1	WAN port, can be connected to the host computer or LAN/public network to conduct program publishing and screen control
RELAY OUT	1	Extended port, used for ON/OFF control, and etc.
RS-485	1	Protocol port, used for brightness sensor connection
RS232	2	Can be connected to the central control system, and used for multi-units cascade application
USB 3.0	1	Used for USB flash drive connection, support reading and playing multimedia files and firmware upgrade
USB 2.0	1	Used for USB flash drive connection, support reading and playing multimedia files and firmware upgrade
Power Input Port		
DC/12V	1	DC/12V Power input port

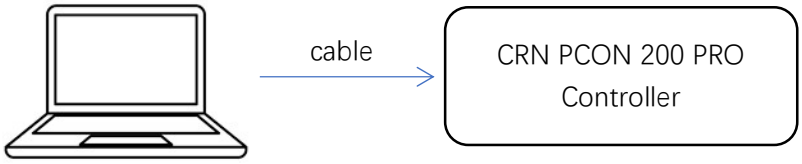
2.3 Product Dimensions



Appearance Dimension Diagram

3.Connection Modes

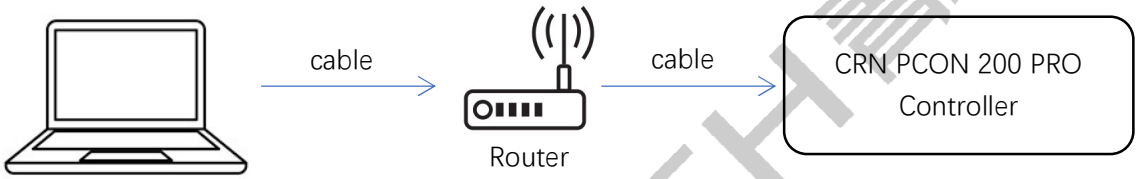
3.1 Network Cable Connection



Configuration Requirement: In network setting on PC,manually input IP address:192.168.100.1**(1** stands for 100 code segment)

*Notice:Default IP address for the controller is 192.168.100.180.The IP adress for PC shall not be set the same as the controller's.

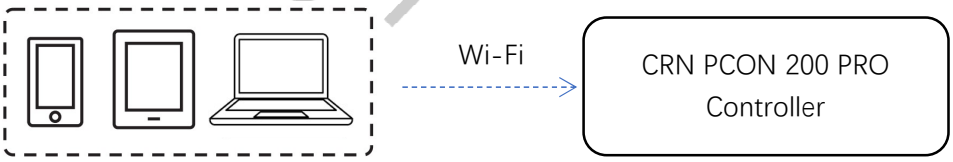
3.2 Wired LAN Connection



Configuration Requirement: automatically obtain IP address by setting DHCP on PC via wired network.

3.3 Wi-Fi Connection

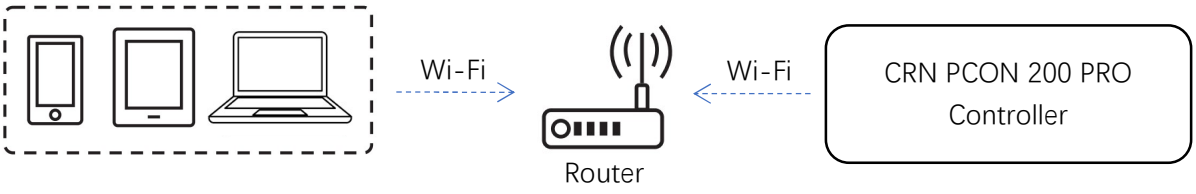
CRN PCON 200 PRO has built-in Wi-Fi with default SSID: led-box-xxxx (xxxx indicates a random code of each controller, e.g. led-box-b98a), and default password: 12345678.



Configuration Requirement: None.

