



 **SYSOLUTION**

# Synchronous Sending Card

## S20

### Instructions

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Versions : Ver.1.0

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# Chapter 1 Operating Environment

## 1. Hardware Environment

CPU: Pentium 2.6GHz or above

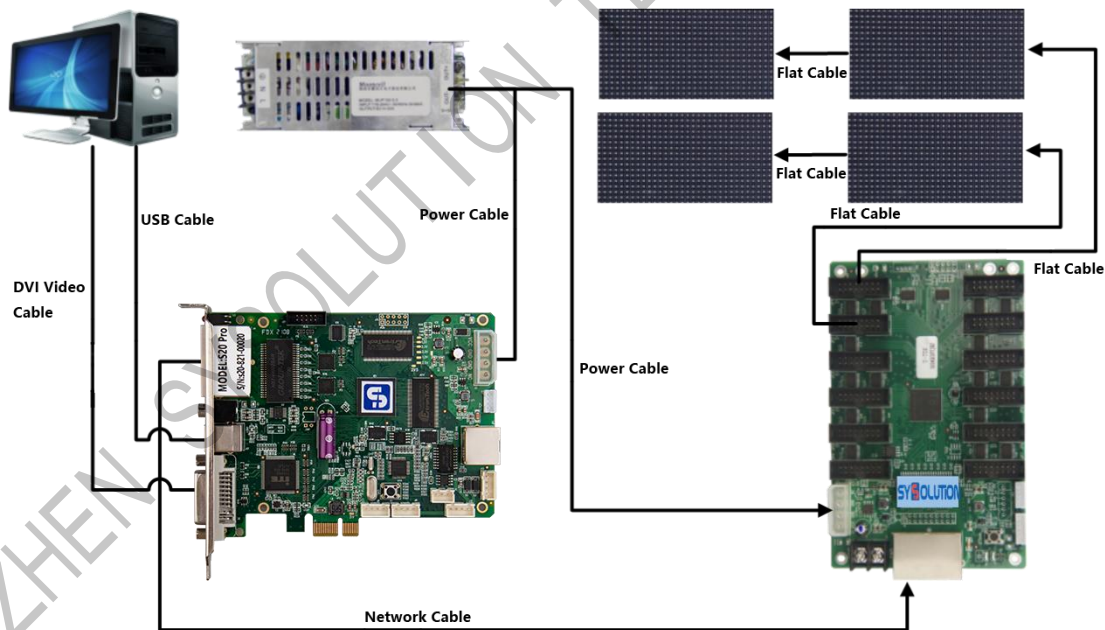
Memory: 512 M or more

## 2. Software Environment

Operating System: Windows NT/XP/Vista/Win7/Win8/Win10

# Chapter 2 Hardware Connection

Step 1: Install the sending card in the mainboard slot of the desktop computer or an independent power supply device such as an external sending box, and connect the DVI cable and USB cable, see Figure 2-1.

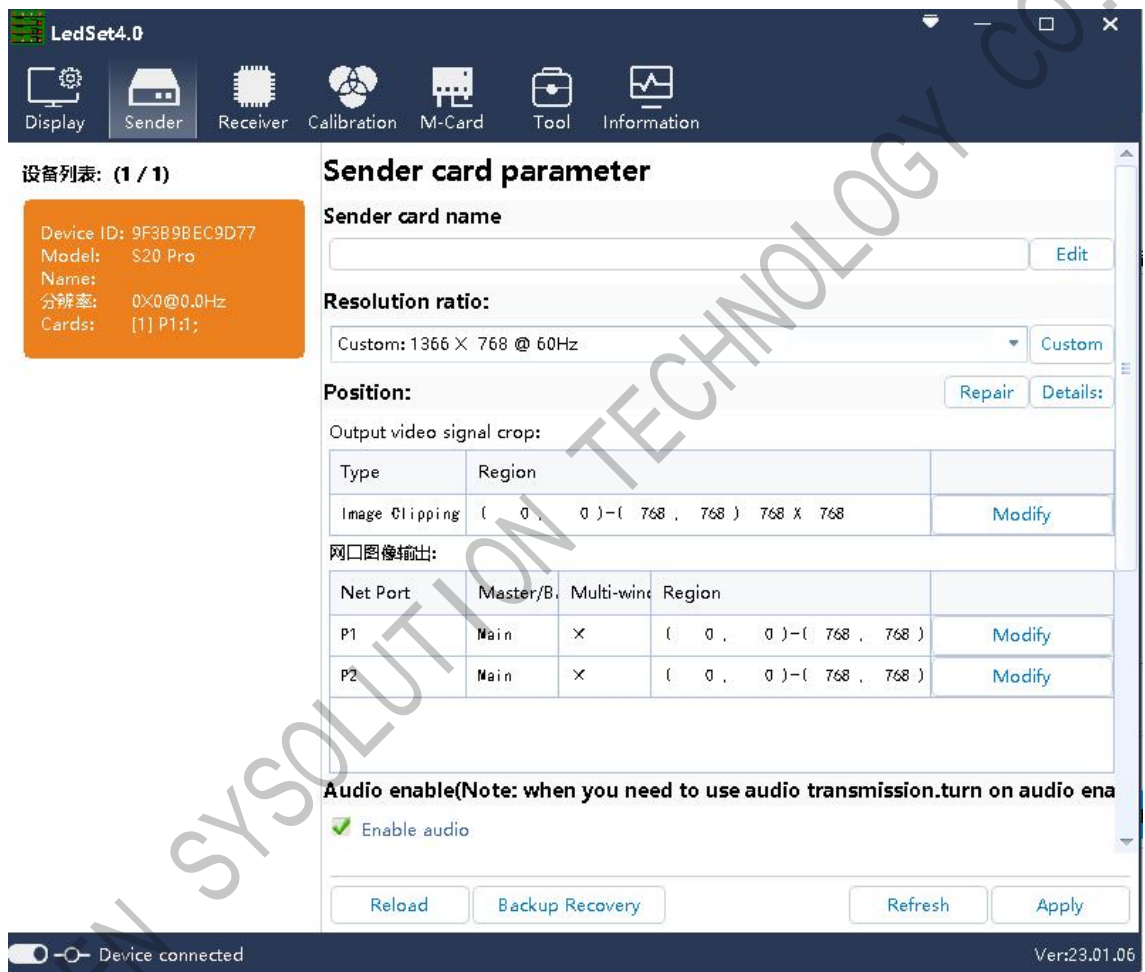


2-1: Hardware Connection Diagram

Step 2: Apply power to the receiver card and the large screen for debugging, and connect the sending card and receiving card with a Category 568B network cable. When the indicator

lights of both the sending card and receiving card are blinking, it means that the hardware communication is normal.

Step 3: Confirm hardware connection. Open the LedOK Express software, select the terminal control interface, click Advanced Settings, password: 888, and then click Configure with LedSet4.0 to confirm whether communication is established with the sending card and receiving card, see Figure 2-2:

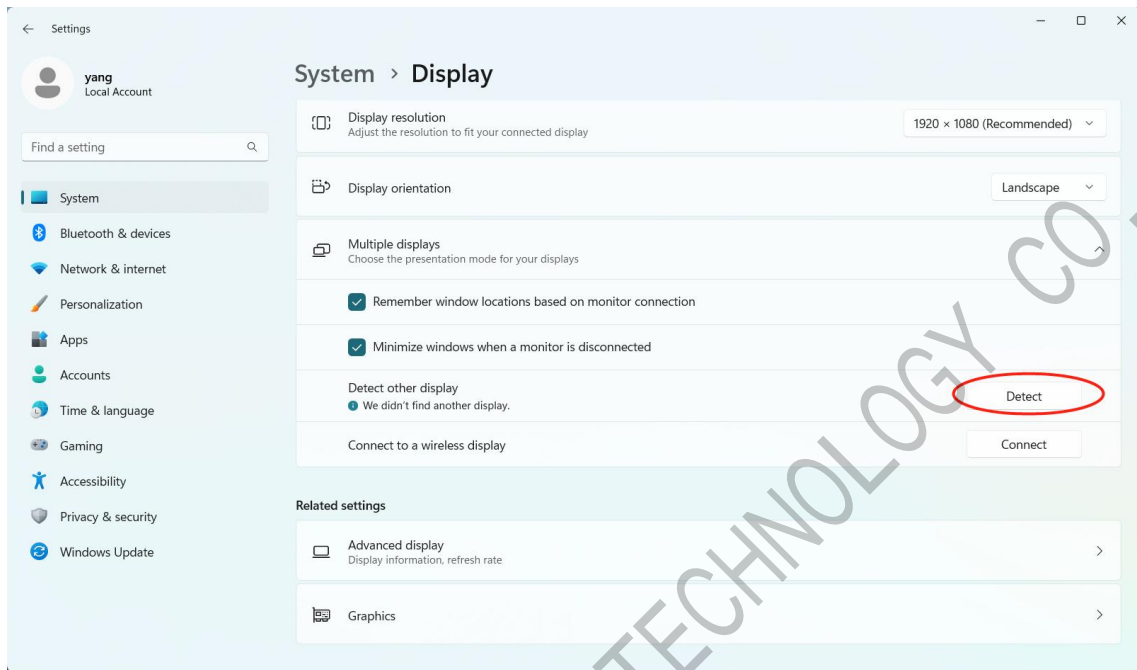


2-2: Communication status between software and sending card

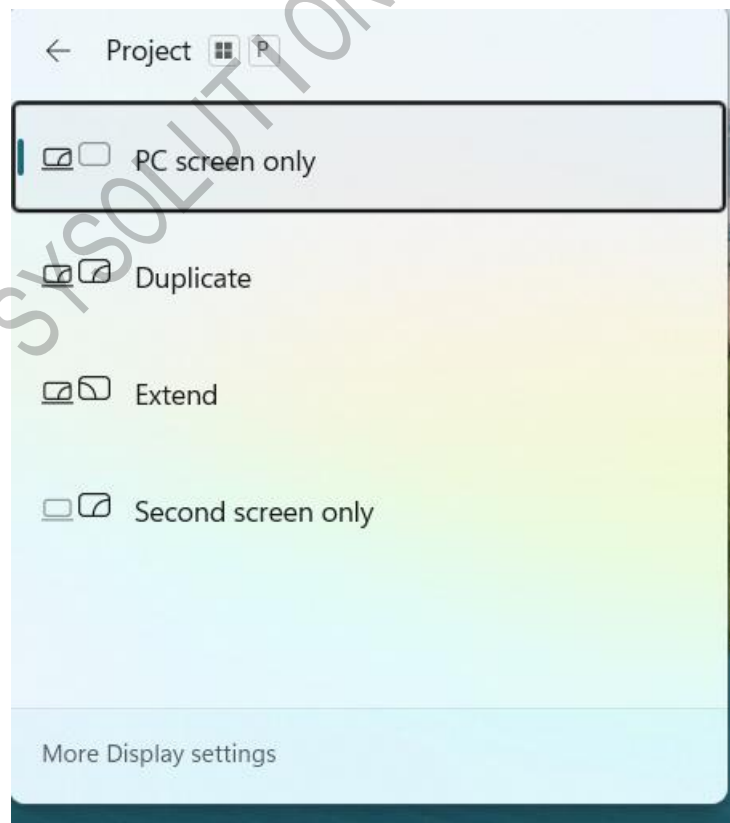
Tip: Confirm whether the display card is set up properly through the debugging software, as shown in Figure 3-2.

Step 4: Graphics card settings


4.1. Win10 system: Right-click on the desktop of the computer, select the Display Settings option, enter the "Display Interface", pull down the window to find multiple monitors, and select "Duplicate these monitors" in the pull-down list, as shown in Figure 2-3.



Or just hold down the windows key + P key and click Copy. As shown in Figure 2-4.



4.2.Win7/Win8 system: right-click computer desktop - screen resolution - - Detect ----

tick the replication mode, or use the Windows  +P key to select the replication mode. As 2-5 Figure.



4.3.XP system

4.3.1 ATI Graphics Card: Right click on the blank space on the desktop --- Properties --  
- Settings --- Advanced --- Enter Graphics Card Driver Control Panel ---- Display  
Management ---- and right click to replication. As shown in Figure 2-6



4.3.2 "NVIDIA" graphics card : Right click on the blank space on the desktop --- Properties --- Settings --- Advanced --- Enter the graphics card driver control panel --- Set multiple monitors --- Select Replication Mode. As shown in Figure 2-7



## Chapter 3 Screen Configuration

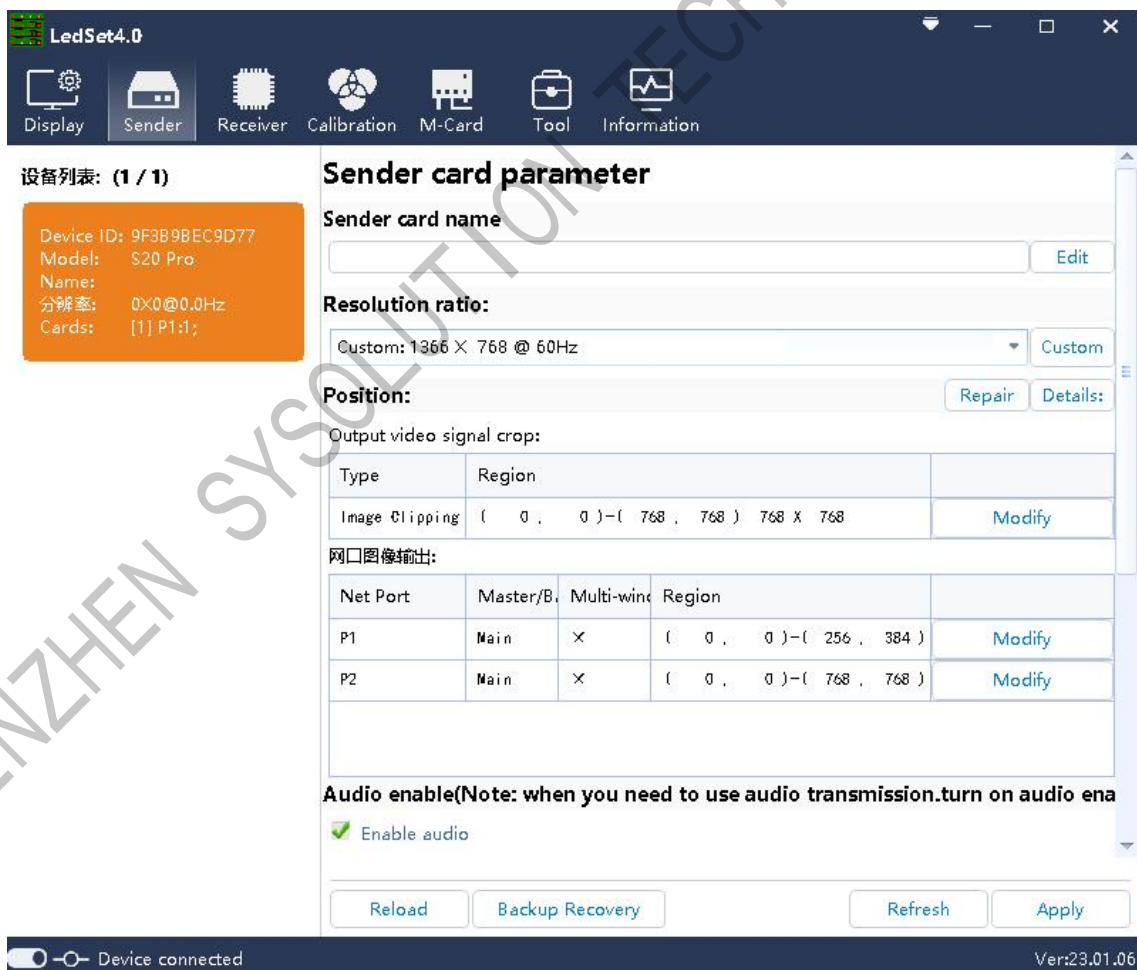
### 1. Send card settings

1) Modify the name of the sending card. You can click the "Edit" button to modify the name of the sending card in the sending card name column of the window. Naming the sending card is convenient for debugging multiple sending cards to quickly specify the card to send data and improve debugging efficiency.

2) Resolution setting. When the current resolution and frame rate of the sending card are not consistent with the DVI resolution and frame rate connected to the sending card, it may lead to image scaling, distortion, ghosting, flickering and other problems on the display. Therefore, it is necessary to change the DVI signal connected to the sending card or change the resolution of the sending card itself

to achieve consistency and ensure that the screen is displayed normally (the video output from the processor and the splicer is mandatory output, and when it is connected to the sending card, the resolution of the sending card does not need to be set, but the left column of the sending card will show the input resolution information).

Change the sending card resolution: Click the "Sending Card" button to enter the Sending Card Settings window, as shown in Figure 3-1-1. Modify the resolution of the sending card by changing the preset resolution or customized resolution in the drop-down list, and adjust it to match the resolution of the input DVI signal. After debugging the Sending Card, click the Cure button to save and cure the parameters of the Sending Card.



