Smart Main Controller Controller specification

Online streaming

The SD card program plays offline

Function overview

I. System features

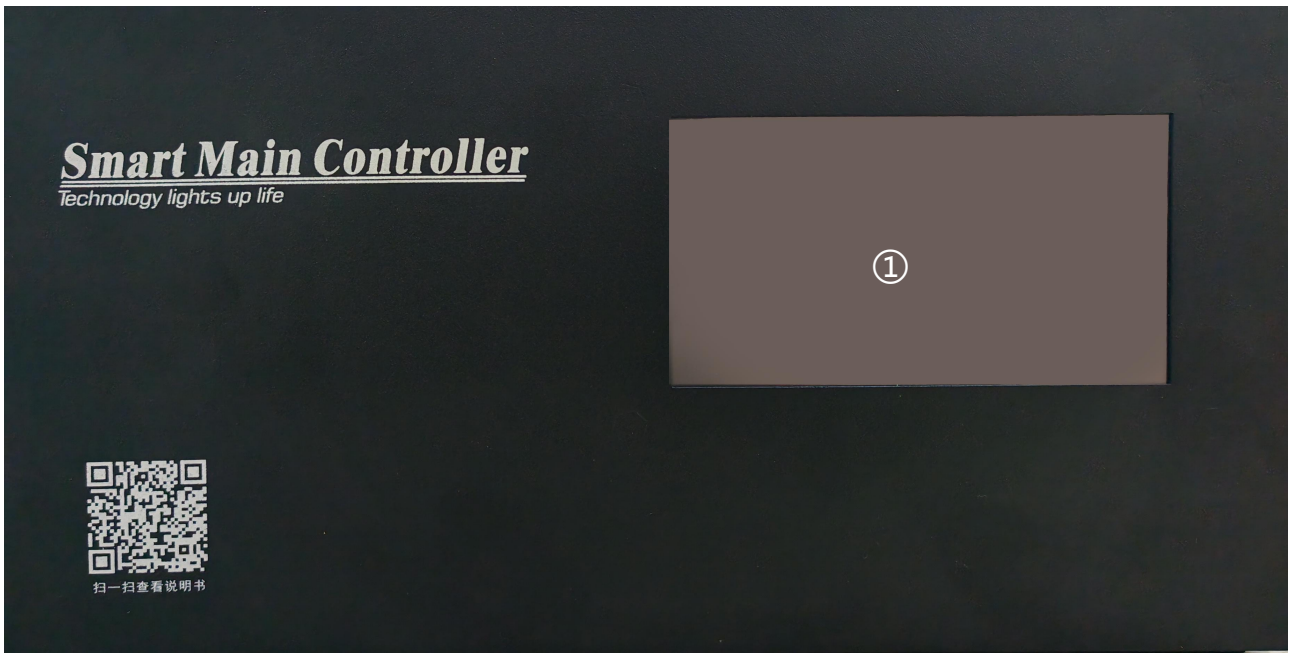
1. The maximum carrying capacity supports 100,000 pixels, which greatly meets the needs of customers' projects.
2. The controller has a button to select program segments, adjust overall brightness, white balance and playback speed.
3. Support offline one-click code writing and clear sub-control ID number for easy on-site application.
4. The independent brightness control of the three basic colors makes it easier and more effective to adjust the white balance accurately.
5. The controller is integrated and supports serial (TTL signal) and DMX512 (differential signal), which can be selected by selecting the chip respectively.
6. The controller supports offline and online control, priority selection, first identify the network, and then read the card.
7. Support four-color lamp (RGBW): energy saving and environmental protection, pure color.
8. Ethernet interface and UDP network protocol transmission is stable, the maximum transmission distance is 100 meters;
9. The LCD display module is touched to display the controller parameters and status in time for convenient operation.
10. SD card storage, the controller can support up to 32G, up to 99 preset program files.
11. The function of modifying channels is added to realize the synchronization of the whole picture in the case of multiple channels being used.
12. Built-in animation test program, convenient for customers to debug and apply in the project.
13. The fixed ID can be used to support different types of lamps and lamps with different protocols, and the compatibility is strong.
14. Support split screen operation, the effect is convenient.
15. Add encryption protection function to ensure the use security of the controller and prevent other personnel from modifying it without authorization.
16. Support GPS synchronization to facilitate the synchronization of effects in different regional blocks.