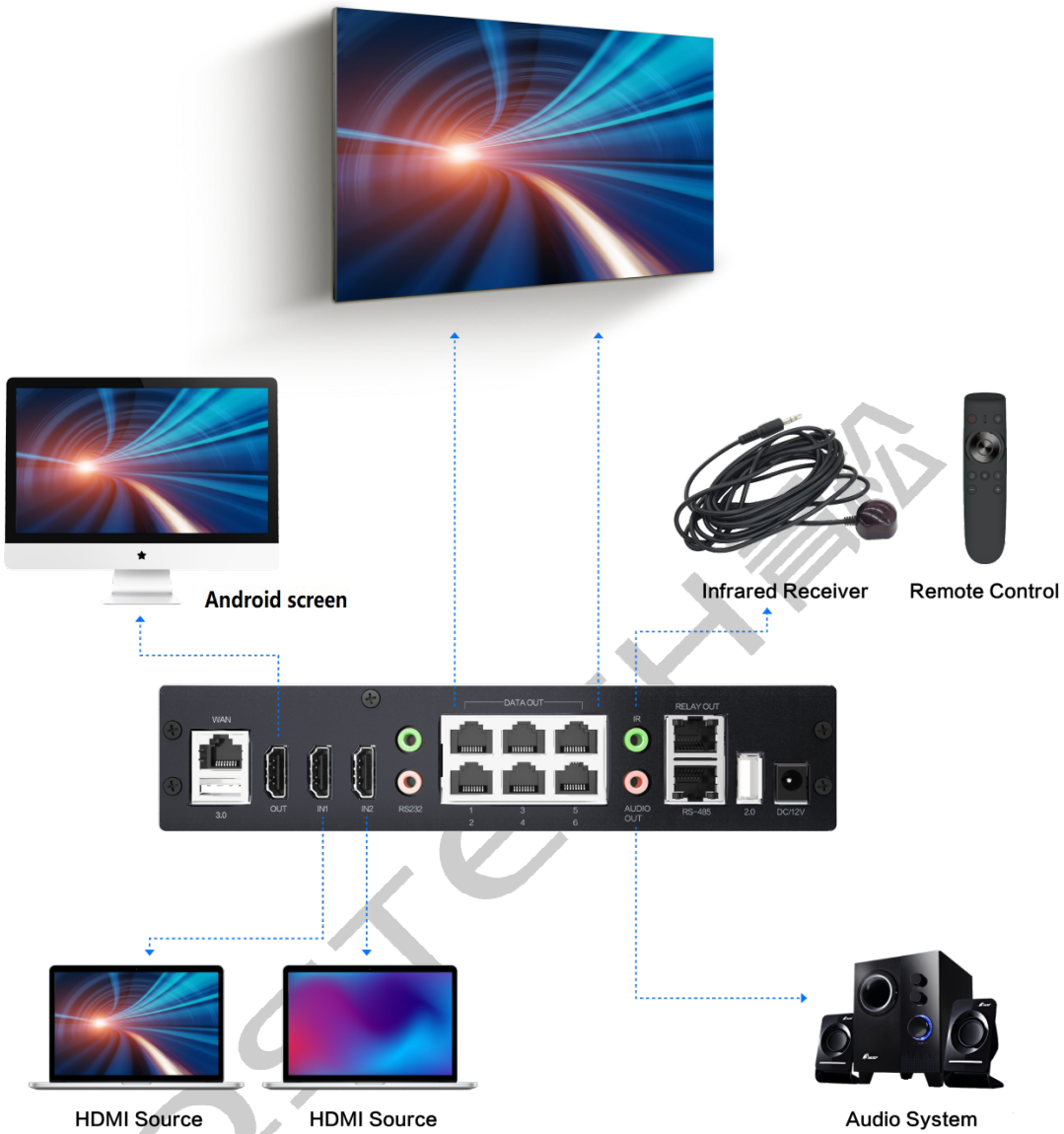
3.4 Wireless LAN Connection

Products that support Wi-Fi Sta mode can adopt this connection mode.



Configuration Requirement: Login LedConfig on mobile devices or MaxConfig PC desktop and connect the router Wi-Fi AP.

