SYSOLUTION

Smart Android

Control Card Y7X

Instructions

Version：Ver.2.2

Statement

Dear user friend， thanks for choosing Shanghai Xixun Electronic Technology Co.， Ltd. (hereinafter referred to as Xixun Technology) as your LED advertising equipment control system. The main purpose of this document is to help you quickly understand and use the product. We strive to be precise and reliable when writing the document, and the content may be modified or changed at any time without notice.

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Update Record

No.	Version	Details	Date
1	Ver.1.0	Initial	2020.09.27
2	Ver.2.0	Add content	2020.10.09
3	Ver.2.1	Content change	2020.02.26
4	Ver.2.2	Content change	2021.04.23

The document is subject to change without prior notice.

Catalogue

Overview

Y7X is a highly integrated and high- performance quad-core Cortex-A17 core controller, can run up to 1.8 GHZ, with 2G memory and 16 GB EMMC high-speed flash memory. It also supports synchronous HDMI output signals. It is more suitable for commercial display fields,such as mirror screen, advertising machine, lamp pole screen and so on.

With the developing of LED display industry, need to support HDMI output monitoring in some occasions, as well as wired network, 4G, WiFi wireless transmission, remote cluster control, and need to be able to control through mobile phones.

Functions And Features

1. Support FCC, CE certification；

2. Lora wireless calibration multi-screen synchronization；

3. Onboard WiFi module, realize wireless communication, support AP mode, Station mode；

4. Support secondary development, support remote cluster control of cloud platform；

5. Built-in Web Sever, support for local web page production, support computer, iPhone, Android phone, tablet stand-alone program editing, cross-platform system fully compatible；

6. Video hard decoding, support 1080P；

7. Dual network ports with super load capacity, 720 pixels(width)*1280(height) pixels resolution；

8. Support dual network ports loop backup

9. Support full color static to 32 scan module；

10. Conventional chips with high refresh, high brightness, and high grayscale; full chip support: support full range drivers IC such as Juji, Jichuangbeifang, Riyuecheng, Mingyang, etc；

11. Industrial-strength onboard Flash: 8GB; highly integrated；

12. Support USB camera；

13. Support receiving card storage parameters (for use with the ninth generation receiving card); Supporting software: LedOK Express.

Interfaces
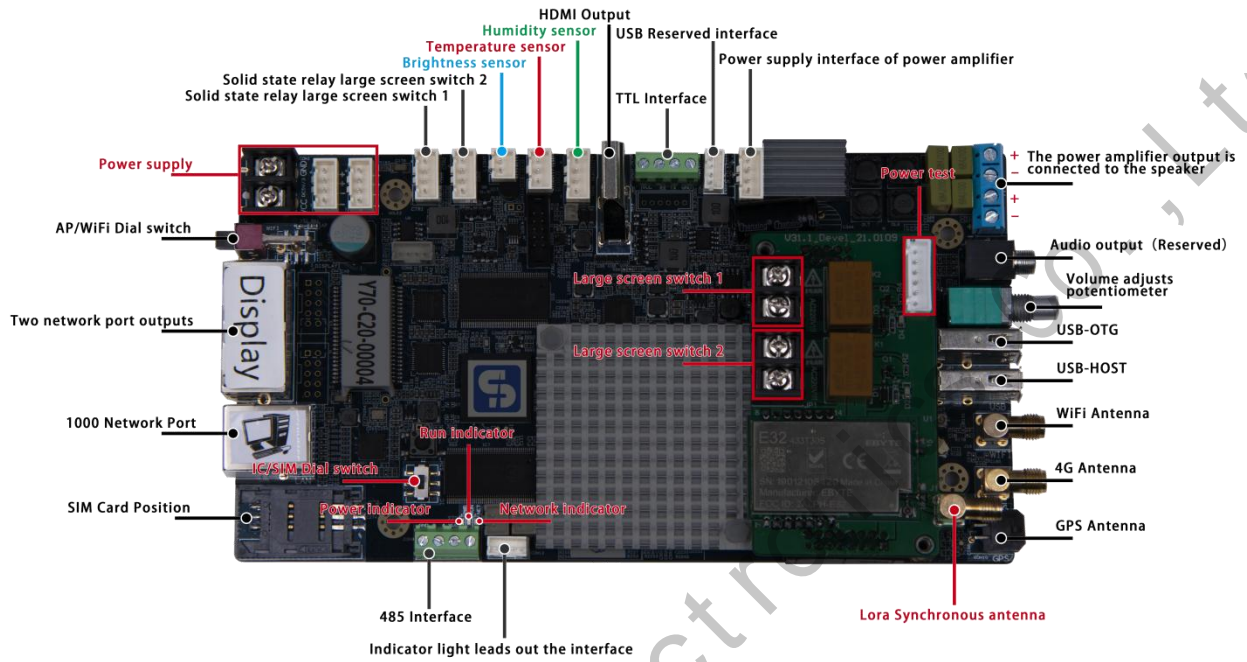
Y7X Interfaces

Technical Parameters

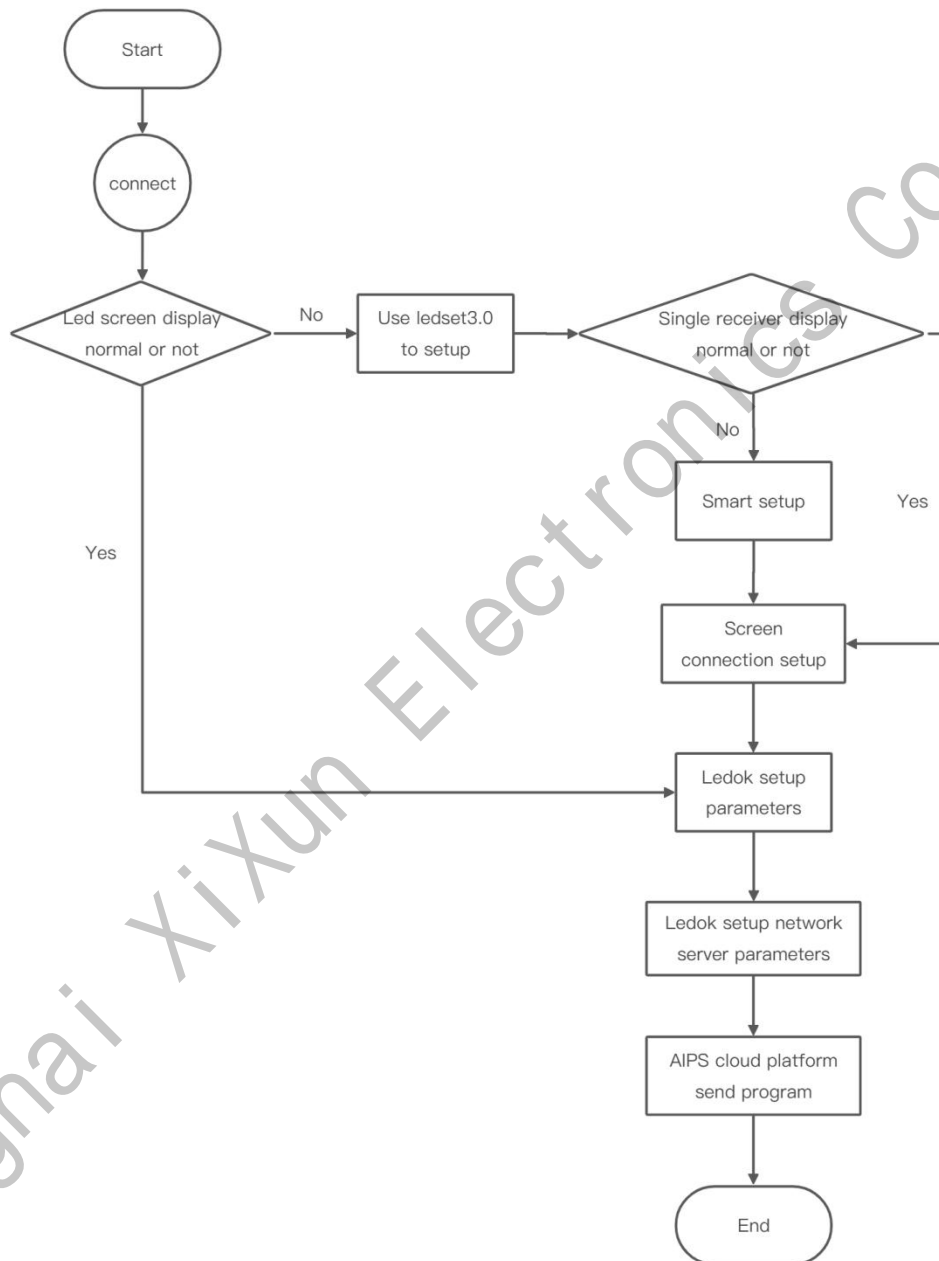| Main Hardware Indicators	
CPU	Rui core micro RK3288 Four core 1.8GHz Cortex-A17
GPU	Four core GPU Mail-T764
Memory	2G
Memory storage	EMMC 16G
Built-in ROM	2KB EEPROM
Decoding resolution	3840*2160 THE maximum support
On load Pix	1920*1080
Operation System	Android 7.1
Play mode	Support loop, timing, insert and other playback modes.
Network support	Ethernet, support WiFi/bluetooth 4.0, wireless peripheral expansion.
Video display	Support MP4 (AVC/H.264、DIVX、XVID) Format
USB2.0 interface	1 个 USB HOST、1 个 USB OTG
Serial port	IIC / TTL / 485
GPS	External GPS（optional ）
WiFi、BT	Built in WiFi，BT4.0（Optional ）
4G	Built-in 4G module communication (optional)
Ethernet	10M/100M/1000M Adaptive Ethernet
HDMI output	Support

audio output	3.5mm audio port
Power amplifier output	15 V power supply 8Ω BTL syndromes of Maximum power load conditions for2*15W,the smaller the power voltage,the smaller the horn
Configuration Software	LedOK Express