Ii. Design concept

1. System signal bidirectional redundancy: stability doubled;
2. Four-color design: energy saving and environmental protection, pure color;
3. Conventional and asynchronous integrated control: online priority, automatic switching off-line effect without online signal, to achieve video source backup;
4. Large-scale independent development and design of video editing, playback and wiring design software: more adaptable, support more languages, higher

openness, used in various complex applications such as domestic and foreign irregular screens, multi-screen, building screen, pixel light screen, etc.

3. Controller interface parameters:

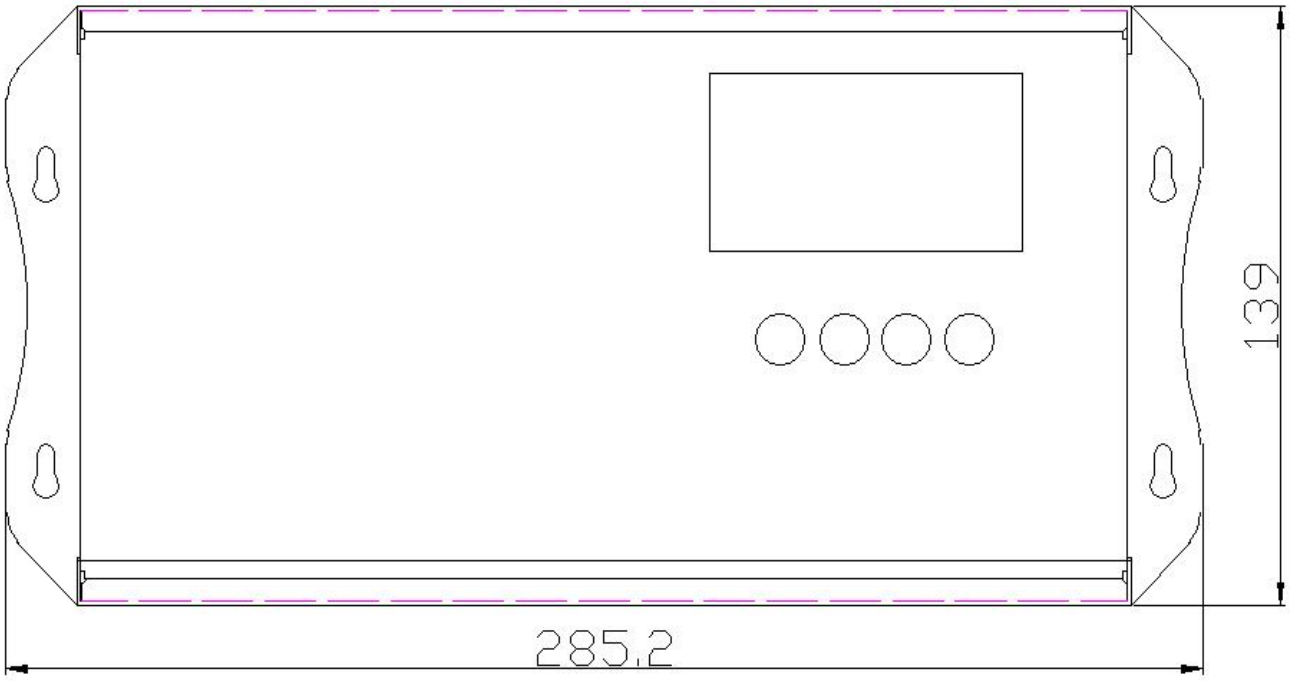


① To ④

INPUT/output network port ⑤ SD card ⑥ AC110-220V pow

side--①

front



side--②

5、main interface:

Speed display area

Built-in SD card effect

A single cycle is complete

File directory display area

6、

Set the menu

program listing

Chip model

Program switch button

The main interface can be switched directly:

1、Speed value 1-----6 levels

2、Built-in effect or SD card effect (tap the screen)

3、Single loop or all loops (click on the screen)

4、Program effect file (go directly to the previous or next)

5、Click Settings to enter the menu selection

6、Click the play list to display all effect numbers

VI. Function List:

1、Chinese: Mandarin

2、English: English

3、Chip selection: When switching between different models of lamps, the effect remains unchanged

4、Test mode: Switch to built-in mode without card status

5、Lighting writing code: lighting for DMX signal use

6、Brightness Settings: Change the overall brightness of the controller

7、Time: This function is mainly used for timing and setting dates (to be developed)

