SY-418 MANUAL

Version: 5.0

Model: SY-418-M1
SY-418G-M1
SY-418Y-M1
SY-418CG-M1

2024-10

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1. FUNCTION OVERVIEW

1. 8-channel output signal (data-independent). Apply to large project and long distance transmission. Support several controllers cascade using.
2. Control variety of regular chips in LED digital tube screen, LED pixel light screen, and etc.

SW Single chip:	D**S, D**J.
SPI:	TM180*-400K/800K, UCS19**, UCS29**, WS2811/12, SM167**, SM15155E, SM16912P, UCS2603, TM1903, TM1908, SM16714PHT, MT16703, FW1935, FL16703A, HW1002A, RT7908A, KW2303A, FW1903.
DMX512:	SW-D, SW-U, UCS512A/B/C0/C4/D/E0/EH/G4/G6/H/H4/H4L/KL, DMX512AP/SM512, SM16500P/511/512, SM16522P/PS, SM17500P/512P/522P, SM17512/522, SM18512P/PK, SM18522P/PH, SM19522PS, Hi512A0/A4/A6AD/AE/B4L, TM512AB3/AL1/ACx/AD/AE, QED512P, GS8512/513/515/516/516B, GS8523/24/25/26, standard DMX512 lighting fixture on the market.
Breakpoint resume:	UCS5603, WS2818, GS8206, P9883, TM1914, XT1506S.

3. Audio control, sound control, cascade sync, time control ,GPS satellite sync and bluetooth applet are optional as additional functions.
4. Specialized software of making animation is included, user can make their own effects.
5. The load capacity of different lighting fixtures is different. (If no specific requirement of frame frequency, load capacity of each channel can be increased independently, and user must conduct the test by yourself.)

2. TECHNICAL PARAMETERS

2.1. PRODUCT INFORMATION

Cover material:	Iron
Input voltage:	AC 100V～240V
Output signal:	TTL & RS-485 * 8 channels
Pixel driven:	Single chip: 960 pixels ×8 channels, Single-wire: 1024 pixels ×8 channels, standard DMX512: 168 pixels ×8 channels, extensible DMX: 336 pixels ×8 channels, Breakpoint resume: 960 pixels ×8 channels.
Output power:	＜3W
Working temperature:	-15℃～60℃
Relative humidity:	≤50% RH
IP grade:	IP20 (Prevent people from touching the components inside electrical appliance, prevent object which diameter is more than 12.5mm from getting in, no special protection to water or moisture.)
Working environment:	1. Please do not install the controller in magnetic, high pressure, high temperature or seriously wet environment. 2. Please do connect the earth safely in order to reduce risks of fire and damage which cause by short circuit. 3. Please ensure AC100-240V power supply is used, and same polarity is connected between transformer and controller in order to guarantee the

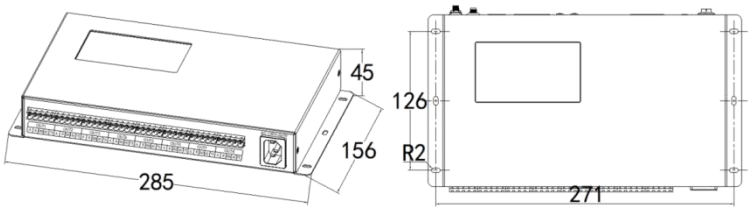
proper supply voltage.

4. No waterproof function in the control system, please pay attention on rainproof and waterproof during installing.

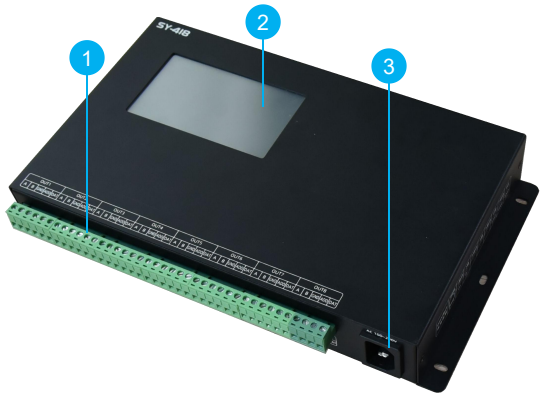
Net weight: 2.05 kg

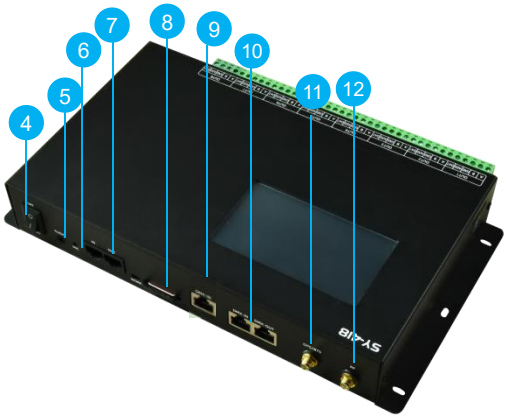
Size: L285*W156*H45

(Unit mm)



2.2. COMPONENT





① Output control lighting fixture ② 4.3” LED display ③ Power input AC100-240V

④ Power switch ⑤ 3.5 to 3.5 audio wire socket ⑥ Built-in microphone

⑦ Uplink port ⑧ SD card port ⑨ KTV light control panel

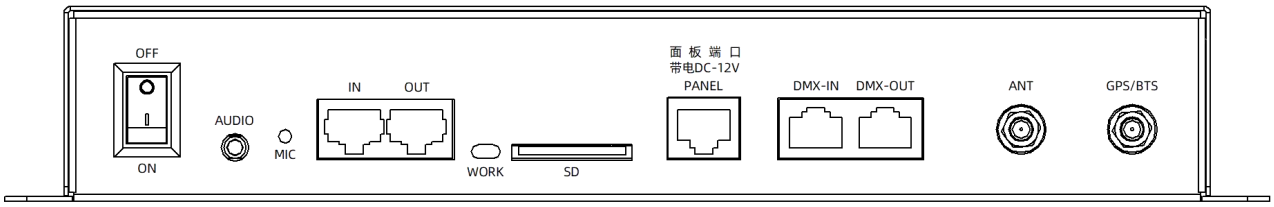
⑩ DMX control port ⑪ WiFi/Bluetooth antenna socket ⑫ GPS antenna socket

Note,

A. Controlled by DMX console is disabled when the external control function is used. And the DMX-IN port becomes the interface for external control.

B. The interfaces of GPS or ANT are selected functions respectively. The interfaces are unavailable if the functions do not support.

2.3. INDICATOR STATUS



WORK: Working light, it flickers according to frame rate when working properly. No flicker indicates abnormal or non-working status.

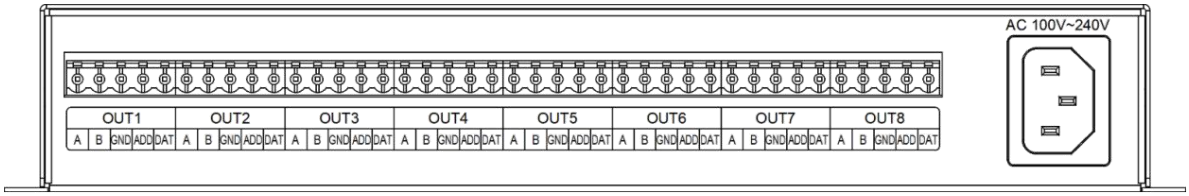
2.4. MODEL AND FUNCTION DESCRIPTION

Function \ Mode		SY-418	SY-418G	SY-418Y	SY-418CG	SY-418P
Addressing / debug in standalone		✔	✔	✔	✔	✔
GPS synchronization			✔		✔	✔
Cascade synchronization		✔	✔	✔	✔	✔
DMX512 console control		✔	✔	✔	✔	✔
Remote controller				✔		
Blue tooth control (applet / remote)		✔				
Controlled by cloud platform	Update animation file					✔
	Switch animation				✔	✔
	Scene coding					✔
	Addressing / debug				✔	✔

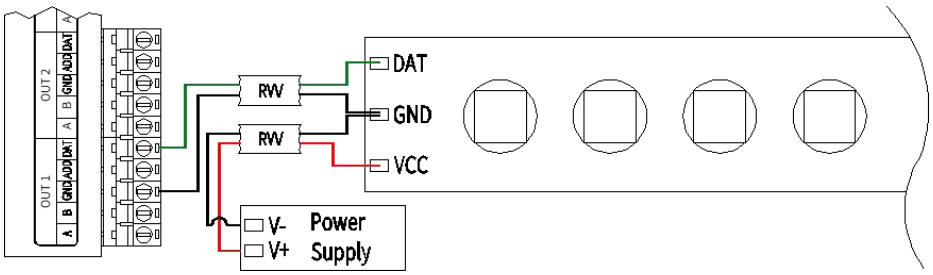
Note: Bluetooth remote control needs to be purchased separately.

3. CONNECTION INSTRUCTION

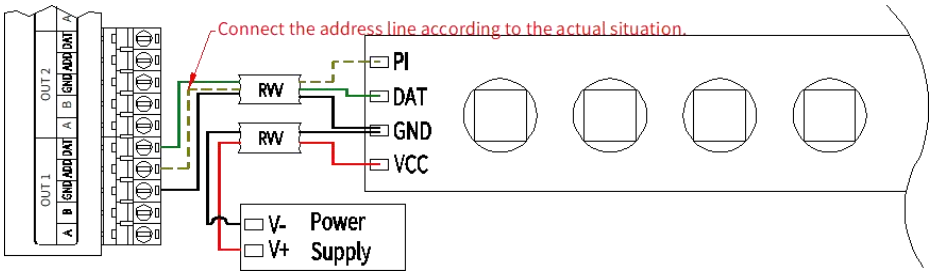
3.1. OUTPUT WIRING



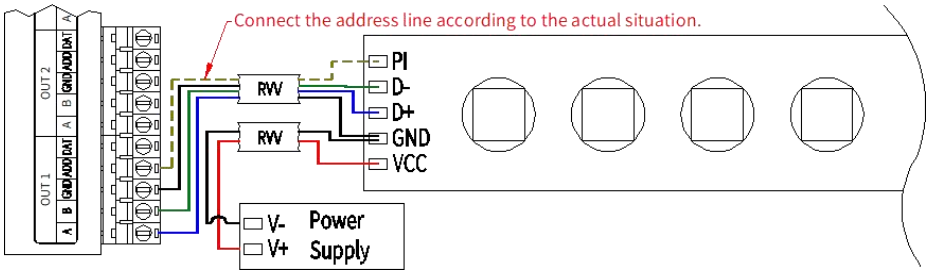
TTL signal output control SPI luminaire.



TTL signal output control DMX512 luminaire.

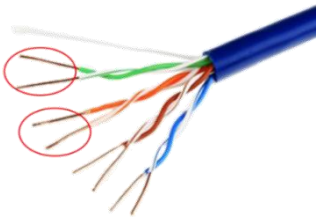


RS-485 signal output control DMX512 luminaire.



★ Signal cables connection cautions:

1. Use UTP—Unshielded Twisted Pair (resistance per 100M<10Ω), low quality Ethernet cables, telephone cables and copper wires are unavailable.
2. Use one group twisted pair, suggest green + green white or orange + orange white. The quality and color of the cable are very important. Blue and brown wires greatly influence the signal transmission. Please don't use several groups of twisted pairs together.



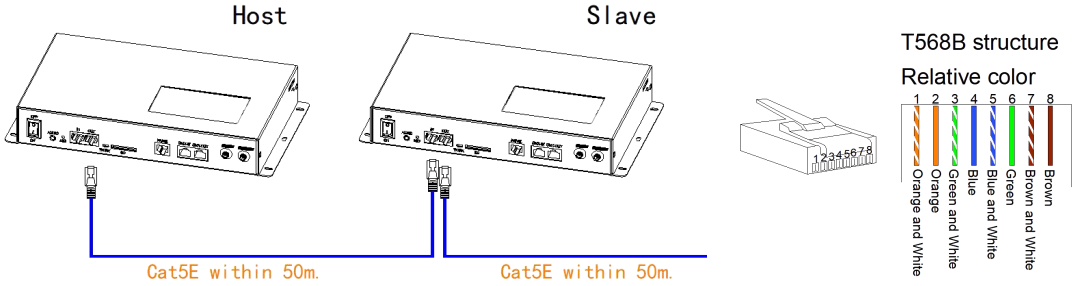
3. Controller signal output GND must connect directly with input GND of lighting fixture. ***Cannot connect with lighting fixture through power supply***.
4. Switch on the controller after all hardware signal and power cables are connected. Please *don't CONNECT / DISCONNECT* the signal cables while the controller is power on;avoid back-flow current burning circuit and components of output port.

Transmission distance:

Transmission Type	Signals	Medium	Distance (M)	Remark
Master control → slave control	RS-485	UTP-Unshielded Twisted Pair	50-100	
Master/slave control → SW lighting fixture	TTL	UTP-Unshielded Twisted Pair	30-50	
		Two core wire	5-30	
Master/slave control → Single-wire lighting fixture	TTL	UTP-Unshielded Twisted Pair	5-20	
		Two core wire	1-5	
Master/slave control → DMX lighting fixture	RS-485	UTP-Unshielded Twisted Pair	30-50	The address cable must be no more than 5m.
		Three core wire	1-20	
		Four core wire	1-20	
Master/slave control → SW lighting fixture Master/slave control → DMX lighting fixture	TTL	UTP-Unshielded Twisted Pair	5-20	Controllable pixels reduce if wire is over 5m.
		Two core wire	1-5	
		Three core wire	1-5	
Single-wire lighting fixture → Single-wire lighting fixture	TTL	UTP-Unshielded Twisted Pair	1-2	Controllable pixels reduce if wire is over 1m.
		Two core wire	0.1-1	

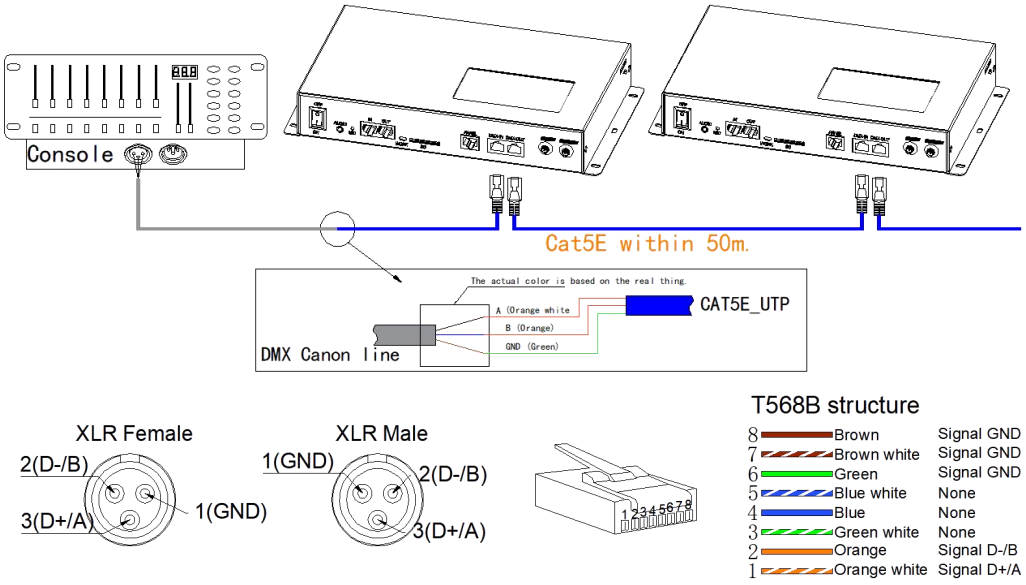
3.2. CASCADE CONNECTION

When the project needs to be controlled by multiple cascading controllers, connect the host with slave controllers by cables to make the whole project synchronous. The distance must be no more than 50M. (Please switch to GPS wireless synchronization scheme if exceeding 50 meters.)
User can extend the cables based on real requirement (cable extension should follow T568B method).
Operation refers to the “CASCADE CONTROL” section.