Hardware Connection Diagram

Ribbon cable

Ribbon cable

5V Power

Ethernet cable

5V Power

Ethernet cable
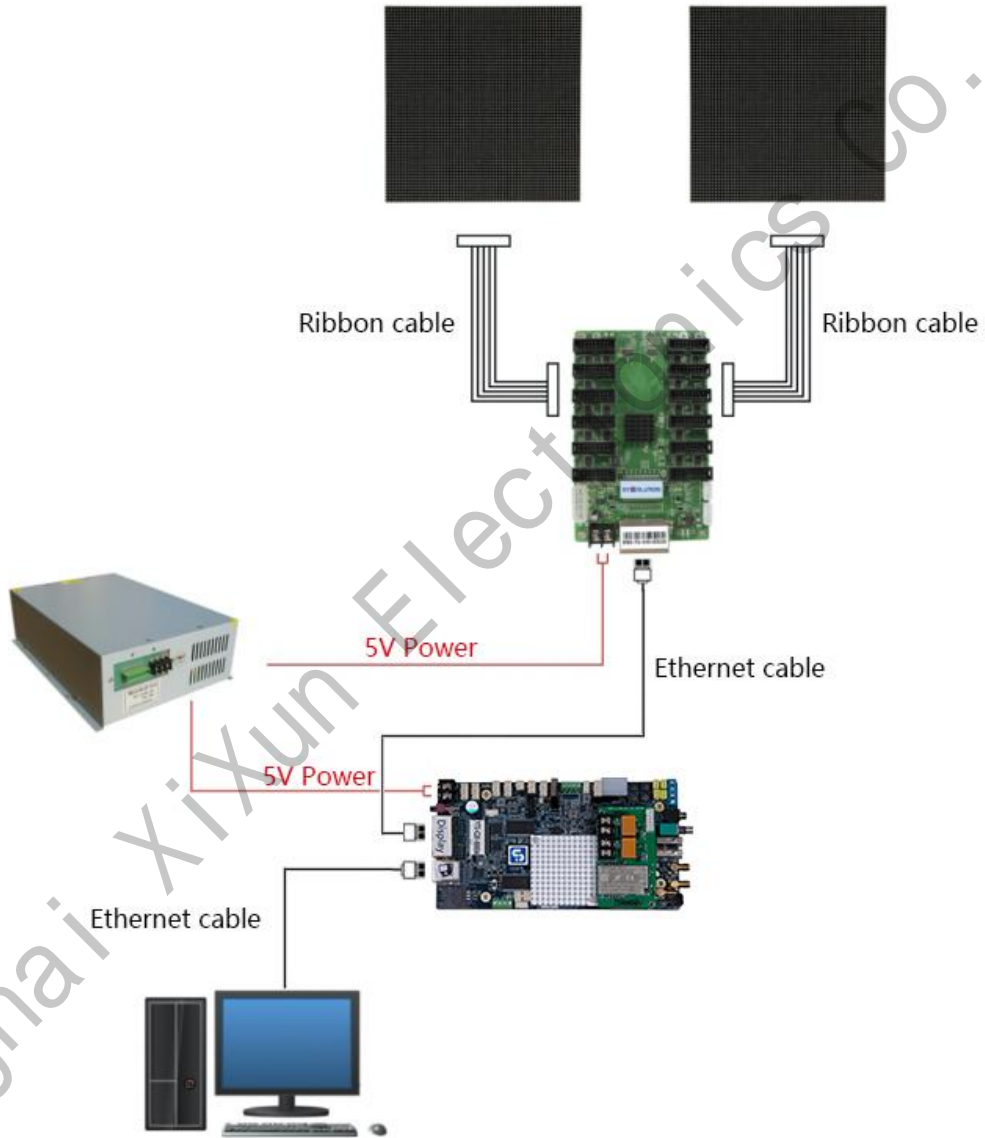
Software Operation Procedures

```
                    ┌──────────┐
                    │  Start   │
                    └────┬─────┘
                         │
                         ▼
                     ╭────────╮
                    (  connect )
                     ╰────┬───╯
                          │
                          ▼
           ◇─────────────────◇      No    ┌──────────┐        ◇───────────────────◇
          ╱ Led screen display ╲─────────▶│ Use ledset3.0 │────▶╱ Single receiver display ╲
          ╲  normal or not     ╱         │   to setup    │      ╲    normal or not        ╱
           ◇─────────────────◇           └──────────┘           ◇───────────────────◇
                    │                                                      │
                    │                                                  No  │           Yes
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                                                                 │ Ledok setup network │
                                                                 │ server parameters  │
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                                                                 ┌────────────────┐
                                                                 │ AIPS cloud platform │
                                                                 │  send program     │
                                                                 └─────┬──────┘
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                                                                  (   End    )
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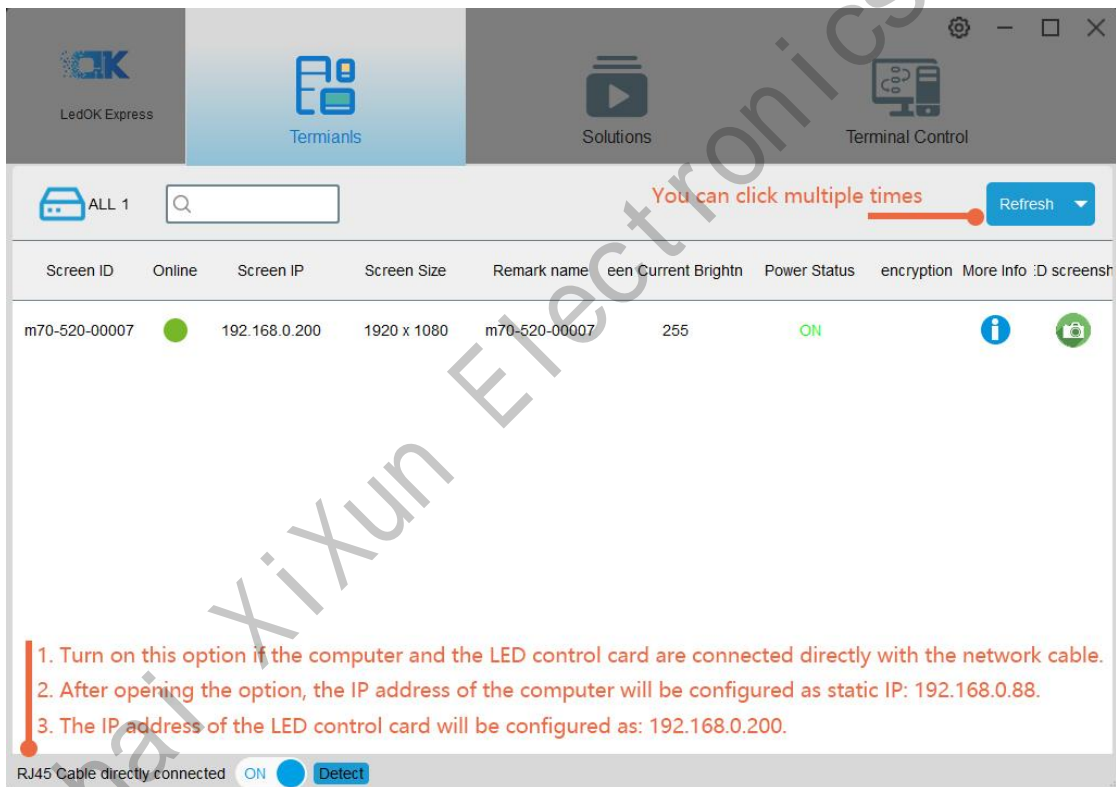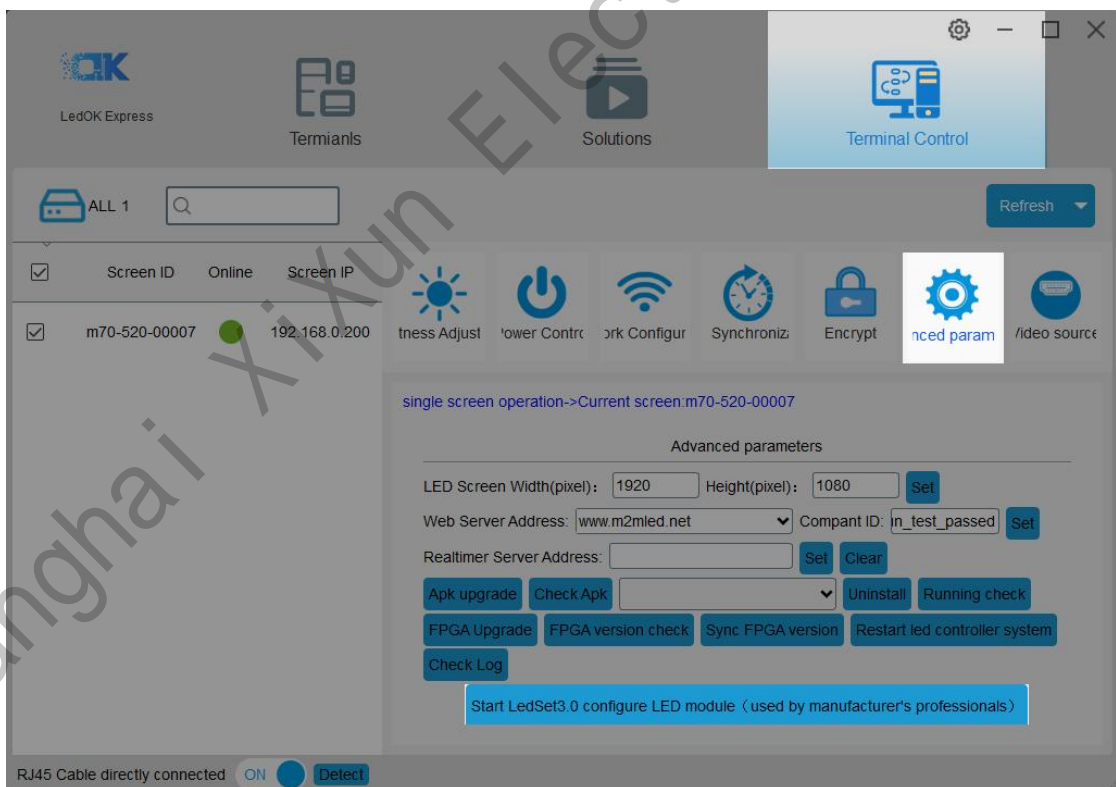
LedSet3.0 Setup

Sending Card Setup

1. Make sure connecting the Y7X with laptop via LAN cable directly，open LedOK Express software and auto detect the Y7X IP address. Please click "refresh" button on the right top if can not detect controller IP. You can also enable "RJ45 cable directly connect" option and click Detect button to detect controller IP.
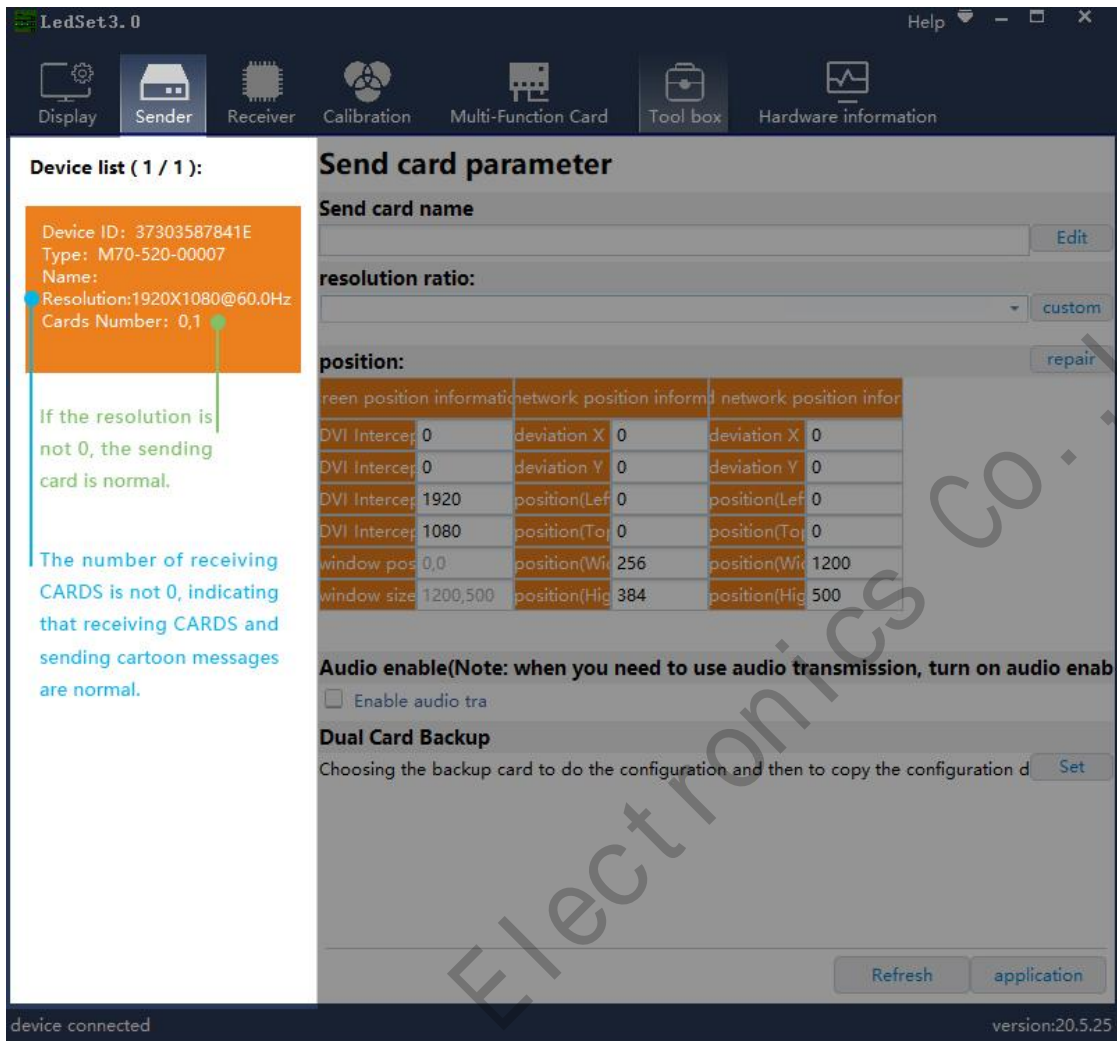

2. Click Terminal control and select the controller，go to Advanced parameters and input password 888 to enter setup interface.
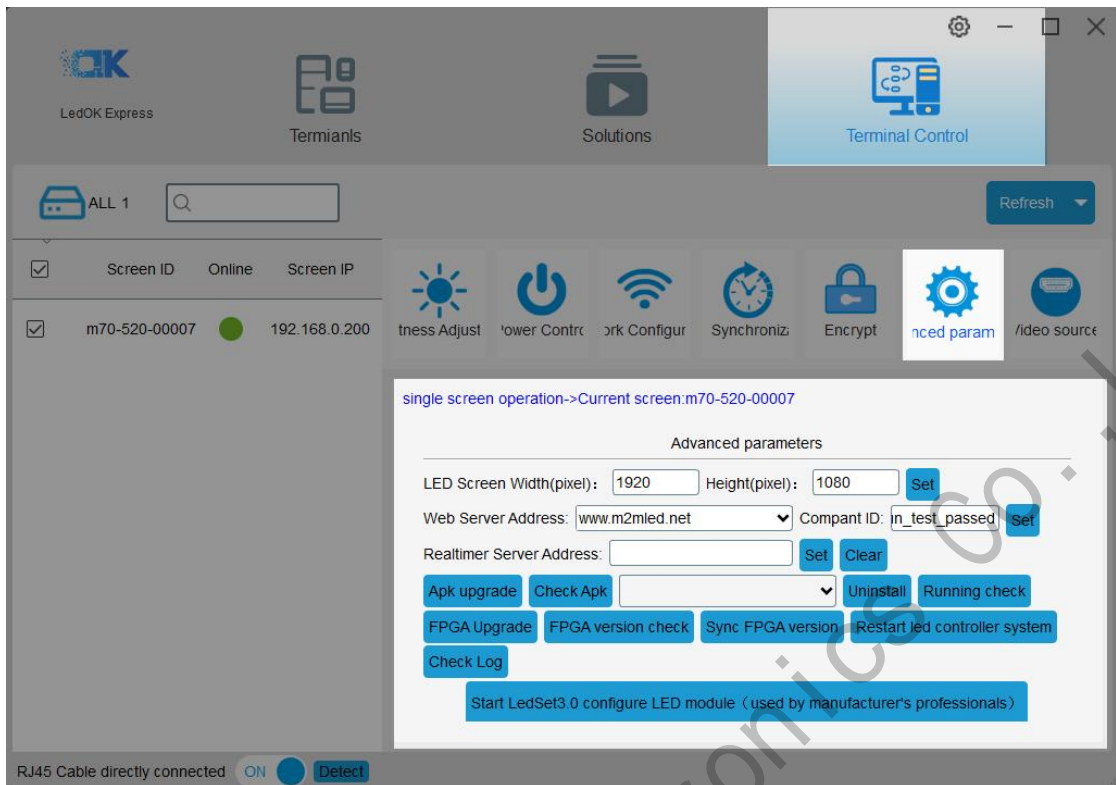
3. Then click the "Start Ledset3.0 configure led module" button in the bottom.

4. Choose Sender in ledset3.0 and make sure the card number and sending card all correct.

Note: LedSet3.0 cannot detect the sending card, please close the firewall and other anti-virus software.

Smart Setup

5. Choose Normal mode debug.
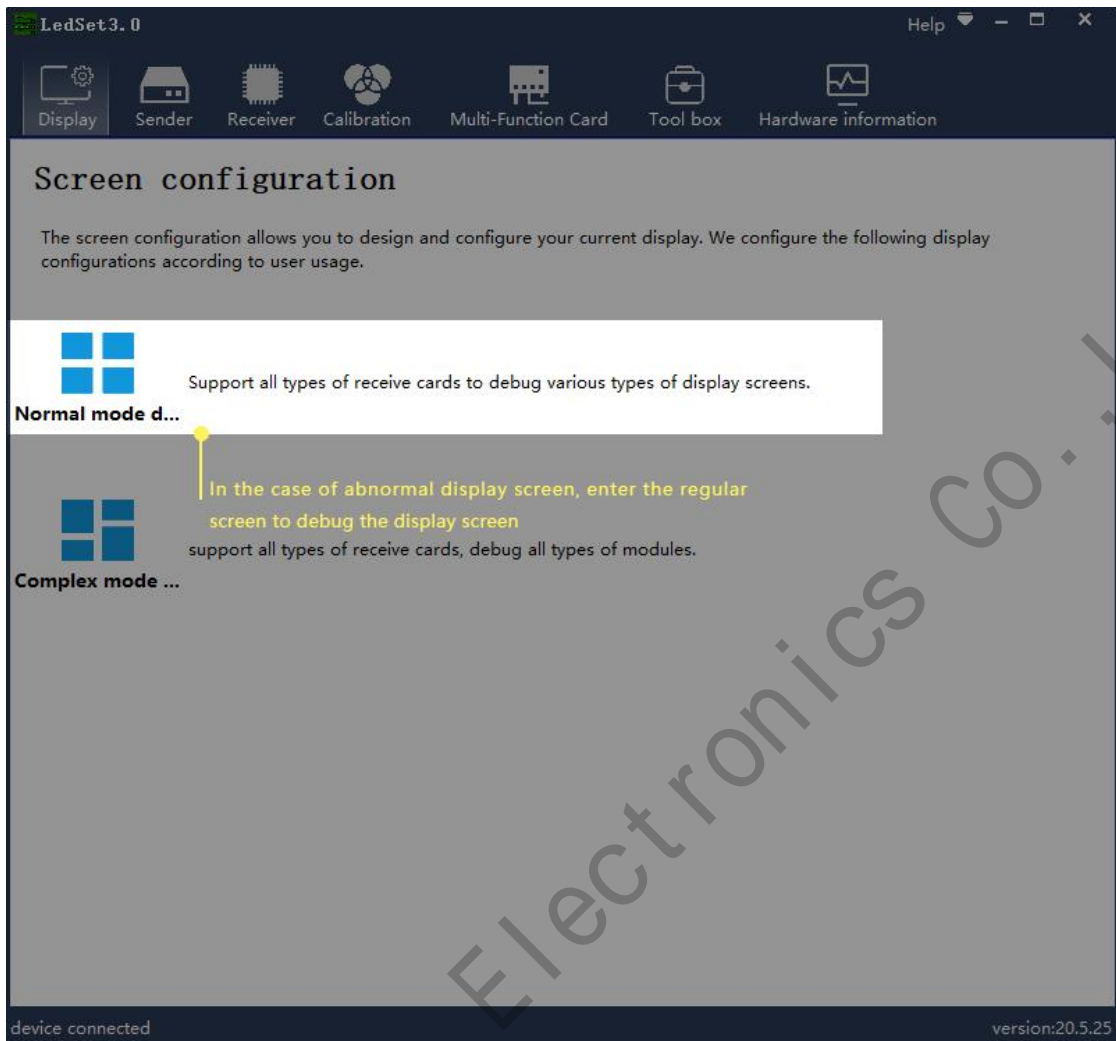
6. Choose Smart setup wizard and start configuration.
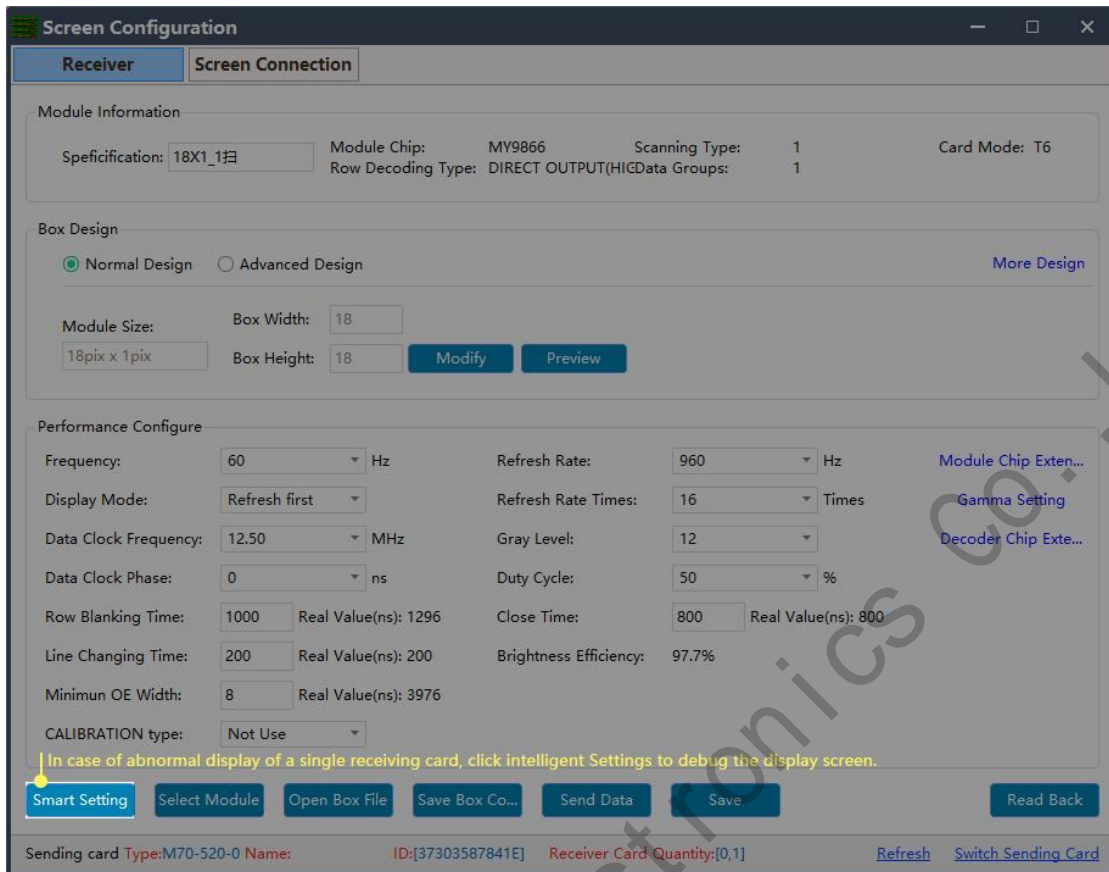