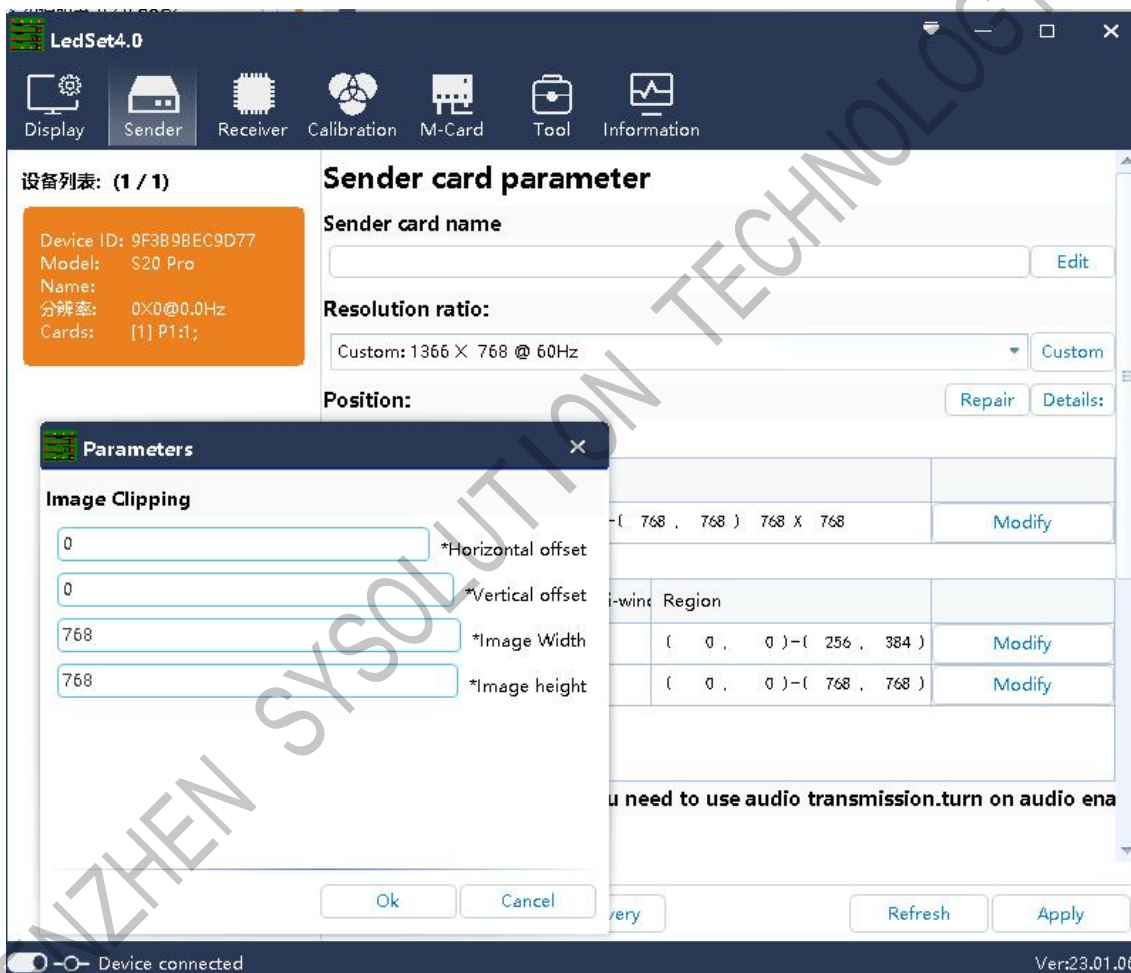
3-1-1



### 3) Sending card splicing (sending card display position setting)

In the Position column of the Sender Card window, you can adjust the starting position of the LED screen image by setting the intercept of the input DVI signal, the default coordinate is (0,0). Other positions will be configured automatically according to the connection settings of the display, or you can set the display position manually to stitch the display screen of multiple transmitter cards. After debugging, click the Cure button to save the adjustment effect to the sending card.

See Figure 3-1-2:



3-1-2

Note: When the display is spliced using a sending card, the product of the horizontal and vertical resolutions must be less than 2.3 million.

### 4) Enable Audio Transmission

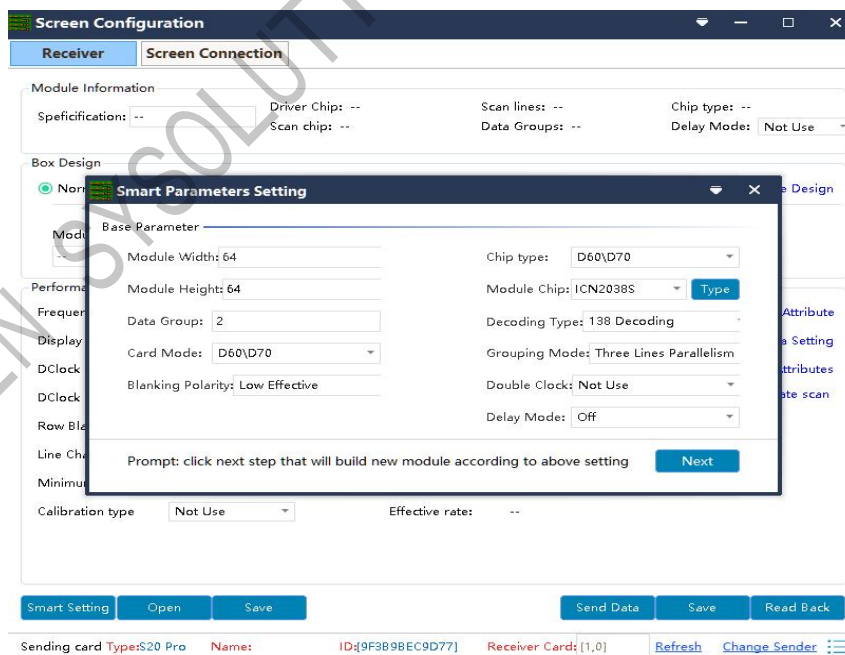
The audio output from the computer and other devices is connected to the audio port of the sending card through the audio cable, and then transferred to the multifunction card through the Gigabit Ethernet port, and output from the audio port of the multifunction card. After the hardware connection is normal, enable the audio transmission function in the interface of the transmitter card, and the audio can be output to the amplifier and other devices through the multi-function card.

## 2. Normal Configuration

### 2.1. Smart Setting

Operation steps:

1) Click "Screen Configuration" icon on the main interface of LedSet4.0 software, click "Normal" to enter the configuration window of receiver card, and click "Smart Setting" button on the left bottom corner to enter the Smart Parameter Setting Window, and input the corresponding parameters according to the actual situation of the current LED module. See Figure 3-2-1:



3-2-1

Module Width/Height : Enter the actual pixel width/height of the current module.

Module Data Group : Observe the interface definition of the data input port of the module, and calculate according to the actual number of data lines and grouping method of the module. Generally it is three lines in parallel, so one RGB is a group of data, for example: the module has two groups of RGB, then the data group of the module is 2.

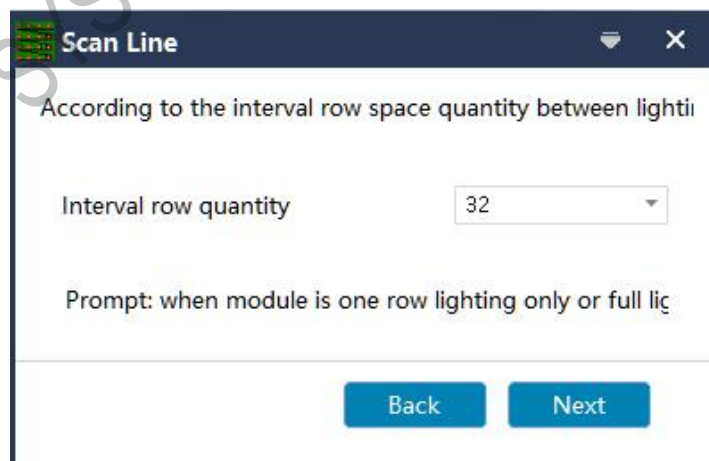
Card Mode : The mode of receiver card used for current debugging, you can directly view the logo on the receiver card.

Driver Chip : Select the type of driver chip used in the current module, such as: regular chip, MBI5153, ICN2053, etc.

Decoding type: select "138 decoding", "5958 decoding", "direct output high" and so on.

Grouping mode: observe the current module data input port interface definition, such as =R\G\B (red, green and blue) three color signal data, (and the module to control the red, green and blue LED driver chip is connected separately, red, green and blue chips are not connected in series), then the data type select "three lines parallelism"; if the module only one color signal data or only one R data (except monochrome screen, and control the red, green and blue LED chips are connected in series), then select "RGB serial".

2) The next step is to enter the Scan Line window. Select the scan lines according to the actual display of the current module. As Figure 3-2-2 below:



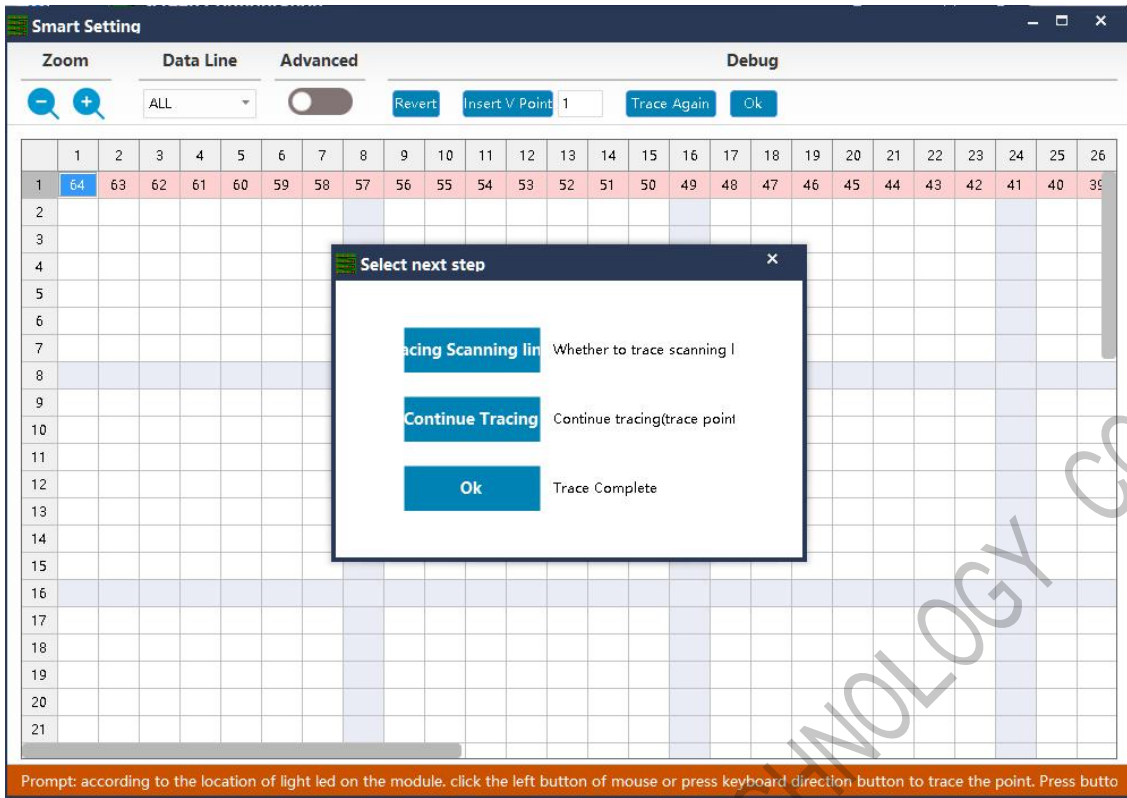
3-2-2

3) The next step is to enter Date Line Color window. Select the corresponding display color according to the status mode. As figure 3-2-3:



3-2-3

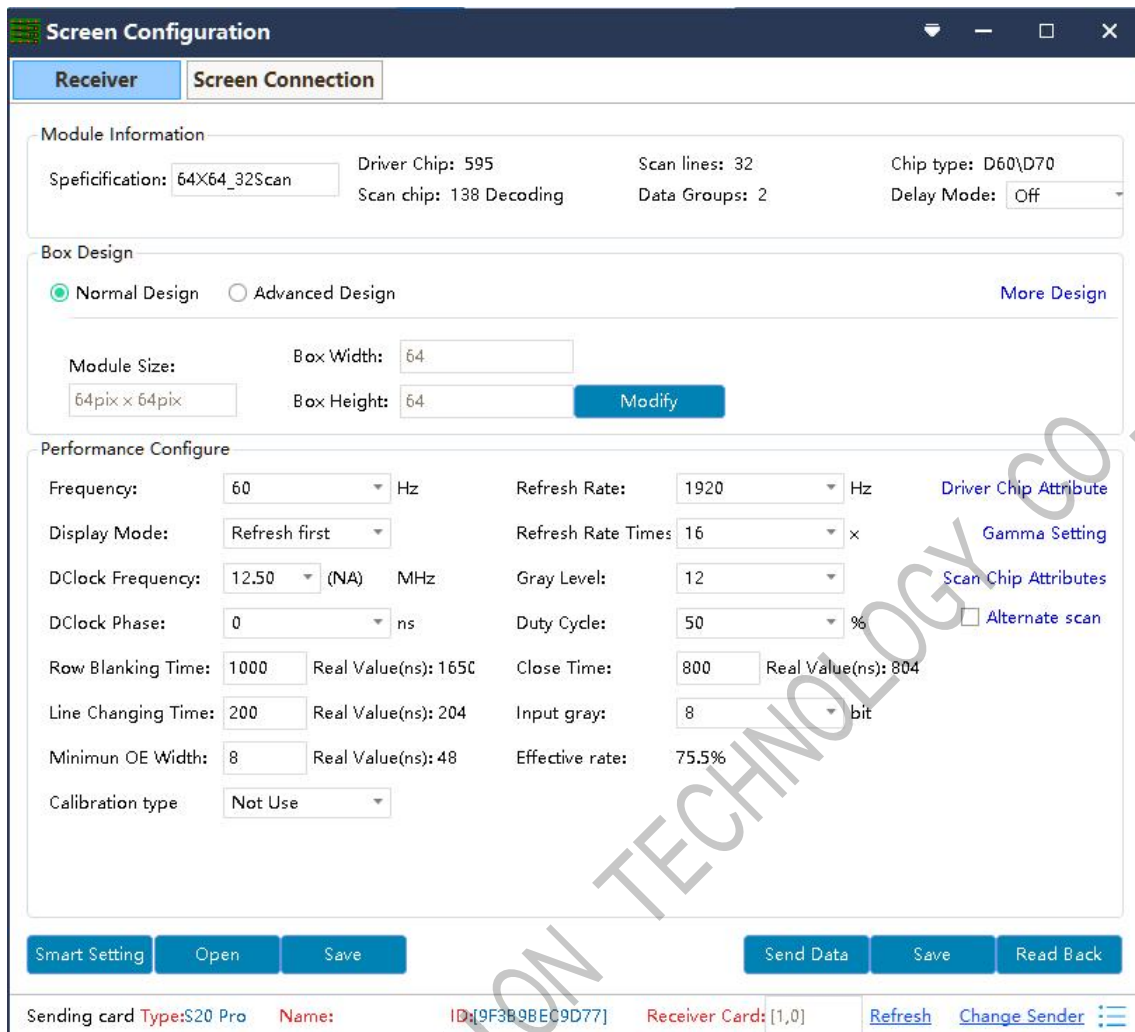
4) Click Next to enter the Smart Setting window. According to the actual display of the current module, trace the point (if there is no pixel flashing in the module, please connect the LED module to the first data interface of the receiver card or change the data cable to all interfaces, or try to insert the virtual point), after the smart setting is finished, it will prompt to finish the window, click "Finish tracking", then click "ok" button, then send the data to the device, as shown in the following Figure 3-2-4 .



3-2-4

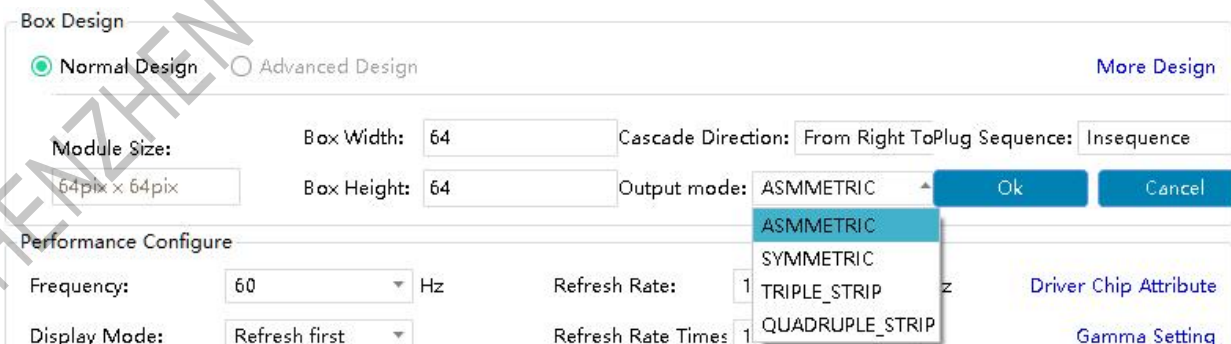
## 2.2. Receiver card configuration

The "Receiver Card Configuration" can be completed by Smart Setup, or by loading the module file through the preset "Select Module" (applicable to Receiver Card 1), or by loading the saved box module file through the "Open Configuration", as shown in Figure 3-2-5 below.



3-2-5

1) In the box design column, select "General Design" and click the Modify button to set the box width and height, as well as the cascade mode and output mode according to the actual load of the receiver card. As shown in Figure 3-2-6 below.



3-2-6

Output mode : There are two to four output modes. According to the actual needs, you can give full play to the performance of the receiver card, so that the display has a higher refresh rate. The following is an example of module cascade direction from right to left.

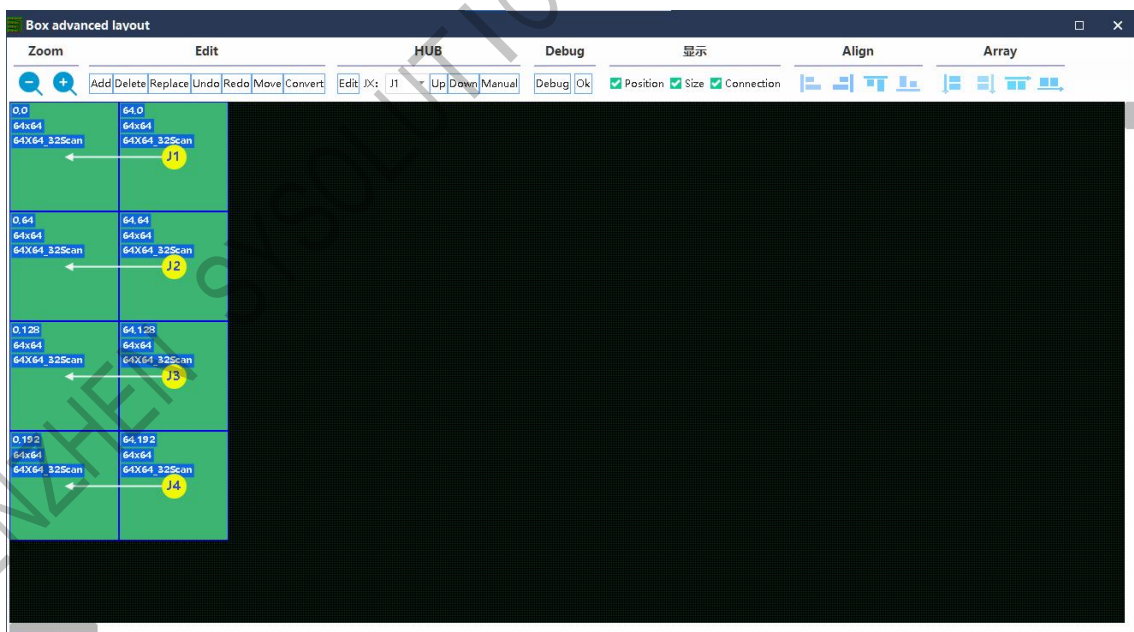
No Folio Output: 1 to 24 data sets highly banded from top to bottom.