8、Separate control configuration: adjust brightness, change channel, set master control ID,

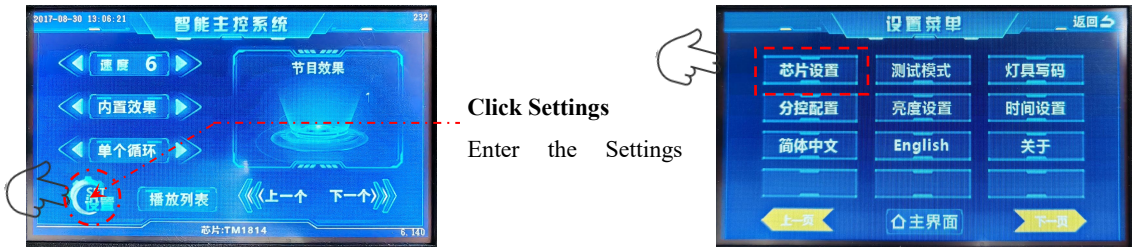
configure separate control parameters, restore factory Settings, encryption and other functions.

9、About: Information about the system

operate mode:	Touch operation, online + offline + third-party protocol invocation
Parameter characteristics:	Network cable direct connection, automatic encoding, channel test, single point test, support RGB, RGBW
Load quantity:	A single master can connect to 255 submasters with 100,000 points
grey scale:	Level 32-65536
loading regime:	Real-time playback of the computer, SD card copy storage program
SD card storage:	Up to 32G, up to 99 files
working temperature:	-20℃--75℃
working voltage:	AC110V···220V
weight:	Gross weight: 1.35kg Net weight: 0.95kg
size:	Machine: 29.1 x 14.2 x 5cm, package: 31.2*24.7*6cm

Vii. Operation instructions:

7.1, set the menu bar



Click Settings

Enter the Settings

Set menu: chip setting, test mode, lamp writing code, sub-control configuration, brightness setting, time setting, Simplified Chinese, English, about

7.2 Chip selection

The first step of the controller is to set the controller chip. The specific operation is as follows:

Step 1: Click Settings

Step 2: Click Chip Settings

Step 3: Select the corresponding chip model

Step 4: Click OK to return to the Settings menu

Step 5: Click the top right Return to go back to the start

7.3, test mode: channel test, color palette, number of points test

7.3.1. The test mode is used in many cases, including testing the sequence of lamp channels, point number testing and static color value testing

The specific operation of channel test is as follows:

Step 1: Click Settings

Step 2: Click Test mode

Step 3: Enter the test interface and set parameters

Separate control: select alone or all

Ports: Select 1-8 ports individually or all

Channel mode: 3 or 4 (RGB or RGBW)

Step 4: Test channel order

Channel 1 (red) ----According to the actual color of the lamp, for example: Channel 1 lamp is bright blue, then channel B

Channel 2 (green) ----According to the actual color of the lamp, for example: channel 2 lamp is green, then channel G

Channel 3 (blue) ----According to the actual color of the lamp, for example: channel 3 lamp bright red then channel is

The actual lamp channel is BGRW

Channel 4: If channel mode is 3, it is disabled; if channel mode is 4, it is enabled

Step 5: Test whether the power supply is normal (jump, gradual change)

When the lamp is loaded with TTL or SPI, it is necessary to supply sufficient power for load testing

Jump: red, green, blue, white four colors change one by one

Gradient: seven color transitions

7.3.2, point test: test the port points and the order of the points (DMX512)

Step 1: Click Settings

Step 2: Click Test mode

the third step:

Click on the number dot test

Decimal parameter setting:

Separate control: single or all Channel number: 3 or 4 RGB or RGBW

Port: single choice 1-8 or all lamp section number: 1 start--adjust according to the

lamp

Parameter setting is comp

① Click Start to count

The number box in the lower left corner starts adding numbers automatically

The corresponding lamp will also light up white light

② Click to pause the nu

Switch to manual

Manual point increase

The number is stuck at the

The lamp is restored to the

7.3.3, Test mode-Palette: usually used for static color adjustment

Step 1: Click Settings

Step 2: Click Test mode

the third step:

Click the Palette

1、RGB or RGBW Click to select

2、You can directly click the color wheel on the right, and the color

value bar on the left will automatically adjust according to the color wheel

3、Manually adjust the value of the left color bar, or add and subtract to adjust

After selecting the color value, adjust the color according to the color value and store it offline on the SD card

7.4 Brightness Settings: Adjust brightness and gamma value

Step 1: Click Settings

Step 2: Click Brightness Settings

1、Manual + -can increase or decrease the value; or drag the color bar directly. The higher the value, the higher the brightness, and vice versa

2、Gamma value is usually default, but in special cases, you can manually + -to increase or decrease the value; or drag the color bar directly.