7. Please enter the correct parameters to the smart setup dialogue box .

① **Module width/height**： input the actual pixel of the current pixel.

② **Module data group**： view the interface definition of module data input port and calculate according to the actual data line number and grouping mode of module.(Generally, three lines are parallel, so an RGB is a set of data. For example, if a module has two sets of RGB, then the module data group is 2).

③ **Card type**： type of receiving card currently used for debugging which can directly view according to the identity on the receiving card.

④ **Blanking polarity**： low/high effective, normally use the default one.

⑤ **Contrl system**： please choose T6(D90 series) or FPGA(D80 series) according to your receiver card types

⑥ **Drive chip**： select the type of drive chip used in the current module， such as： conventional chip， MBI5153， ICN2053， etc.

⑦ **Decoding method**： "138 decoding"， "5958 decoding"， "high direct output"， etc.

⑧ **Grouping mode**： Viewing the interface definition of the current module data input port，if having R/G/B three colors (red, green and blue) signal data (red，green, and blue lights on driver chip is separate connection， and no string between them， thus choose "parallel three line"；If there is only one color signal data on the module or only one R data (In addition to the single color screen， and the chip controlling the red， green and blue LED lights is connected together)，then select "RGB serial".

⑨ **Double clock**： No need to choose when configure normal module. Only need to choose D，E，F signal for second clock when configure double clock led module.
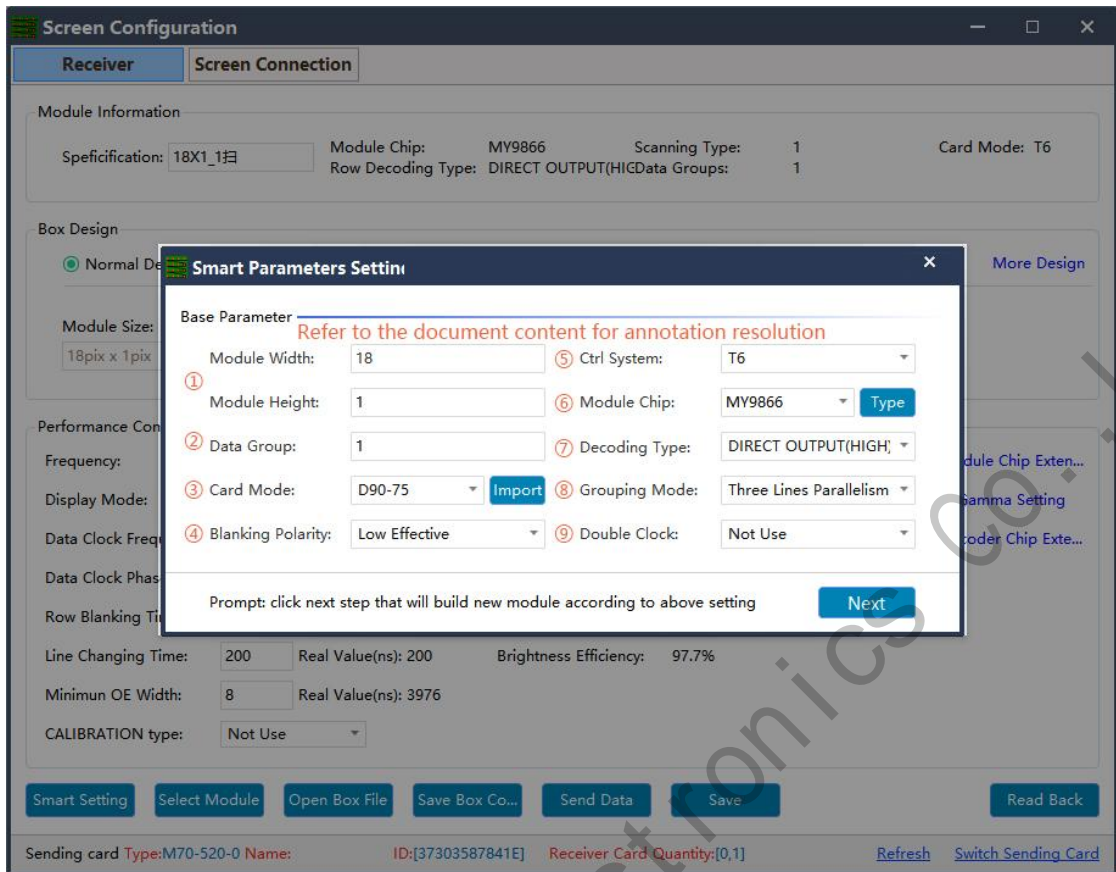
8. Click Next step and enter choose of Data polarity，please choose correct according to screen changes.

9. Click "Next Step" to enter the" OE polarity selection window" .Select the corresponding

state according to the actual display of the current module.

Screen Configuration

Receiver | Screen Connection

Module Information

Spefification: 18X1_1扫 | Module Chip: MY9866 | Scanning Type: 1 | Card Mode: T6
Row Decoding Type: DIRECT OUTPUT(HIC | Data Groups: 1

Box Design

○ Normal De...

OE Polarity Selection ✕

Click status1、status2，check the led module,
select more brighter status:

⊙ Status1(Low)   ○ Status2(High)

Module Size:
18pix x 1pix

Back | Next

Performance Con...

Frequency:			960 ▾ Hz	Module Chip Exten...
Display Mode:	Refresh first ▾	Refresh Rate Times:	16 ▾ Times	Gamma Setting
Data Clock Frequency:	12.50 ▾ MHz	Gray Level:	12 ▾	Decoder Chip Exte...
Data Clock Phase:	0 ▾ ns	Duty Cycle:	50 ▾ %	
Row Blanking Time:	1000 Real Value(ns): 1296	Close Time:	800 Real Value(ns): 800	
Line Changing Time:	200 Real Value(ns): 200	Brightness Efficiency:	97.7%	
Minimun OE Width:	8 Real Value(ns): 3976			
CALIBRATION type:	Not Use ▾			

Smart Setting | Select Module | Open Box File | Save Box Co... | Send Data | Save | Read Back