4.Signal Connection Scenario



5. Software Configuration Software

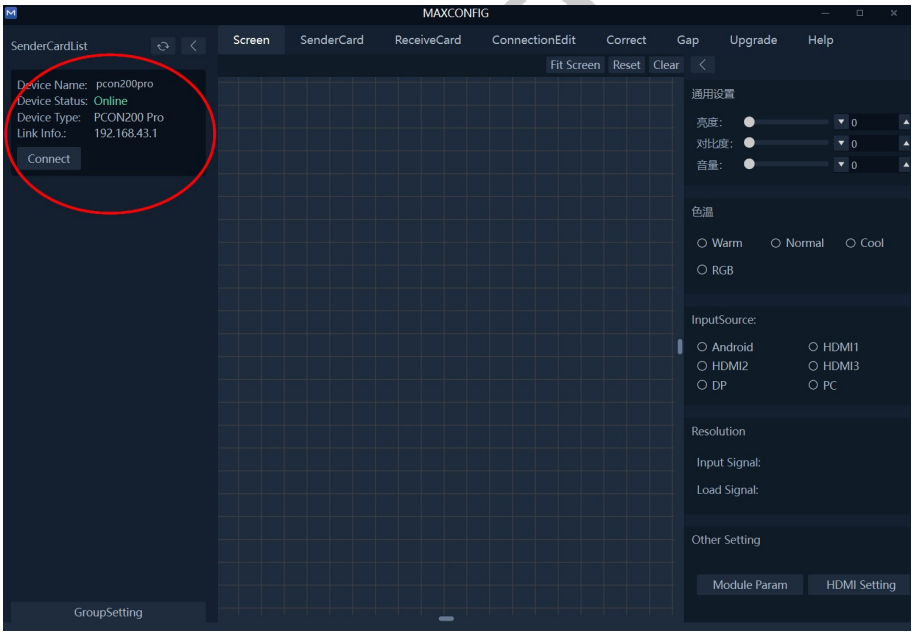
Name	Mode	Introduction
MaxConfig	PC User Edition	A LED display control software used for screen configuration and display effect adjustment.

5.1 Install MaxConfig control software

① Get the MaxConfig installation package on the specified server and extract maxconfig3_ Setup_ offline. Exe file, double-click to enter the installation mode, and there will be a shortcut icon on the desktop after installation;

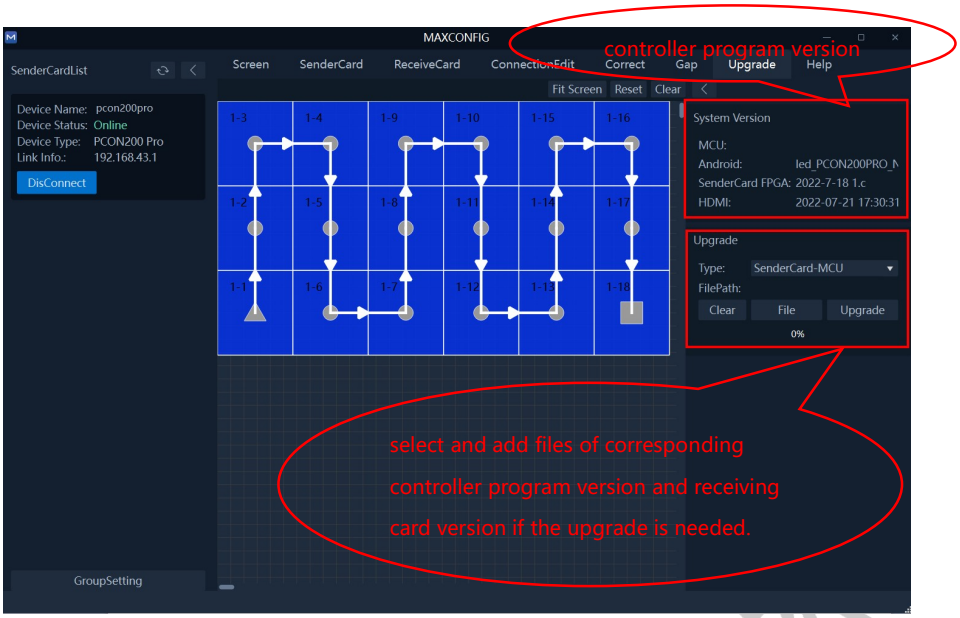
② Power on CRN PCON 200 PRO, search the Wi-Fi hotspot of the controller on the PC via wireless network, double-click the hotspot to connect, input password: 12345678, and check that whether the PC is connected to the Wi-Fi hotspot successfully;

③ Double-click on the shortcut icon of PC to start the software, click “connect” after detecting the controller.