7.5, Sub-control configuration: parameters of any one can be configured separately, or all can be configured

The specific operation is as follows:

Step 1: Click Settings

Step 2: Click Brightness Settings

Parameter configuration:

Start ID: numeric keypad selection Brightness value: numeric keypad selection

Channel sequence: Click to switch Gamma value: Select from numeric keypad

DMX512 500K	DMX512 250K	P9883S	SM16703P
UCS1903	UCS2904B	SK6812RGB W	SK6812RGB
UCS5603	TM1804	WS2811	WS2812B
TM1914A	GS8206	TM1903	TM1814
UCS8903	UCS8904	Start ID, brightness value, click to appear the numeric keypad input, select and confirm. As shown in the figure on the right	
HW1603	UCS9812		
UCS2603	TX1816		
WS2818B			

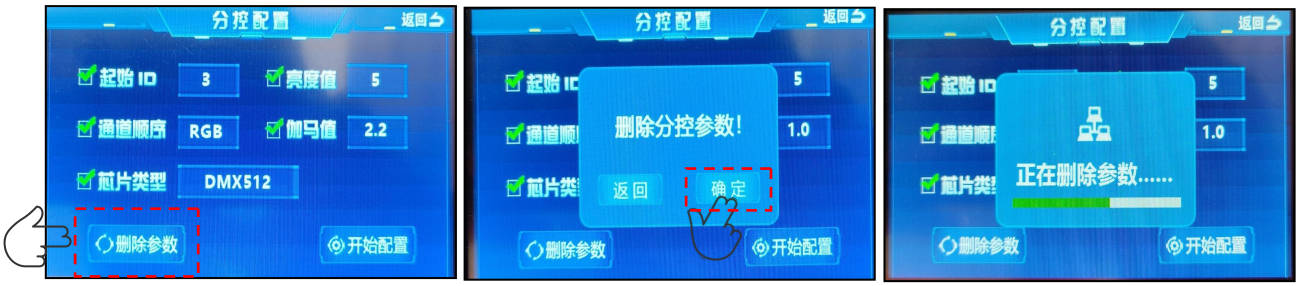
Select all parameters and click Start Configuration as shown in the

After the parameter configuration is completed, return to the sub-control

configuration interface and check whether the sub-control is displayed normally.

Delete parameters: In the case of switching, the original parameters need to be deleted, as follows:

Step 1: Click the delete parameter in the sub-control



Step 2: Click OK

Step 3: Display, parameter is being

Parameter deletion is complete, return to the sub-control configuration interface, and check whether the sub-control display is normal.

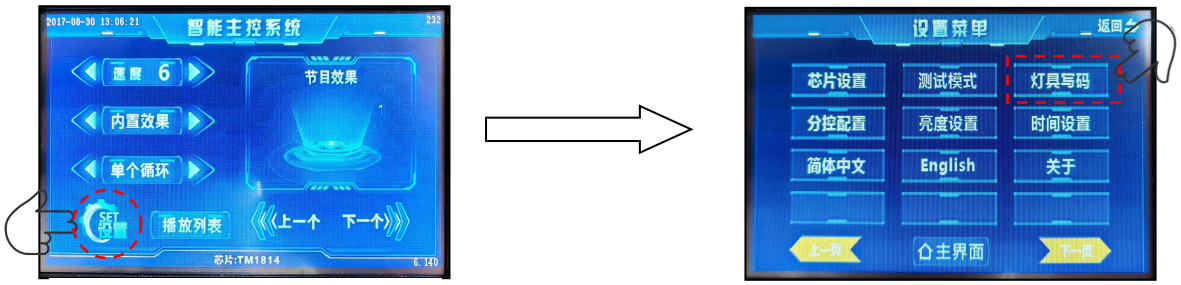
7.6, Lamp Coding Operation: (This operation is mainly for the DMX512 series products. The original factory will perform lamp coding operations on the lamps, but that is just a simple test. Moreover, during actual installation, the order of the lamps may be disrupted, so their addresses will also be scrambled. Therefore, it is necessary to reassign addresses to each lamp at every port after actual installation, ensuring that the addresses of the lamps at each port follow an independent sequence to ensure the normal operation of the program.)