Sending card Type:M70-520-0 Name: | ID:[37303587841E] | Receiver Card Quantity:[0,1] | Refresh | Switch Sending Card

10. Click "Next Step" to enter the "scan line number" window and select the scan line according to the actual display of the current module.

Screen Configuration

| Receiver | Screen Connection |

Module Information

Spefification: 18X1_1扫   Module Chip: MY9866   Scanning Type: 1   Card Mode: T6
Row Decoding Type: DIRECT OUTPUT(HIC   Data Groups: 1

Box Design

○ Normal De   More Design

Scan Line ✕

According to the interval row space quantity between lighting rows to judge the scan number:

Interval row quantity   6 ▼

Prompt: when module is one row lighting only or full lighting, the interval row is one.

Back   Next

Module Size: 18pix x 1pix

Performance Con

Frequency:		960 ▼ Hz	Module Chip Exten...
Display Mode:		16 ▼ Times	Gamma Setting
Data Clock Frequency:	12.50 MHz	Gray Level:	12 ▼	Decoder Chip Exte...
Data Clock Phase:	0 ▼ ns	Duty Cycle:	50 ▼ %	
Row Blanking Time:	1000 Real Value(ns): 1296	Close Time:	800 Real Value(ns): 800	
Line Changing Time:	200 Real Value(ns): 200	Brightness Efficiency:	97.7%	
Minimun OE Width:	8 Real Value(ns): 3976			
CALIBRATION type:	Not Use ▼			

Smart Setting   Select Module   Open Box File   Save Box Co...   Send Data   Save   Read Back

Sending card Type:M70-520-0 Name: ID:[37303587841E]   Receiver Card Quantity:[0,1]   Refresh   Switch Sending Card

11. Click "Next Step" to enter the select color window.Select the corresponding display color according to the state mode.

12. Click "Next step" to enter the "intelligent Settings" window and do the walk-points according to the actual display of the module.

Prompt: according to the location of light led on the module, click the left button of mouse or press keyboard direction button to trace the point. Press but...

13. Click Complete to finish the smart setup.

Prompt: according to the location of light led on the module, click the left button of mouse or press keyboard direction button to trace the point. Press but...
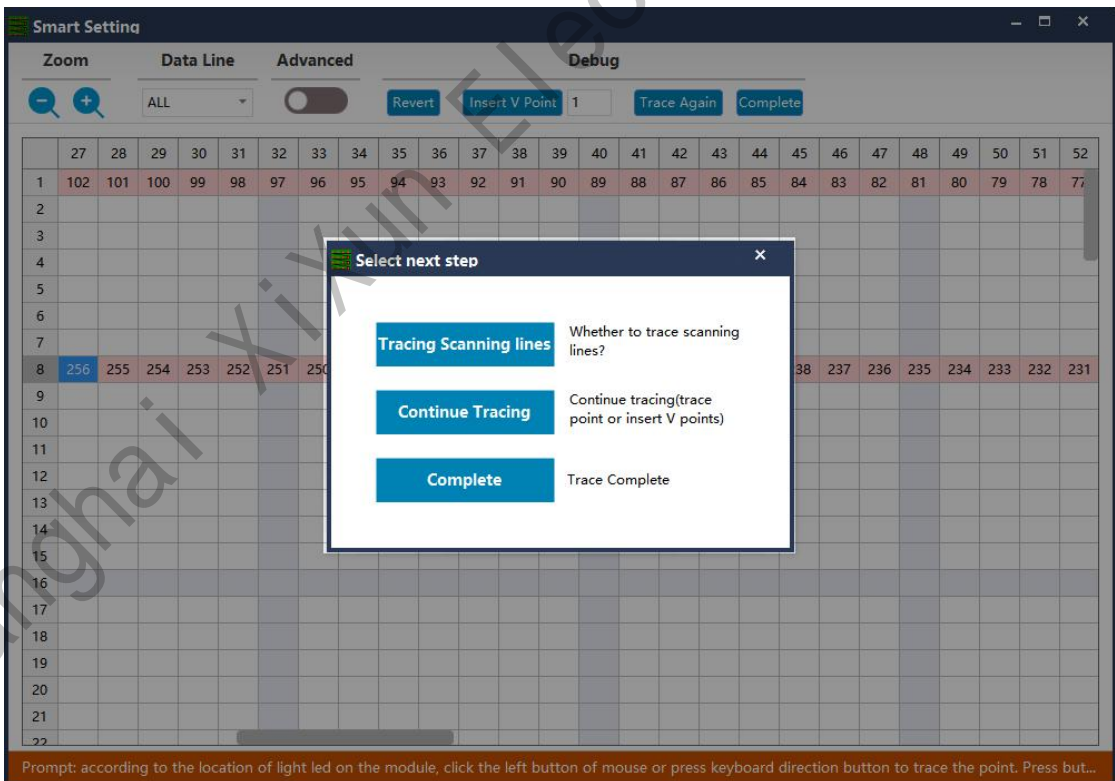
14. Click finish.
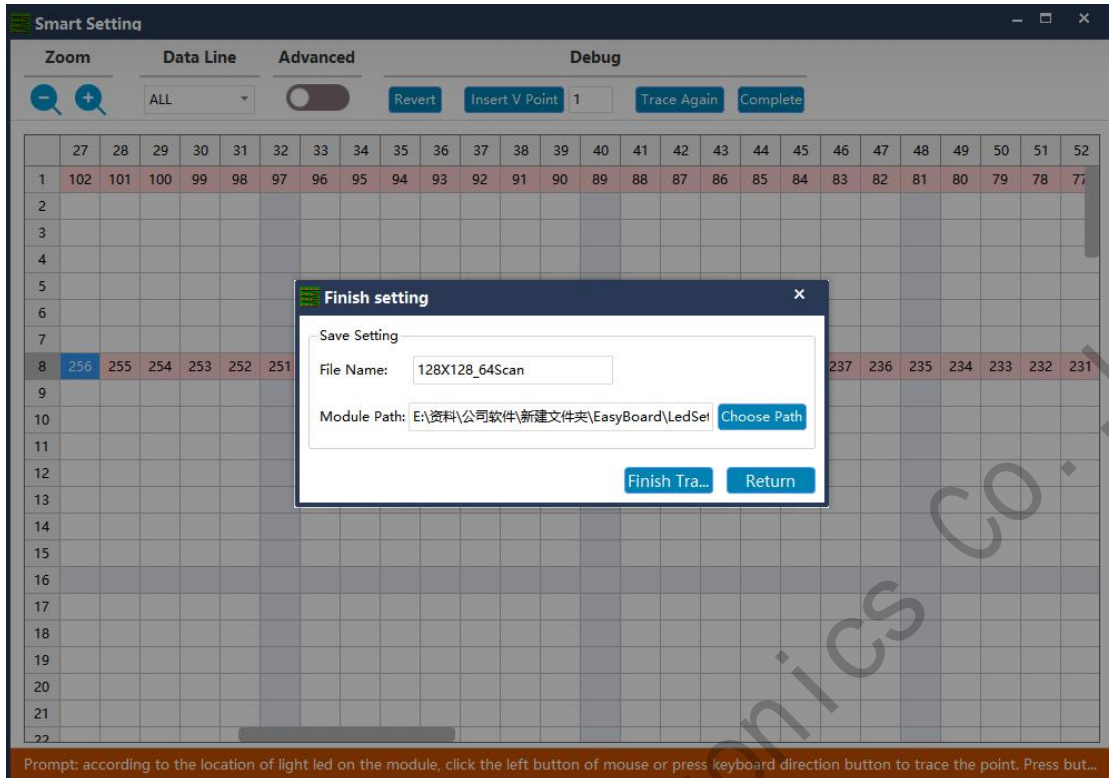
Receiver Card Setup

15. It can be configured by means of "smart setting" or by default "option modules" (applicable to receiving cards D90-75) to load module file or by "open box file" after loading preservation cabinet file.
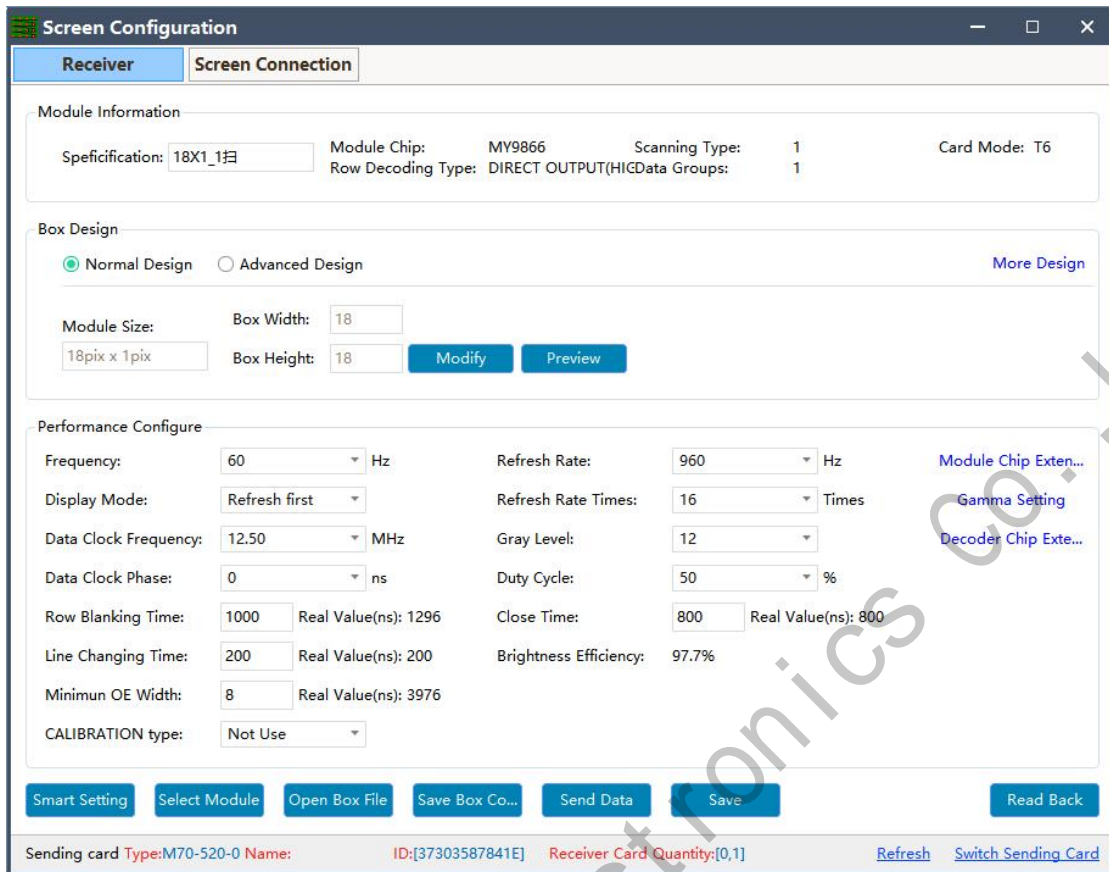
16. Box Design，choose Normal design and click Modify，then enter the box width and height pixels according to your cabinet and choose the correct cascading direction and click complete.

① **Output mode:** with symmetrical to quadruple strip outputs，It can give full play of the receiving card performance to make the screen higher refresh rate according to actual needs. For example(cascade way： from right to left).

② **Normal output:** 1 to 24 sets of data are loaded from top to bottom.