Dual Folio Outputs: Receiver card (1-12) data sets with left half-light panel, (12-24) data sets with right half-light panel, with the same width or height of the carrier.

Triple folio outputs: 1-8, 9-16, 17-24 Each of the 8 data sets is horizontally divided into three sections carrying the same width or height.

Four folio outputs: 1-6, 7-12, 13-18, 18-24 Each of the four data sets is horizontally divided into four sections carrying the same width or height.

2) Complex box construction. Select "Advanced Design" in the box design navigation bar. Click the Advanced Layout button to enter the box layout editing interface, where you can construct the complex box. See Figure 3-2-7 below.

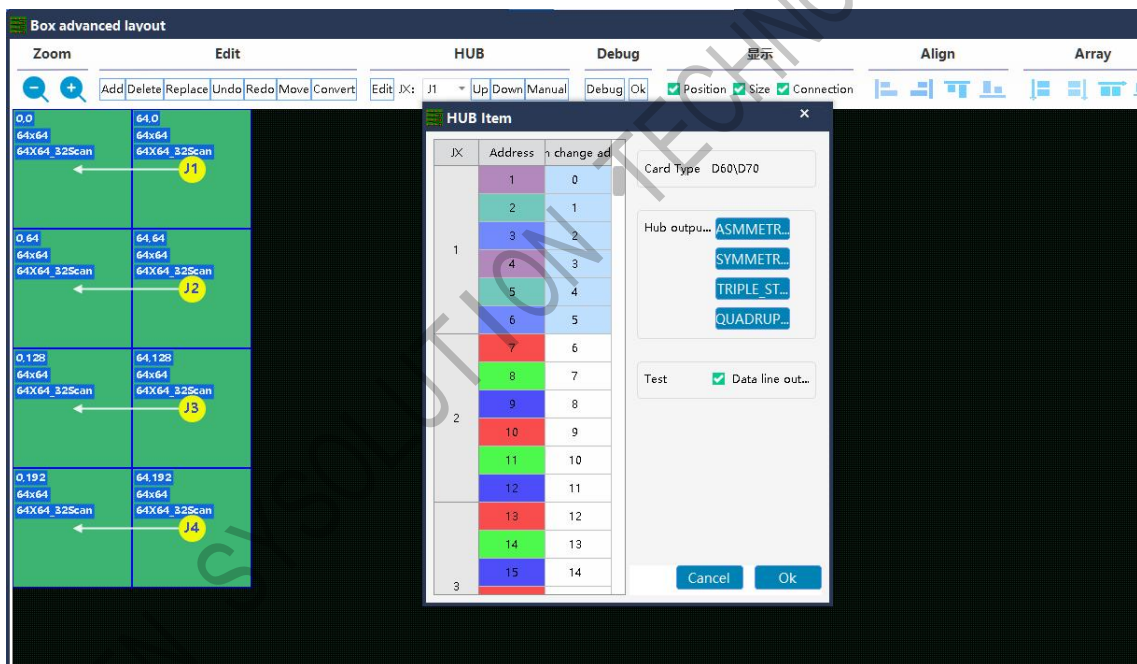


3-2-7

HUB port switching : Select the corresponding module and change it directly to the actual HUB port in the HUB column, or move the module for switching.

Data line exchange : Click "Edit" button in HUB column to enter the data address editing interface, as shown in Figure 3-2-8.

In this interface, open the Data Line Output Test button and find the HUB port corresponding to the module in the "Jx" column of the HUB entry. Change the data line address in the "Switch Address" column of the HUB entry until the colour displayed on the box matches the colour in the "Address" column of the HUB entry. When it corresponds to the HUB port in the module layout (module construction), it means the change is correct. Similarly, after defining all the HUB addresses, close the "Data Line Test" button. Finally, click "Finish Edit" button to exit the data line exchange editing interface.



3-2-8

3) If you are not satisfied with the display effect, you can change the parameters manually, as shown in Figure 3-2-9 below.



Performance Configure			
Frequency:	60	Hz	Refresh Rate: 960 Hz
Display Mode:	Refresh first		Refresh Rate Times: 16 x
DClock Frequency:	12.50	(NA) MHz	Gray Level: 12
DClock Phase:	0	ns	Duty Cycle: 50 %
Row Blanking Time:	1000	Real Value(ns): 2232	Close Time: 800 Real Value(ns): 804
Line Changing Time:	200	Real Value(ns): 204	Input gray: 8 bit
Minimum OE Width:	8	Real Value(ns): 102	Effective rate: 80.2%
Calibration type	Not Use		

### 3-2-9

**Refresh rate** : An important indicator of the display effect. Increasing the refresh rate improves the water ripples that appear when the screen is captured with a camera.

**Display scheme** : There are two kinds of display schemes: refresh priority and grey scale priority.

**Refresh Rate Priority** : This mode greatly improves the module refresh rate at the expense of brightness efficiency;

**Grayscale Priority** : This mode will give a better grayscale effect at low brightness.

**Octave** : High brush algorithm to increase the visual refresh rate, default 16.

**Data clock frequency** : it is related to the circuit design of LED module and the driver chip used. If high brush IC is used and the design is reasonable, the higher clock the module can achieve. It can support higher grey scale and refresh frequency with the same bandwidth area.

**Grey level** : Increase the grey level according to the requirements of the display. The higher the grey level, the better the picture level and the better the picture quality.

Generally 12~14bit, 12bit grey scale is equal to 212th grey scale is equal to 4096 levels of grey scale.

**Data Clock Phase** : Set the starting point of clock timing. Adjust this item if the screen has abnormal phenomena such as flashing dot and splash screen. Generally 12.5~17.86.

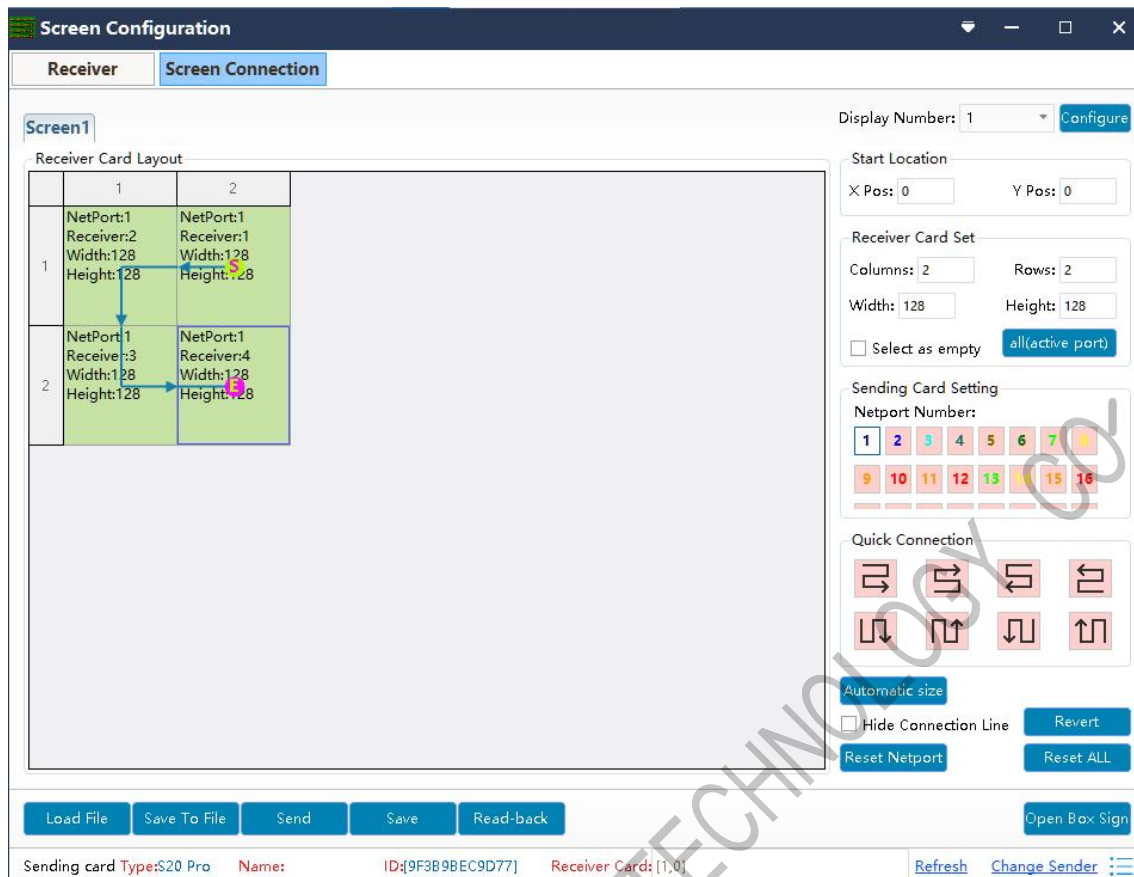
Duty Cycle : The duty cycle of the clock phase, change this data, you can make the scanning clock phase can be on a higher clock, generally set to 50%.