Before coding, the following information needs to be determined: the chip model of the light fixture (manufacturer, series, model), the number of segments (linear lights, wall washer lights) or points (point light sources), the color sequence of the light fixture (RGB/RGBW), whether the wiring from the light fixture to the controller port is correct, whether the direction of the light fixture is correct, the power supply voltage, power supply method, and power supply wire diameter of the light fixture, as well as the load capacity and distance of the port

DMX512 The theoretical standard protocol is 512 channels, which means 512/3=170 points

Step 2: Click Write code for lamps

The specific operation steps of writing code are as follows:



Step 1: Click Settings

Enter the coding parameter setting interface

①, chip select:

Click to enter the chip list

The list is as follows:

Select the chip model corresponding to the lamp, and click OK

②, sub-control: single controller ID or all

③. Number of channels: Click to display the input k

combination of numbers

④ Port: Select all controllers ID or

⑤. Number of lamp segments: determined according to the lamp

⑥. Start lamp: The starting position can be customized. Click to display

the input keyboard and enter any combination of numbers

So select the parameters and 

click start writing code

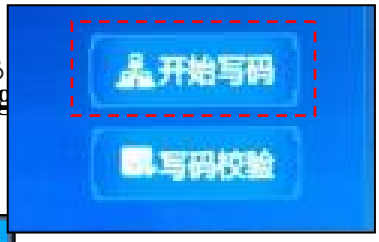
Example: The RGBW line lights used on site are 1 meter 8 sections, and the C4 chip is used by Lianxin Technology. How do we set the code?

Option 1: Set according

Option 2: Set according to the number of lamp

Separate control: all, port: all Start light: 1

After all parameters are set, click start writing



Showing code is bein

After the code writing is completed, return to the lamp code writing interface. Usually, after the code writing is completed, a few tests should be carried out to determine whether the code writing is successful.

The number of segments of the lamp is different, and the writing channel is also different. For example, for six-segment writing TD: 6*3=18, for eight-segment writing TD: 8*3=24, these are based on RGB lamps. For RGBW lamps, the number of segments *4 corresponds to

After writing the code, press the test function and use the point-by-point test function to test whether the address of the lamp is

written in the correct order.

The expansion protocol is 512 points and 1536 channels (most of the 512 lamps on the market are expanded), which is the most commonly used in our actual installation. Each port is loaded at 80% according to the proportion, and the distance of the load is also considered. If the distance is too far, the corresponding load of the port can be reduced.

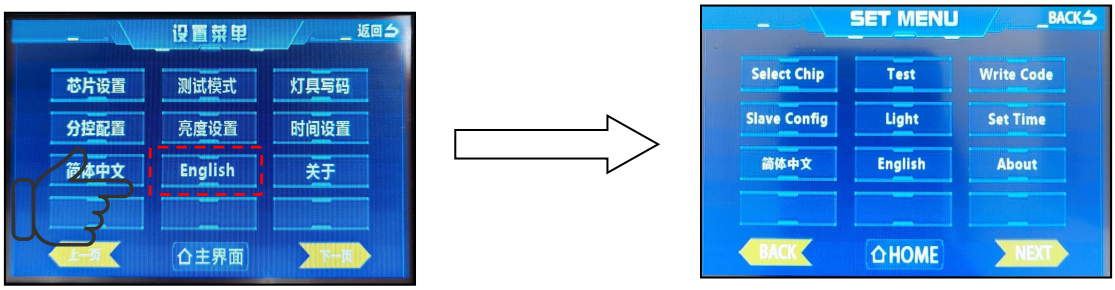
7.7, Chinese/English switching: Different languages are used in different regions

The specific operation is as follows:

Step 1: Click Settings

Step 2: Click Simplified Chinese

Note: The default is Simplified Chinese



Click English to switch to the English interface

7.8, time setting

The operation is as follows:

Step 1: Click Settings

Step 2: Click Time

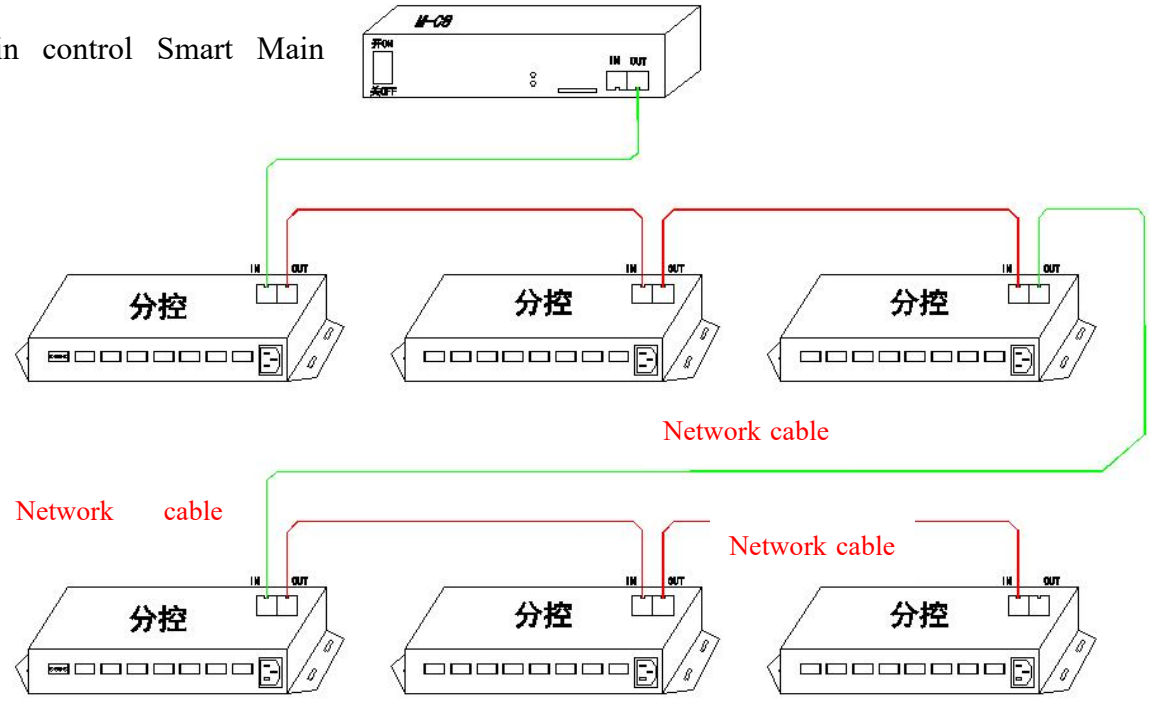
Step 3: Set the current time, click the number to appear on the numeric keypad

Step 4: Set the completion and click Save as shown in the figure above: The controller starts the timing function.

7.9, regarding (functions to be opened)