③ **Symmetrical:** The data of the receiving card (1-12) group is equipped with the left half lamp board，and the data of (12-24) group is equipped with the right half lamp board，with the same width/height.

④ **Triple strip mode:** 1-8，9-16，17-24，Each 8 sets of data are carried in three parts

horizontally with the same width and height

⑤ **Quadruple strip:** 1-6, 7-12, 13-18, 18-24, Each 6 sets of data are carried in four parts

horizontally with the same width and height.
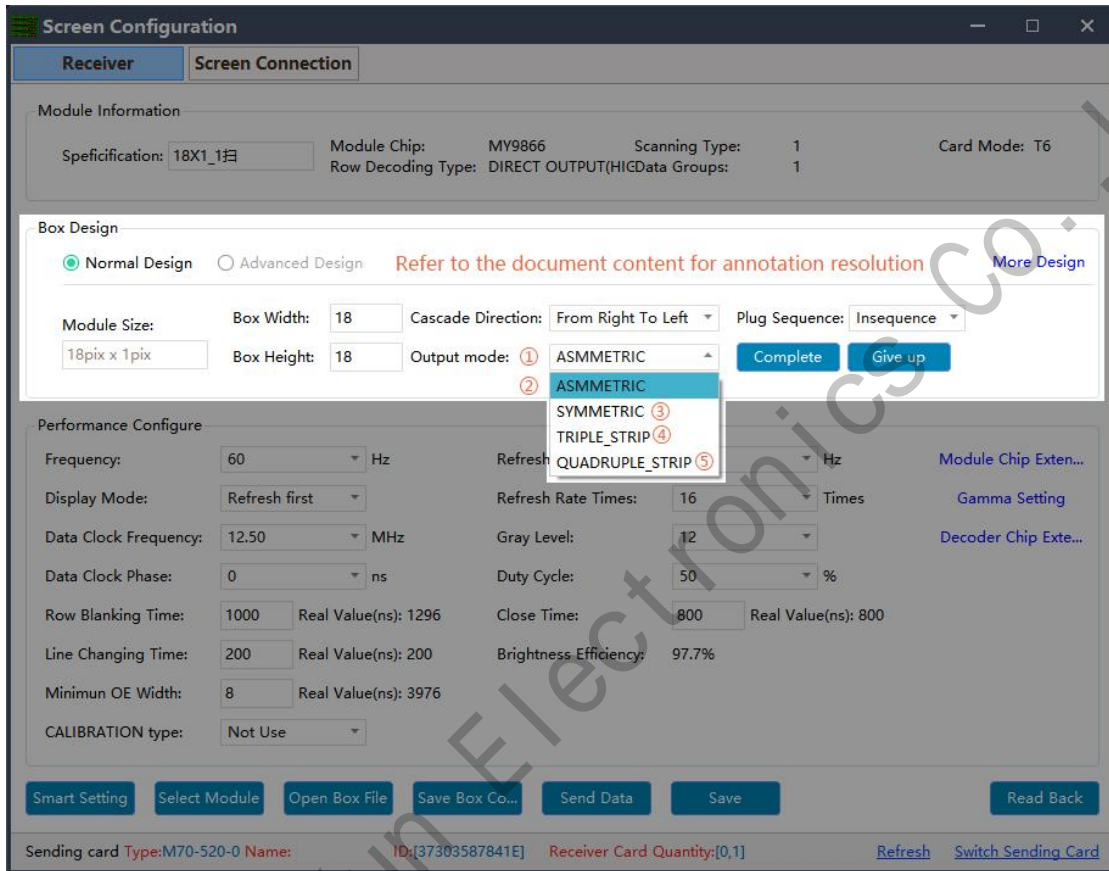
17. The System will auto calculate the performance configuration parameters after done box

design，you can also adjust some options to make display effect better.

Refresh rate： an important indicator of the Led screen.Increasing the refresh frequency

can improve the water ripple when using the camera to take pictures.

Display mode： It can be divided into refresh priority and Grayscale priority. Refresh

priority： In this mode, the brightness efficiency will be reduced while the refresh rate of

the module can be greatly improved. Grayscale priority： This mode will have a better

grayscale effect at low brightness.

Refresh rate times： High brush algorithm for improving visual refresh rate， default 16.

Data clock frequency： it is related to the design of LED module circuit and the driving chip used.If the well-designed high brush IC is used ， the module can be reached higher clock while gray degree and refresh frequency can be supported higher with the same load area.

Grayscale： Increasing the grayscale according to the requirements of the LED. The higher the grayscale， the better the picture quality. Generally， it is 12 to 14bit， (12bit grayscale is equal to 4096 gradation grayscale)

Data clock phase： timing starting point of the clock setting.It can be adjusted when the screen body has flash point， flower screen and other abnormal phenomena.Generally 12.5~17.86.

Duty cycle： refers to the duty cycle of the clock phase. Changing this data can make the scanning clock phase higher generally set to 50%.

Line changing time/discharge time/sweeping position： mainly adjust the scan screen afterglow， the newline value time can be increased if serious ， generally take the default values.

Min OE width： Min response time. When the refresh cannot be improved effectively， try to reduce it.
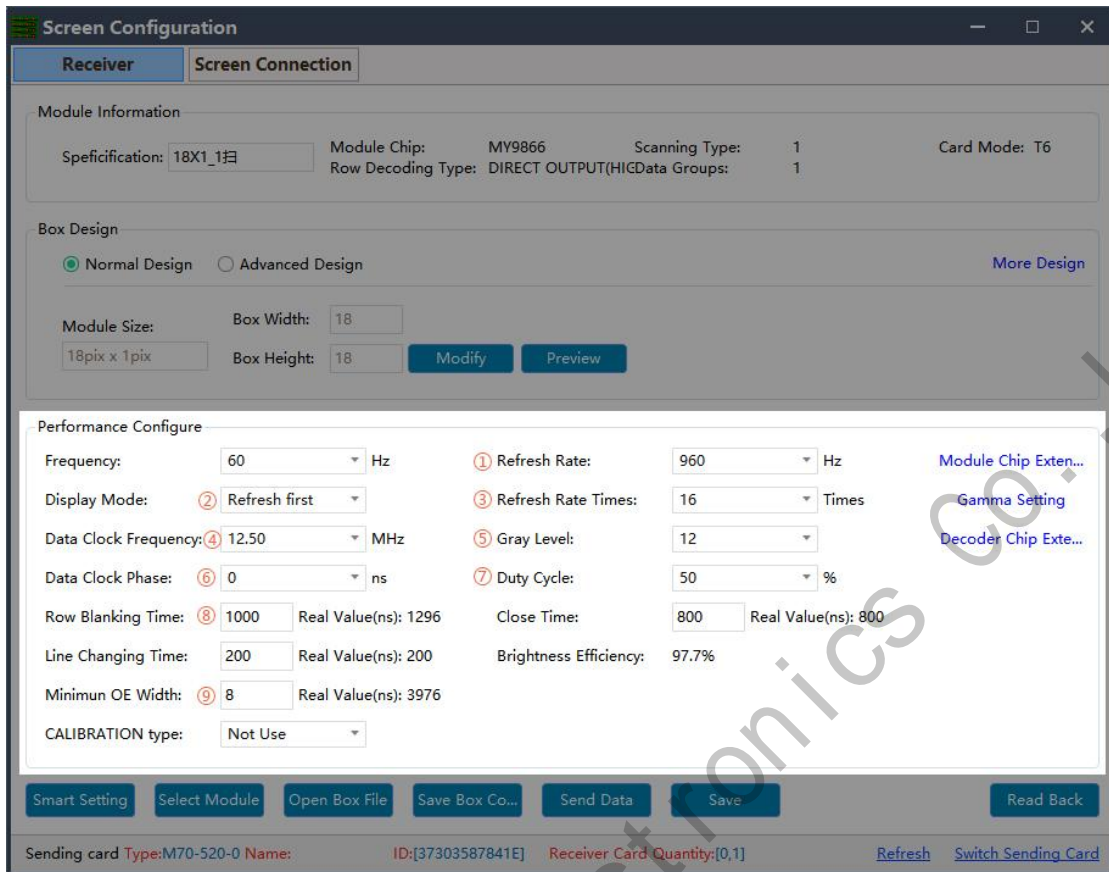
18. Click the"send data" button to send the program to the receiving card.
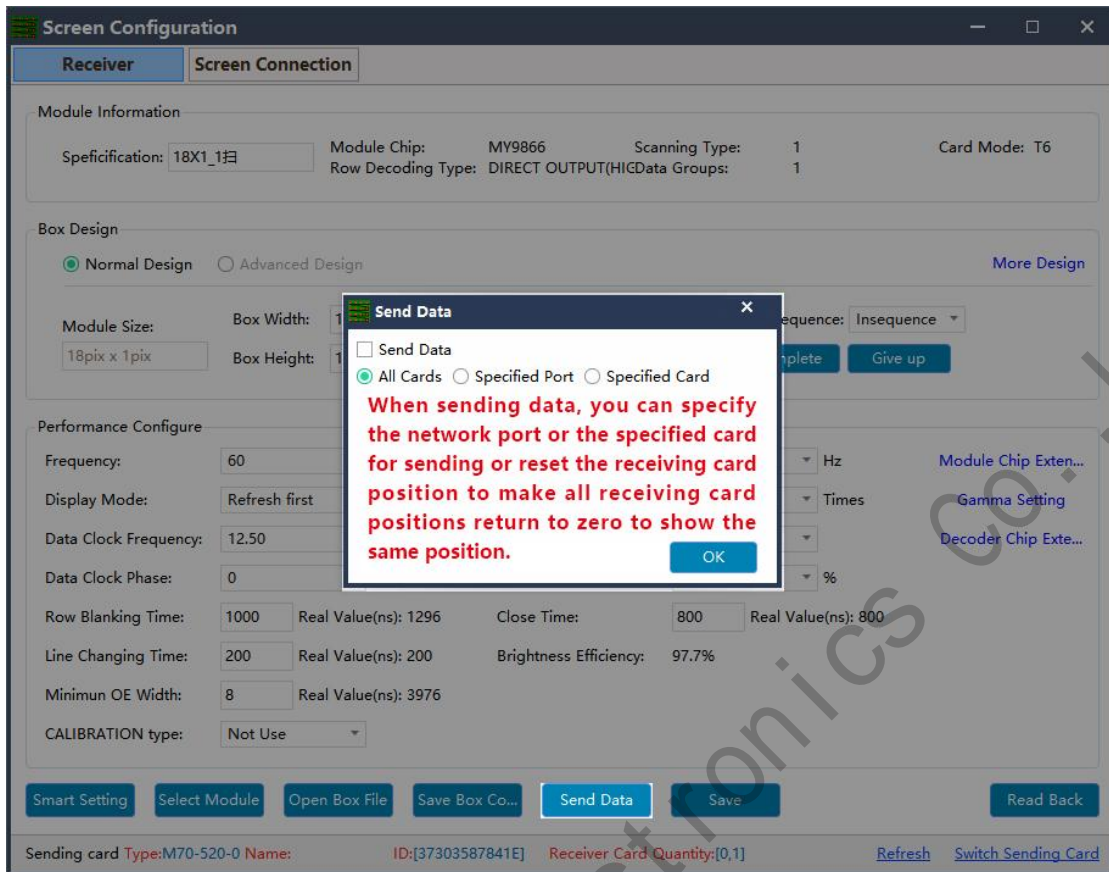
19. Observe whether the box is displayed normally. Then click the "save" button and solidify the data to the receiving card to prevent data loss from power off and restarting.
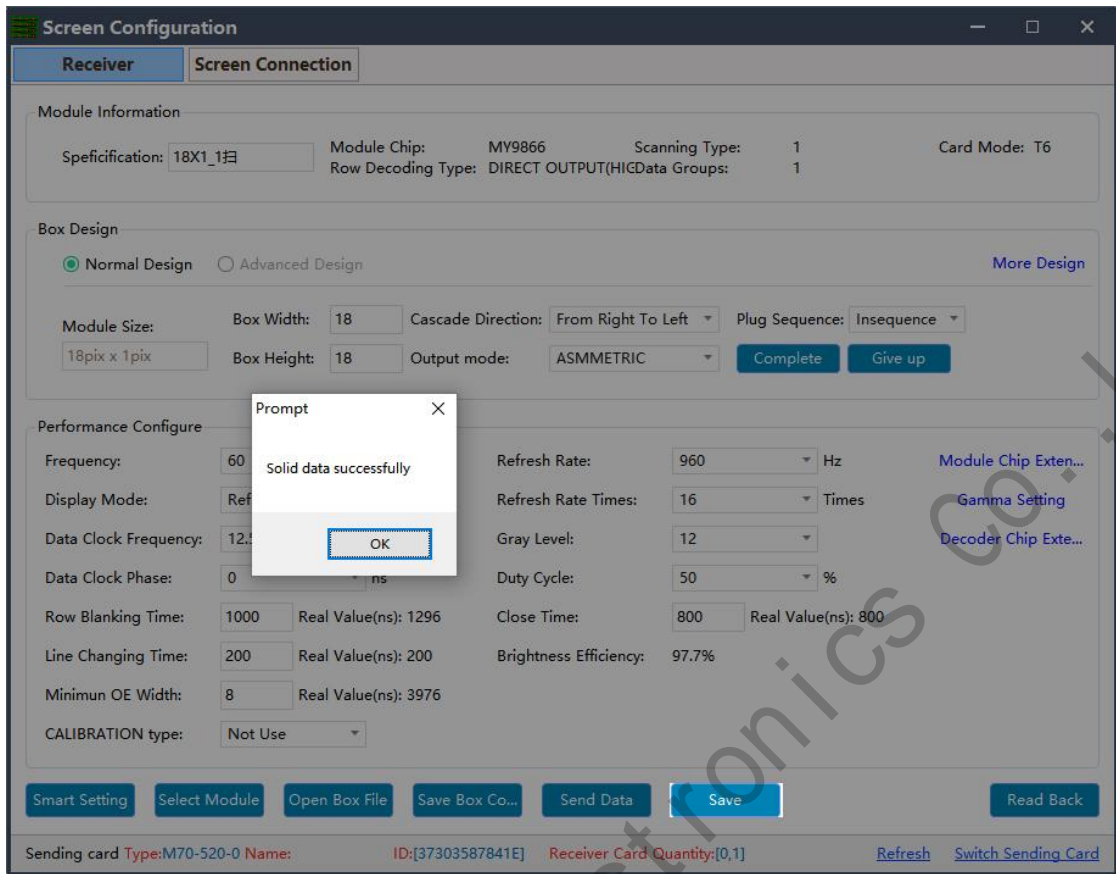
20. Finanlly click Save Box Config button and save the configuration file to laptop.
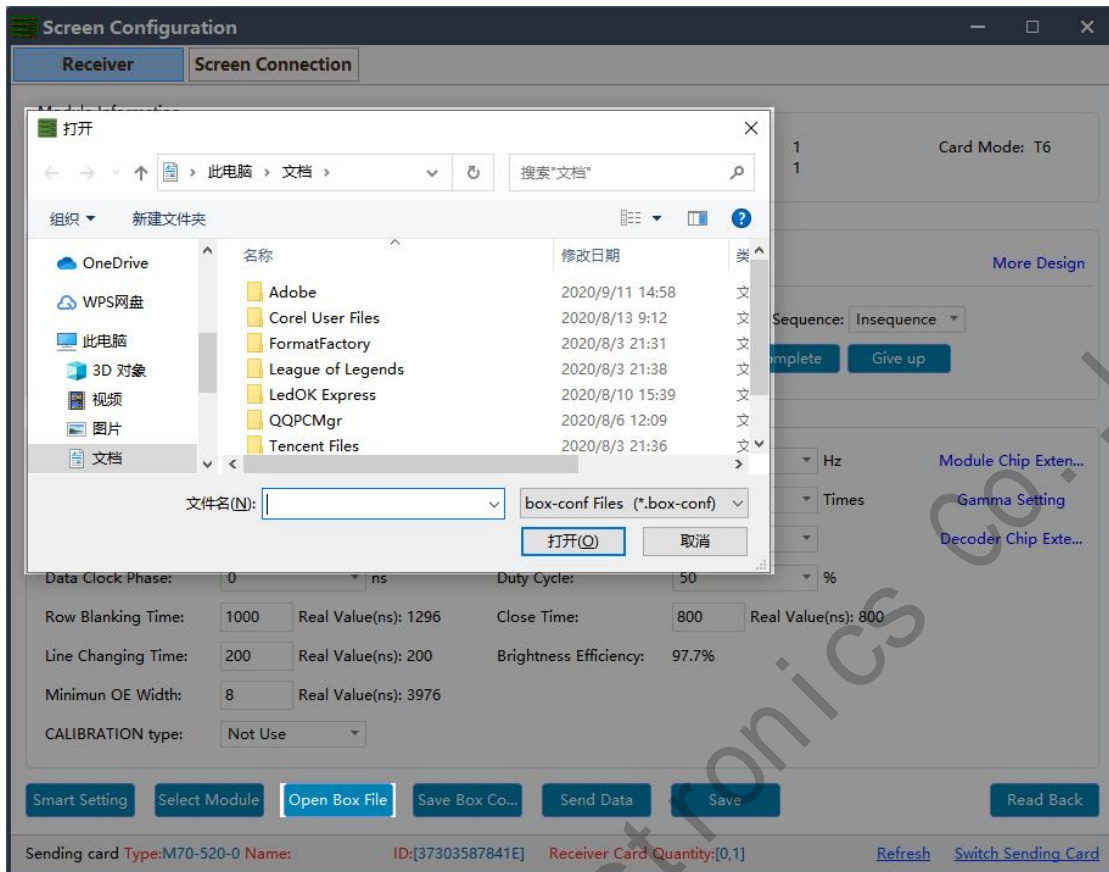
Screen Connection

21. While the receiving card is configured, click the "screen connection" button in the menu