Line feed time/position/switching position: the time and position of data switching after sweeping a line and then sweeping the next line, mainly to adjust the scanning screen afterglow, if the afterglow is serious, you can increase the value of this line feed time, generally take the default value.

4) Click the Send Data button to send the receiving card programme to the receiving card. When sending data, you can specify the network port or the specified card to send, or you can reset the position of the receiving card, so that the position of all the receiving cards is zeroed to show the same position. Observe whether the box is displayed normally. When satisfied, click the Cure Data button to cure the data to the receiver card. Prevent data loss after the receiver card is powered off and restarted. Finally, click the Save Configuration button to save the box configuration file to your computer.

### **2.3. Display connection**

1) After the user has configured the receiver card file, click the "Display Connection Button" in the menu bar of the receiver card configuration interface to enter the display window interface. The figure below is 3-2-10.



### 3-2-10

Tip : When doing a connection operation on the current display, first click the Refresh button. Refresh all the receiving cards carried by the current sending card, check whether the number of chips (usually the number of receiving cards) is the same as the number connected.

Refresh all the receiver cards carried by the current transmitter card, check whether the number of chips (usually the number of receiver cards) is the same as the number of connected cards. If it is not the same, please check whether the hardware connection is normal or not, when connecting more than one transmitter card, please switch the transmitter card and find the corresponding transmitter card for debugging.

Load from File : Loads the display configuration file saved on the control computer.

Save File : Save the display configuration information to your computer as a (. \*lcn) format file to your computer.

Send to Hardware : Sends the screen configuration information to the sender and receiver cards.

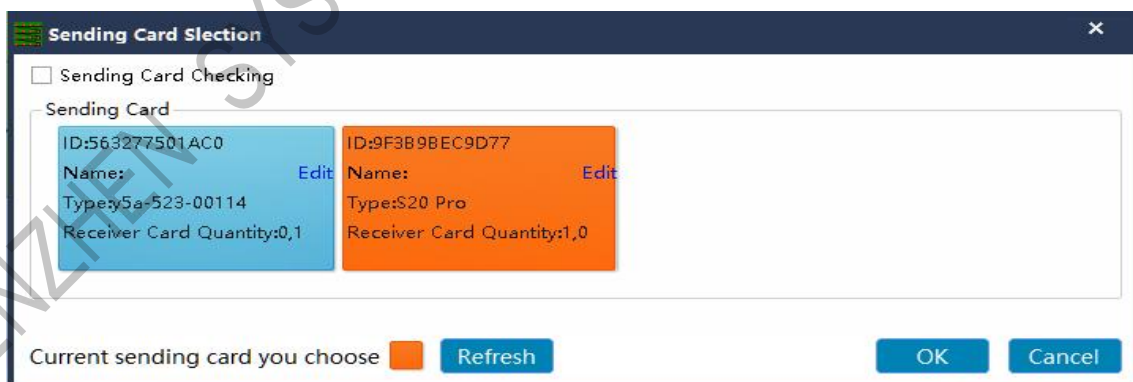
Curing data : Curing the screen configuration information into the receiver card and transmitter card, no loss in power failure.

Current Sending Card Information : Type, Name, ID is to distinguish the sending card. "Name" can be edited in the sending card screen.

Number of Receiver Cards : the number of receiver cards connected to the transmitter card, the four values represent the receiver cards carried by the four ports of the transmitter card.

For example, the number of receiver cards (2,22,0,0) means that port 1 of the transmitter card carries 2 receiver cards. port 2 carries 22 receiver cards. port 3 and 4 carry 0 receiver cards. Ports 3 and 4 carry 0 receive cards.

Switch the sending card: When multiple sending cards are connected at the same time, you can click the switch the sending card button to enter the switching interface of the sending card, as shown in Figure 3-2-11 below.

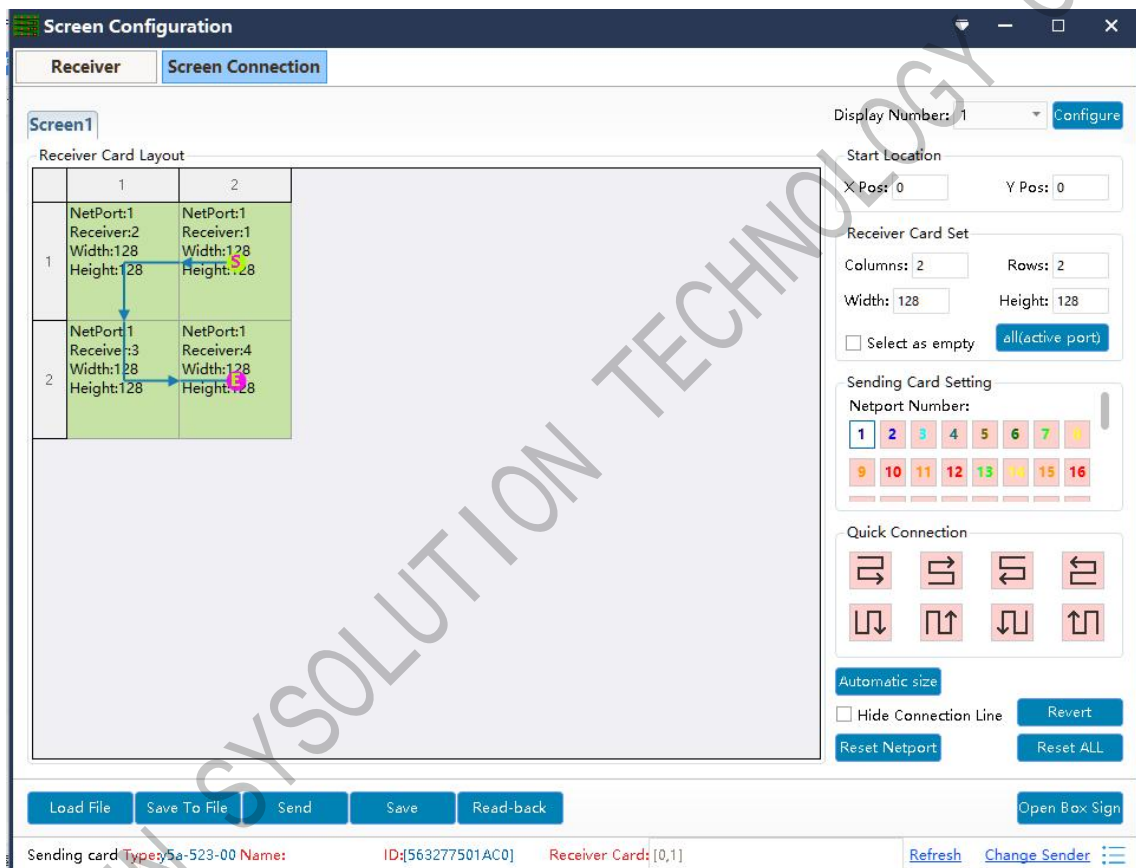


3-2-11

Click the Refresh button to refresh the receiver cards carried by the sending card. Tick the Start transmitter card detection checkbox. When selecting a sender card, the area of the

receiver card (the box that has been configured with data) carried by the selected sender card will blink, making it easy to quickly find the sender card with the corresponding carry area. You can also edit the name of the transmitter card after confirming the area, by clicking the Edit button you can edit it directly.

2) In the display connection interface, according to the actual situation of the big screen, set the cascade mode of the receiver card, width and height (each receiver card can be different in bandwidth and height), such as 3-2-12 Figure:



3-2-12

Number of Displays : The number of displays can be configured by clicking on the Setup button, and the system will automatically update the number of displays. Button

Screenshot :. If you see the page with the configured display connections, you can modify it according to the actual situation or click the Reset All button to reset the settings. Starting Position : The position of the LED display that intercepts the input

signal source. The default state is (0,0), that is, the LED display starts from the point (0,0) of the video source.

Receiver Card Setting: According to the actual number of cards used in the display, set the number of columns and rows of the receiver card and the width of each receiver card in the Receiver Card Setting column on this interface.

Apply to current network port : Set the size of all the boxes connected to this network port to the current column width and column height.

Transmitter Card Setting: Select the network port access of the transmitter card.

Quick Connect : If the whole screen is loaded with only one cable and the cable of the receiving card is regular cascade, you can use Quick Connect.

Hide Alignments : When the Hide Alignments check box is selected, the display connection knowledge will be hidden.