7. Main control and sub-control diagram:

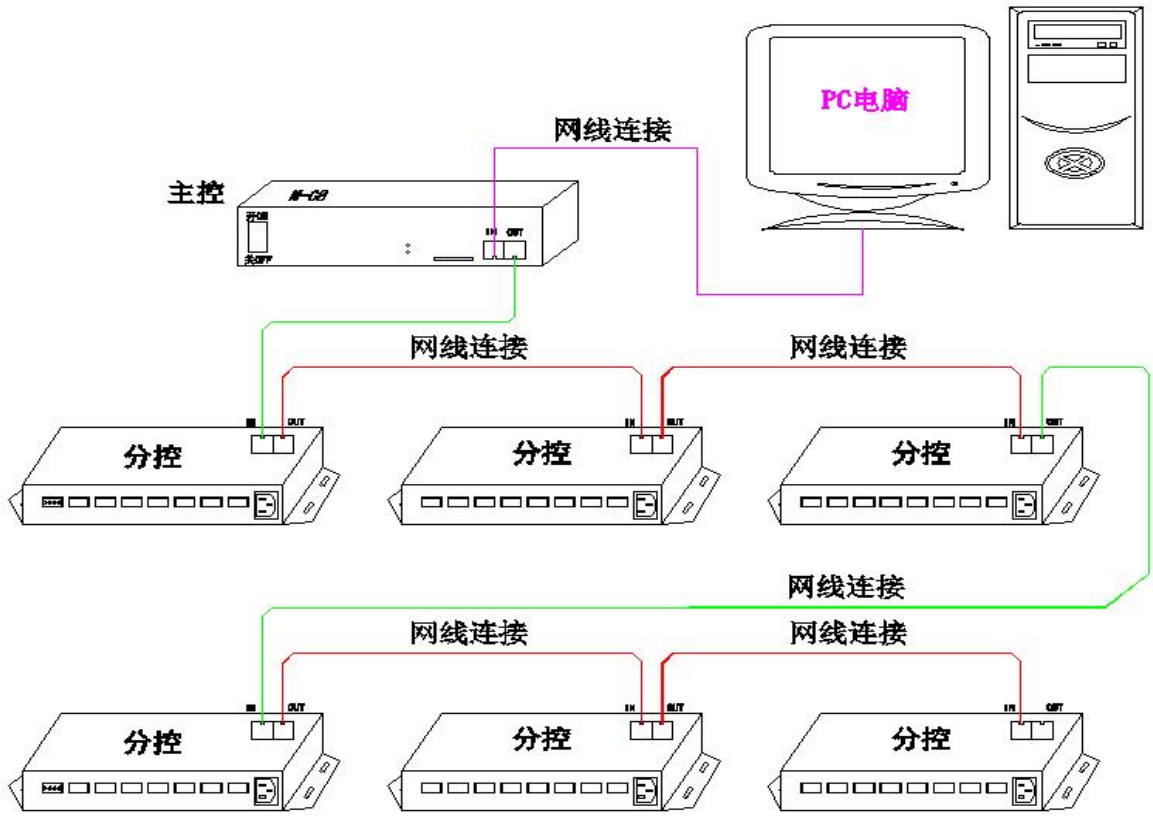
Touch the main control Smart Main Controller



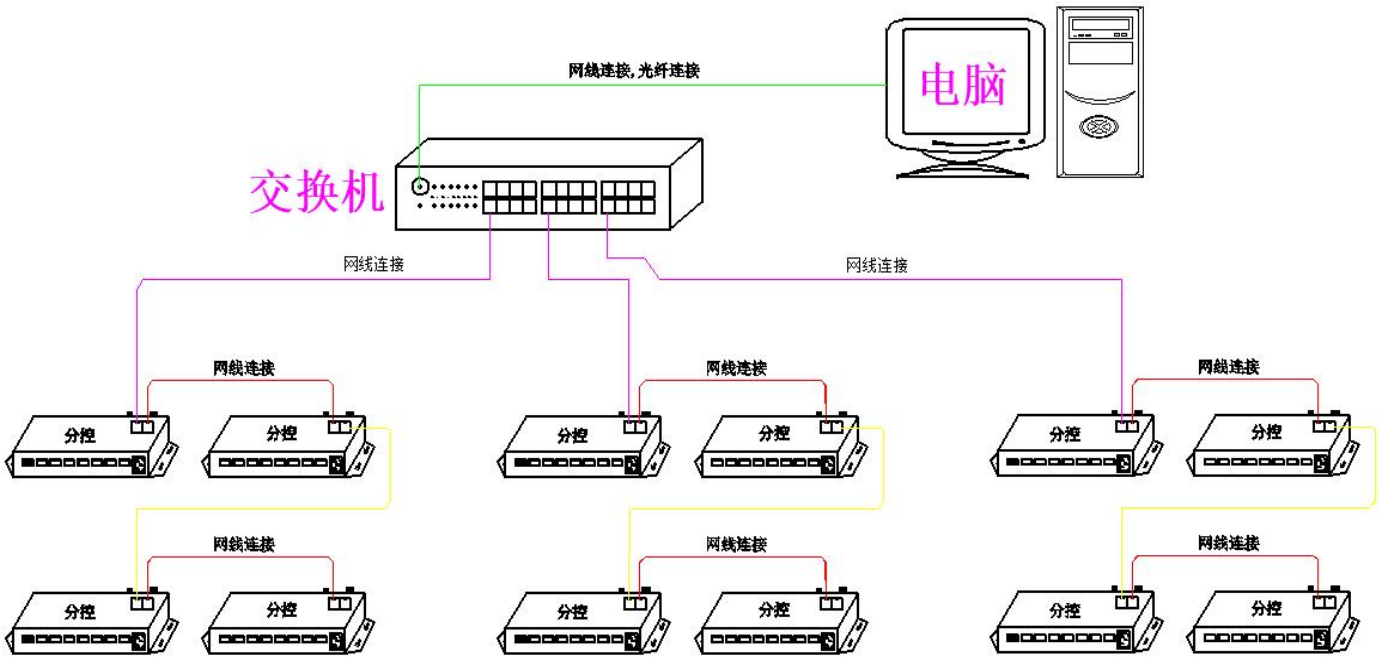
Online diagram:

Option 1: computer software + main control + sub-control

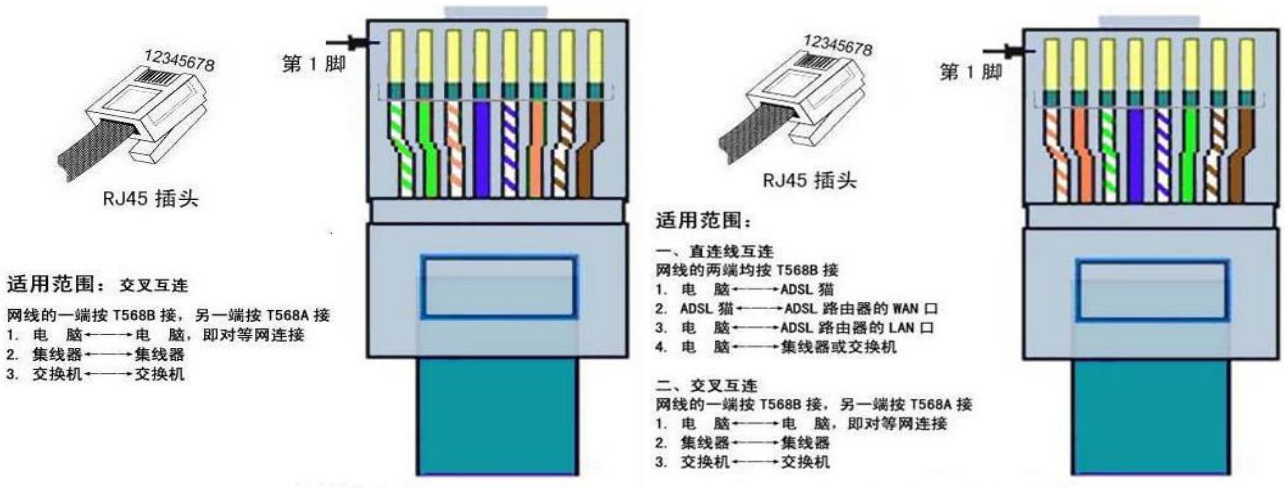
Option 1:



Option 2: computer software + switch + sub-control



8. Network cable making method:



Network cable making: In practical application, there are two methods to make (cross interconnection and straight line interconnection)

We use "straight line interconnection" 568B uniformly, that is, the two ends are made with the same wire sequence. The specific wire sequence is as follows:

1、Orange and white 2, orange 3, green and white 4 blue 5, blue and white 6, green 7, brown and white 8, brown

9. Control distance of conventional signals reference table: (for reference only, everything is based on the actual situation)

detailed information	TTL	4 lines 512	5 lines 512
The distance from the controller port to the light	15 meters	30 meters	80 metres
The controller is at the distance from the last light		80 metres	120 metres
The distance between the lights	3	30	30

	meters	meters	meters
The distance between the controller and the amplifier	15 meters	35 meters	80 metres
The distance between the amplifier and the lamp	---	---	---
Distance between subcontrols	60 metres		
Distance between master and sub-control	80 metres		

Note: If the distance between the computer and the controller, between the main control and the sub-control, or between the sub-control and the sub-control exceeds the limited distance, the signal is disturbed and cannot be transmitted normally.

Rx:

1、The signal amplifier can be extended to 300 meters

2、Optical fiber can be used instead of network cable to extend the distance to 5 kilometers

X. Common Problems:

1. No effect when inserting SD card?

Answer: a. Check the SD card format b. Check the file format c. Check the direction of the SD

2、The controller shows normal, but the lamp does not run normally?

Answer: a, whether the chip selection is normal b, whether the program is normal

3、No signal when the network cable crystal is plugged in?

Answer: Check whether the line sequence is normal and whether the network port is normal

4、Signal unstable, lamp flashing?

Answer: a. Check whether the power supply has filtering function b. Check whether there is poor contact in the line c. Check whether the controller port is normal d.

Check whether the signal line has shielding e. Check whether there are high-power machines or magnetic fields near the controller