bar of the receiving card configuration interface to enter the screen window interface.

① **Load:** load the saved screen configuration file.

② **Save to file:** save the display configuration information to the computer in (.* dcc)

format.

③ **Send:** send screen configuration information to the sending and receiving cards.

④ **Read back:** click this button will read back the existed screen connection

configuration from the good working receiving card so that can quickly send to the new

receiving card.

⑤ **Open Box sign**：click this button then will auto show the receiving card numbers in correct order in each cabinet.

⑥ **Receiving card quantity**：it will show all receiving cards numbers，there are normally two digits，for example：[1.0] means Ethernet port 1 of sending card has connected 1 receiving card，while Ethernet port 2 of sending card no receiving card.
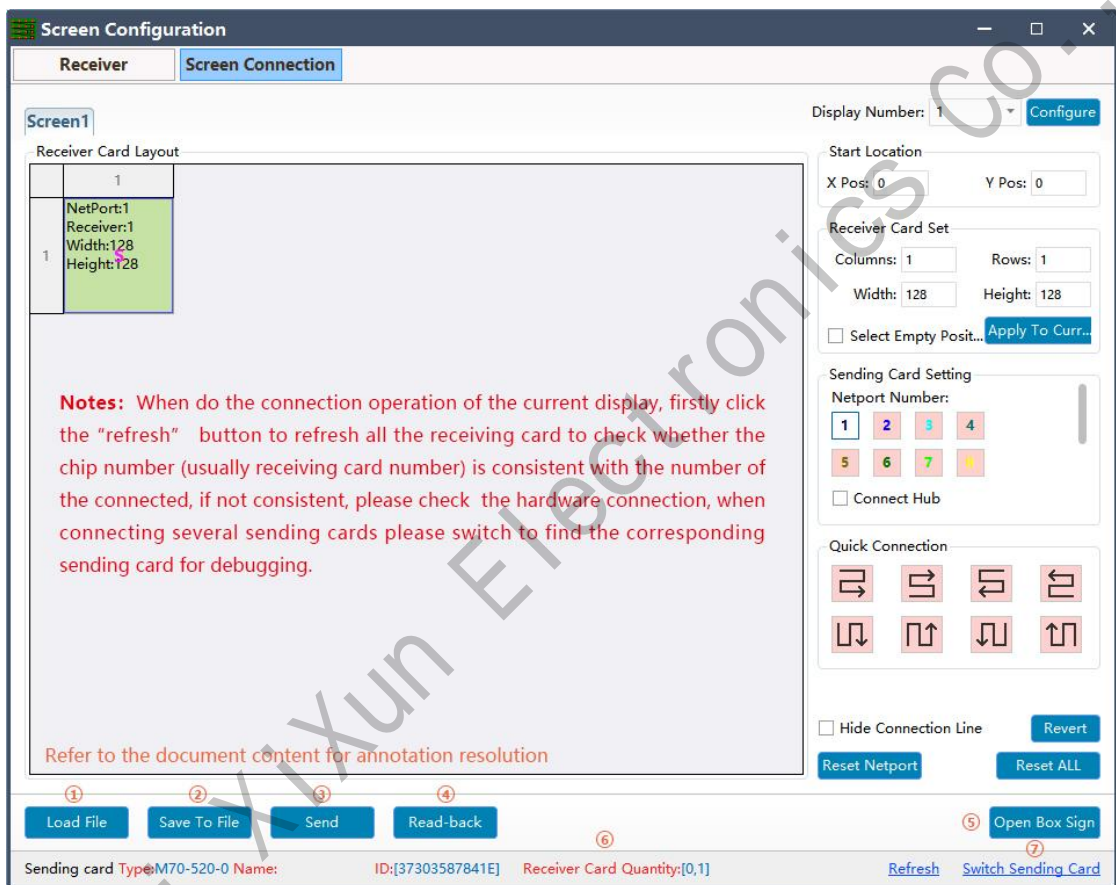
⑦ **Switching sending card**：if there are more than one sending cards in the same network，can switch to the correct sending card when sending parameters.
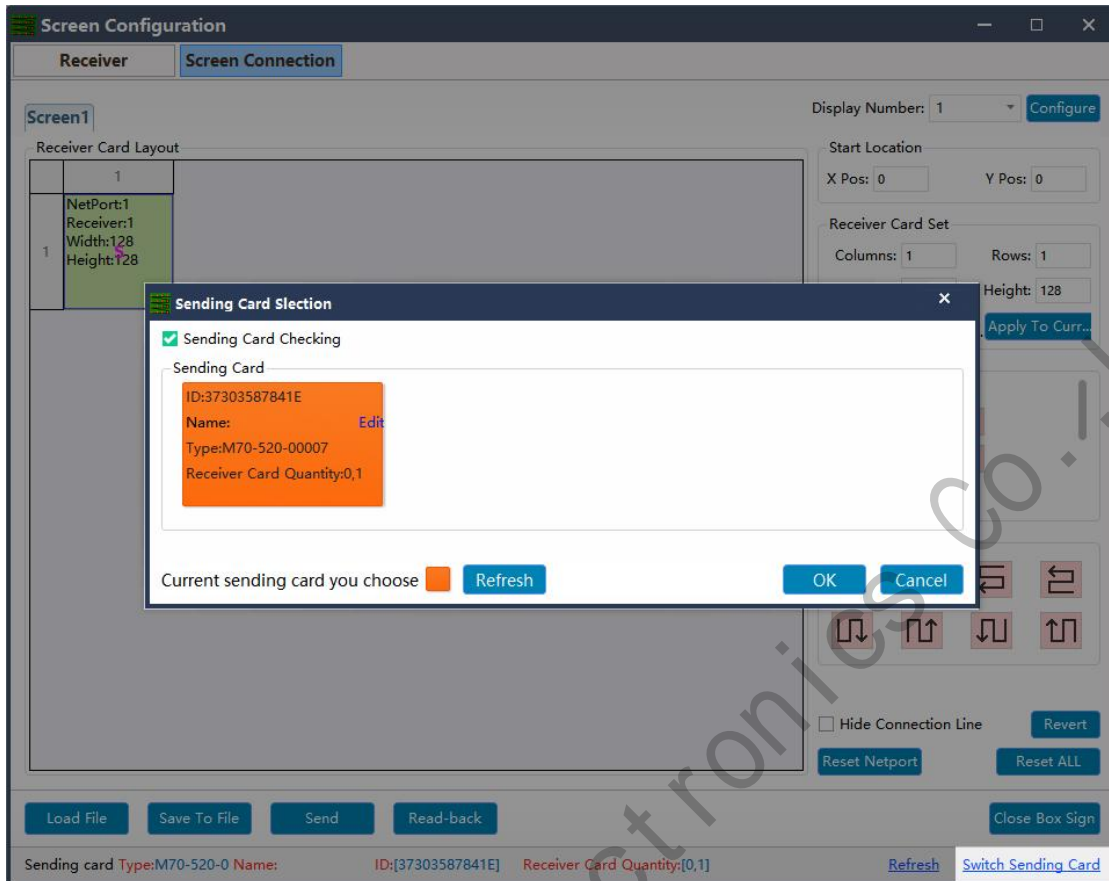
22. In the screen connection interface，the cascade mode of receiving card as well as the

width and the height can be set according to the actual situation of large screen，(the

width and height of the dots of each receiving cards can be different)，

Please setup the cascading way including receiver card width and height pixels correctly.

① **Display Number：** number range 1-20，please select according to real situation，

click Configure button after choose. If choose 2 means LED screen is double sides，you

need do screen connection one by one.

② **Starting location：**LED display interception position of input signal source.The default

state is (0，0)，which means that the LED display starts at the point (0，0) of the video

source.

③ **Receiving card Settings：** Set the rows and lines and the dots of the width of each

receiving cards according to the actual number of cards used in the screen .

④ **Position blank：**click the "Select Empty position" button，and then select the blank. When set，click the button again to exit the select blanks operation.

⑤ **Apply to current port ：**set the size of all boxes connected to this port to the current column width and column height.

⑥ **Sending card setting：**select the output port of sending card.

⑦ **Connect hub：**if adopt the hub in the big screen can do following operations：

- Choose the "Connect HUB" option;

- Select the sending card Ethernet port and setup the "hub address";

- Choose "hub address" and do screen connection;

⑧ **Quick connect：**the entire screen is loaded with only one network cable and the receiving card's network cable is regularly cascaded.

⑨ **Hidden connection line：**When checking the hidden connection line box，the display wire knowledge will be hidden.

⑩ **Revert：**cancel the lastest operation