5.2 Check controller sending card program (check program version)

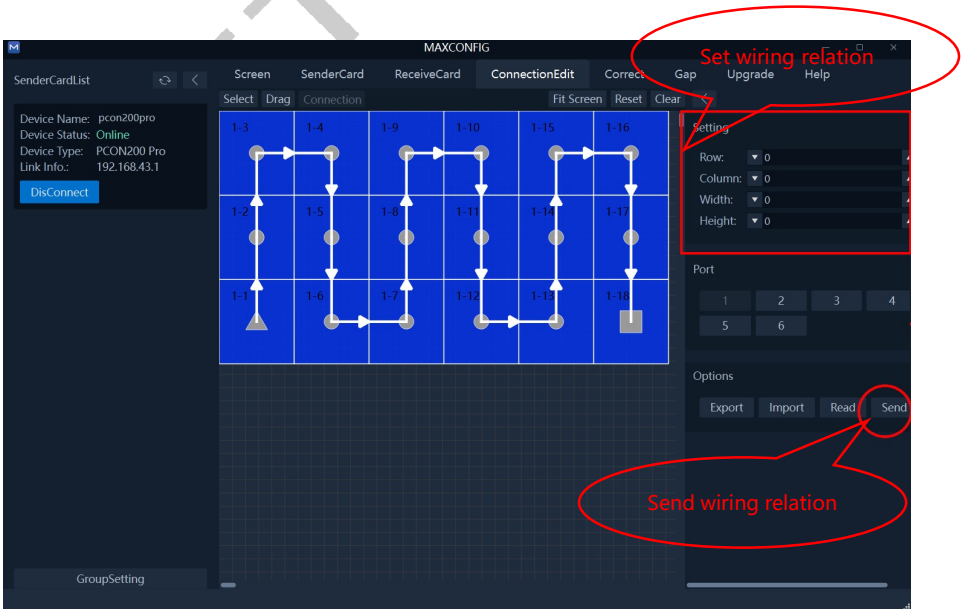
Select the “upgrade” to query the controller Android program version, MCU program version, sending card FPGA program version and HDMI program version on the interface, as well as receiving card program version on the receiving card control interface. Each program shall be obtained from the specified server with correct package to upgrade. Do not power off during the upgrade process.



Note: configuration of different products and parameters shall be found in the specified server product category.

5.3 Edit configuration wiring relation (according to onsite screen Android wiring relation mode)

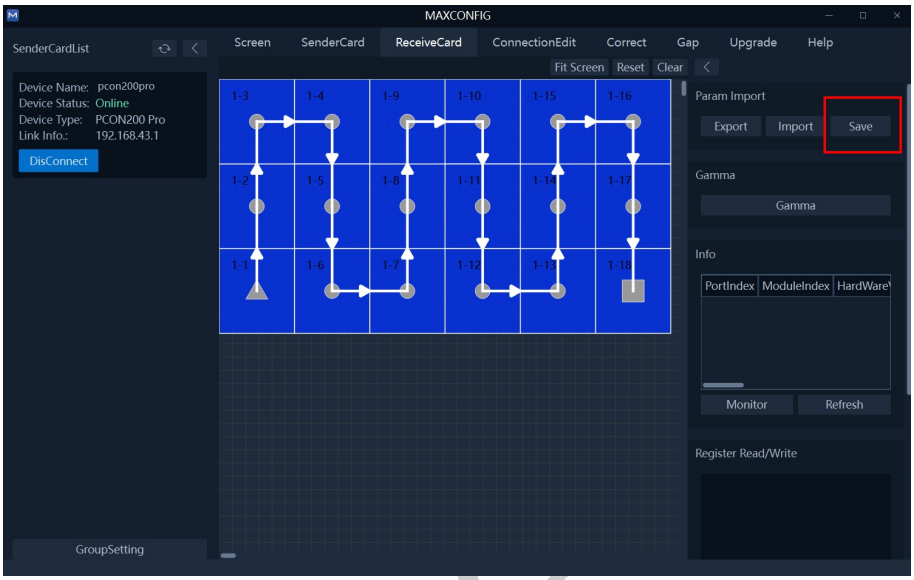
Select “wiring relation editing” to enter the editing interface, and edit wiring relation based on actual cabinet size and wiring mode applied for the screen and then click “send”. A "sending successfully" prompt will pop up in the lower left corner after the operation is successful. If the transmission fails, please check the wiring stability and resend.



Note: if the correct wiring relation is not sent, the number of receiving cards read by software may be less than the actual one.