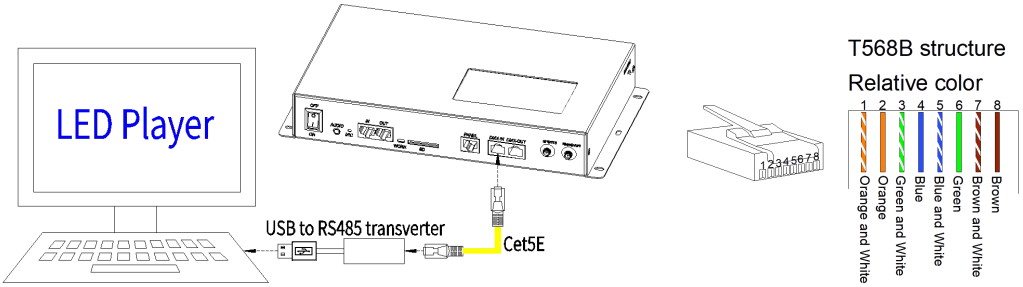
3.3. DMX CONNECTION

Operation refers to the “DMX512 CONTROL” section.



The pin position of The XLR is for reference only, and the final signal shall be subject to the actual XLR and DMX512 controller.

3.4. CHECK POSITION OF LUMINAIRES ONLINE



3.5. GPS ANTENNA NOTES

User can also purchase GPS marine antenna with standard SMA interface according to on-site engineering requirement. The longer the antenna is, the more difficult to search satellite.

Notes:

a) GPS Antenna should be installed in open space to guarantee view angle within 30 degree, there is no big shades (such as trees, iron towers, buildings etc.). GPS Antenna should be more than 2m away from the metal objects which size is bigger than 20cm.

b) Due to the satellite appearing on the equator more than other places, it preferably put the GPS antenna in the south of location for the north hemisphere.

c) Please don't put GPS antenna around other transmitting and receiving equipment to avoid radiation of other transmitting antenna facing to GPS antenna. Please keep them 2m away with each other.

3.6. WIFI ANTENNA NOTES

Notes:

a) Please try to keep WIFI Antenna perpendicular to the floor.

b) Wall, glass and interval would reduce WIFI signal rapidly during transmission. Besides, external electromagnetic interference (EMI) could lead to signal interruption, short transmission distance, failed connection and related problems. **Therefore, the distance between mobile phone and WIFI antenna cannot be too long which should be less than 30m without blocks.**

c) Controller can only be controlled by ONE mobile APP. Also, one mobile APP can only control ONE controller.

3.7. BLUETOOTH ANTENNA NOTES

Notes:

a) The Bluetooth antenna must be tightened with the "ANT" interface to avoid loosening during use and affecting the stability of signal transmission.

b) Because obstacles such as metal will affect the signal transmission rate, the Bluetooth antenna must be kept in the unobstructed state and cannot be wrapped by the metal shell.

c) The unobstructed distance between the Bluetooth remote control and the Bluetooth antenna must be within 6 to 8 meters.

And the unobstructed distance between the mobile phone and the Bluetooth antenna must be within 10 meters.

3.8. 4G SIGNAL NETWORKING

Wireless access network: The controller is equipped with 4G module and 4G iot card. Access to the antenna as shown in the figure, and access to 4G network can be realized by electrification.

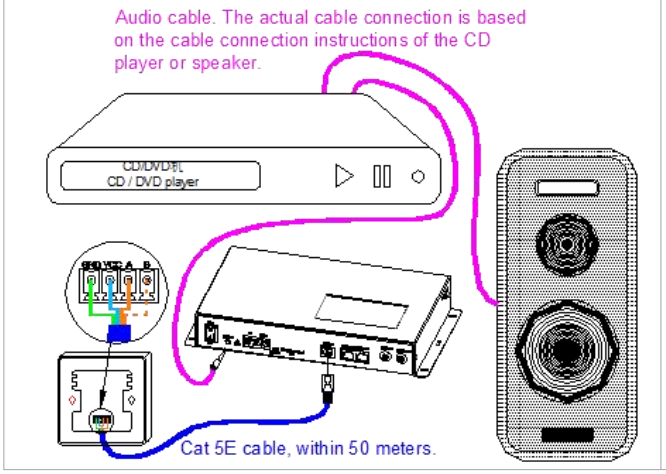
Attentions,

a) Try to place the antenna as high as possible, and close to the open air.

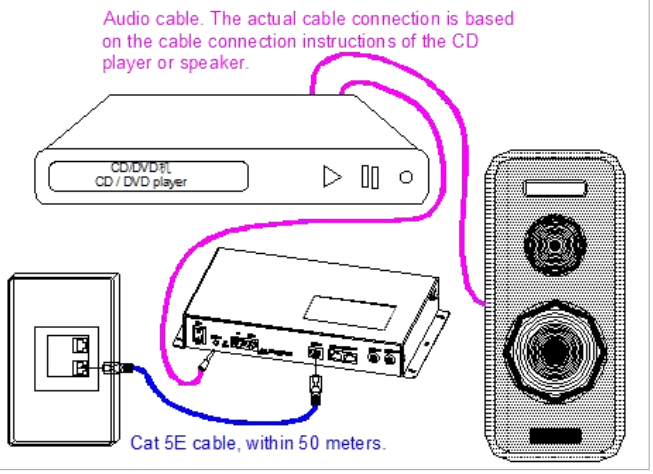
b) Applicable to China only.

3.9. KTV LIGHTING CONTROL PANEL WIRING

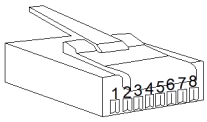
Panel A,



Panel N, we can connect either of the two RJ45 ports on the panel.



T568B structure

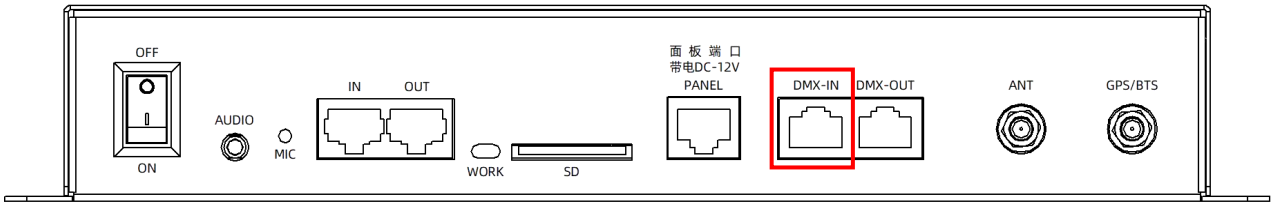


8	Brown	None
7	Brown white	None
6	Green	GND
5	Blue white	DC 12V
4	Blue	DC 12V
3	Green white	Signal GND
2	Orange	Signal D+/A
1	Orange white	Signal D-/B

1. The port sequence of the network cable must be clamped according to T568B.
2. Do not use crossover cables to avoid burning the panel or controller ports.

The other KTV panel

When the KTV panel not provided by our company is used for control, it is necessary to use the Class 5 network cable to connect to the DMX-IN network port of the controller.



3.10. CONNECT TO OTHER EXTERNAL CONTROL DEVICES

To use the external control function, connect external devices to the DMX_IN port of the controller through the USB to 485 device.

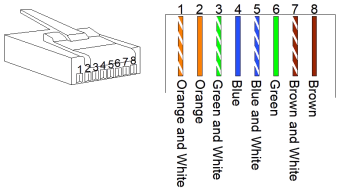
The conversion device is connected to the controller using a network cable.

Note the corresponding line sequence: pin 1 is T/R+, pin 2 is T/R-, and pin 3 is GND.

The wiring must be correct, otherwise it will cause uncontrollable.

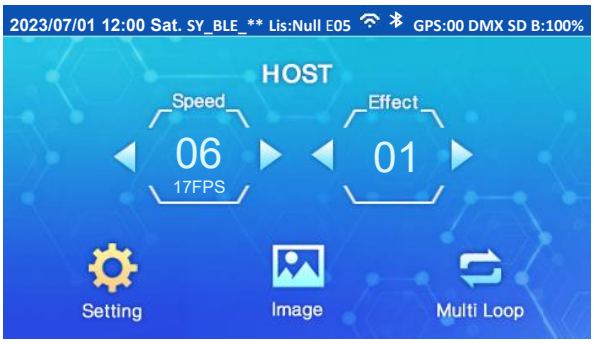
T568B structure

Relative color



4. BASIC OPERATION

4.1. INTERFAE INTRODUCTION

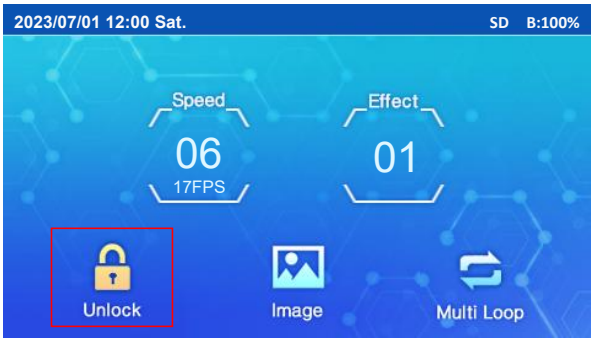


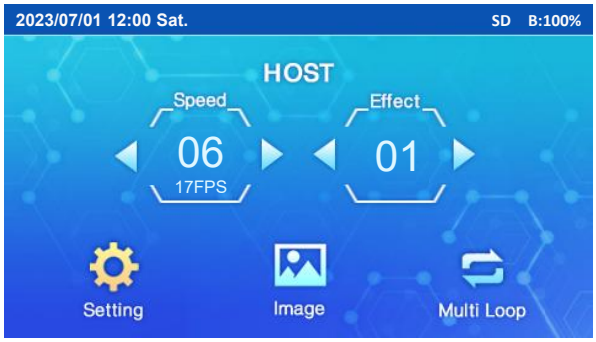
The icon of unsupported functions will not display.

Display	Introduction
Speed	Current speed.
Effect	Current effect.
HOST	Function display.
Setting	select and enter the setting menu.
Normal	Current control mode.
Random/Multiple/Single	Current Play mode, press to switch.
2020/04/01 12:00 Wen.	Current setting date and time.
SY_BLE_***	The Bluetooth name.
List: Null	Current list of time control.
E**	Error prompt for card reading.
	Controller is connected with APK.
	Controlled by Bluetooth signal indication.
GPS:***	Signal strength of GPS satellite. The synchronization depends on the animation display.
DMX	Controller access DMX512 console.
SD/FS	Location of the effects file in play.
B:100%	Current brightness of lighting fixture.

4.2. UNLOCK CONTROLLER

Enter the screen saver state after no operation for a period. Double click the icon “Double Click” to unlock main interface.

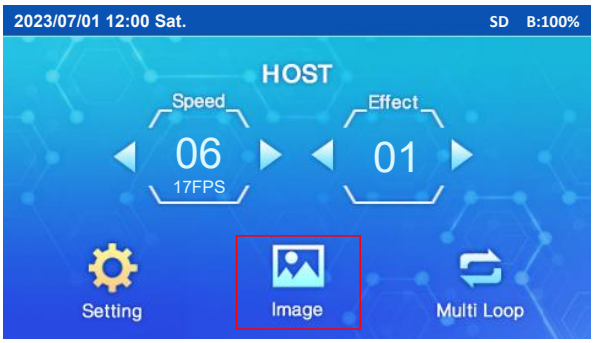




4.3. CONTROL SETTING

4.3.1. CONTROL MODE SWITCHING

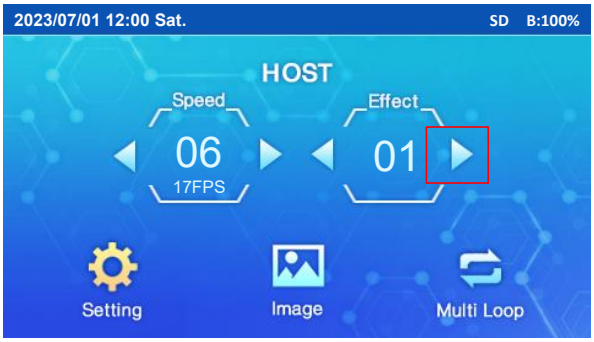
Select the Normal to switch other mode. There are Normal, Sound, Audio, Dynamic Sound, Dynamic Audio.

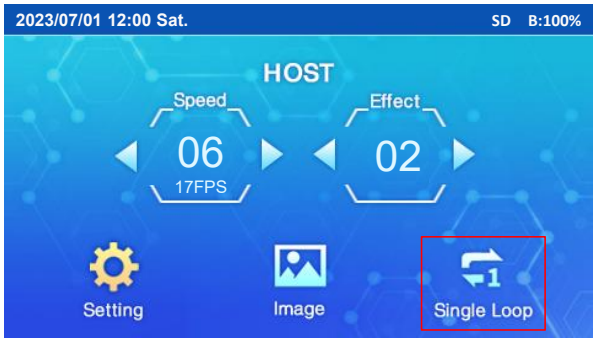


Mode	Icon
Image	Image
Build-in	Build-In
Dimming	Dimming
Spectrum Sound / Audio	Spectrum Sound Spectrum Audio
Dynamic Sound / Audio	Dynamic Sound Dynamic Audio

4.3.2. EFFECT

Select the number under “Effect”, select ◄ / ► to change effect, and it will be changed from multiple loop to single loop. The controller that supports GPS does not support the random loop playback mode.





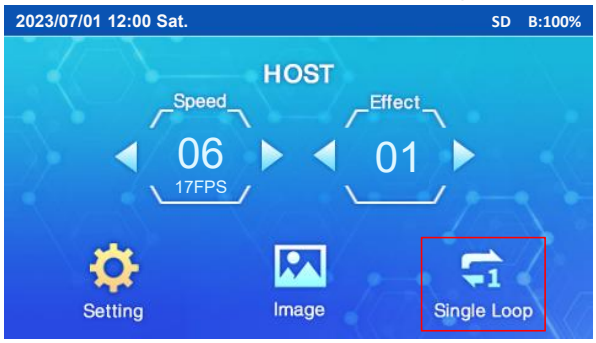
4.3.3. SPEED

Select the number under “Speed”, select ◄ / ► to set it. The less the value, the quicker the speed.

Parameters	Speed															
Interface	03	04	05	06	07	08	09	10	11	12	15	20	30	50	80	99
Frame Rate(ms)	30	40	50	60	70	80	90	100	110	120	150	200	300	500	1000	2000
(fps)	33	25	20	17	14	13	11	10	9	8	7	5	3	2	1	0.5

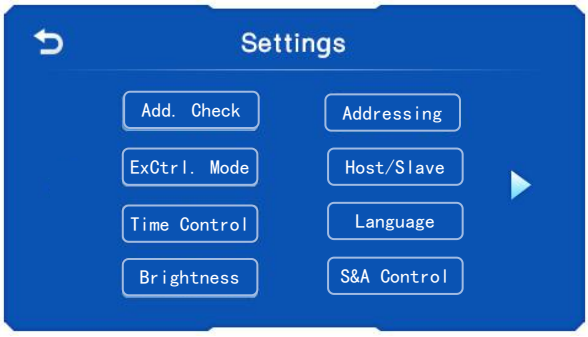
4.3.4. LOOP

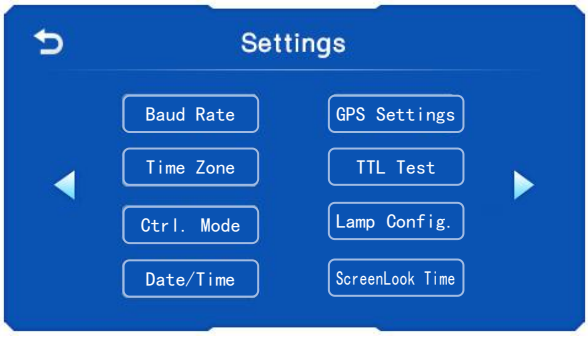
Select “Multi Loop" to switch loop mode. There are Random Loop, Multiple Loop and Single Loop.

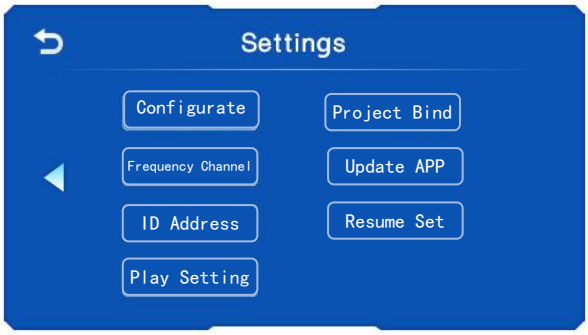


5. MENU SETTING

Select the “Settings” of main interface to enter the menu settings. All Settings are valid in real time.