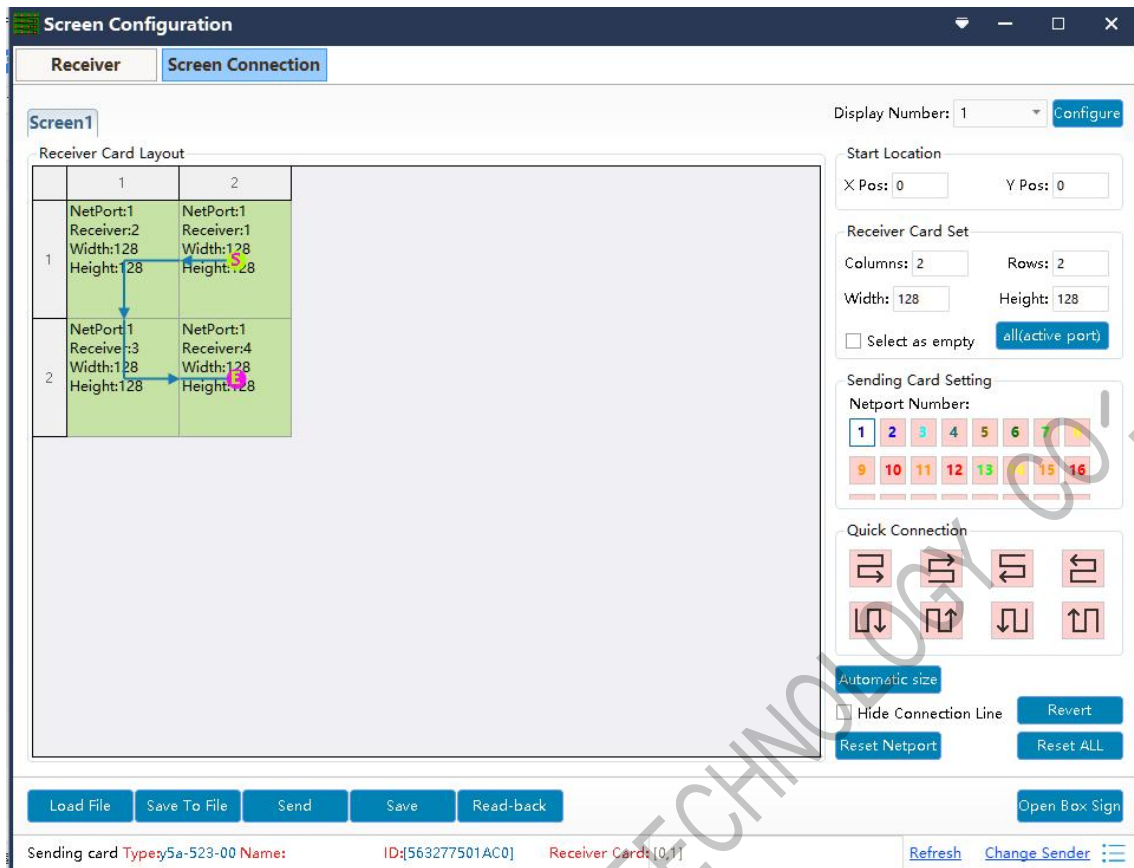
Rewind: Undo the last step.

Reset Current Port: Reset all the settings related to the current port.

Reset All : Reset all settings related to all network ports.

Connecting a splitter: If a splitter is connected to the big screen, you can do the following.

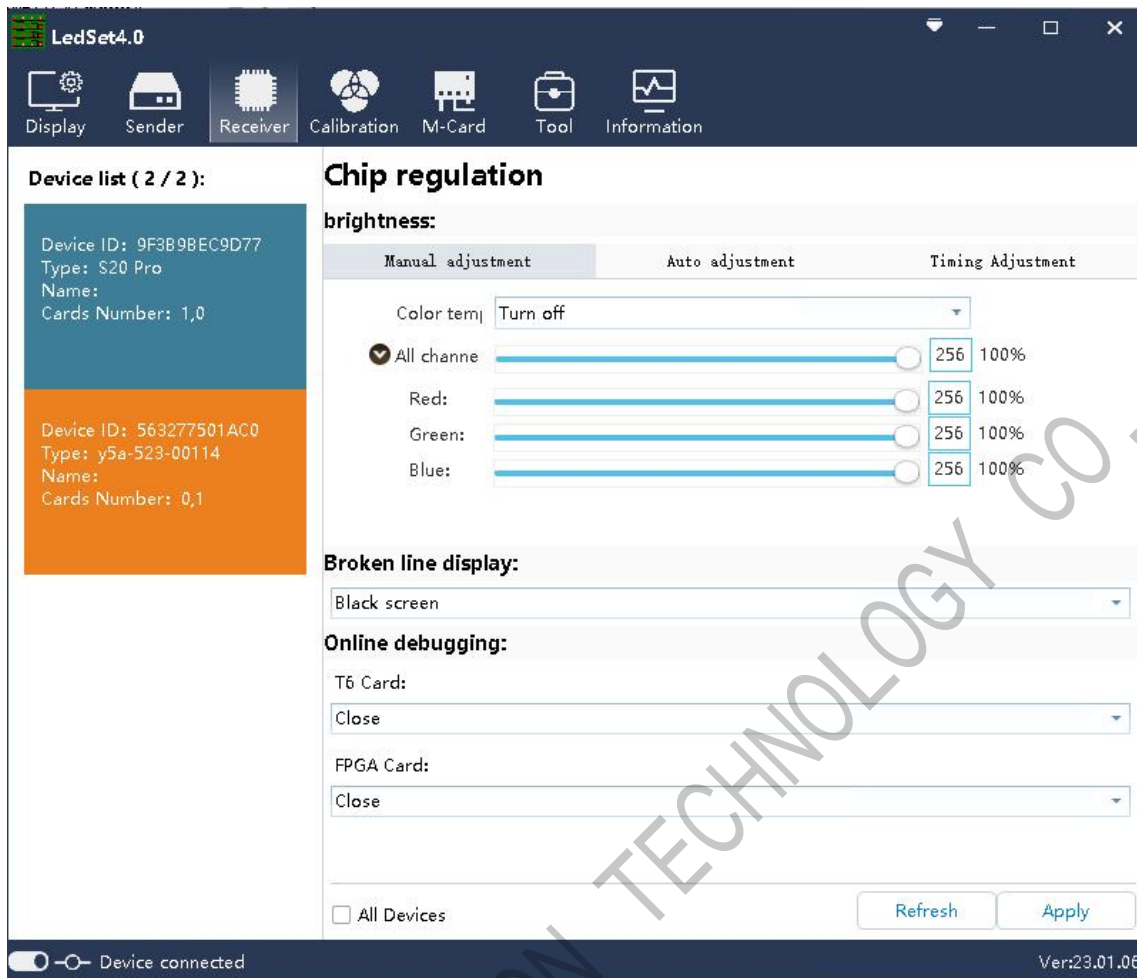
- 1) Tick the "Connect Splitter" checkbox in the display connection interface.
- 2) Select the transmitter card to access the network port and configure the "splitter" address.
- 3) Select "Splitter Address" for display connection. Figure 3-2-13 below:



3-2-13

### 3. Brightness and Gamma Adjustment

Click the "Screen Control" option in the main interface to enter the brightness adjustment interface, as shown in Figure 3-3 below.



3-3

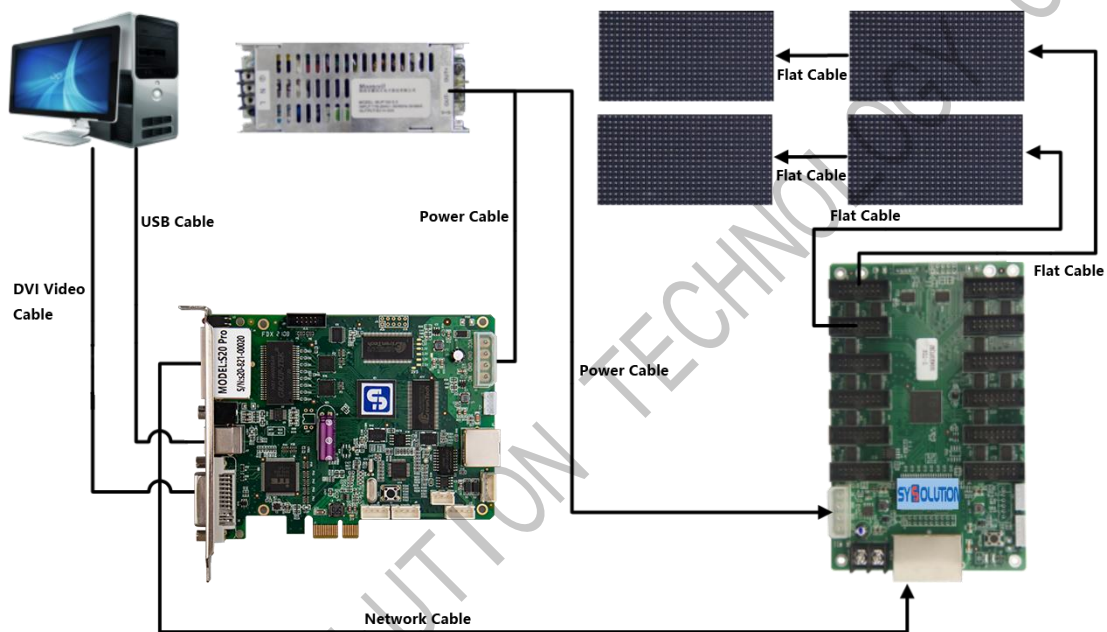
Brightness Adjustment : Manually adjust the desired brightness on the Brightness Settings section. Click the Cure button after debugging to save the adjustment to the receiver card.

#### 4. Cable Backup and DVI Backup

Network cable backup: Form a loop by cascading network cables to the receiver card. The network cables at both ends of the loop are connected to the primary/secondary network ports of the sending card. In case of accidental disconnection of one of the network cables in the loop, the transmitter card will take over the part of the receiver card after the disconnection of the network cable in time to ensure that the big screen is still displayed normally.