⑪ **Reset Netport：**will revert all setup for current Ethernet port.

⑫ **Revert ALL：** will revert all setup for all network ports.
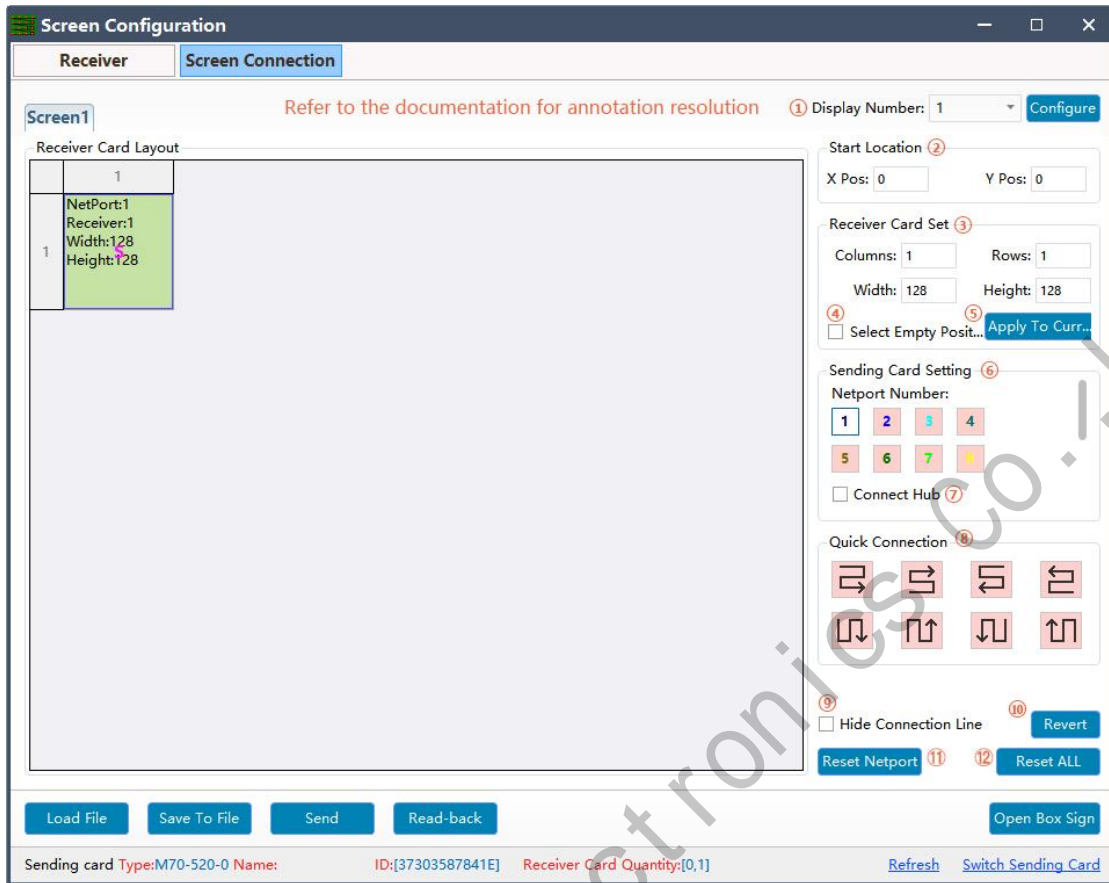
23. Click send and choose "as the main sender" and save to device; or choose "As the backup sender" to save to backup sender device. For double sender backup only work for synchronous controller.
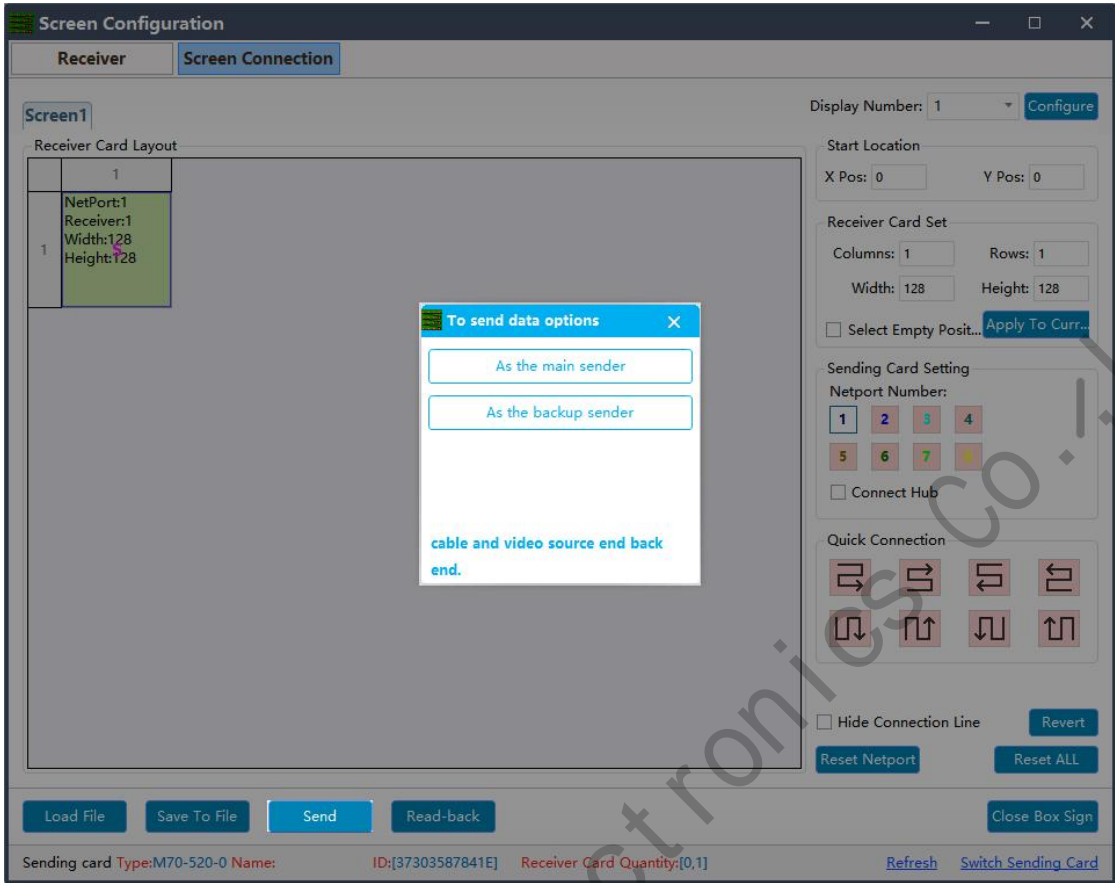
LedOK Setup System Parameters

LED Screen Width And Height Pixels

LedOK Express software, advanced parameters and enter screen width and height pixels, then

click save.
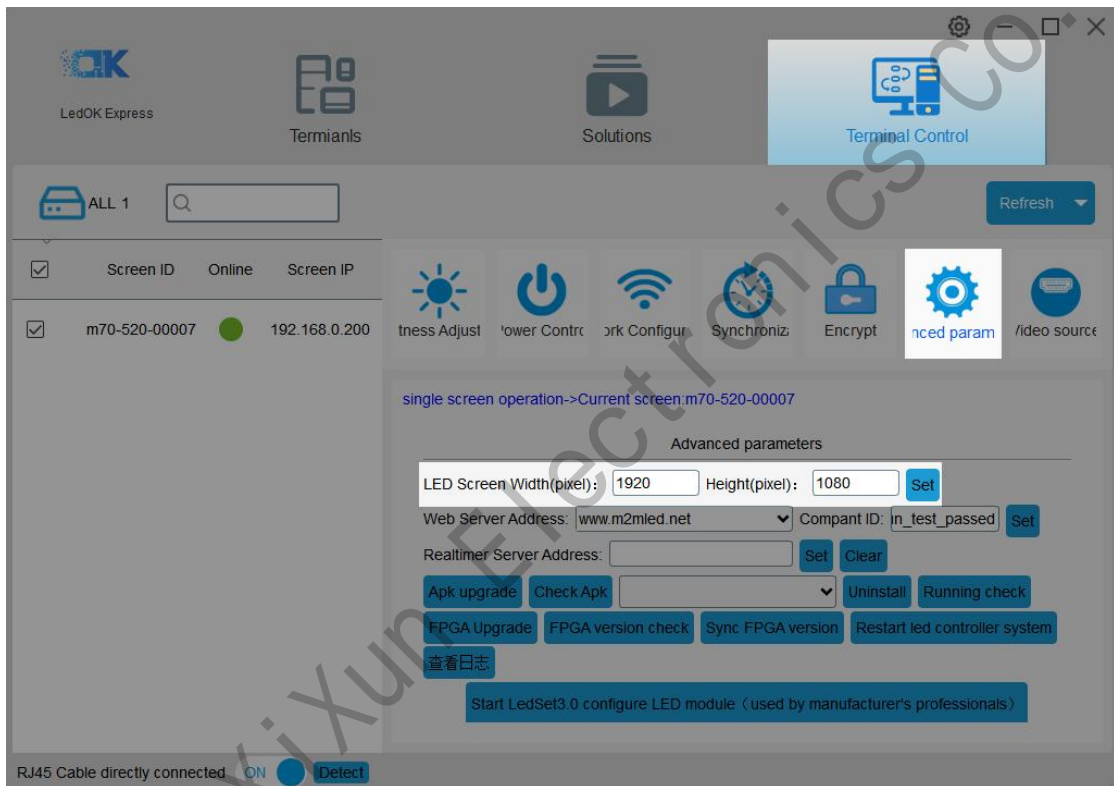
LedOK Setup Network

There are 3 ways of accessing internet for controller，1. Wire 2. WIFI 3. 3G/4G. can only choose

either of them.

Wire Setup

Network configuration，first is Wire，can setup the controller IP address.
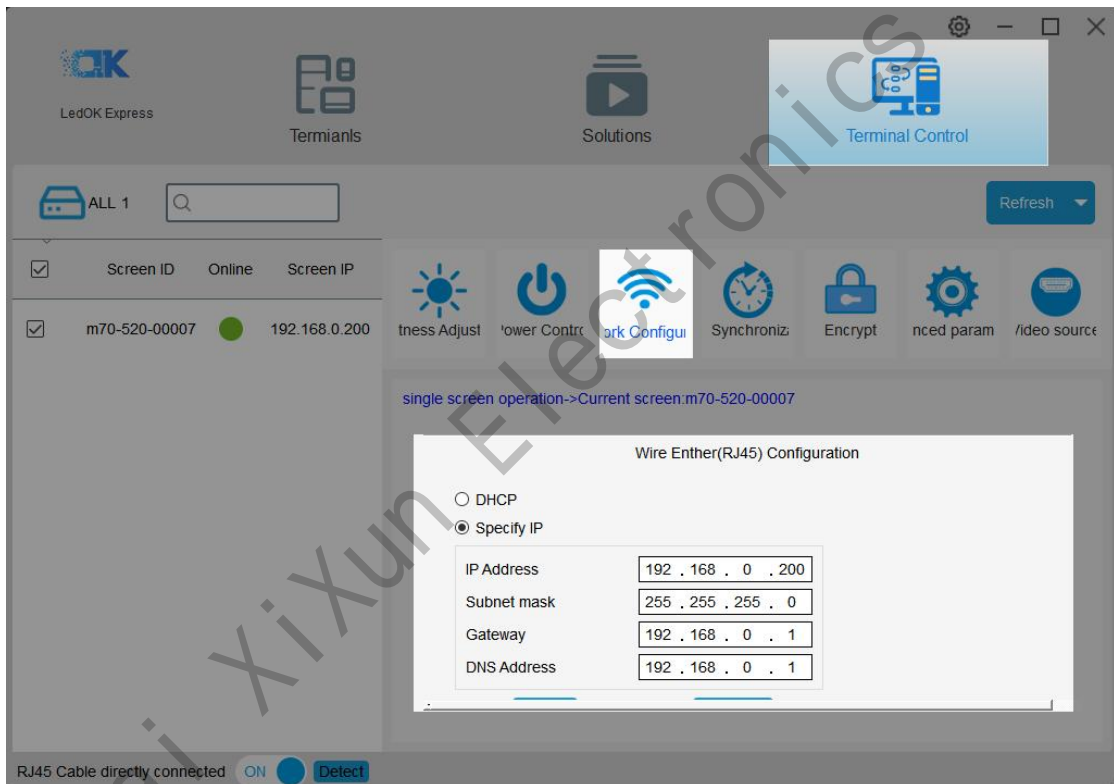
NOTES：

1. Controller will get access to internet by wire as first priority.

2. Must remove the LAN cable from controller if choose WIFI or 3G internet and choose

   automatically acquisition IP.

WiFi Configuration

Turn on WIFI and scanning WIFI hotspot, then enter wifi password and click save.
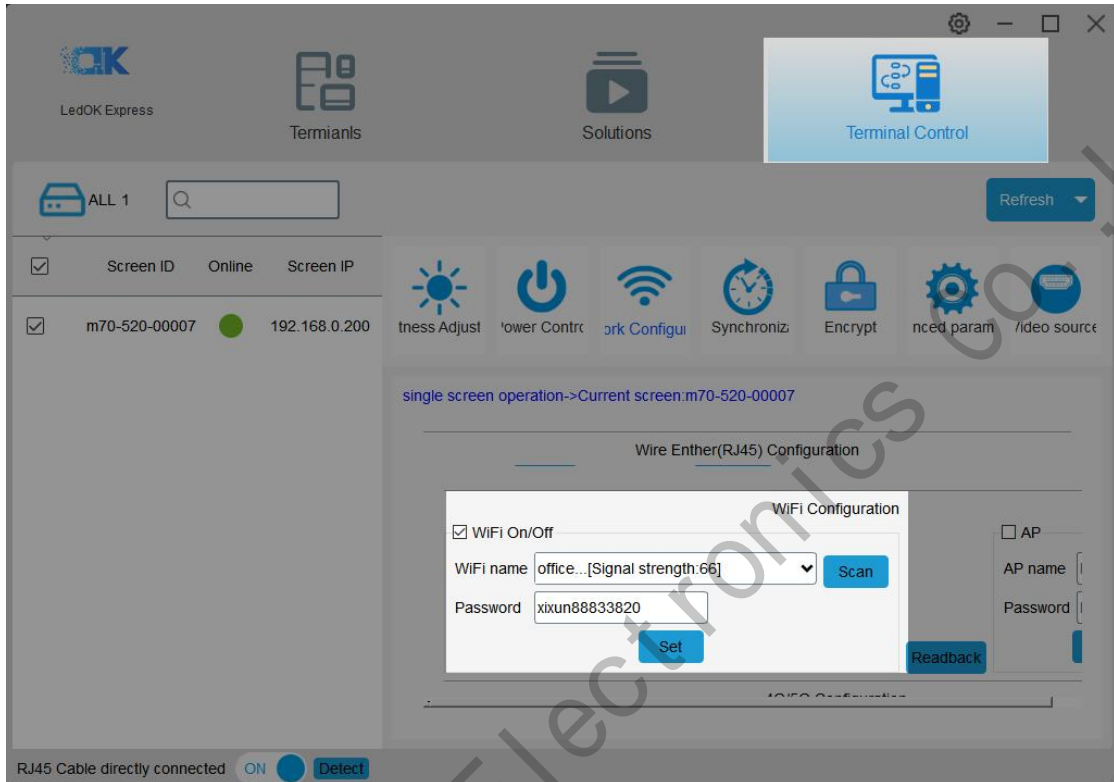
Wait for about 3 minutes, controller will come online. Please watch the "Internet" light, if it flashing regularly means online success, go to AIPS platform and check it.

NOTES：

1. If could not scanning the WiFi, please try to turn on/turn off Software or WiFi Switch.

2. If controller can't get access to internet through WiFi, please double check the steps below：

   A.WiFi antenna plug correctly.

   B.WiFi password is correct or not.

   C.If the Wireless router being accessed too many terminals?

D.E series controller switch on WIFI mode?

E.Try another WIFI hot spot.

F.Y/M series controller，please make sure the LAN cable removed

3G/4G Setup

Enable 4G/5G option，click"Check" button will auto match the country code MMC and choose the operator name to get the APN，if can not find your country code，please enter by click custom option.
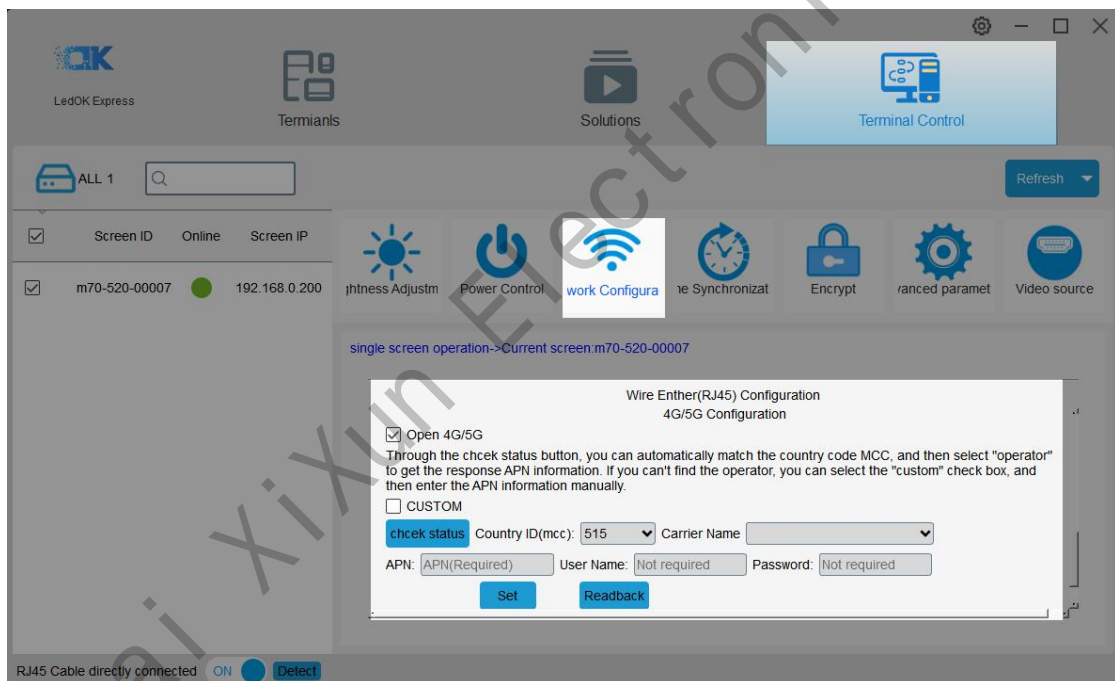
After save 3G parameters，waiting for about 5 minutes，please check if card online in AIPS platform. "Internet" light will flashing fast for dialing up then flashing regularly means get online success.

NOTES：

If controller can't get online success，please checking following things：

A.3G antenna has plugged correctly?

B.Y/M series controller，make sure the LAN cable removed.

C.APN is correct or not?

D.SIM card has activate? SIM card has enough money and 3G data service?

E.Check 3G signal at least 13 and above? Click Network status detection to check 3G signal.

AIPS Cloud Platform Register

Register For AIPS Platform

Visit www.ledaips.com and choose Register to starting input related information，click done

and verified the link sent by email，finish the register.

Oversea address：www.ledaips.com