Interface 1	Interface 2	Instructions
Add. Check	Address Check Increment: 0001 Check Mode: Pile up Current LEDS Reset LEDS ◄ 0001 ►	Light the lighting fixture to verify that its address is correct. Check Mode: Pixel / Scan. Current LEDS: Select ◄ / ► to set value. Or select Current LEDS to enter setting interface.
Addressing	Address Mode Auto Address Follow Last Mode Effect After Addressing: Y Parameter Settings	Address the lighting fixtures.
ExCtrl. Mode	COM control interface. ExCtrol. Mode Control Mode: COM Baud: 9600 The 3rd interface of DMX control. DMX Settings DMX Addr. Set: 001 Console Mode: Push Rod Console DMX Channel: Ten to one DMX Mode: Standard	The COM control, Panel control or DMX console can be set as external control. It needs set the baud rate by COM control. And it needs set the DMX control parameters by DMX control mode. When Panel control is selected, random play or sequential play can be selected. Notes. Check position of luminaires is used, the DMX control must be selected.
Host/Slave	Host/Slave	Set the controller to host or slave.
Time Control	Time Control Disable SD Card	Set the controller to time control. In the GPS synchronous state, the time control can be set to standard mode or compatible mode. The standard default starts from the first frame of the program list. And is not compatible with older versions.
Language	Language 中文 English	Set the interface language.
Brightness	Brightness R: ◄ 15% ► G: ◄ 15% ► B: ◄ 15% ► W: ◄ 15% ► W2: ◄ 15% ► W3: ◄ 15% ► All: ◄ 15% ►	Select ◄ ► to set value. (Range is 0% to 100%.) 0% is black and 100% is the brightest.
S & A control	Sound & Audio Control Effect Playing Type: Single Loop Mute Switching Time: ◄ 5s ► Mute Voice Threshold: ◄ 5% ► Mute Switching Effect: ◄ Black ► Switching Effect Beat Qty: ◄ 4 ► Mutation Beat Qty: ◄ 2 ► Beat Trigger Sensitivity: ◄ 23 ► MIC: ◄ Internal ► SoundGain: ◄ 009 ►	Enabling the Sound and Audio control, it would be set the parameters. Please refer to SOUND AND AUDIO CONTROL.
Baud Rate	Baud Rate Custom: ◄ 800K ► Enable SD Card: 700K Current	Select ◄ ► to set value, range is 600K - 800K. Only for the single-wire lighting fixture. We suggest set read the setting of SD card.

Interface 1	Interface 2	Instructions
GPS Setting	GPS Setting Sync Switch: 开/ON Sec: ◄ 00 ► Msec: ◄ 0000 ►	GPS synchronization switch.Only for the GPS synchronization.
Time Zone	Time Zone ◄ UTC+8 ►	Select ◄ ► to set value. Range is -11 -+12. Only for the GPS synchronization.
TTL Test	TTL Test Lamps: Three Color Check Mode: Auto Pile Up Start Current LED Reset LED ◄ 0001 ►	Light the lighting fixture to check if it is abnormal.
Ctrl. Mode	Control Mode Sound Control Only Audio Control Only Sound & Audio	Set the control mode of controller.
Lamp Config.	Lamp Configuration Current-R ◄15► Current-G: ◄15► Current-B ◄15► Current-W ◄15► GAMMA: 2.2	Configure the current of lighting fixture.
Date/Time	Date/ Time 2019/03/01 12:00	Select the value to enter the setting interface. Select ▼ ▲ to set value. The data and time are updated bases on GPS when the GPS synchronization is enabled.
Screen Lock Time	Screen Lock Time ◄ 30 secs ►	Set the time for the controller lock screen.
Confiturate Address	/	There are parameter of chip in the SD card. Only click it to quickly and conveniently set the lighting fixtures.
Project bind	Project bind  123B56 888543 210C01 234567 ICCID: 0 2 3 4 7 5 4 8 9 1 9 8 A 7 6 5 4 3 2 1 Project bind NodeNum ◄ 003 ►	Scan the QR code through the cloud platform operation or manually enter 24 characters to access the cloud platform to achieve remote control. (For use outside China, please consult our company in advance and customize the equipment.)
Frequency Channel	Frequency Channel ◄ 1 ►	Reserved function, only applicable to Long Range Radio.
Update App	User Application Update Create UID Update App	It is the hardware program used to upgrade the controller.
ID Address	ID Address ▲ ▲ ▲ ▲ 0 0 0 1 ▼ ▼ ▼ ▼	Reserved function, only applicable to Long Range Radio.
Resume Set	/	Restore factory setting.
Play Setting	User Application Update Single Play:Single Not Loop	Set the unicast type.And it does not work when the GPS switch is on or outputting the built-in effects. Single Loop, loop an effect. Single Not Loop, after playing a certain effect is paused (frozen in the last frame).

6. ADDITIONAL FUNCTION

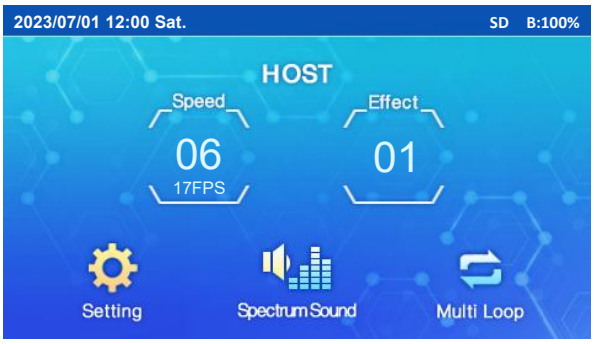
6.1. THE BUILT-IN TEST ANIMATION

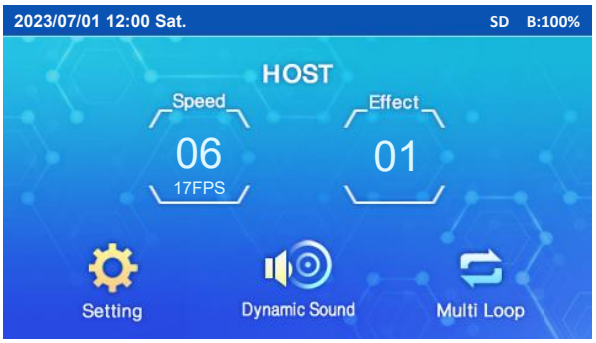
Under normal operation, the controller can invoke the "built-in effects" control mode. Click the icon at the bottom of the screen to switch.

Note: This built-in effect control mode cannot be invoked when there is no card.

Channel / Effect Mode	1 Channel	2 Channel	3 Channel	4 Channel	5 Channel	6 Channel
1.	Lightless	Lightless	Light-up CH1	Light-up CH1	Light-up CH1	Light-up CH1
2.	Always light	Always light	Light-up CH2	Light-up CH2	Light-up CH2	Light-up CH2
3.	Trailing	Trailing (CH1)	Light-up CH3	Light-up CH3	Light-up CH3	Light-up CH3
4.	Chasing	Trailing (CH2)	Light-up CH1+CH2	Light-up CH1+CH2	Light-up CH1+CH2	Light-up CH1+CH2
5.	Flicker	Chasing (CH1+2)	Light-up CH2+CH3	Light-up CH2+CH3	Light-up CH2+CH3	Light-up CH2+CH3
6.	Breathing	Flicker	Light-up CH1+CH3	Light-up CH1+CH3	Light-up CH1+CH3	Light-up CH1+CH3
7.		Full color gradually turn	Lightless	Lightless	Lightless	Lightless
8.			Always light	Always light	Always light	Always light
9.			Trailing (CH1)	Light-up CH4	Light-up CH4	Light-up CH4
10.			Trailing (CH2)	Trailing (CH1)	Light-up CH5	Light-up CH5
11.			Trailing (CH3)	Trailing (CH2)	Trailing (CH1)	Light-up CH6
12.			Full color trailing	Trailing (CH3)	Trailing (CH2)	Trailing (CH1)
13.			Chasing (CH1)	Trailing (CH4)	Trailing (CH3)	Trailing (CH2)
14.			Chasing (CH2)	Chasing (CH1)	Trailing (CH4)	Trailing (CH3)
15.			Chasing (CH3)	Chasing (CH2)	Trailing (CH5)	Trailing (CH4)
16.			Full color chasing	Chasing (CH3)	Chasing (CH1)	Trailing (CH5)
17.			Flicker	Chasing (CH4)	Chasing (CH2)	Trailing (CH6)
18.			Flicker (CH1/2/3)	Flicker	Chasing (CH3)	Chasing (CH1)
19.			Colorful flowing water	Flicker (CH1/2/3)	Chasing (CH4)	Chasing (CH2)
20.			7 color gradually turn	Colorful flowing water	Flicker	Chasing (CH3)
21.			Colorful gradually turn	7 color gradually turn	Flicker (CH1/2/3)	Chasing (CH4)
22.			7 color breathing	Colorful gradually turn	Colorful flowing water	Flicker
23.				7 color breathing	7 color gradually turn	Flicker (CH1/2/3)
24.					Colorful gradually turn	Colorful flowing water
25.					7 color breathing	7 color gradually turn
26.						Colorful gradually turn
27.						7 color breathing

6.2. SOUND AND AUDIO CONTROL

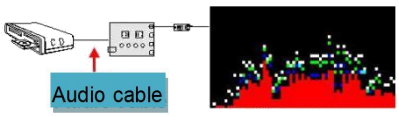




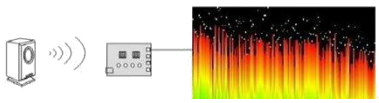
It includes audio and sound control function. It can only use one control mode.

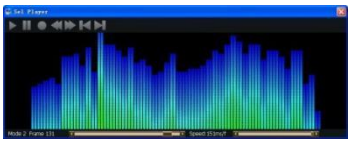
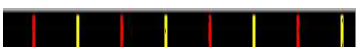
Select the icon in the lower part of interface to switch to sound control or audio control. The effect of the these two controls is the same. Effect of sound control and audio control can be changed according client's needs. Please ensure there are .YEL / .YIN (spectrum) or .mel / .min (dynamic) format effects in the software before merging files in SD card.

Audio When the controller is power off, plug one end of audio cable into AUDIO port, and plug the other end into music player. Then switch on the power of controller and music player. Ensure the status is "Audio control".



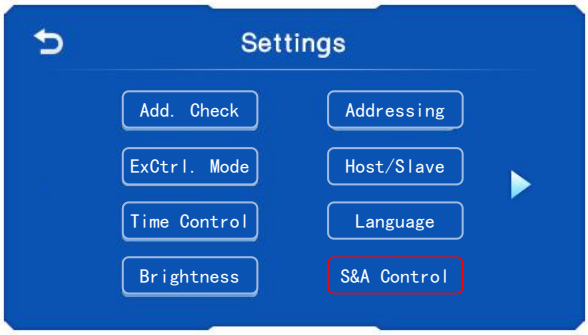
Sound Controller with built-in microphone, put the controller near sound equipment and make the sound clear. Manually adjust to sound mode.

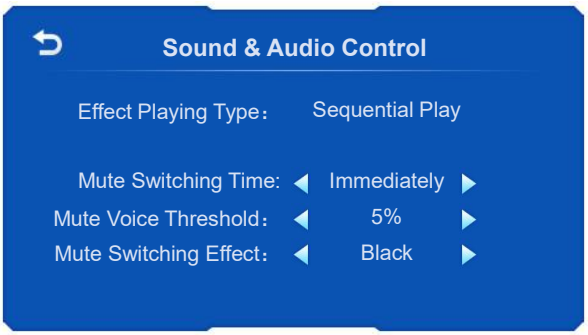


Type	Application	Introduction	
spectrum	Screen	The controller will output different audio color columns based on sound volume. Higher volume, Higher color column. Lower volume, lower color column.	
spectrum	Light strips	The speed of effect runs by setting in general. It would be faster in the low-frequency sound segment (such as the background drum) changes.	

Enabling the Sound and Audio control, it would be set the parameters.

Click the S & A Control in the settings interface.





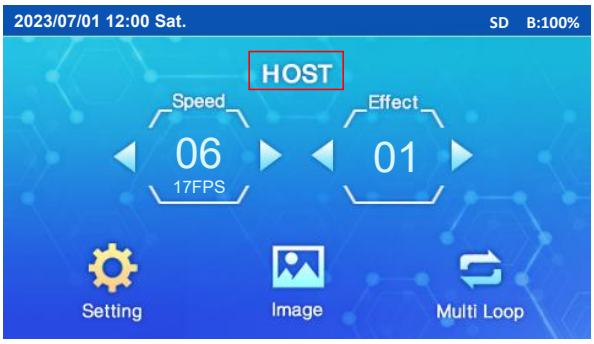
Effect Playing Type: set Sequential play or Random play.
Mute Switching Time: set Immediately, disable or the time 1-10s.
Mute Voice Threshold: set 5% - 95%.
Mute Switching Effect: set Black or Multiple Loop.

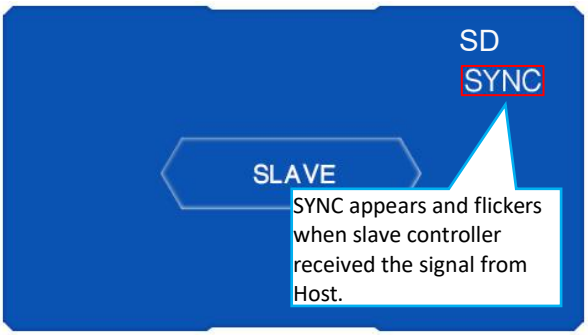
Option	Explain
Effect Playing Type	Set Sequential play, Single Loop or Random play. It works in multiple loop mode.
Mute Switching Time	Set Immediately, disable or the time 1-10S. Whether to switch immediately or delay x seconds in mute mode. The effect is set by Mute Switching Effect.
Mute Voice Threshold	Set 5% - 95%. The sensitivity of sound detection, the smaller the value, the more sensitive the sound detection is.
Mute Switching Effect	Set an effect program played without sound.
	Set the acceleration when a downbeat is detected in the sound control state.
Switching Effect Beat Qty	Set the number of reshoots to detect changed programs.
Mutation Beat Qty	Set the effect changes direction or color when a certain number of downbeats is detected in the sound control state.
Beat Trigger Sensitivity	Set the sensitivity to detect drumbeats. The smaller the value, the higher the sensitivity.
Mic	We can set whether the microphone is an external device or a built-in microphone in the controller. Note: When using [external microphone], use 3.5mm 4-segment interface (CTIA).
SoundGain	Can set 001-030. The magnification of sound detection sensitivity, the larger the multiple, the more sensitive the sound detection.

6.3. CASCADE CONTROL

When the project needs to be controlled by multiple cascading controllers, connect the host with slave controllers by cables to make the whole project synchronous.

1. Quickly click HOST on the interface 3 times to enter menu setting. Select HOST to become SLAVE.
2. Connect two controllers by UTP CAT5E for synchronization. Connection refers to the CASCADE CONNECTION section.



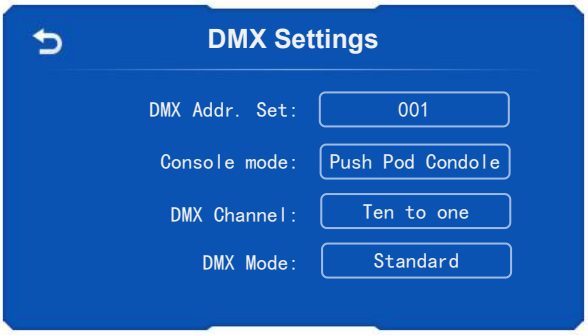


6.4. DMX512 CONTROL

User can adjust the effect, speed and brightness by DMX512 console.

The same or different addresses can be set in the controller, so that DMX512 console is able to control several controllers with same or different effects. The actual effect is determined by SD card and mode selection of the controller. Connection refers to the DMX CONNECTION section.

Select ▼ and ▲ to set DMX address value.



Different control modes correspond to different functions of channels. And the address setting formula is related to the control mode. They are:

Standard, (N-1) *10 + 1

Compatible, (N-1) *8 + 1

N represents the Nth controller.

All settings are valid in real time.

Effect 00 is black and Effect 99 is playing in multiple loop.

Set the numerical interval of the console,

[Standard] Many to one. (Channel values are evenly distributed by level.)