5.4 Send and save parameters (get corresponding product parameter file in specified server)

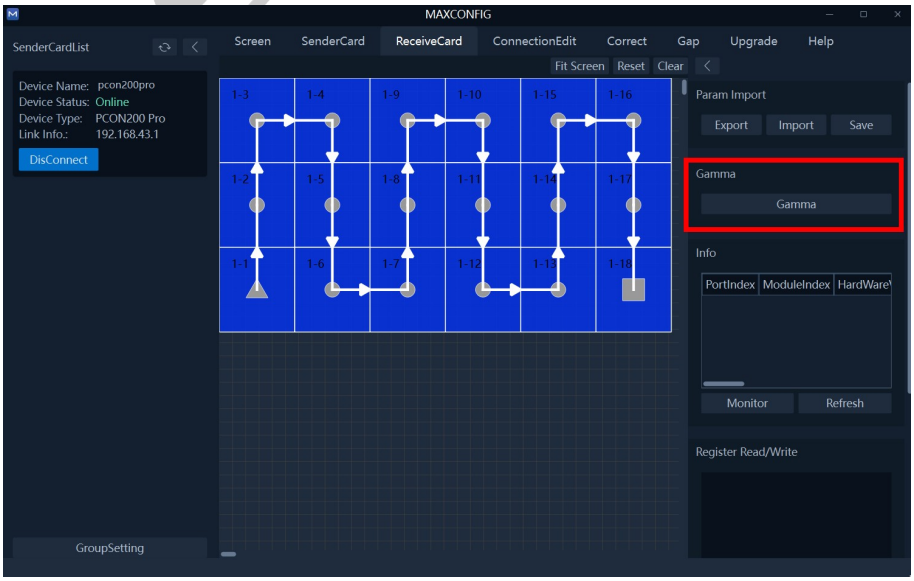
Select “receiving card” to enter the editing interface, select and click the “import” button in the lower right corner, import the parameters of 9K size and send parameters by clicking “write”. And then click the “save” button twice to save the imported parameters (without clicking “save”, parameters shall be cleared after power off, and the screen displaying will be in black or disorder status).



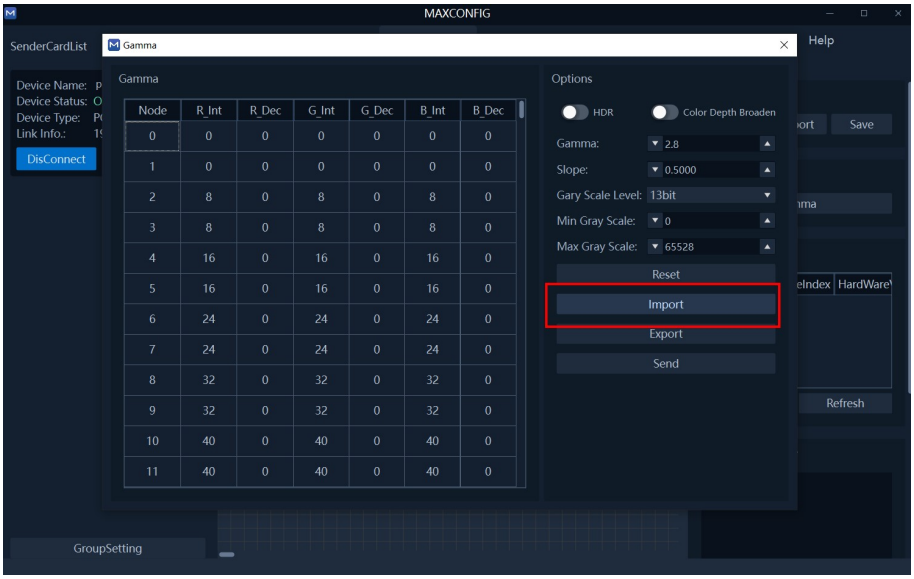
Note: after the sending step is successful, a prompt “sending successfully” will pop up in the lower left corner. If the step fails, please check wiring stability and repeat above step.