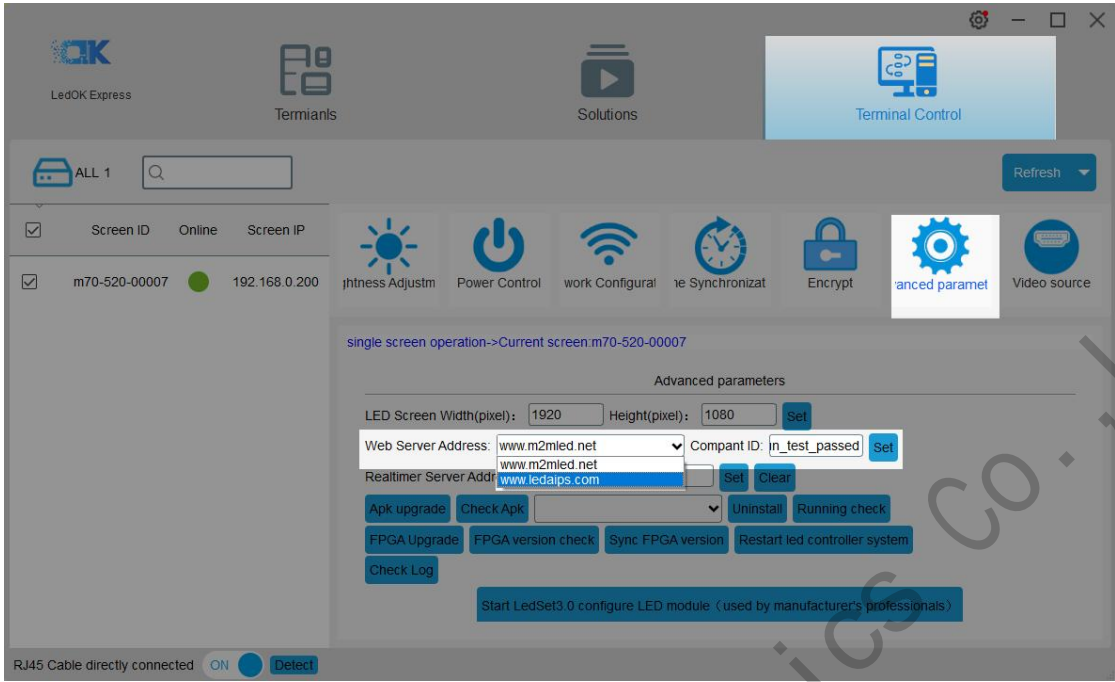
AIPS Cloud Programing

Simple Program

Make simple program ----only support image or video files

1. Click "add simple program" button and set correct screen width and height pixels and

    click OK.
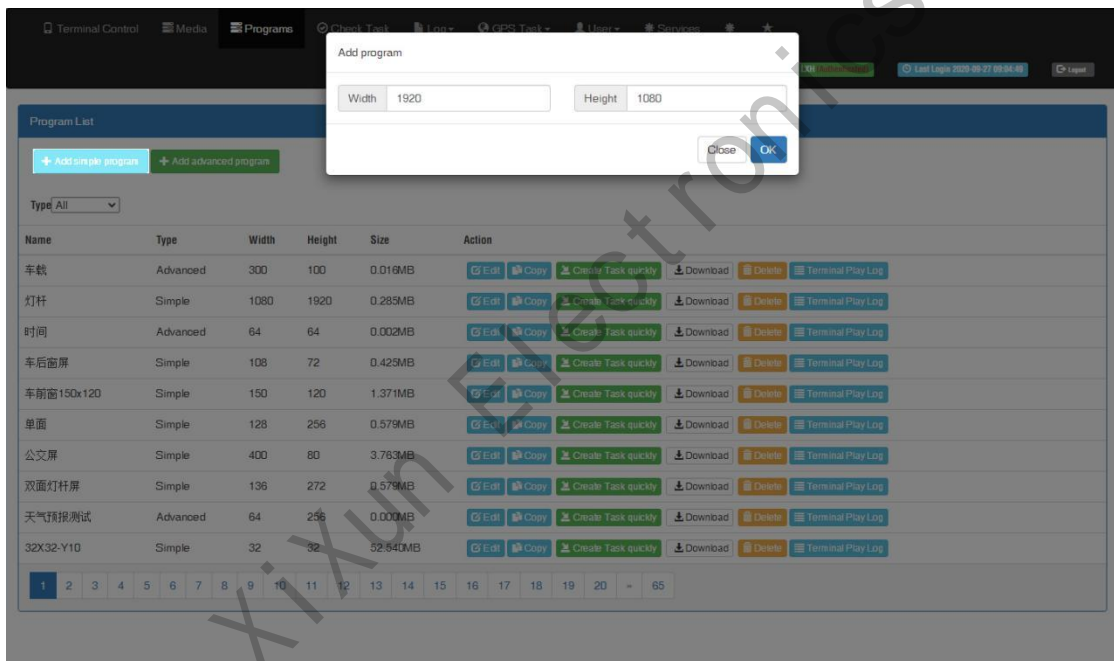
2. Input program name and select the material from left side，here are 3 zones including

    material in the left side，program editing in the middle and preview window in the right

    side.
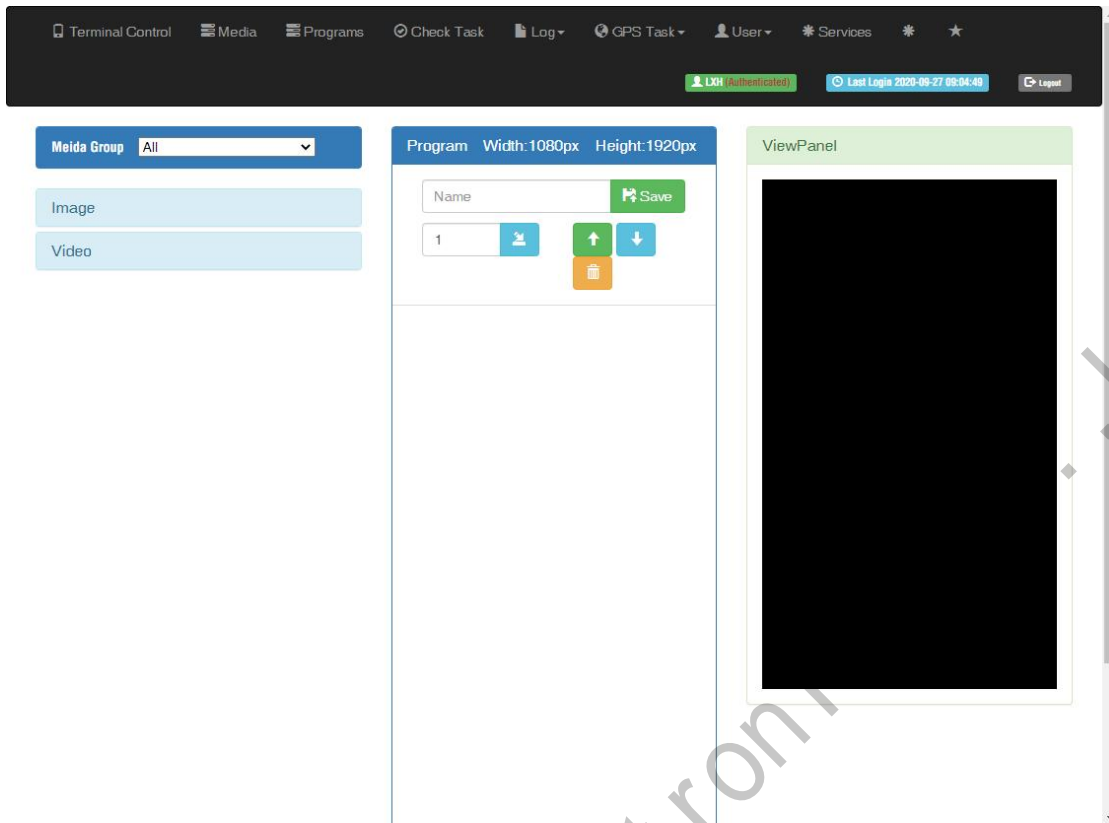
3. Choose materials and set program name，can check preview in the right window.

Click on the image to preview
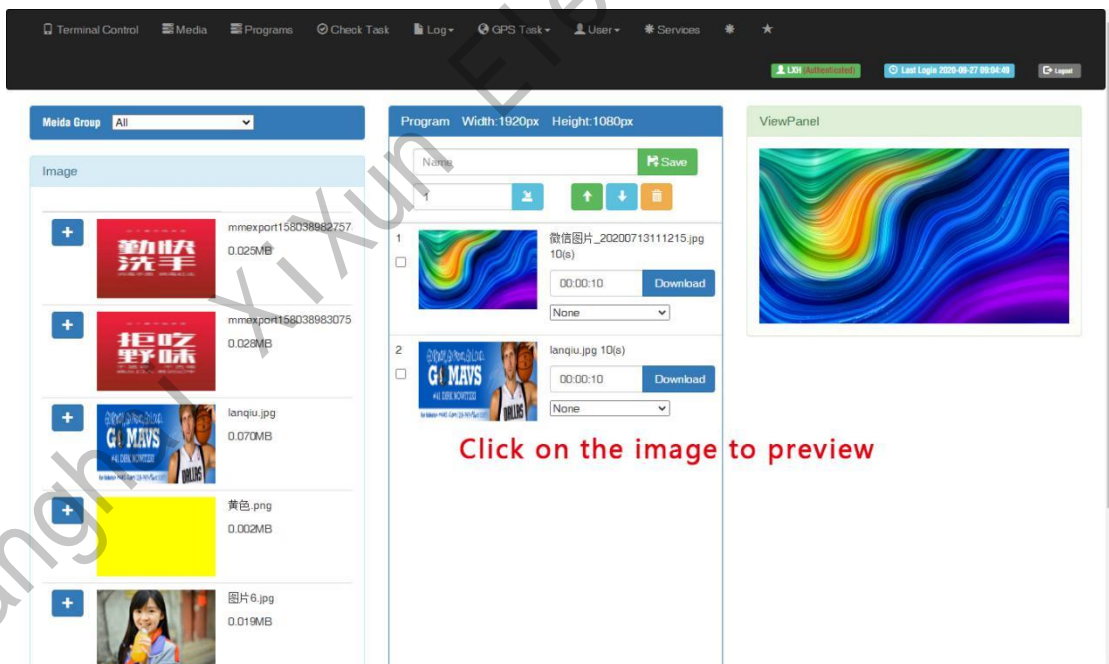
4. Can set the display duration time here，see screenshot in below：
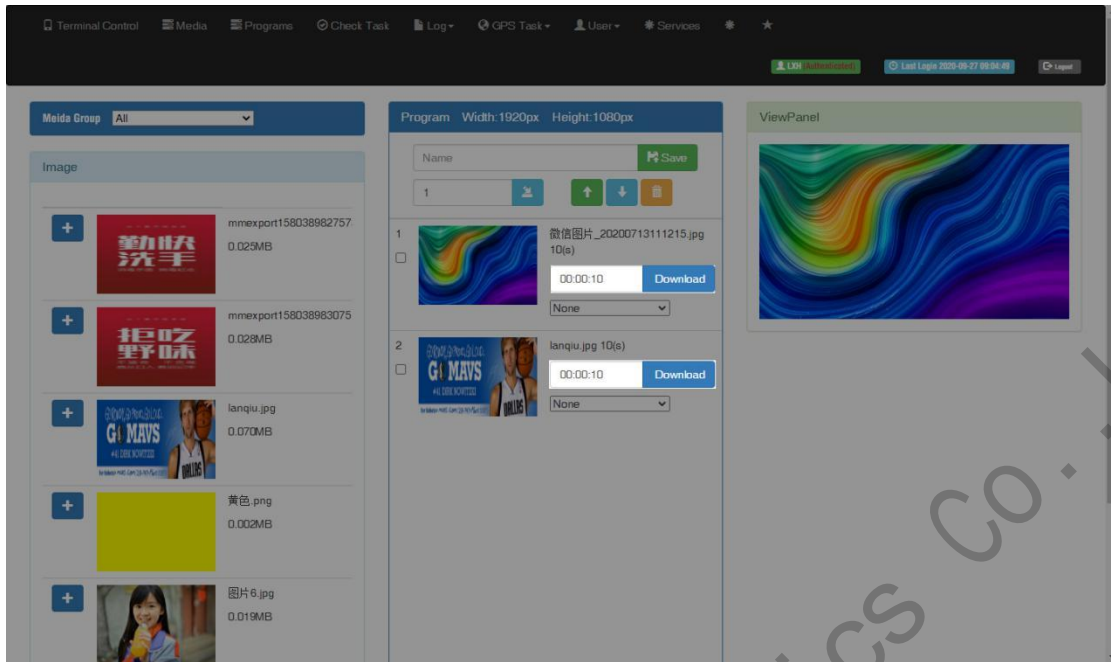
5. Will see program in the list after save.
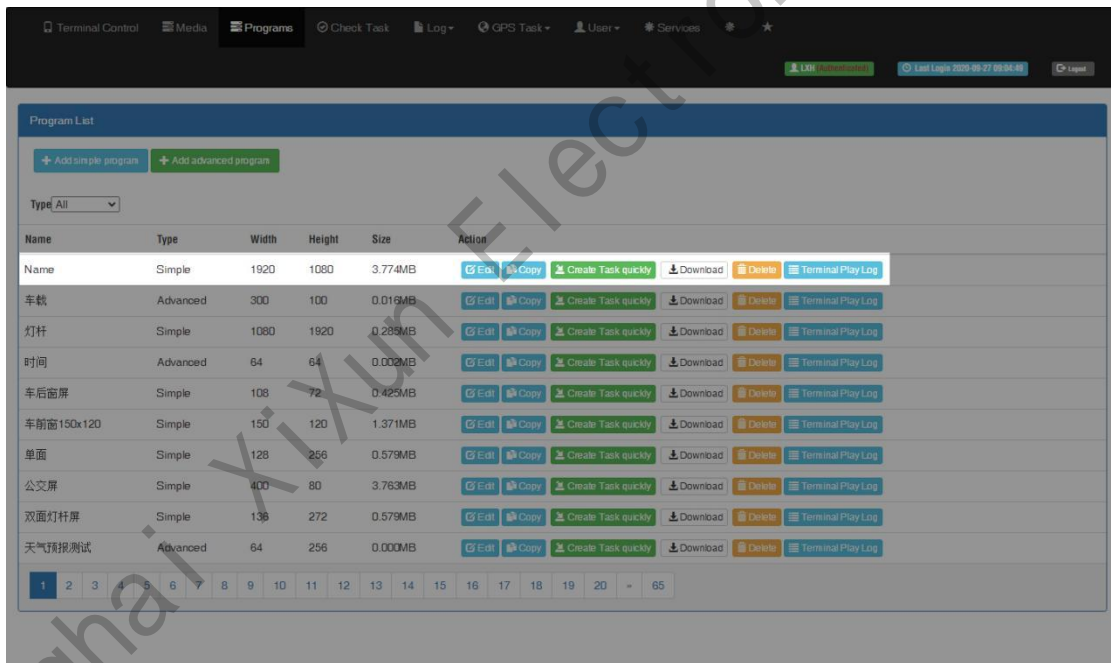
Advanced Program

Advanced program including image，video，clock，text，audio and support more layers.

1. Clcik "add advanced program" button and set correct screen width and height pixels，

   click ok.
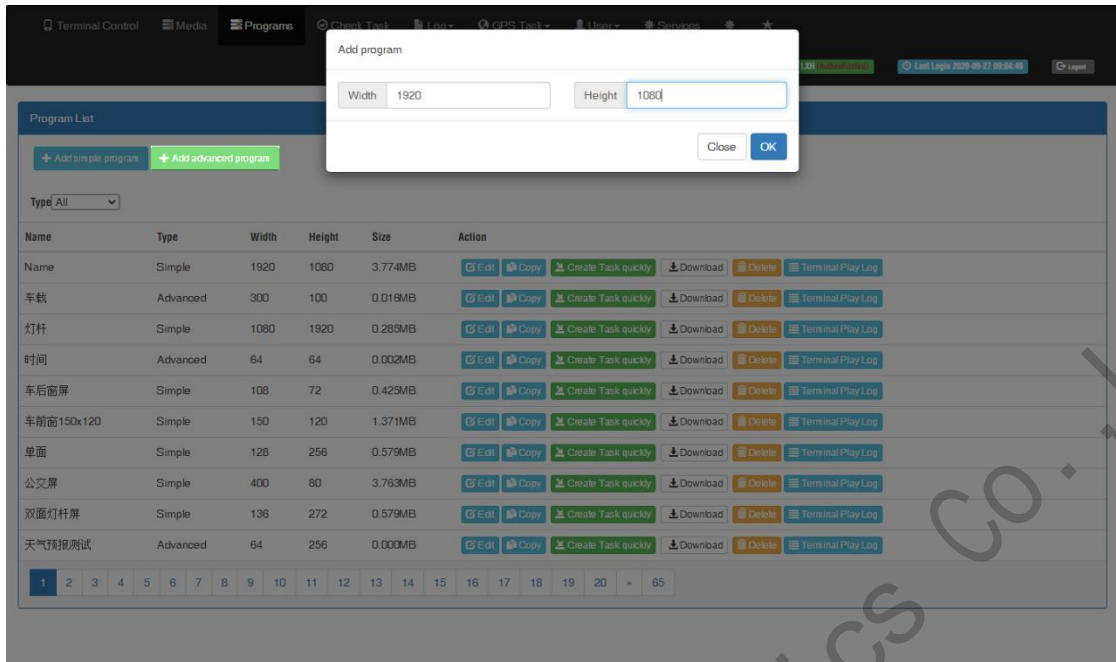
Here are 4 zones including media group，time panel，preview and program property.
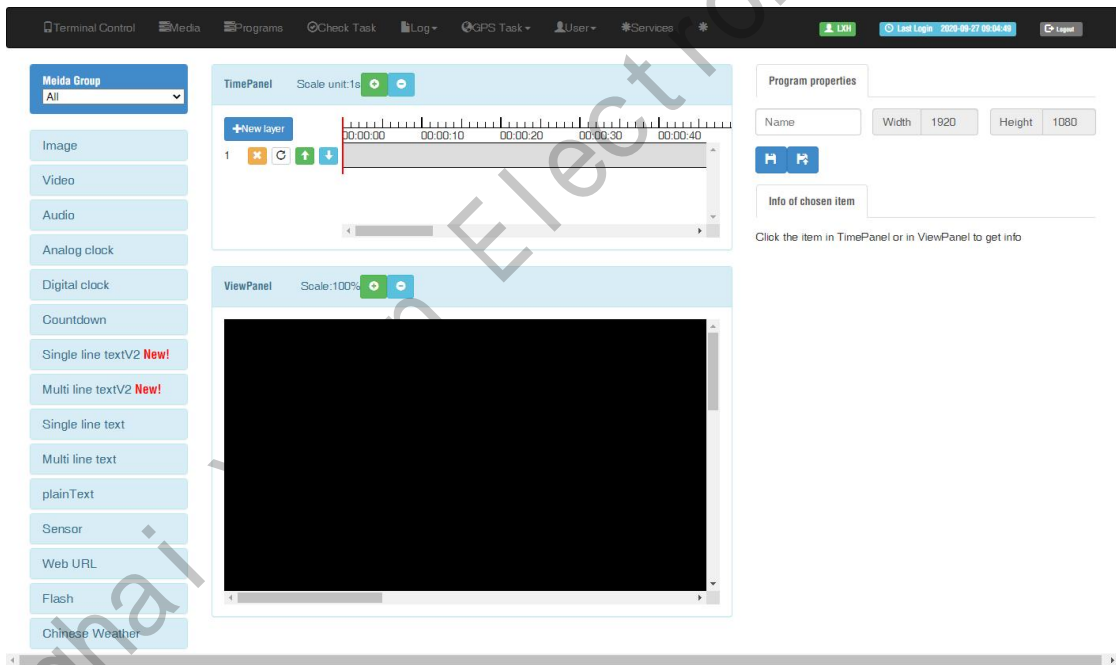
2. Click "New layer" button and select media file then add to the time panel，for example：

select video file and add to time panel.
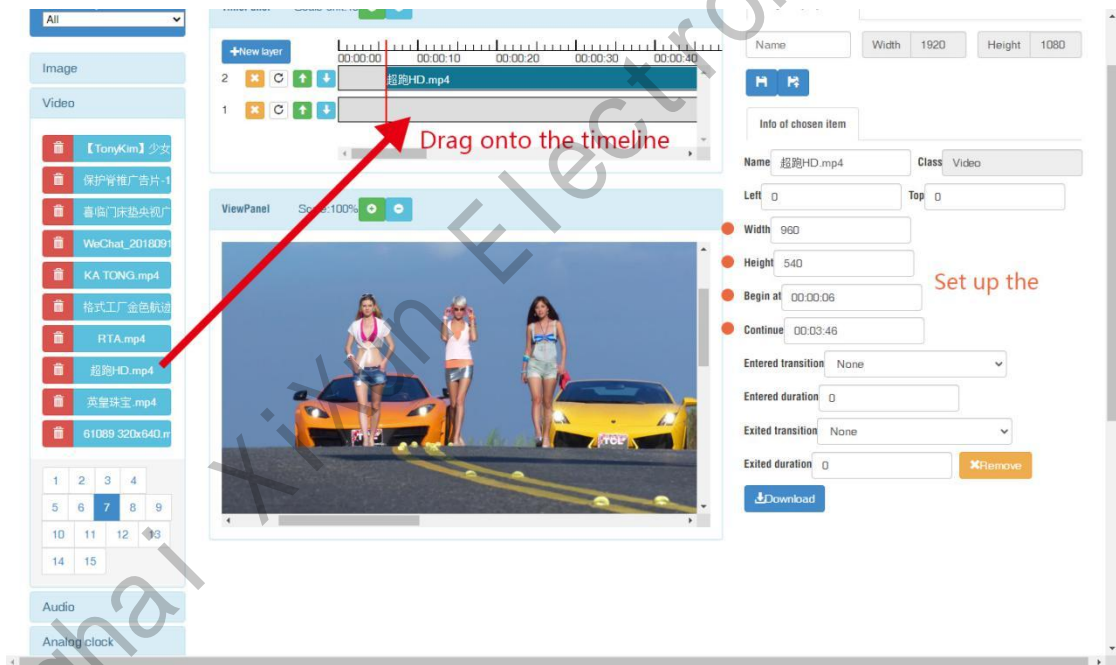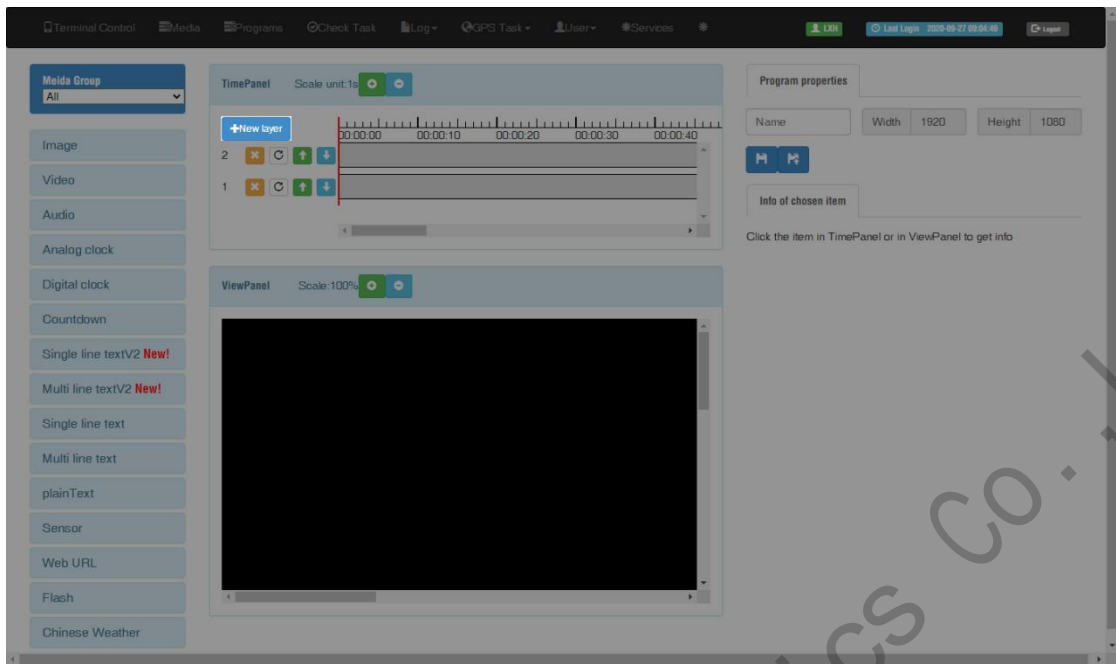
3.　Can set the program parameters， start and end time，
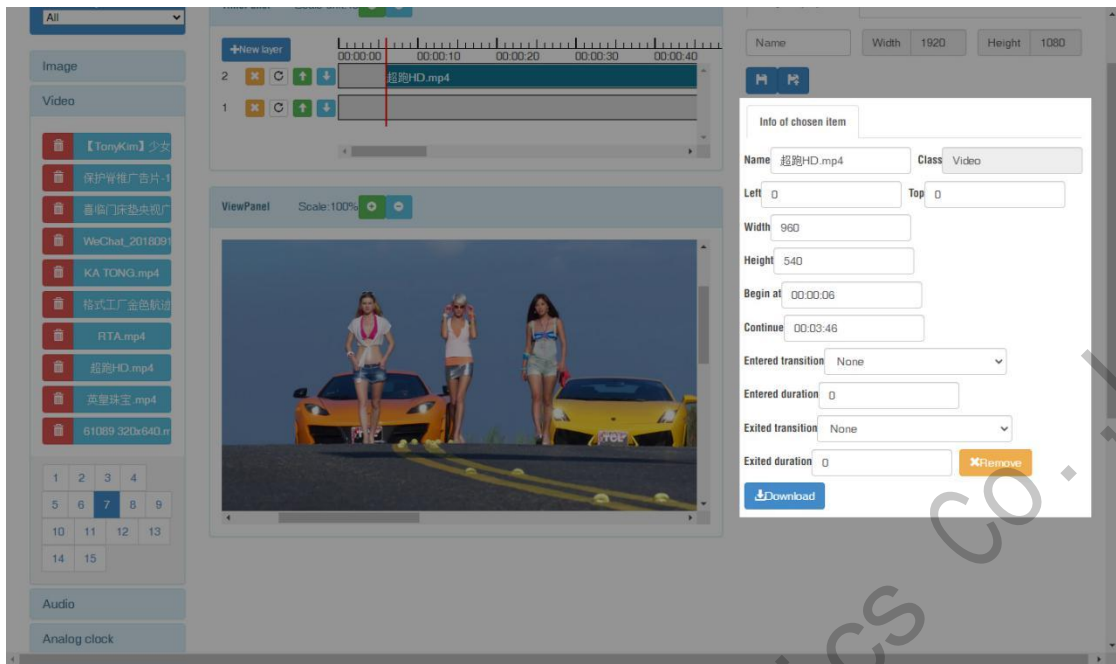
4. Save and quit after setup all parameters and program name.
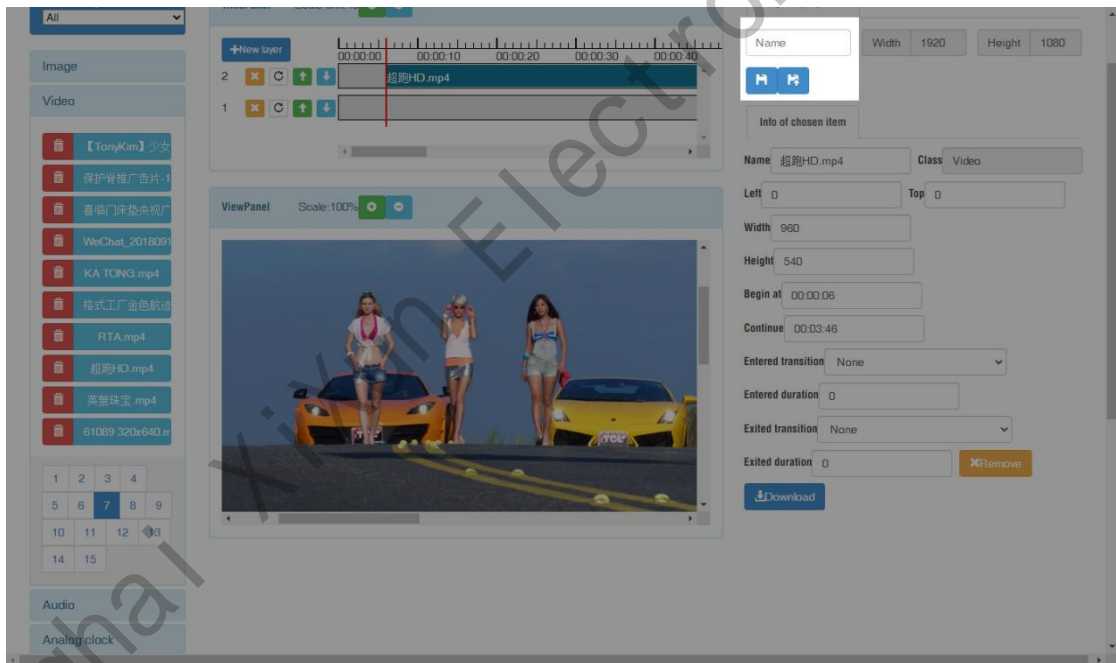
5. Then jump to program list interface，you can click green button of create task quickly and
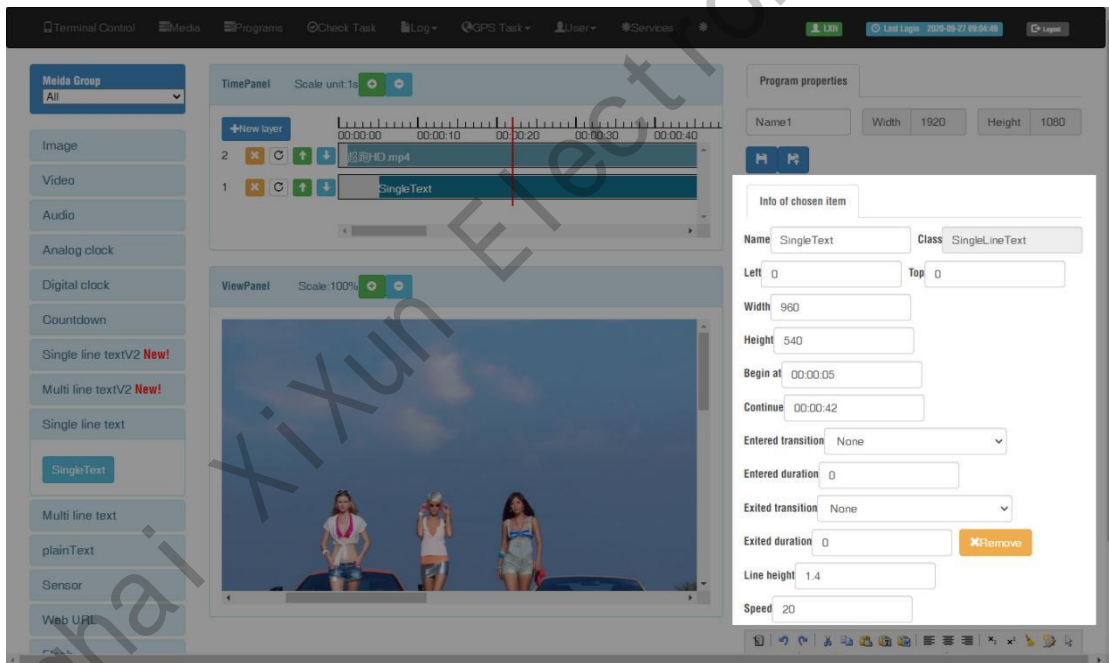
then select controller and send.
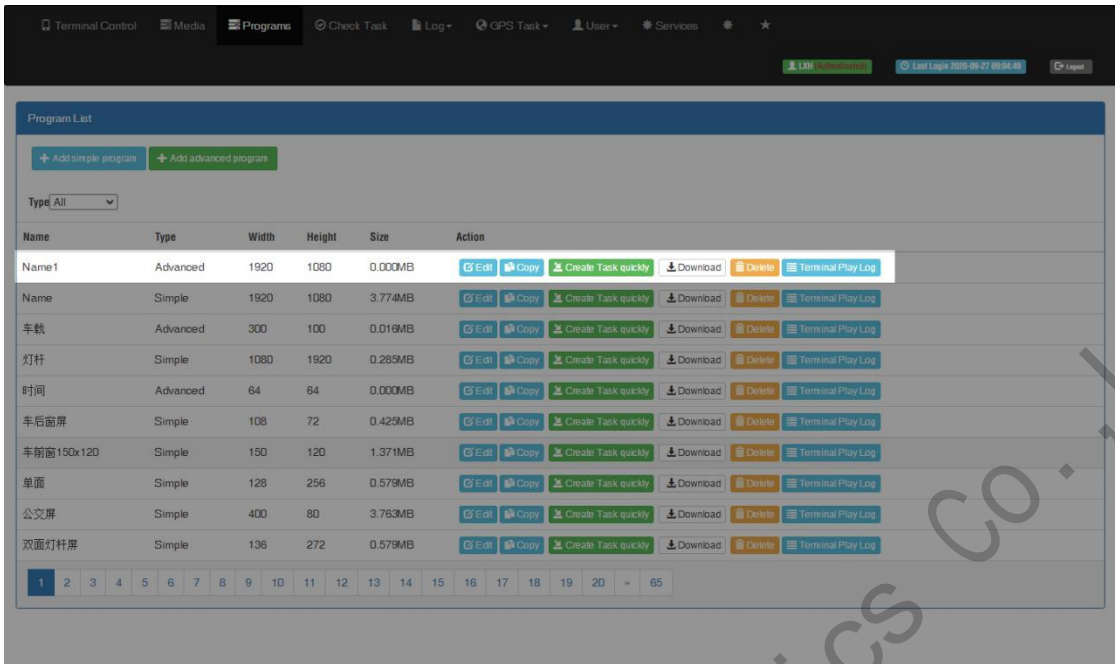
Use the "Edit" button to modify the existing program.
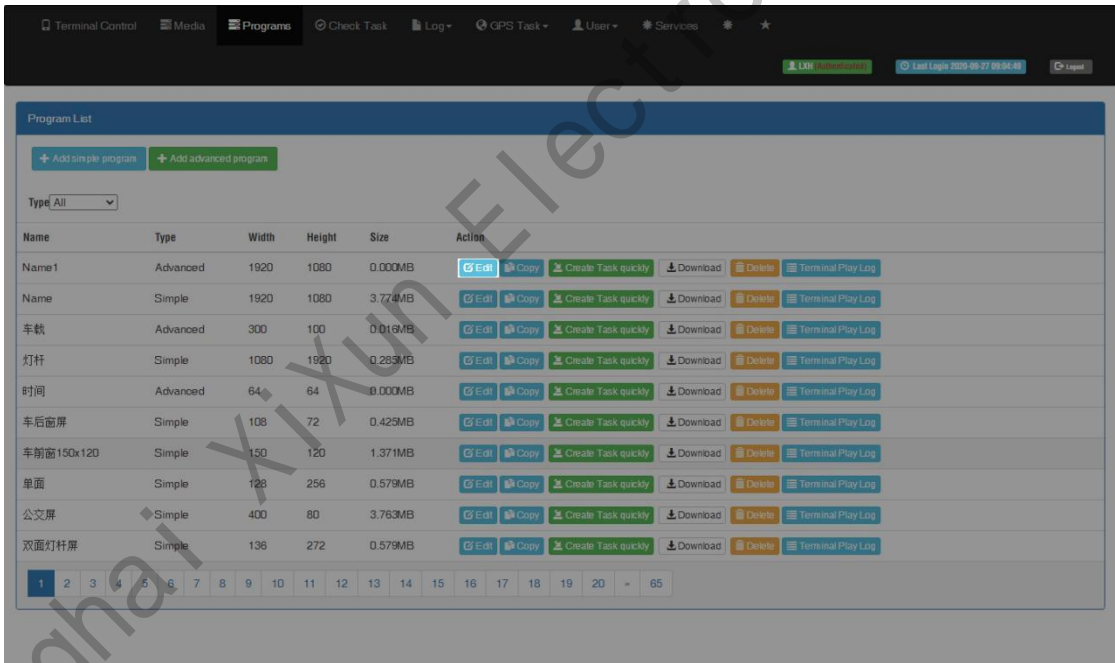
Add multi-line text, click the text (single or muti-text)and add to the time panel
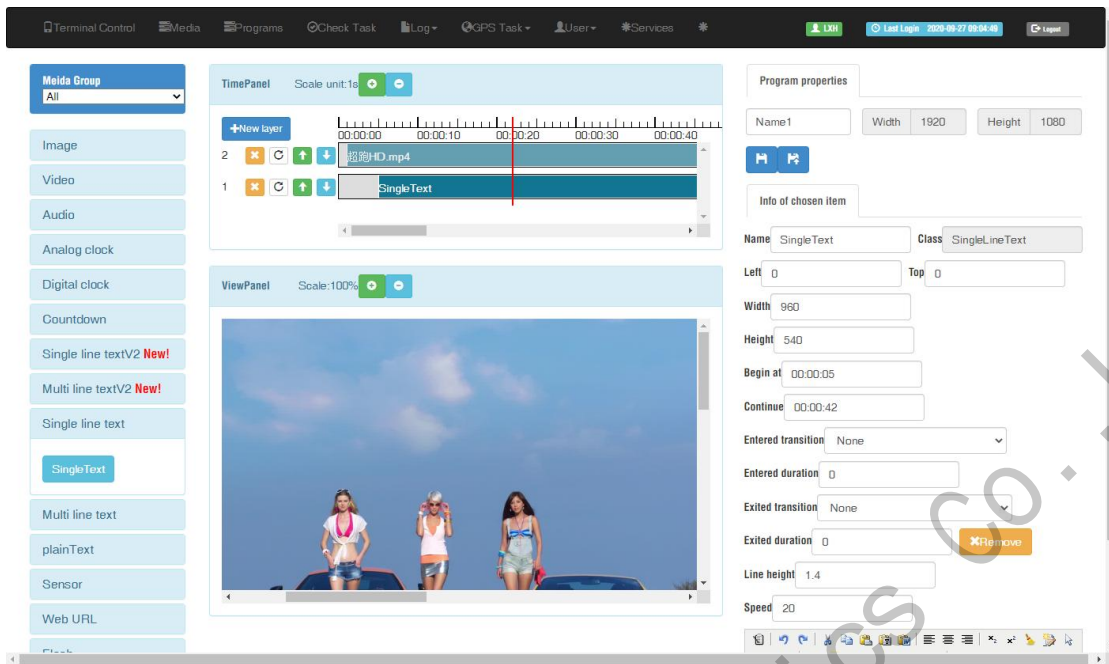
Setup parameters for text, including the start and end time.

Setup the text color, font size and add more pages, please pay attention to our TIPS message

in below, save and quit after finish.

Hint Press Enter to separate next page, Press Shift + Enter to new a line. Define the following string instead of the value of sensors in terminal: %c is celcius, %f is fahrenhite, %h is humidity, (%c1 %f1) or (%c2 %f2) round to 1 or 2 digit(s) after the decimal point
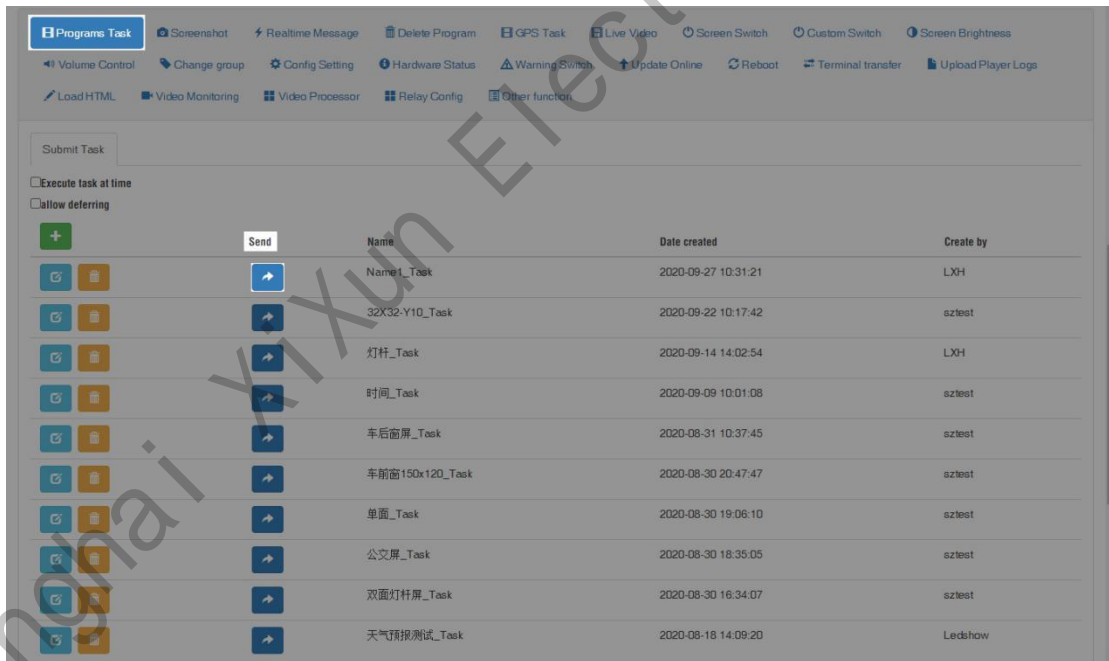
Send Program

1. Click "create task quickly" button in the program list interface and will jump to the terminal interface directly.
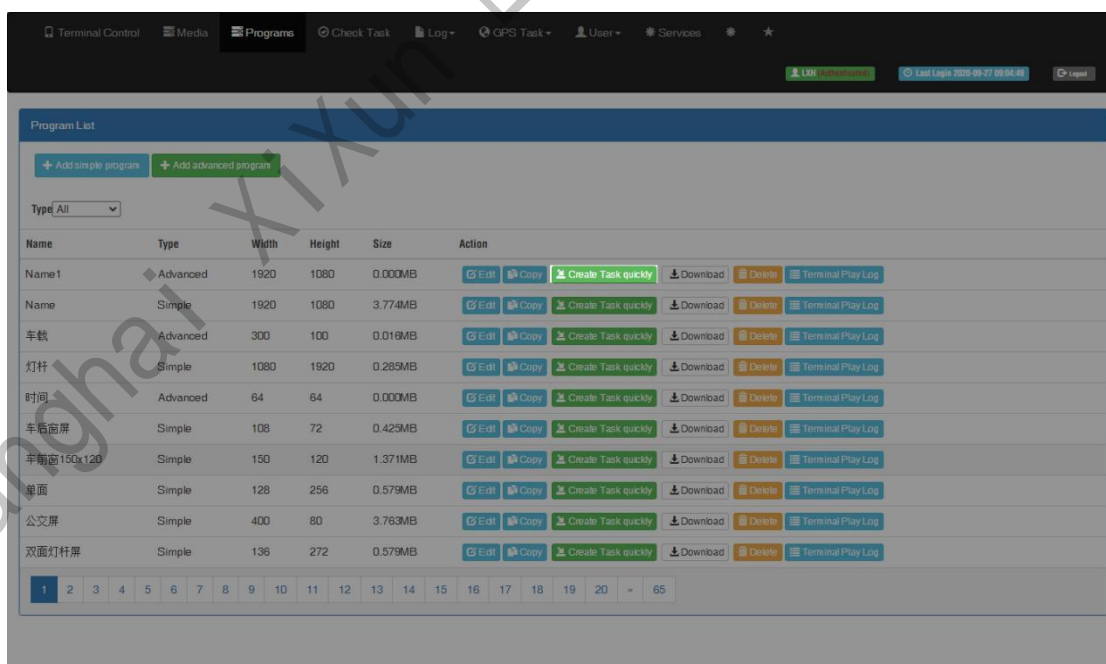
2. Select the controller and send program
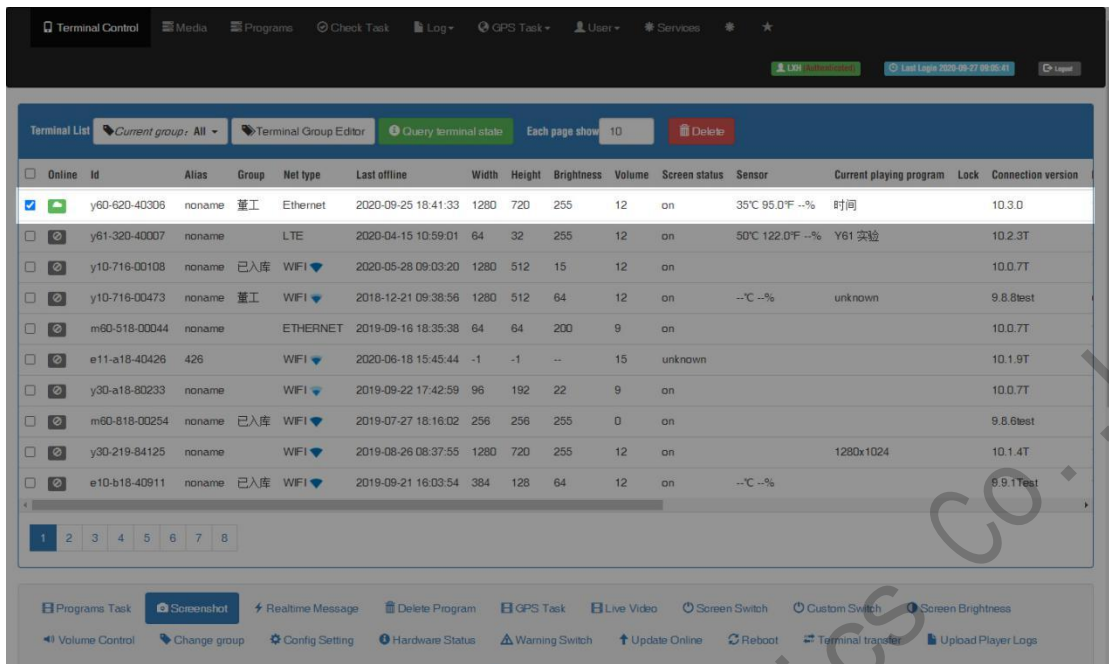
3. In the bottom part of terminal interface, will see program task then choose the program

task and click send.