CH.	01 Effect		02 Effect		03 Speed		04 Bright._Overall		05 Bright._CH. R		06 Bright._CH. G		07 Bright._CH. B		08 Bright._CH. W		09 Control Mode			10 Loop	
	Set	Range	Set	Range	Set	Range	Set	Range	Set	Range	Set	Range	Set	Range	Set	Range	Set		Range	Set	Range
Position of Push Road	90	225 ~ 255	09	225 ~ 255	99	240 ~ 255	100	200 ~ 255	100	200 ~ 255	100	200 ~ 255	100	200 ~ 255	100	200 ~ 255	Dynamic	Audio	204 ~ 255	Random	171 ~ 255
	80	200 ~ 224	08	200 ~ 224	80	224 ~ 239	99	198 ~ 199	99	198 ~ 199	99	198 ~ 199	99	198 ~ 199	99	198 ~ 199					
					50	208 ~ 223	98	196 ~ 197	98	196 ~ 197	98	196 ~ 197	98	196 ~ 197	98	196 ~ 197		Sound	154 ~ 203		
	70	175 ~ 199	07	175 ~ 199	30	192 ~ 207	97	194 ~ 195	97	194 ~ 195	97	194 ~ 195	97	194 ~ 195	97	194 ~ 195					
					20	176 ~ 191	96	192 ~ 193	96	192 ~ 193	96	192 ~ 193	96	192 ~ 193	96	192 ~ 193					
	60	150 ~ 174	06	150 ~ 174	15	160 ~ 175	95	190 ~ 191	95	190 ~ 191	95	190 ~ 191	95	190 ~ 191	95	190 ~ 191					
					12	144 ~ 159															
	50	125 ~ 149	05	125 ~ 149	11	128 ~ 143		...		...		...		...		...	Spectrum	Audio	103 ~ 153	Multiple	85 ~ 170
					10	112 ~ 127															
	40	100 ~ 124	04	100 ~ 124	9	96 ~ 111	7	14 ~ 15	7	14 ~ 15	7	14 ~ 15	7	14 ~ 15	7	14 ~ 15					
					8	80 ~ 95	6	12 ~ 13	6	12 ~ 13	6	12 ~ 13	6	12 ~ 13	6	12 ~ 13					
	30	75 ~ 99	03	75 ~ 99	7	64 ~ 79	5	10 ~ 11	5	10 ~ 11	5	10 ~ 11	5	10 ~ 11	5	10 ~ 11		Sound	52 ~ 102		
					6	48 ~ 63	4	8 ~ 9	4	8 ~ 9	4	8 ~ 9	4	8 ~ 9	4	8 ~ 9					
	20	50 ~ 74	02	50 ~ 74	5	32 ~ 47	3	6 ~ 7	3	6 ~ 7	3	6 ~ 7	3	6 ~ 7	3	6 ~ 7				Single	0 ~ 84
					4	16 ~ 31	2	4 ~ 5	2	4 ~ 5	2	4 ~ 5	2	4 ~ 5	2	4 ~ 5					
	10	25 ~ 49	01	25 ~ 49	3	0 ~ 15	1	2 ~ 3	1	2 ~ 3	1	2 ~ 3	1	2 ~ 3	1	2 ~ 3	Image		0 ~ 51		
	00	0 ~ 24	00	0 ~ 24			0	0 ~ 1			0	0 ~ 1			0	0 ~ 1					

[Standard] Ten to one. (Channel values are incremented by tens.)

CH.	01 Effect		02 Effect		03 Speed		04 Bright._Overall		05 Bright._CH. R		06 Bright._CH. G		07 Bright._CH. B		08 Bright._CH. W		09 Control Mode			10 Loop	
	Set	Range	Set	Range	Set	Range	Set	Range	Set	Range	Set	Range	Set	Range	Set	Range	Set		Range	Set	Range
Position of Push Road	90	90 ~ 255	09	90 ~ 255	99	240 ~ 255	100	200 ~ 255	100	200 ~ 255	100	200 ~ 255	100	200 ~ 255	100	200 ~ 255	Dynamic	Audio	40 ~ 255	Random	20 ~ 255
	80	80 ~ 89	08	80 ~ 89	80	230 ~ 239	99	198 ~ 199	99	198 ~ 199	99	198 ~ 199	99	198 ~ 199	99	198 ~ 199					
					50	220 ~ 229	98	196 ~ 197	98	196 ~ 197	98	196 ~ 197	98	196 ~ 197	98	196 ~ 197		Sound	30 ~ 39		
	70	70 ~ 79	07	70 ~ 79	30	210 ~ 219	97	194 ~ 195	97	194 ~ 195	97	194 ~ 195	97	194 ~ 195	97	194 ~ 195					
					20	200 ~ 209	96	192 ~ 193	96	192 ~ 193	96	192 ~ 193	96	192 ~ 193	96	192 ~ 193					
	60	60 ~ 69	06	60 ~ 69	15	150 ~ 159	95	190 ~ 191	95	190 ~ 191	95	190 ~ 191	95	190 ~ 191	95	190 ~ 191					
					12	120 ~ 149															
	50	50 ~ 59	05	50 ~ 59	11	110 ~ 119		...		...		...		...		...	Spectrum	Audio	20 ~ 29	Multiple	10 ~ 19
					10	100 ~ 109															
	40	40 ~ 49	04	40 ~ 49	9	90 ~ 99	7	14 ~ 15	7	14 ~ 15	7	14 ~ 15	7	14 ~ 15	7	14 ~ 15					
					8	80 ~ 89	6	12 ~ 13	6	12 ~ 13	6	12 ~ 13	6	12 ~ 13	6	12 ~ 13					
	30	30 ~ 39	03	30 ~ 39	7	70 ~ 79	5	10 ~ 11	5	10 ~ 11	5	10 ~ 11	5	10 ~ 11	5	10 ~ 11		Sound	10 ~ 19		
					6	60 ~ 69	4	8 ~ 9	4	8 ~ 9	4	8 ~ 9	4	8 ~ 9	4	8 ~ 9					
	20	20 ~ 29	02	20 ~ 29	5	50 ~ 59	3	6 ~ 7	3	6 ~ 7	3	6 ~ 7	3	6 ~ 7	3	6 ~ 7				Single	0 ~ 9
					4	40 ~ 49	2	4 ~ 5	2	4 ~ 5	2	4 ~ 5	2	4 ~ 5	2	4 ~ 5					
	10	10 ~ 19	01	10 ~ 19	3	0 ~ 39	1	2 ~ 3	1	2 ~ 3	1	2 ~ 3	1	2 ~ 3	1	2 ~ 3	Image		0 ~ 9		
	00	0 ~ 9	00	0 ~ 9			0	0 ~ 1			0	0 ~ 1			0	0 ~ 1					

[Standard] One to one. (Channel values are incremented by ones.)

CH.	01 Effect		02 Speed		03 Bright._Overall		04 Bright._CH. R		05 Bright._CH. G		06 Bright._CH. B		07 Bright._CH. W		08	09 Control Mode			10 Loop	
	Set	Range	Set	Range	Set	Range	Set	Range	Set	Range	Set	Range	Set	Range		Set		Range	Set	Range
Position of Push Road	97	97 ~ 255	99	18 ~ 255	100	100 ~ 255	100	100 ~ 255	100	100 ~ 255	100	100 ~ 255	100	100 ~ 255	Hi	Dynamic	Audio	4 ~ 255	Random	2 ~ 255
	96	96	80	17	99	99	99	99	99	99	99	99	99	99			Sound	3 ~ 3		
	95	95	50	16	98	98	98	98	98	98	98	98	98	98		Spectrum	Audio	2 ~ 2	Multiple	1 ~ 1
	94	94	30	15	97	97	97	97	97	97	97	97	97	97			Sound	1 ~ 1		
	93	93	20	14	96	96	96	96	96	96	96	96	96	96					Single	0 ~ 0
	92	92	15	13	95	95	95	95	95	95	95	95	95	95		Image		0 ~ 0		
	...		12	12	...		...		...		...		...							
			11	11																
			10	10																
	07	7	9	9	7	7	7	7	7	7	7	7	7	7						
	06	6	8	8	6	6	6	6	6	6	6	6	6	6						
	05	5	7	7	5	5	5	5	5	5	5	5	5	5						
	04	4	6	6	4	4	4	4	4	4	4	4	4	4						
	03	3	5	5	3	3	3	3	3	3	3	3	3	3						
	02	2	4	4	2	2	2	2	2	2	2	2	2	2						
	01	1	3	0 ~ 3	1	1	1	1	1	1	1	1	1	1						
	00	0			0	0	0	0	0	0	0	0	0	0						

[Compatible] Many to one. (Channel values are evenly distributed by level.)

CH.	01 Loop		02 Speed		03 Control Mode			04 Effect		05 Effect		06	07	08 Brightness	
	Set	Range	Set	Range	Set		Range	Set	Range	Set	Range			Set	Range
Position of Push Road	Random	171 ~ 255	99	240 ~ 255	Dynamic	Audio	204 ~ 255	90	225 ~ 255	09	225 ~ 255	None	None	100%	215 ~ 255
			80	224 ~ 239				80	200 ~ 224	08	200 ~ 224				
			50	208 ~ 223		Sound	154 ~ 203							50%	172 ~ 212
			30	192 ~ 207				70	175 ~ 199	07	175 ~ 199				
			20	176 ~ 191											
			15	160 ~ 175				60	150 ~ 174	06	150 ~ 174			25%	129 ~ 169
			12	144 ~ 159											
	Multiple	85 ~ 170	11	128 ~ 143	Spectrum	Audio	103 ~ 153	50	125 ~ 149	05	125 ~ 149			12%	86 ~ 127
			10	112 ~ 127											
			9	96 ~ 111				40	100 ~ 124	04	100 ~ 124				
			8	80 ~ 95		Sound	52 ~ 102								
			7	64 ~ 79											
	Single	0 ~ 84	6	48 ~ 63				30	75 ~ 99	03	75 ~ 99			6%	43 ~ 84
			5	32 ~ 47											
			4	16 ~ 31				20	50 ~ 74	02	50 ~ 74				
			3	0 ~ 15	Image		0 ~ 51	10	25 ~ 49	01	25 ~ 49			0	0 ~ 42
								00	0 ~ 24	00	0 ~ 24				

[Compatible] Ten to one. (Channel values are incremented by tens.)

CH.	01 Loop		02 Speed		03 Control Mode			04 Effect		05 Effect		06	07	08 Brightness	
	Set	Range	Set	Range	Set		Range	Set	Range	Set	Range			Set	Range
Position of Push Road	Random	20 ~ 255	99	240 ~ 255	Dynamic	Audio	40 ~ 255	90	90 ~ 255	09	90 ~ 255	None	None	100%	50 ~ 255
			80	230 ~ 239				80	80 ~ 89	08	80 ~ 89				
			50	220 ~ 229		Sound	30 ~ 39							50%	40 ~ 49
			30	210 ~ 219				70	70 ~ 79	07	70 ~ 79				
			20	200 ~ 209											
			15	150 ~ 159				60	60 ~ 69	06	60 ~ 69			25%	30 ~ 39
			12	120 ~ 149											
	Multiple	10 ~ 19	11	110 ~ 119	Spectrum	Audio	20 ~ 29	50	50 ~ 59	05	50 ~ 59			12%	20 ~ 29
			10	100 ~ 109											
			9	90 ~ 99				40	40 ~ 49	04	40 ~ 49				
			8	80 ~ 89		Sound	10 ~ 19								
			7	70 ~ 79											
	Single	0 ~ 9	6	60 ~ 69				30	30 ~ 39	03	30 ~ 39			6%	10 ~ 19
			5	50 ~ 59											
			4	40 ~ 49				20	20 ~ 29	02	20 ~ 29				
			3	0 ~ 39	Image		0 ~ 9	10	10 ~ 19	01	10 ~ 19			0	0 ~ 9
								00	0 ~ 9	00	0 ~ 9				

[Compatible] One to one. (Channel values are incremented by ones.)

CH.	01 Loop		02 Speed		03 Control Mode			04 Effect		05 Effect		06	07	08 Brightness	
	Set	Range	Set	Range	Set		Range	Set	Range	Set	Range			Set	Range
Position of Push Road	Random	2 ~ 255	99	99 ~ 255	Dynamic	Audio	4 ~ 255	90	9 ~ 255	09	9 ~ 255	None	None	100%	5 ~ 255
			80	80 ~ 98				80	8 ~ 8	08	8 ~ 8				
			50	50 ~ 79		Sound	3 ~ 3							50%	4 ~ 4
			30	30 ~ 49				70	7 ~ 7	07	7 ~ 7				
			20	20 ~ 29											
			15	15 ~ 19				60	6 ~ 6	06	6 ~ 6			25%	3 ~ 3
			12	12 ~ 14											
	Multiple	1 ~ 1	11	11 ~ 11	Spectrum	Audio	2 ~ 2	50	5 ~ 5	05	5 ~ 5			12%	2 ~ 2
			10	10 ~ 10											
			9	9 ~ 9				40	4 ~ 4	04	4 ~ 4				
			8	8 ~ 8		Sound	1 ~ 1								
			7	7 ~ 7											
	Single	0 ~ 0	6	6 ~ 6				30	3 ~ 3	03	3 ~ 3			6%	1 ~ 1
			5	5 ~ 5											
			4	4 ~ 4				20	2 ~ 2	02	2 ~ 2				
			3	0 ~ 3	Image		0 ~ 0	10	1 ~ 1	01	1 ~ 1			0	0 ~ 0
								00	0 ~ 0	00	0 ~ 0				

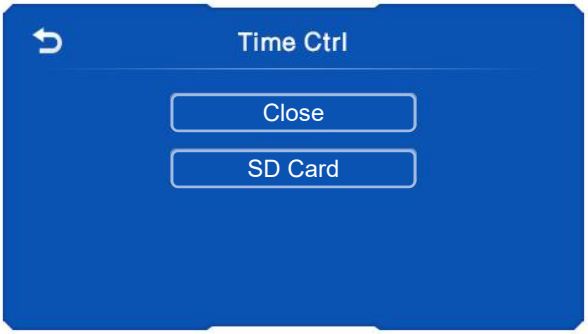
If the channel color sequence of lighting fixtures is not R-G-B-W, the brightness channel shall be switched accordingly.

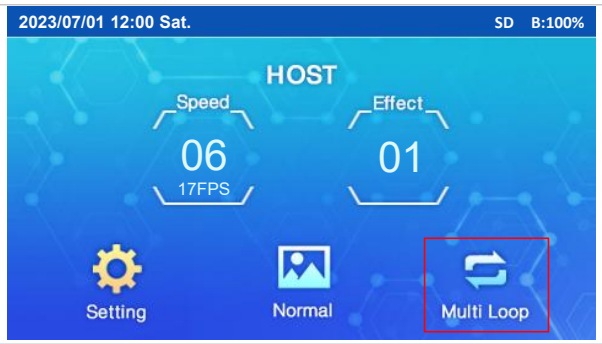
6.5. TIME CONTROL

It has time control function. After enabling time control, the specified effect can be triggered in a specified time.

Enter "Parameter Setting" - "Time Control" function to enable. Maximum time control lists of player can be 100, and maximum 10 effects can be set in each list.

Noted: This function only applies to pattern effects.



Mode	Description	Shows
SD Card Time Control	The light is black while waiting. The controller will switch to corresponding effect mode when it reaches the time set. (The “Normal” and “Effect” buttons are disabled.)	
Normal	Manually set the time control disable, it will become controllable.	

6.6. WIRELESS CONTROL

6.6.1. REMOTE CONTROL

6.6.1.1. RF REMOTE CONTROL

There is build-in remote control module. It can send wireless signal within 5-15m control distance. Speed and mode can be changed by remote controller. The remote control will be unavailable if the number in remote controller does not correspond to the one in remote control module of controller.

0-9: Press the value to jump to the target mode.
E.g. To invoke mode 2,please quickly press [0] and [2].

MODE◄: Short press, effect decrease 1. Long press, effect decline rapidly.

MODE►: Short press, effect increase 1. Long press, effect increasing rapidly.

Speed: Short press, speed increase 1. Long press, effect increasing rapidly.

Menu: Switch Image, Dynamic Audio, Dynamic Sound, Spectrum Audio, Spectrum Audio.

Auto: 00 is auto mode.

Note: “Random loop only works in playing image.