5.5 Send Gamma file

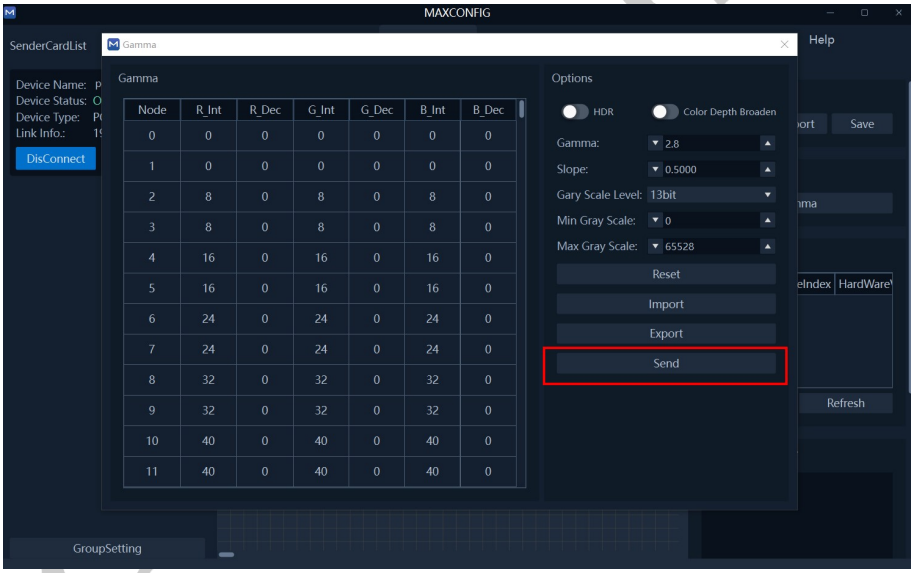
① Select “Gamma” button on **“receiving card”** interface to start editing.



② Enter Gamma editing interface and click “import” button.

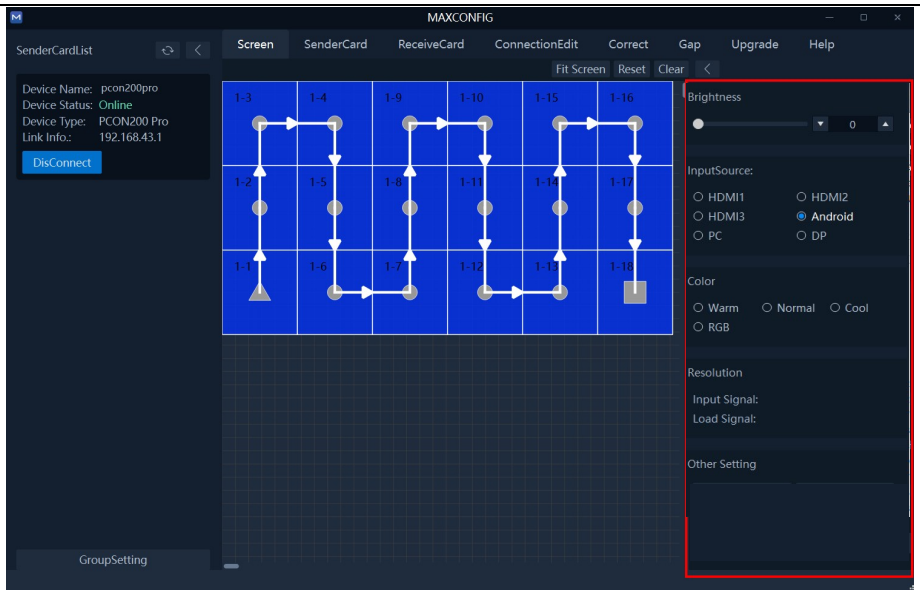


③ Select the “Gamma” file suitable for on-site screen, click "send" button, and screen will display normally after sending the gamma file.



5.6 Check screen adjustment is normally displayed

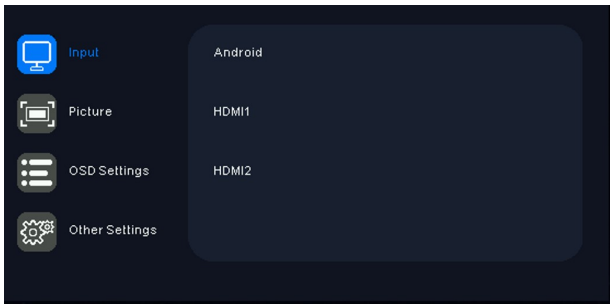
1.Select “screen” to enter the editing interface, click mouse to adjust **brightness, input source, color** and other functions, and observe whether the screen displaying has corresponding function changes.



Power off and restart the screen and controller, and then check whether image displaying is normal.

6. Controller OSD Menu Function Instructions

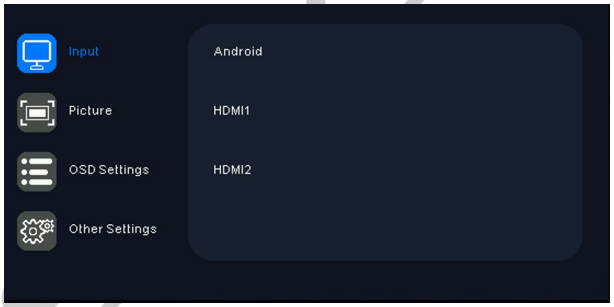
Call up the menu through remote control or the “menu” option on the MaxConfig mobile application - remote control function:



6.1 Input Signal Setting

① Select “signal input” setting by remote control or find it in the “menu” option on the MaxConfig mobile application-remote control function.