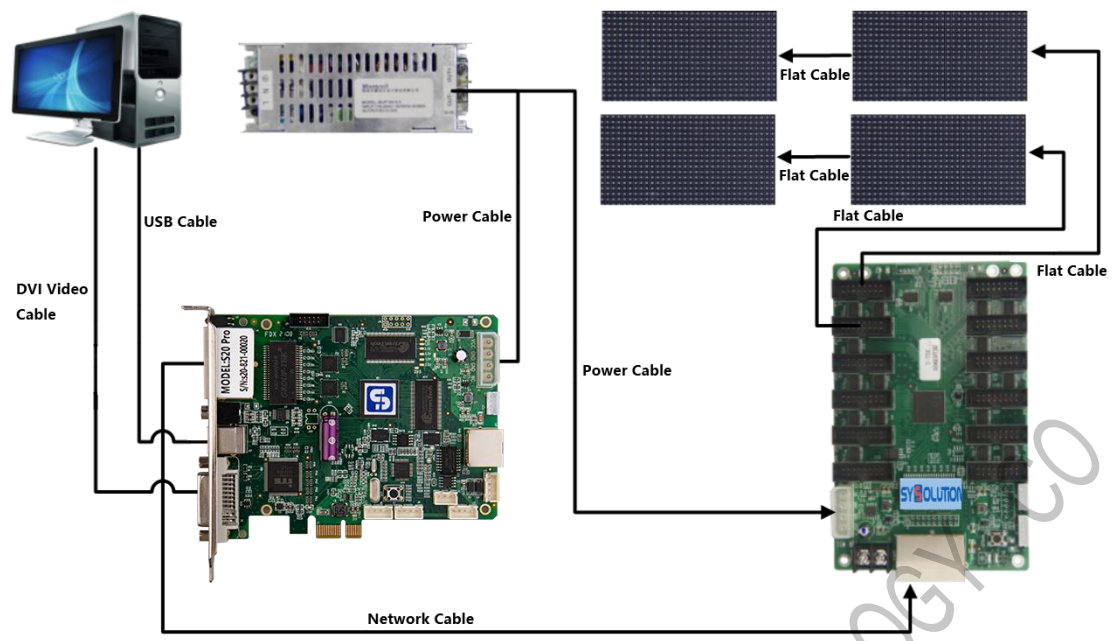


Single Transmitter Backup: When a single transmitter card (two-port transmitter card) is used to load the screen on only one network port, the other network port is automatically backed up. If the large screen has more than 650,000 pixels, please use double transmitter card backup. After debugging the large screen, directly connect the loop cable of the loop directly to the other network port of the transmitter card to complete the backup of the same card of the transmitter card. As shown in Figure 3-4-1.

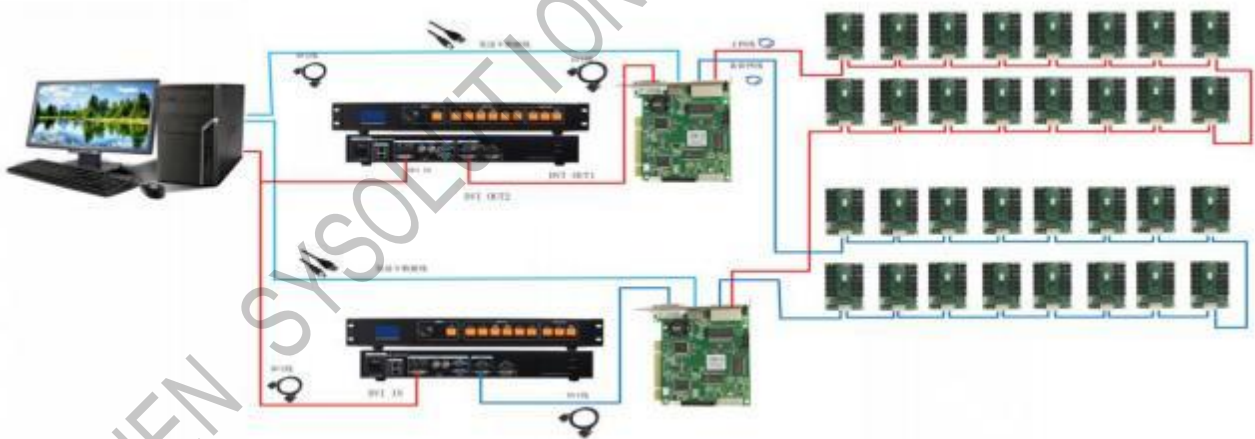


3-4-1

Dual sender card with the same port backup: When a single sender card (two-port sender card) uses two network ports at the same time to carry the screen adjustment, connect the two loop network cables in the loop to the corresponding network ports of the backup sender card, as shown in Figure 3-4-2. Disconnect the backup port of the backup sender card first, and after the main sender card is finished debugging, directly send the saved display connection file to the backup sender card and solidify it, and then connect the backup (loop) cable to realise the function of dual sender cards with the same port backup.



DVI Dual Backup : Dual card DVI backup can only be done when doing dual sender card backup. Refer to the Dual Transmitter Backup setting to complete the dual card cable backup, and input DVI video signals to the two transmitter cards respectively to achieve the DVI dual backup function. As shown in Figure 3-4-3:



3-4-3

When "Video Processor 1" disconnects the DVI signal input to "Transmitter 1", the system automatically switches to the DVI signal of "Transmitter 2" and the DVI signal of "Video Processor 2", thus forming a double backup of DVI signals.

# Chapter IV. Frequently asked questions

## 1. Control software common problem processing

1. The sending card cannot be found:

After the hardware is connected, the software cannot read the sending card, you can do the following:

- 1) Re-plug the USB cable.
- 2) Check the USB cable and computer USB interface.
- 3) Reinstall the debugging software (including USB driver).
- 4) Reboot or replace the transmitter card.

To determine whether the driver is installed on the transmitter card : open the device manager of the computer, and see whether there is LED Smart Card device in the Universal Serial Bus controller.



2. Large screen display fuzzy/unclear

1) Confirm the resolution of the video source (e.g. computer resolution, etc.), and then enter the interface of the "Send Card" window to set the "Preset Resolution" of the send card, so that it is set to be the same as the video source (you can customise the resolution).

2) Replace the video source.

3) Check whether the driving parameters of the large screen box are suitable.

3、 Can not find the chip

1) Confirm whether the indicator light of the receiver card is normal (red light is always on, green light is blinking). If the red light is not on, please check the power supply of the receiver card; if the green light is not on, please check the communication between the receiver card and the transmitter card, i.e. the network cable.

2) Confirm whether the model of the transmitter card and receiver card are matching, and the firmware programme is correct.

3) Refresh the receiver card or switch the transmitter card in the interface of receiver card on the debugging software (multiple transmitter cards debugging at the same time).

## **2. Multi-function card common problem processing**

1.Sensor device data return delay description

It takes some time for the data to be transmitted back, if it is the first time to connect the device, you need to wait for about 1-2 minutes.

A. The first time to read the ambient brightness value of the brightness probe (in the receiver card - chip adjustment - automatic adjustment).

B. Delay in transmitting the automatic brightness adjustment data to the LED display brightness change.

C. Temperature change itself is not a rapid change.

2.Automatic brightness adjustment without environmental brightness and current screen brightness value

A.Check whether the hardware connection is unstable or the interface is off.

B. Check whether the device is connected in the lower left corner of the software, in the multifunction card, and whether the status information of the multifunction card in the device list is normal.

C. If there is no abnormality in the hardware connection and the problem still exists, please contact the manufacturer's technical staff to solve the problem.

3. Automatic control commands in power control are not executed

A. Check whether the time of the power management board is synchronised with the computer. Because in the execution of automatic control, the command is executed according to the time, if the time and the computer are not synchronised, the data cannot be processed and the command cannot be executed.

B. Check whether the time for executing the command is reasonable, the start time should be greater than the computer time and less than the end time.

C. Whether the command is sent successfully or not, and whether there is command content in the power custom control list.

Check whether the current circuit state corresponds to the state of the automatic control execution command.

E. If the problem still exists, please contact the manufacturer's technical personnel to solve it.

Note: Manual Brightness Adjustment and Automatic Brightness Adjustment Instructions

Adjusting the manual brightness while the automatic brightness adjustment is on, the

brightness of the display remains at 80% of the display brightness even at the value of 256

(100% brightness). This is the same as the display brightness of the maximum value (80%) of

the auto brightness adjustment. When the automatic brightness adjustment is not cancelled,

the display brightness performed by the receiver card is still based on the value of the

automatic brightness adjustment, and the manually adjusted value is sent to the transmitter

card, but the value is not fully executed by the receiver card (only 80% is executed). When the

receiver card executes the manual value and the auto adjusted value from the sender card, the receiver card executes the value in the auto brightness adjustment in priority.

## End

This is the end of the introduction of the S20 setup part, I hope that through this short description, will help you in the future use of the process.

We thank you again for choosing Shanghai Xisun control card as your LED advertising equipment control system, if you have any questions or suggestions about our products, please feel free to call us at 400-400-500-4003 or call us at 400-400-5003.

If you have any questions or suggestions about our products, you are welcome to call us at 400-608-6499 or email us at

service@xixunled.com

If you have any questions or suggestions about our products, you are welcome to call us at 400-608-6499 to give us feedback. We will value each of your complaints or suggestions, and actively give feedback.

For more information about the Internet cluster control solution for LED advertising equipment control and related manual documents, please visit our website:www.ledok.cn for more information, if necessary, online customer service will promptly communicate with you, more than 10 years of industry experience will give you a satisfactory answer.

Shanghai Xixun sincerely look forward to cooperating with you in the future.

Good luck with your business.

SHENZHEN SYSOLUTION TECHNOLOGY CO.,LTD