6.6.1.2. BLUETOOTH REMOTE CONTROL

When the controller supports the Bluetooth remote control function, it can use the remote control of Bluetooth signal to call effect and speed within 10 meters.

【AUTO】 Short press, switch from single cycle to multi-cycle.
【MODE+】/【MODE-】Short press, effect increase/decrease 1.
【SPD+】/【SPD-】 Short press, speed increase/decrease 1.
【BRI-】/【BRI+】 Short press, brightness increase/decrease 10%.
【A/V/P】 Tap to switch pattern/built-in/Sound control/Dimming playback mode

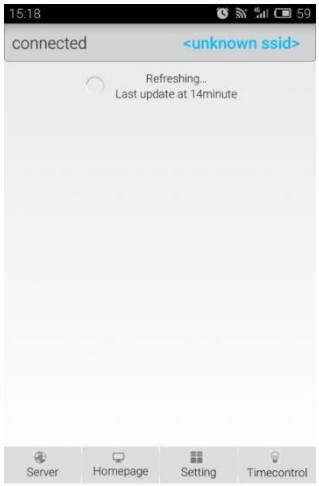
6.6.2. WiFi CONTROL

It will set the effect and speed by APP when the controller connect WIFI.

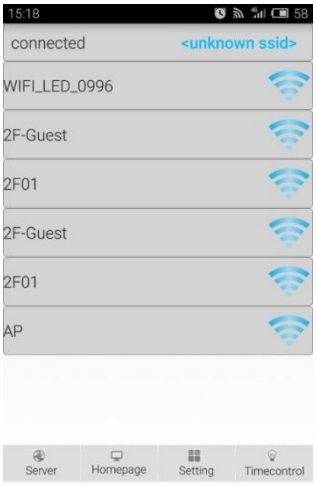
Connect the WIFI antenna to the controller, and power on. Connect the app and controller through wireless network. The operation below.

1. Press to open .

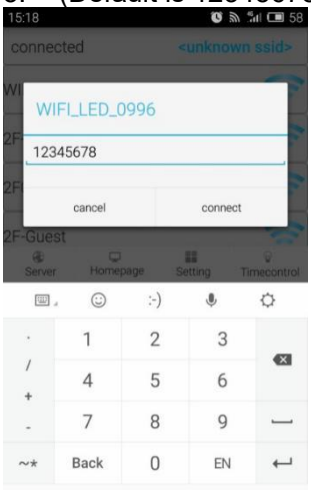
2. Refresh “Server” list.



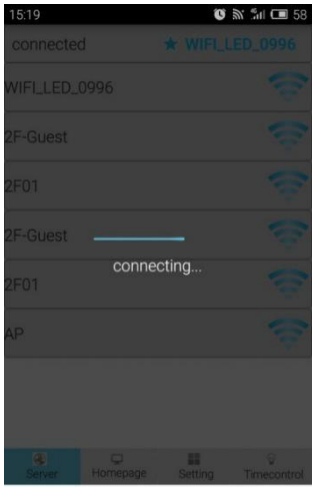
3. Find corresponding controller WIFI account.



4. Input password
5. (Default is 12345678).



6. Show “connecting” status.

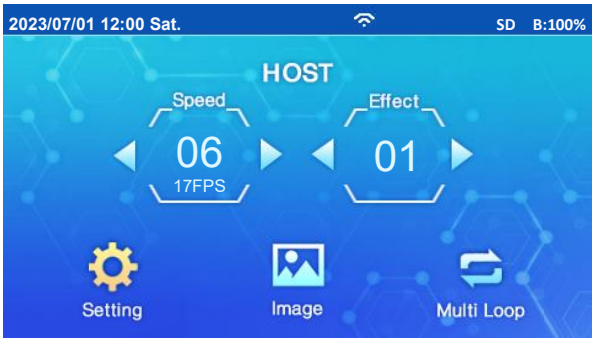


7. Successfully connected.

User can set the WIFI account and password.

APP Interface	Solution
Connect success.	It has been connected successfully and accessible operation.
Disconnected.	Only one phone at a time is allowed for control. Can log out of the original APP and reconnect, or wait five minutes before

APP Interface	Solution
	reconnecting.
	Network signal is poor. The phone is enabled "Super WIFI". After turning off the "Super WiFi", completely exit the APP and open it again (must exit in the background as well).
Please connect to WIFI first.	APP cannot connect with controller through WIFI because of poor network signal or no operation for 5 minutes, all the functions in APP will be disabled. Please manually re-connect mobile APP with controller.



6.6.3. CONTROLLED BY BLUETOOTH

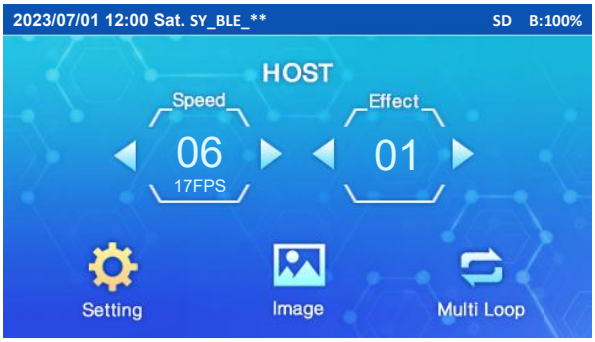
When the controller enables the Bluetooth signal, the effect, speed and other operations of the controller can be called through the Eseeker app of the phone. The operation below.

The controller that supports GPS does not support Bluetooth control.

1. Open the app store and search “Eseeker” to install.

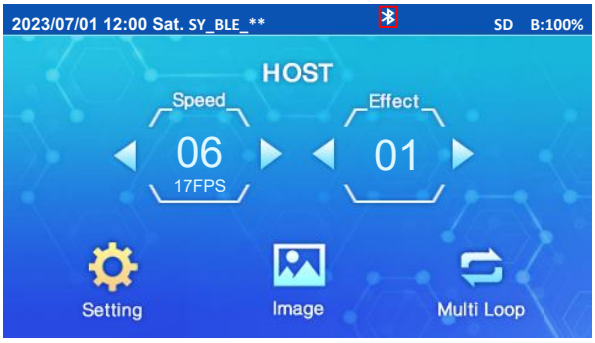
Note, the name extension must be .apk.

2. Power on the controller.



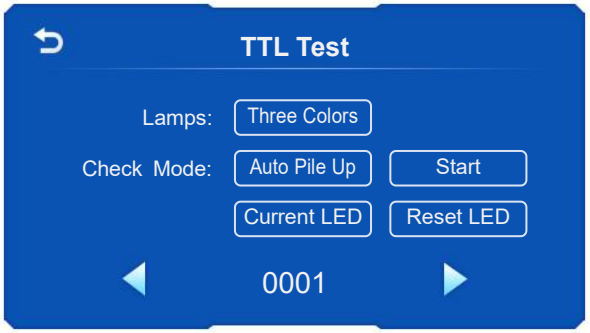
3. Select the device to connect.

4. When the applet is successfully connected, a Bluetooth icon is displayed on the controller screen.



6.7. SIGNAL CABLE TESTING

Testing and counting the single cable lighting fixtures.



Option	Explain
Lamps	1/2/3/4/5/6 colors
Check Mode	Pile-up, Scan, Auto Pile-up, Auto Scan
Start	Click to auto pile-up / scan animation.
Current LED	Click and enter-into set the lamp value.
Reset LED	Reset the lighting fixture value.

6.8. CONTROLLED BY PANEL

Use the audio cable to connect the controller and the audio device. After select the dynamic audio (动感音控) on the panel, the controller will read the drum sound of the sound source to accelerate / decelerate / change the effect when play music.

Please ensure there are *.smel/*.emel/*.smin/*.emin format effects in the software before merging files in SD card.

6.8.1. CONTROLLED BY PANEL A

After the panel is properly connected to the controller, enable the COM external control mode in the menu setting. That is, we can switch animations, speeds and other functions through the panel.

Options	Instructions
图案 1-9	Select mode 1-9.
单循环/多循环/随机循环	Select single loop(单循环), multiple loop(多循环), random loop(随机循环)
开关	Turn on /off the luminaires.
设置	Enter the settings interface.

Options	Illustrate
模式/速度/亮度	Mode / Speed / Brightness
图案	Image
动感音控	Dynamic Audio
动感声控	Dynamic Sound
自动息屏	Time to sleep without operating.

6.8.2. CONTROLLED BY PANEL N

After the panel is properly connected to the controller, enable the “Panel 3” external control mode in the menu setting. That is, we can switch animations, speeds and other functions through the panel.

Options	Instructions
情景 1	multiple loop play mode 1 to 5.
情景 2	multiple loop play mode 6 to 10.
情景 3	multiple loop play mode 11 to 15.
情景 4	multiple loop play mode 16 to 20.
情景 5	multiple loop play mode 21 to 25.
情景 6	multiple loop play mode 26 to 30.
柔和	multiple loop play mode 31 to 35.
明亮	multiple loop play mode 36 to 40.
动感音控	Dynamic Audio
温馨	multiple loop play mode 41 to 45.
模式	single loop play the designated mode. (Select the “情景*” option to switch the multiple loop.)
关灯	Turn on /off the luminaires.
自动	Sequential/random playback according to the control mode set by the controller
亮度	Brightness: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%

6.8.3. OTHER MARKET PANELS

After the panel is properly connected to the controller, enable the COM external control mode in the menu setting. See corresponding specifications for control operations.

7. ADDRESSABLE

7.1. CHIP SUPPORTED

Chip	Addressing	Custom Channel	Set parameters					
			No signal State	Power-on Setting	Current	Forward	Issue	Gamma
UCS512A	√	×	×	×	×	×	×	×
UCS512B	√	×	×	×	×	×	×	×
UCS512C0	√	×	×	×	×	×	×	×
UCS512C4	√	×	×	√	×	×	×	×
UCS512CN	√	×	√	√	×	×	×	×
UCS512D	√	×	√	√	√	×	×	×
UCS512E0	√	√	√	√	√	√	×	×
UCS512G4	√	×	√	√	√	×	×	×
UCS512G6	√	×	√	√	√	×	×	×
UCS512H	√	×	√	√	√	×	×	×
UCS512KH	√	√	√	√	√	√	×	×
UCS512KL	√	√	√	√	√	√	×	×
DMX512AP	√	×	×	×	×	×	×	×
SM16511	√	×	×	×	×	×	×	×

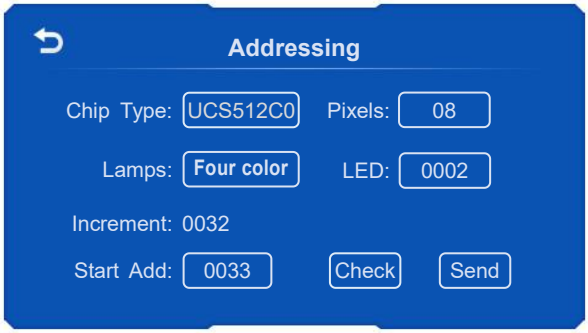
Chip	Addressing	Custom Channel	Set parameters					
			No signal State	Power-on Setting	Current	Forward	Issue	Gamma
SM16512	√	×	×	×	×	×	×	×
SM16520	√	×	×	×	×	×	×	×
SM16500	√	×	√	√	×	×	×	×
SM17500	√	√	√	√	√	×	×	×
SM17512	√	×	√	√	√	×	×	×
SM17522	√	×	√	√	√	×	×	×
SM18522P	√	×	√	√	√	×	×	√
SM18522PH	√	×	√	√	√	×	×	√
SM18512P	√	×	×	×	×	×	×	×
SM18512PK	√	×	×	×	×	×	×	×
SM16522P	√	×	×	×	×	×	×	×
SM16522PS	√	×	×	×	×	×	×	×
SM19522PS	√	×	×	×	×	×	×	×
SW-D	√	×	×	×	×	×	×	×
Hi512A0	√	√	×	×	×	×	×	×
Hi512A4	√	×	√	√	×	×	×	×
Hi512A6	√	×	√	√	×	×	×	×
Hi512D	√	×	√	√	√	×	×	×
Hi512E	√	×	√	√	√	×	×	×
Hi512B4L	√	×	×	×	×	×	×	×
TM512AB3	√	×	×	×	×	×	×	×
TM512AL1	√	×	×	×	×	×	×	×
TM512ACx	√	×	×	×	×	×	×	×
TM512AD	√	×	√	√	√	×	×	×
QED512P	√	×	√	√	√	×	×	×
GS8511	√	×	×	×	×	×	×	×
GS8512	√	×	×	×	×	×	√	√
GS8513	√	×	×	×	√	×	√	√
GS8515	√	×	×	×	√	×	√	√

7.2. MANUAL ADDRESSING

Option	Setting			Instructions
Chip type	Page 1	Chip Select		Select the chip of lighting fixture.
		SW-D	DMX512AP	
		UCS512A	UCS512B	
		UCS512C0	UCS512C4	
		UCS512D	UCS512E-SELF	
	Page 2	Chip Select		
		SM16500	SM16511	
		SM16512	SM16520	
		SM17512	SM17522	
		SM17500-NOR	SM17500-SELF	
	Page 3	Chip Select		
		HI512A0-NOR	TM512AB3	
		H512A0-SELF	TM512ACX	
		HI512A4	TM512AD	
		HI512A6	TM512AL1	

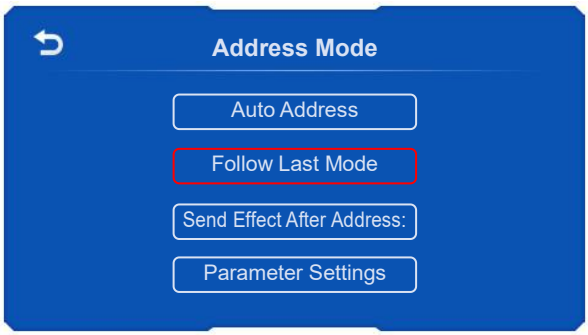
Option	Setting	Instructions
	Page 4 Chip Select QED512P Hi512D UCS512CN GS8512 Hi512E GS8513 GS8511 GS8515	
	Page 5 Chip Select SM18522P UCS512H SM18522PH UCS512KH UCS512G4 UCS512KL UCS512G6 SM18512P	
	Page 6 Chip Select SM18512P SM18512PK SM16522P SM16522PS SM19522PS HI512B4L UCS512K 自通道	
Pixels	Dots ◄ 1 ►	Set the pixel of a DMX512 chip. Select ◄ ► to set value.
Lamps	/	Set the channel of the lighting fixture.
LED	Lights (MAX: ----) ▲ ▲ ▲ ▲ 0 0 0 1 ▼ ▼ ▼ ▼	Addressing the Nth lighting fixture. Select ▼ ▲ to set value.
Increment	/	It can be calculated automatically according to the number of lighting fixtures, dots and lights. Manual setting is not supported.
Start Add	Start Address (MAX: ----) ▲ ▲ ▲ ▲ 0 0 0 1 ▼ ▼ ▼ ▼	It can be calculated automatically according to the number of lighting fixtures, dots and lights. Manual setting is also supported. Select ▼ ▲ to set value.
Check	/	Select and enter the addressing check interface.
Send	/	Select to start addressing the lighting fixture.

E.g. Addressing the second 8 pixels/meter lighting fixture with 4-channels UCS512C0 chip.

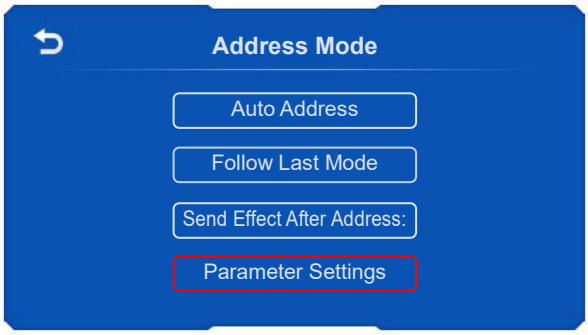


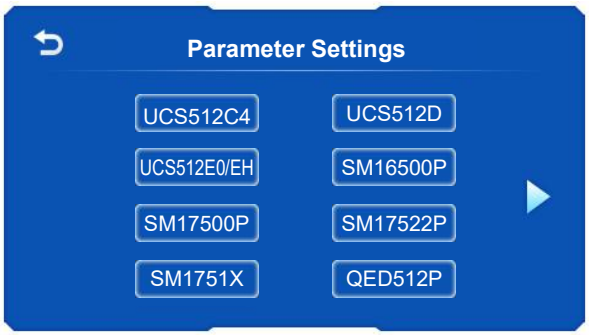
7.3. FOLLOW LAST ADDRESS

Select and addressing the lighting fixture again according to the addressable setting.