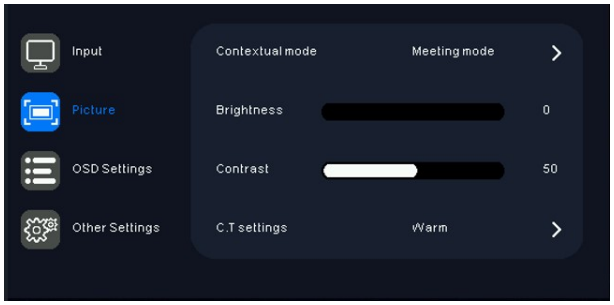
② Select and set the input source to be accessed by “OK” and “Up & Down” buttons on the remote control, or options on MaxConfig setting page.



6.2 Picture Quality Setting

① Select “picture quality” setting by remote control or find it in the “menu” option on the MaxConfig mobile application-remote control function.

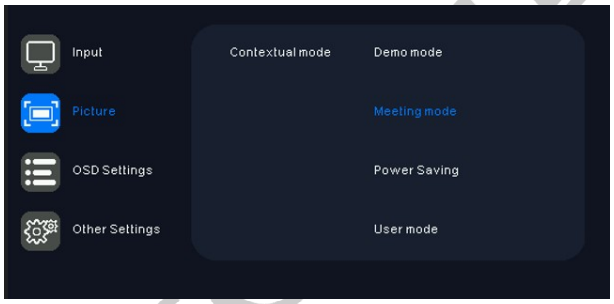
② Set scene mode, brightness, contrast, color temperature and aspect ratio to achieve ideal picture quality for various application scenarios by “OK” and “Up & Down” buttons on the remote control, or option bars on MaxConfig setting page.



6.3 Scene Mode Setting

① Select “scene mode” by remote control or find it in the “picture setting” of “menu” option on the MaxConfig mobile application-remote control function.

② Enter the page to select demonstrate mode, meeting mode, power saving mode, user mode for onsite needs by “OK” and “Up & Down” buttons on the remote control, or option on MaxConfig setting page.



6.4 Color Temperature Setting

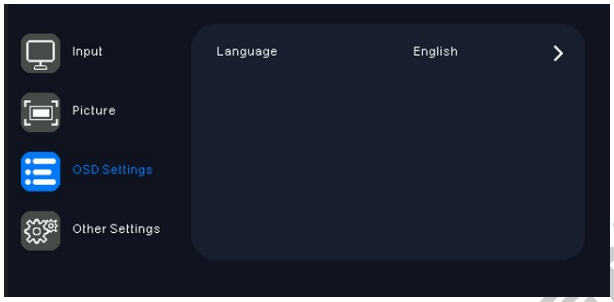
① Select “color temperature” by remote control or find it in the “picture setting” of “menu” option on the MaxConfig mobile application-remote control function.

② Enter the page to select nature, design, warm color, cold color and user mode for onsite needs by “OK” and “Up & Down” buttons on the remote control, or option on MaxConfig setting page.

6.5 Menu Setting

① Select “menu setting” by remote control or find it in the “menu” option on the MaxConfig mobile application-remote control function.

② Enter the page to select language, menu horizontal position and menu vertical position for onsite needs by “OK” and “Up & Down” buttons on the remote control, or option on MaxConfig setting page.



6.6 Language Setting

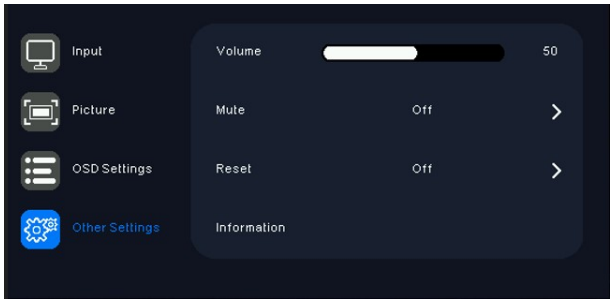
① Select “menu setting” by remote control or find it in the “menu” option on the MaxConfig mobile application-remote control function.