7.4. PARAMETER SETTING





The option is invalid if the chip does not supported.

Option	Introduction
Color CH1-6 with power	Set the power on color of channel 1-6.
Byte Select	Select to set channel of chip.
No signal	Set the color the luminaire without signal.
Last Frame	The lighting fixture stays the last frame color.
Power on effect	The lighting fixture stays the color power-on.
Current CH1-6	Select to set the current of channel 1-6.
Series Address Mode	/
Retransmission Times	Set the times that the data of single SPI chip is retransmitted by UCS512K chip.
Protocol	Set the chip model of UCS512K chip delivery driver
Color Num	Set the channel number of color to be presented by the project of UCS512K chip, such as 4 channels for RGBW.
Automatic function	Select to enter the Self-Channel setting interface.
Gain Mode	Select and select the current gain level. It is only for SM17500.
Chip Type	Select and select the type of forward chip.
Forward Times	Select and set forward time.
Protocol	Select and set forward protocol (zero code / DMX).
Auto addressing	Select and set whether to turn on the step setting.
Step	Select and set the step value. It is only for SM17522P.
State with Power on	Set the lighting fixture color with power.
Power on Blue	Set if blue is lighted up after power on the lighting fixture.

Option	Introduction
Retransmission Times (CH 1-7)	Set the times that a single channel data of SPI chip is retransmitted by UCS512K chip.
Retransmission Sequence (CH 1-7)	Set the channel sequence is retransmitted by UCS512K chip.
Refresh Rate	Set refresh rate of lighting fixture.
Open port Delay	Set the delay lighting time of the lighting fixture after power on.
PWM Compensate	Set PWM compensation of lighting fixture.
Check address wire	Check the connection of the address line.
GAMMA	Set GAMMA of lighting fixture.
GAMMA Smooth	Set if open the GAMMA smoothness.
Maximum PWM Ch1-6	Set the PWM value of CH1-6.
Anti-interference With Power on	ON/OFF option.

Self-Channel Setting: Select and set the parameter in real-time. It may cause the lighting fixture work improperly. Please take caution!

7.5. SUCCESSFULLY ADDRESSED AND SET PARAMETERS

Chip	Lighting color after power on	Addressed		Byte + No signal + No signal		Current parameter		Self-Channel Setting	
		First chip	Other chip	First chip	Other chip	First chip	Other chip	First chip	Other chip
UCS512A	White	Blue	Blue	-	-	-	-	-	-
UCS512A1	White	Blue	Blue	-	-	-	-	-	-
UCS512A2	White	Blue	Blue	-	-	-	-	-	-
UCS512B3	White	Blue	Blue	-	-	-	-	-	-
UCS512C	Custom	White	White	-	-	-	-	-	-
UCS512C0	-	White	White	-	-	-	-	-	-
UCS512C3	Custom	White	White	Red	Red	-	-	-	-
UCS512C4	Custom	White	White	Red	Red	-	-	-	-
UCS512CN	Custom	Yellow	White	Yellow	Power on	-	-	-	-
UCS512D	Custom	Yellow	White	Yellow	Power on	Yellow	Red	-	-
UCS512E0	Custom	Yellow	White	Yellow	Power on	-	-	Yellow	Green
UCS512EH	Custom	Yellow	White	Yellow	Power on	Yellow	Red	Yellow	Green
UCS512G4	Custom	Yellow	White	White / Custom	White / Custom	White	White	-	-
UCS512G6	Custom	Yellow / Custom	White / Custom	White / Custom	White / Custom	White	White	-	-
UCS512H UCS512H4 UCS512H4L	Custom	Yellow / Custom	White / Custom	Yellow	Red	-	-	-	-
UCS512KH	Custom	Yellow / Custom	White / Custom	-	-	-	-	Yellow / Custom	White / Custom
DMX512AP	-	White	White	-	-	-	-	-	-
SM16512	-	Green	Green	-	-	-	-	-	-
SM16511	-	Green	Green	-	-	-	-	-	-
SM16520	-	Green	Green	-	-	-	-	-	-
SM16500	Custom	Red	Green	Red	Power on	-	-	-	-
SM17500	Custom	Red	Green	Red	Power on	Red	Yellow	Red	Purple

Chip	Lighting color after power on	Addressed		Byte + No signal + No signal		Current parameter		Self-Channel Setting	
		First chip	Other chip	First chip	Other chip	First chip	Other chip	First chip	Other chip
SM17512	Custom	Red	Green	Blue	Blue	-	-	-	-
SM17522	-	Red	Green	Red	Blue	Red	Yellow	-	-
SM18522	Custom	Red	Green	Blue	Blue	-	-	-	-
SM18522PH	-	Red	Green	Red	Blue	Red	Yellow	-	-
SM19522PHG	-	Red	Green	Red	Blue	Red	Yellow	Red	Purple
SW-D	-	Yellow	Green	-	-	-	-	-	-
Hi512A4	Custom	Red	Green	Red	Green	-	-	-	-
Hi512A6	Custom	Red	Green	Red	Green	-	-	-	-
Hi512A0	-	White	White	White	White	-	-	-	-
Hi512D	-	Red	Green	Green	Green	Green	Green	-	-
Hi512E	-	Red	Green	Green	Green	Green	Green	-	-
TM512AB3	White	Blue	Blue	-	-	-	-	-	-
TM512AL1	White	Blue	Blue	-	-	-	-	-	-
TM512AC0	-	White	White	-	-	-	-	-	-
TM512AC2	Custom	White	White	-	-	-	-	-	-
TM512AC3	Blue	White	White	-	-	-	-	-	-
TM512AC4	Blue	White	White	-	-	-	-	-	-
TM512AD	Blue	Yellow	White	Yellow	Power on	Yellow	Red	-	-
GS8512	Custom	Red	Cyan	-	-	-	-	-	-
GS8513	Red+Cyan	Red	Cyan	-	-	-	-	-	-
GS8515	Red+Cyan	Red	Cyan	-	-	-	-	-	-
GS8516	/	Red	Cyan	/	/	/	/	/	/
GS8516B	/	Red	Cyan	Blue	Blue	Blue	Blue	/	/
GS8523	/	Red	Cyan	/	/	/	/	/	/
GS8524	/	Red	Cyan	/	/	/	/	/	/
GS8525	/	Red	Cyan	/	/	/	/	/	/
GS8526	/	Red	Cyan	Red	Cyan	/	/	/	/

Note: The above content comes from the chip specification. For non-detailed parts, please refer to the specification of the corresponding model.

7.6. CONFIGURATE ADDRESS AND WRITE PARAMETER

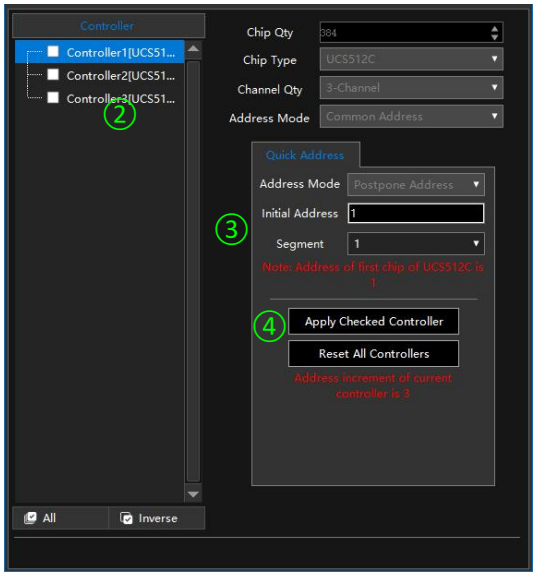
7.6.1. SETTING THE ADDRESSING IN LED PLAYER

Chip	Addressing	Custom Channel	Set parameters					
			No signal State	Power-on Setting	Current	Forward	Issue	Gamma
UCS512A	√	×	×	×	×	×	×	×
UCS512B3	√	×	×	×	×	×	×	×
UCS512C	√	×	×	×	×	×	×	×
UCS512C4	√	×	×	√	×	×	×	×
UCS512CN	√	×	√	√	×	×	×	×
UCS512D	√	×	√	√	√	×	×	×
UCS512E0	√	√	√	√	√	√	×	×
UCS512G4	√	×	√	√	√	×	×	×
UCS512G6	√	×	√	√	√	×	×	×
UCS512H	√	×	√	√	√	×	×	×
UCS512H4	√	×	√	√	√	×	×	×
UCS512H4L	√	×	√	√	√	×	×	×
UCS512KH	√	√	√	√	√	√	×	×

Chip	Addressing	Custom Channel	Set parameters					
			No signal State	Power-on Setting	Current	Forward	Issue	Gamma
UCS512KL	√	√	√	√	√	√	×	×
UCS512C1	√	×	√	√	√	×	×	×
UCS512C1L	√	×	√	√	√	×	×	×
UCS512C2	√	×	√	√	√	×	×	×
UCS512C2L	√	×	√	√	√	×	×	×
UCS512CBL	√	×	√	√	√	×	×	×
DMX512AP	√	×	×	×	×	×	×	×
SM512	√	×	√	√	√	×	×	×
SM16511	√	×	×	×	×	×	×	×
SM16512	√	×	×	×	×	×	×	×
SM16500P	√	×	×	×	×	×	×	×
SM16520P	√	×	√	√	×	×	×	×
SM17500P	√	√	√	√	√	×	×	×
SM17512P	√	×	√	√	√	×	×	×
SM17520P	√	×	√	√	×	×	×	×
SM17522P	√	×	√	√	√	×	×	×
SM18500P	√	√	√	√	√	√	×	×
SM18500PS	√	√	√	√	√	√	×	×
SM18522P	√	×	√	√	√	×	×	√
SM18522PH	√	×	√	√	√	×	×	√
SM18512P	√	×	×	×	×	×	×	×
SM18512PK	√	×	×	×	×	×	×	×
SM16522P	√	×	×	×	×	×	×	×
SM16522PS	√	×	×	×	×	×	×	×
SM19522PS	√	×	×	×	×	×	×	×
SM19522PH	√	×	√	√	√	×	×	×
SM19522PHG	√	×	√	√	√	×	×	√
SW-D	√	×	×	×	×	×	×	×
Hi512A0	√	√	×	×	×	×	×	×
Hi512A4	√	×	√	√	×	×	×	×
Hi512A6	√	×	√	√	×	×	×	×
Hi512D	√	×	√	√	√	×	×	×
Hi512E	√	×	√	√	√		×	×
Hi512B4L	√	×	×	×	×	×	×	×
TM512AB3	√	×	×	×	×	×	×	×
TM512AL1	√	×	×	×	×	×	×	×
TM512ACx	√	×	×	×	×	×	×	×
TM512AD	√	×	√	√	√	×	×	×
QED512P	√	×	√	√	√	×	×	×
GS8511	√	×	×	×	×	×	×	×
GS8512	√	×	×	×	×	×	√	√
GS8513	√	×	×	×	√	×	√	√
GS8515	√	×	×	×	√	×	√	√

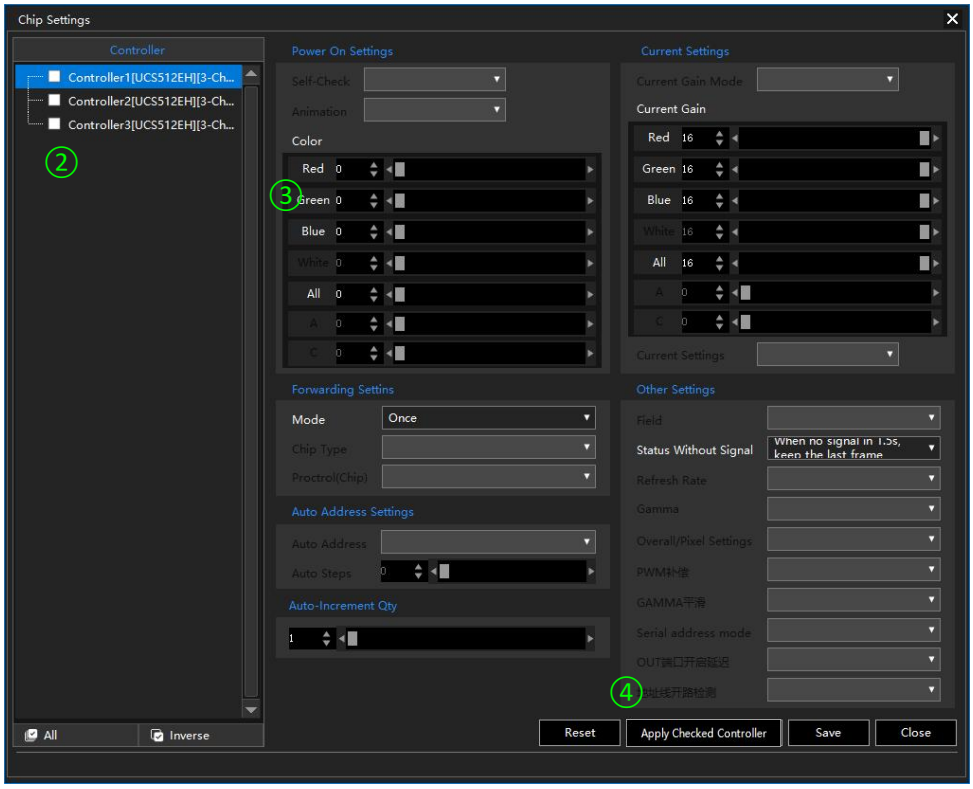
Chip	Addressing	Custom Channel	Set parameters					
			No signal State	Power-on Setting	Current	Forward	Issue	Gamma
GS8516	√	×	√	√	√	×	√	×
GS8516B	√	×	√	√	√	×	√	×
GS8523	√	×	√	√	√	×	√	×
GS8524	√	×	√	√	√	×	√	×
GS8525	√	×	√	√	√	×	√	×
GS8525T2	√	×	√	√	√	×	×	×
GS8526	√	×	√	√	√	×	√	×
A512D4	√	×	×	√	×	×	×	×

7.6.2. SETTING THE ADDRESSING IN LED PLAYER



1. Click “Quickly Addressing” of Debug, and open the setting windows.
2. Select the controller be set.
3. Set the initial address and segment.
4. Click “Apply Checked Controller” to save.
5. Close and quit.
6. Output and copy the SD card. (Please refer to OUTPUT AND COPY THE SD CARD FILE.)

7.6.3. SETTING THE PARAMETERS IN LED PLAYER



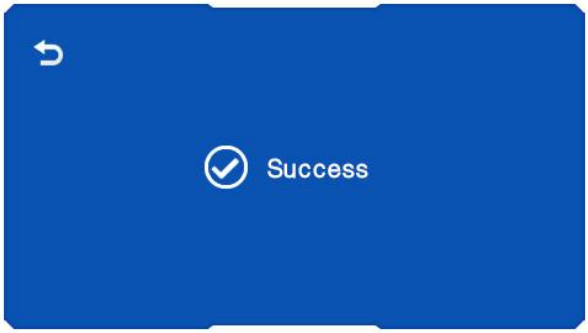
1. Click “Chip” of Settings, and open the setting windows.
2. Select the controller be set.
3. Set the parameters of chip.
4. Click “Apply Checked Controller” to save.
5. Close and quit.
6. Output and copy the SD card. (Please refer to OUTPUT AND COPY THE SD CARD FILE.)

Note: If the chip is not supported setting parameters, it only can be addressed.

7.6.4. OPERATION ON THE CONTROLLER

Put into the SD card. Click the Configurate Address of Settings, and then the controller would send the address parameter to lighting fixtures.

Click the return button after addressing successfully.



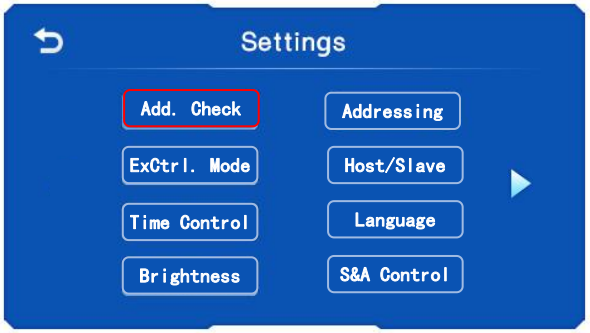
Order of setting parameters: Setting adaptive channel → Setting parameters → Addressing → Adaptive channel coding → Addressing check → Checking Genies chip

Addressing check: First chip lights yellow and the others light green 3 seconds → Goes off 3 seconds → White scan

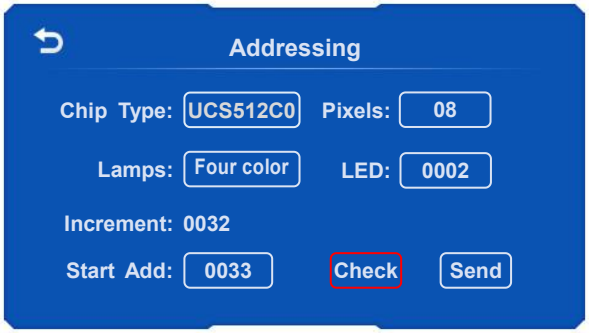
8. ADDRESSING CHECK

Enter addressing check interface as below.

Step 1: Select Add. Check of Settings.



Step 2: Select the Check of Addressing.



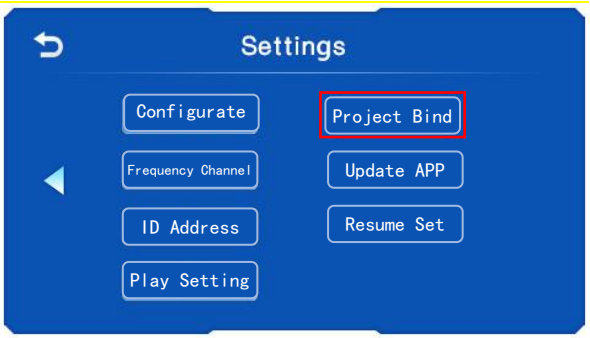
Option	Interface 3	Introduction
Increment	Increment ▲0▼ ▲0▼ ▲0▼ ▲3▼	Set the total number of channels for each DMX512 chip. Select ▼ / ▲ to set value.
Bri.	/	Set the brightness of lighting fixture during checking. 6 sections: 100%, 50%, 25%, 12%,6%, 0%.
Check Mode	/	Point: Turn on designated lighting fixture. Pile up: Turn on designated lighting fixture and all the ones in front of it. .
Current LEDS	LED ADD ▲0▼ ▲0▼ ▲0▼ ▲1▼	Select ▼ / ▲ to set the value of lighting fixture.
LEDS RESET	/	Reset the lighting fixture number.

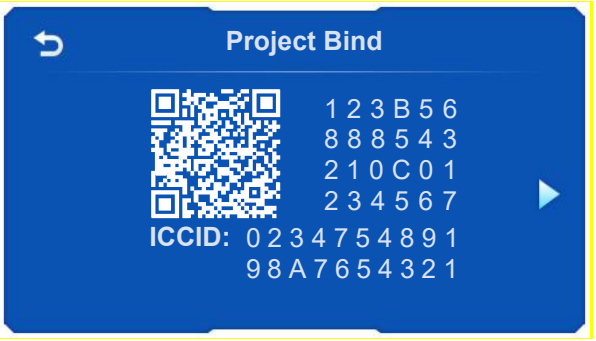
9. REMOTE OPERATION OF CLOUD CONTROL SYSTEM

The designated SY controller has built-in 4G card. The correct access to our cloud platform can realize the functions of remote setup, address writing, debugging and verification.

9.1. GETTING THE DEVICE CODE

Click Project Bind of Settings menu to get the device code.





9.1.1. ACCESS STEPS ON WEBSITE

The Cloud server Web site: https://cloud-3.seekway.cn

Click the [+ Device] in the [Group management]. Enter the 24 characters in the ID bar and click [Confirm]

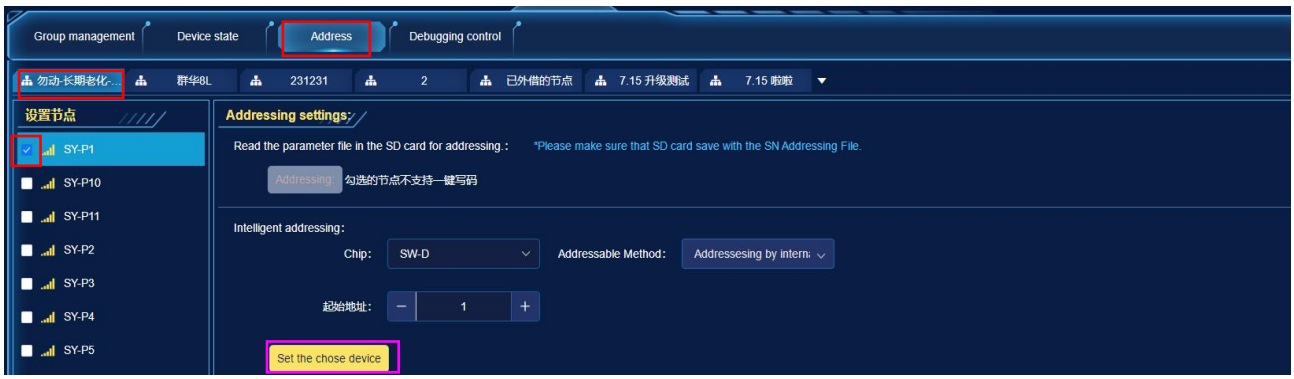
Parameter	Specification
ID	Enter the code of device.
Device	The device's name.
Group	Group the device.

9.1.2. SET THE STATE BY CLOUD SERVER ON WEBSITE

After the controller is connected to the cloud platform, under the "** Grouping" (such as project A) interface of "Node Status", check a controller (multiple selection supported) to remotely set the speed, brightness, animation, etc.,

9.1.3. ADDRESSING AND VERIFY LUMINAIRE BY CLOUD SERVER ON WEBSITE

1. Check the node in the Group * of “Address” (multiple selection supported) to address it has drove the controllers. After the address is complete, the Address Succeeded message is displayed on the node list. The actual addressing success depends on the luminaire effect.



2. Check the node in the Group * of “Debugging control” (multiple selection supported) to debug.

3. When the cloud platform set addresses / debug, the controller enters the corresponding function display interface.

9.1.4. CLOUD UPDATE ANIMATION FILE

The SY-418P series controller not only supports remote switching of animations on the cloud platform, but also supports uploading and updating animation files through the cloud platform, and automatically backs up the effect files to the controller after 5 power on/off cycles.

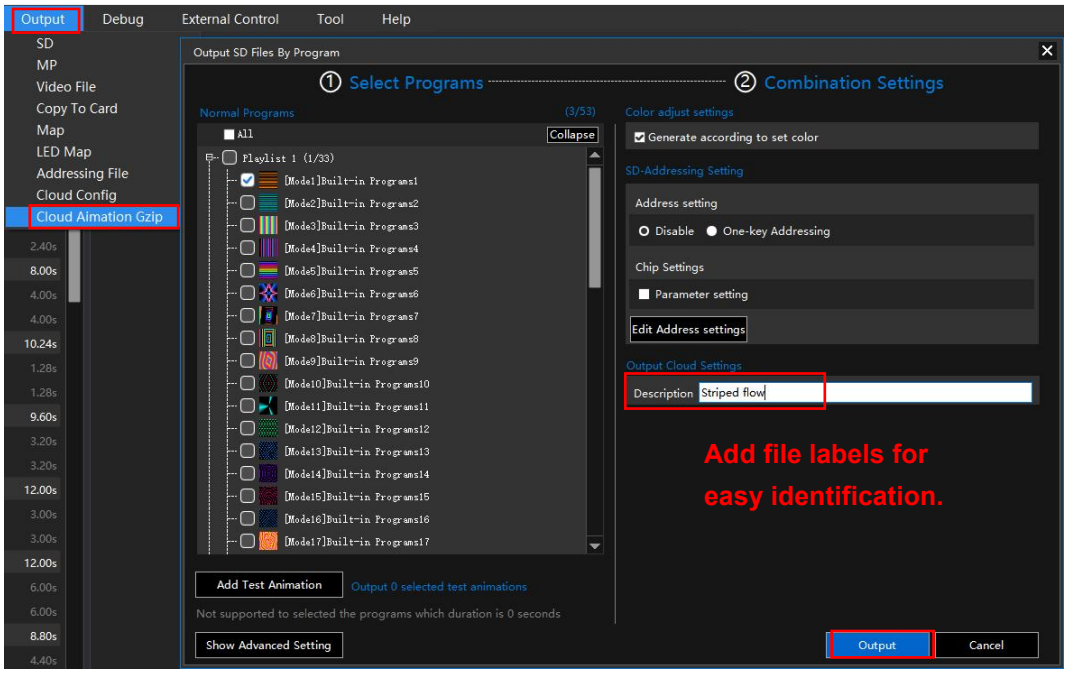
Notes,

1) The controller currently does not support synchronous updating of one click code writing files.

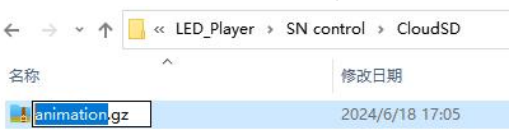
2) When the master and slave machines are cascaded, using cloud update effects requires both the master and slave machines to be connected to the cloud platform.

9.1.4.1. OUTPUT THE ANIMATION FILE IN LED Player

Open LED Player and click “Cloud Animation Gzip” of “Output” in the menu bar. In the pop-up window interface, select the animation material to be output and click [Output] to output.

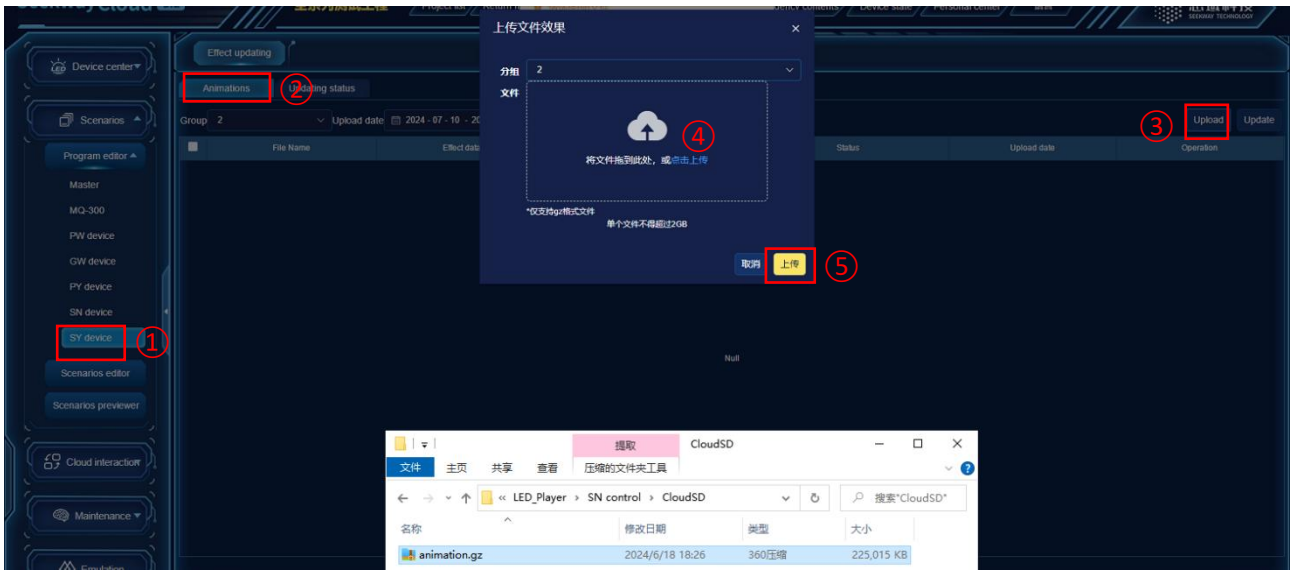


The output effect file is stored in the CloudSD folder under the root directory of the current project. The default file name is SD*.bin.gz. And it can be changed twice. (Retain the “.gz” test.)

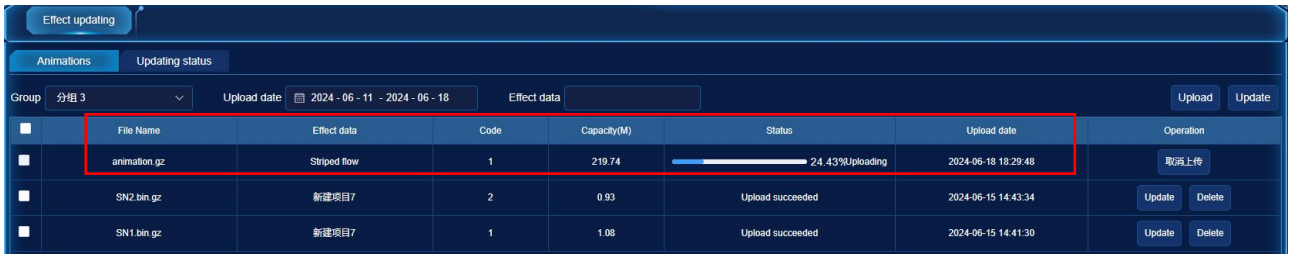


9.1.4.2. UPLOAD THE .GZ FILE

On the “SY Series” screen of “Scenario”, select the corresponding packet device and click “Upload”. In the pop-up window, add (or drag) the file that needs to be updated for uploading.



After the upload is complete, the newly uploaded effect file can be seen on the interface (identified by the file name, effect data, and upload time).

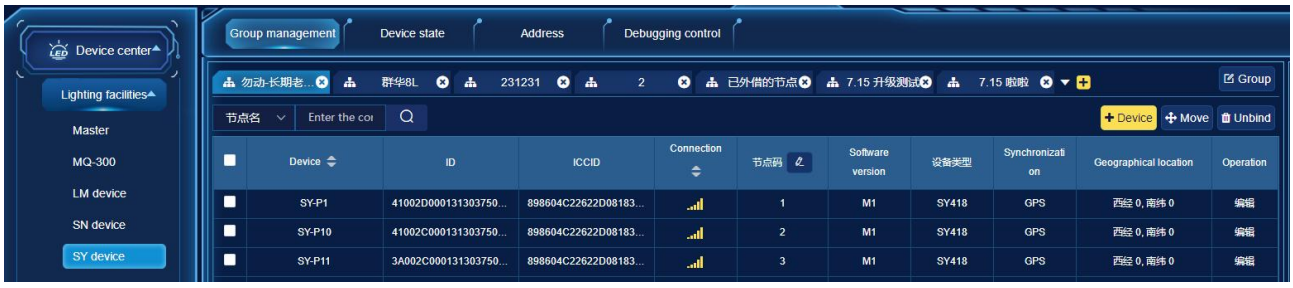


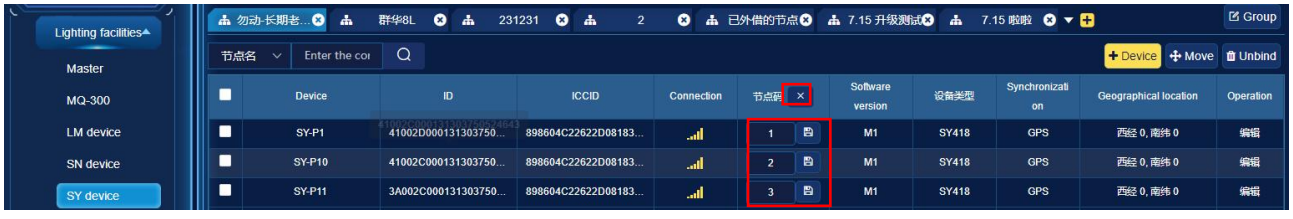
9.1.4.3. SET THE NODE CODE OF SY CONTROLLER (REQUIRED).

Before updating the animation file, ensure that the device code (also called node code) of each SN controller has been assigned to download the animation file correctly. If it has been allocated, it does not need to be allocated again.