② Enter the page to select language, menu horizontal position and menu vertical position for onsite needs by “OK” and “Up & Down” buttons on the remote control, or option on MaxConfig setting page.

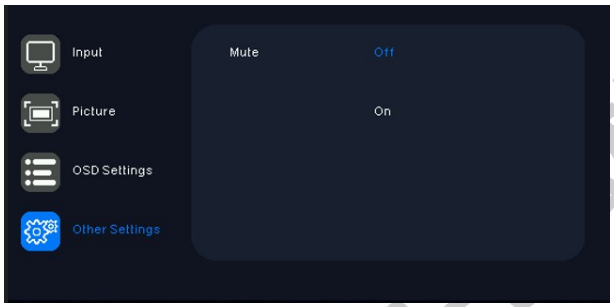
6.7 Other Settings

① Select “other settings” by remote control or find it in the “menu” option on the MaxConfig mobile application-remote control function.

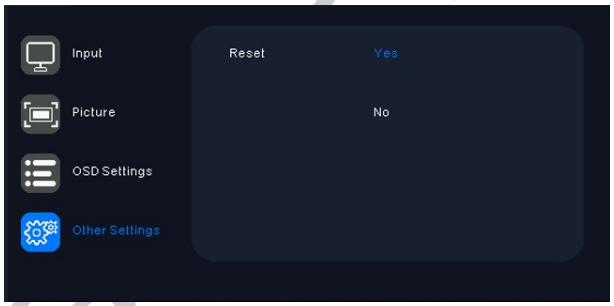
② Enter the page to select volume, mute and reset for onsite needs by “OK” and “Up & Down” buttons on the remote control, or option on MaxConfig setting page.



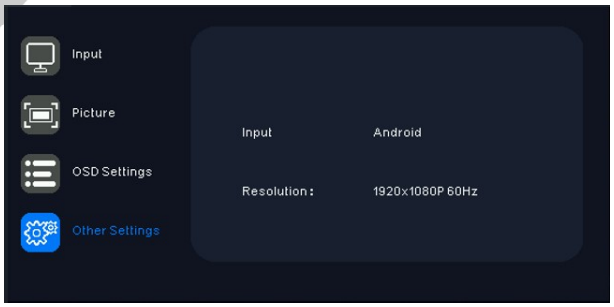
1) Select “volume” to adjust sound volume according to application scenarios. Shortcut button can also be found on the remote control.
2) Select “mute” set the function.



3) Select “reset” to set the function.



4) Select “information” to view the basic screen information including input signal port and output resolution.



7.Specifications

Electrical Parameter	
Input Power	AC100-240V 50/60Hz
Rated Power	30W
Environmental Parameter	
Operating Temperature	-10°C~60°C
Operating Humidity	10%~90% , no frost
Storage Temperature	-20°C~70°C
Storage Humidity	10%~90% , no frost
Product Parameter	
Dimensions (L*W*H)	200*127*43mm
Net Weight	0.95kg
Gross Weight	0.8kg

8.Common Troubleshooting

8.1 Black indicator

1> Check if the power supply is normal.
2> Check if the device ON/OFF switch is turned on.
3> Check if the device is in standby mode.

8.2 Inoperative Wireless Screen Share Function

1> Check if the wireless screen share transmitter is plugged in.
2> Check if the wireless screen share transmitter is paired. Pairing needs to insert the wireless screen share transmitter into the USB port of the display, and then waiting for the prompt to indicate that the pairing is successful.
3> Check if the driver software is installed on the computer. If the screen is not automatically installed after being inserted into the USB port of the computer, user needs to manually enter My Computer, and find the corresponding drive letter on the device driver, and double-click to install.

8.3 No image display after connecting to the computer with HDMI cable

1> Check if it is currently in the HDMI channel.
2> Check if the HDMI cable on the whole unit and the external computer is off or in poor connection.
3> Check if the computer graphics card is set to copy mode.
4> Check if the graphics card output is normal.

9.Special Statement

1> Intellectual Property Rights: The hardware design and software programs of this product are protected by copyright. The contents of this product and the manual shall not be copied without the authorization of the company.
2> The contents of this manual are for reference only and do not constitute a commitment of any kind.
3> The company reserves the right to make improvements and changes to the product design without prior notice
4> Note: HDMI, HDMI HD Multimedia Interface and HDMI logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.