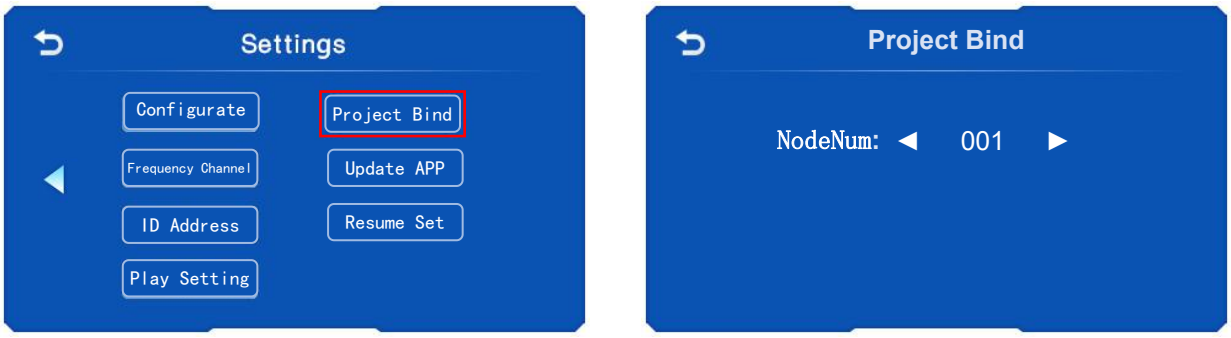
The assignment operation is as follows.

Method 1, Under "Group management" - "** Group" (such as project A), click next to "Code" and enter the editing state. Enter the corresponding value and click to save. When all Settings are complete, click to exit editing state.





Method 2, Select and open "Cloud Settings" in "Settings" to set the device code (node code) on the interface, and the setting takes effect.



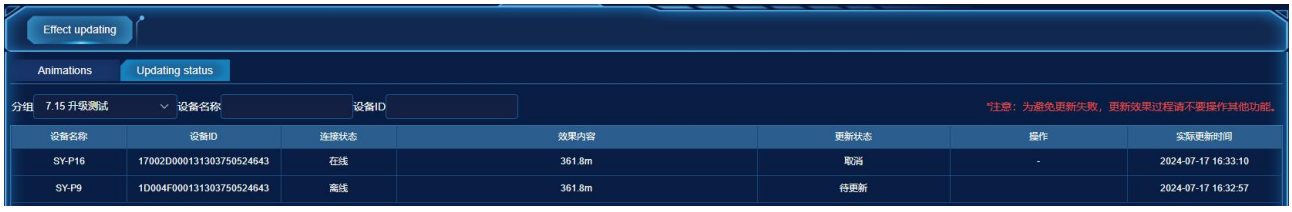
9.1.4.4. DOWNLOAD THE UPDATE FILE TO THE SN CONTROLLER

In the Animations interface of "Program editor", select the corresponding group and click "Update" (multiple selection + simultaneous update is supported).

All SY controller matching the updated file node code (device code) will update the file.

1. The node code of the SY controller must be consistent with the node code of the animation file assigned by the LED Player to ensure the correct update.
2. The online SY controller will immediately execute the file update command, and the offline device will be updated the next time it is online.
3. The download effect process needs to be temporarily interrupted, we can press pause first (do not power off), and continue to download after completing other operations.
4. During the download process, the controller is disconnected from the network. That is, it needs to wait for the next power on the network to connect to the cloud, and automatically updates from the beginning.
5. If an error message is displayed in Update Status, check the network status.

We can view the update details on the Update Status page.

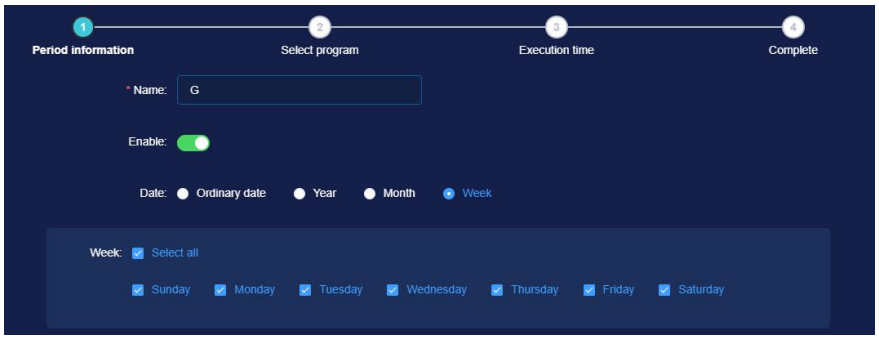


9.1.5. COMPILING A CLOUD SCENARIO (TIME CONTROL)

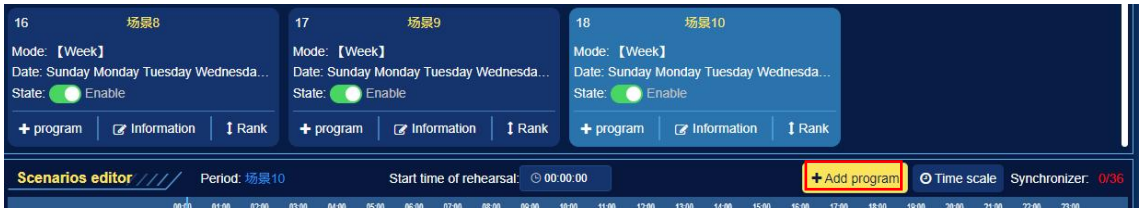
The SY-418P can set the scene (time control list) on the cloud platform and deliver it to the controller.

1. On the Scene Orchestration page, click [+New], enter the scene name and effective date in the pop-up window, and click [Next].

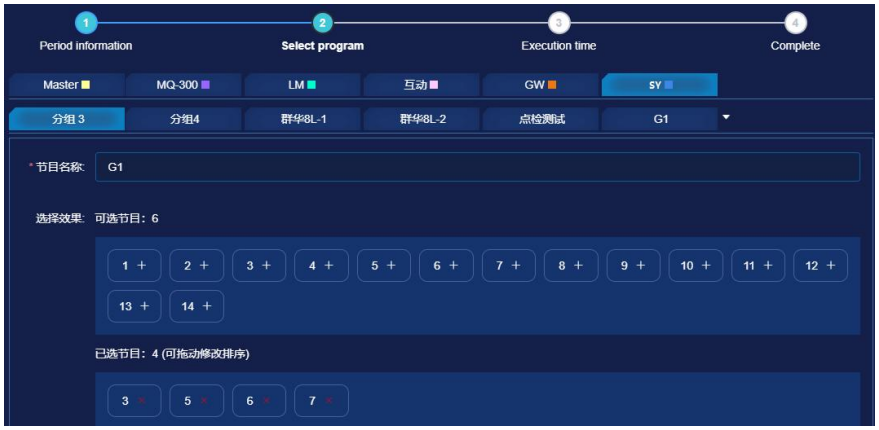
Note: Each SY controller only supports 10 scenarios, with 10 lists per scenario. If there is an excess, please delete some before adding them again.



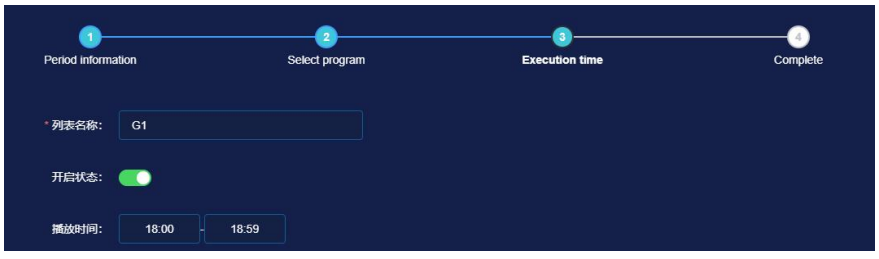
In the existing scene card, we can click [+ Add program] to add twice.



2. Set the name of the time control list and related programs, click [Next].



3. Set the playback time and click [Preserve].



9.2. SETTING BY CLOUD SERVER OF PHONE

9.2.1. ACCESS STEPS ON THE PHONE

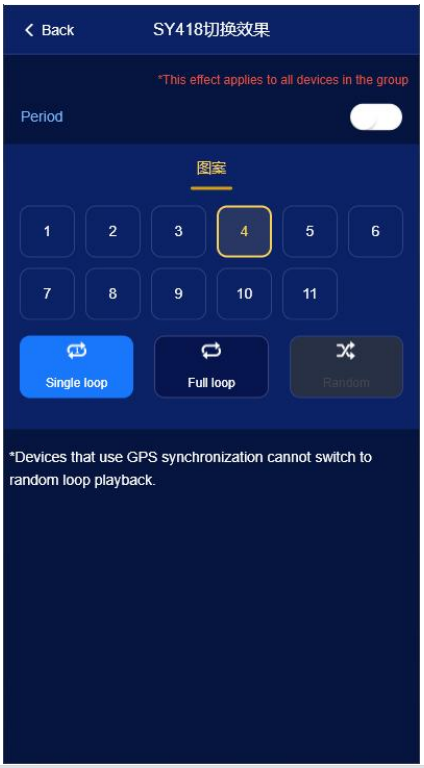
Use your mobile phone to log in to the operation interface.

Select “SY device” of “Device center”. And then select “+” in the “Group”.

Select the icon to scan the ICCID code in the controller and select “Confirm”.

9.2.2. SETING AND ADDRESSING BY CLOUD SERVER ON PHONE

After the controller is connected to the cloud platform, under the "** Grouping" (such as project A) interface of "Address Debug", check a controller (multiple selection supported) to remotely set the speed, brightness, animation, etc.



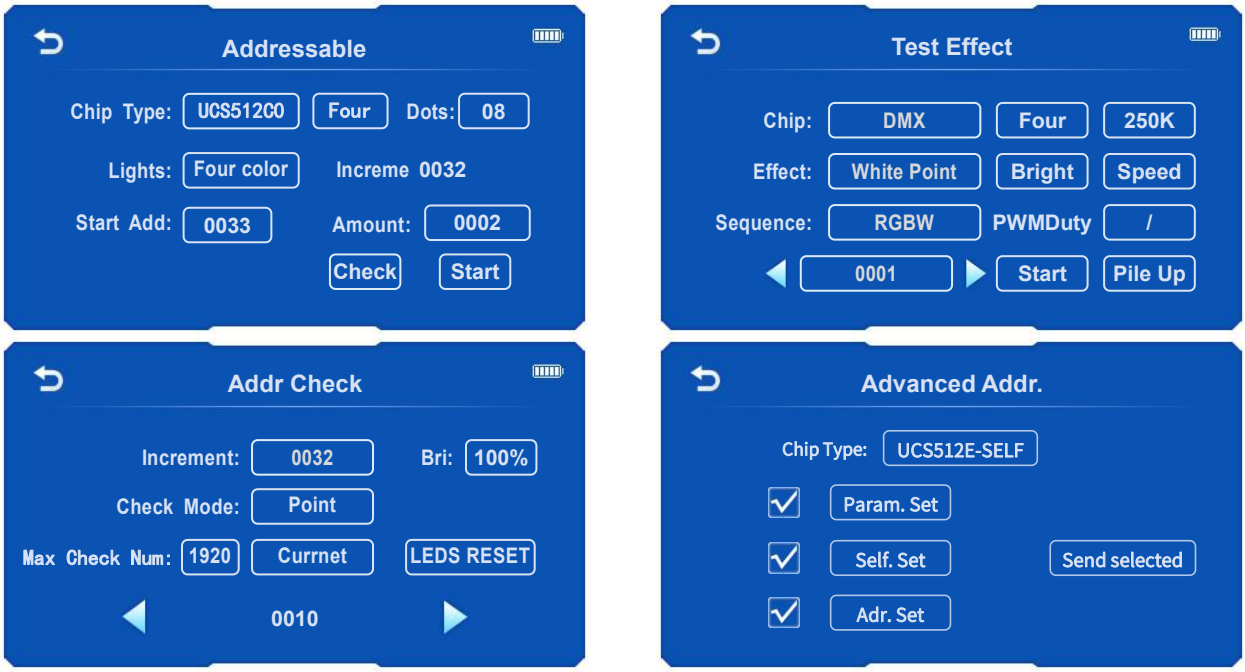
Parameter	Specification
切换效果 (Toggle mode)	Select the animation to play. (Single loop, Full loop and random can be selected.) When playing a single loop, you can click to select any effect to play. When Period is enabled, effects cannot be selected for playback.
调节设置 (Regulation)	帧速, Set the number of frames per second (FPS) to play, ranging from 0.5 to 33 frames per second.

Parameter	Specification
	亮度, The values range from 0-100, where 100 is the brightest and 0 is all black.
一键写码 (Adressing)	Select to address. The write parameters are automatically read from the SD card file and cannot be set on the cloud platform. The coding result is judged by the display color of the lumaires.
GPS 开关 (GPS settings)	Enable or disable the GPS synchronization function.

10. EXTERNAL CONTROL ADDRESS

Our encoder can be connected to SY series controllers to address the lighting fixtures connected to the controller. After wiring, intelligent addressing, testing effectiveness, addressing verification, and advanced addressing functions can be used according to the conventional usage methods of the code writer.

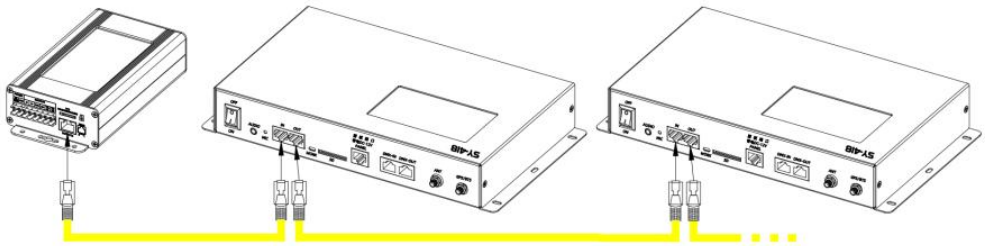
Note：SY-418-M1 and above versions support this feature.



The wiring method is as follows:

Connect one end of the network cable to the OUT port of the encoder and the other end to the cascaded IN port of the controller. Note that the length of the network cable should not exceed 20 meters, as shown in the following figure.

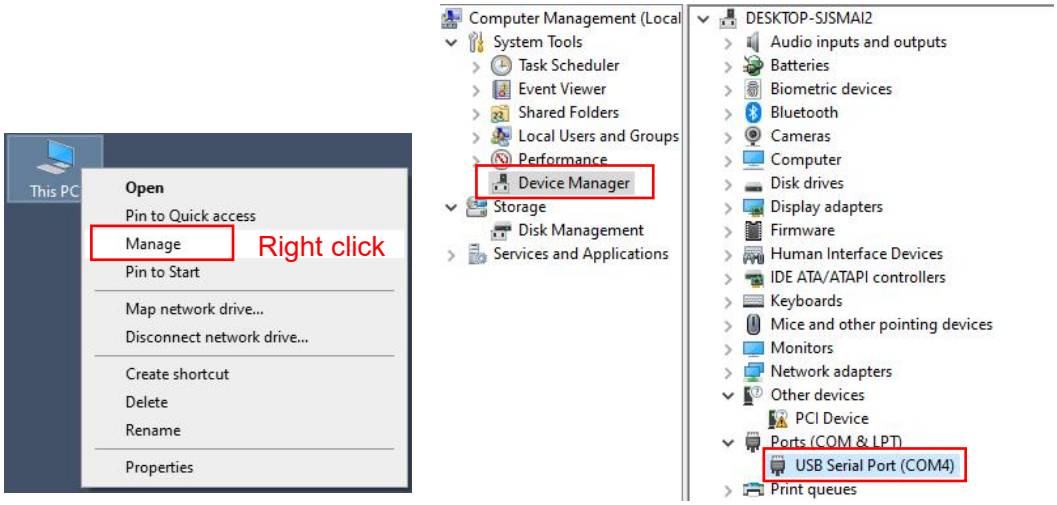
If multiple controllers need to be addressed, they can be connected in series.One end of the network cable is connected to the OUT network port of the controller, and the other end is connected to the IN network port of the next controller.



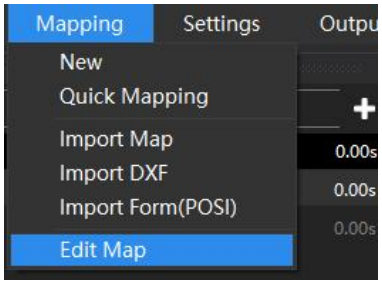
11. CHECK POSITION OF LUMINAIRES ONLINE

It can check the position of luminaires online by the USB to RS-485 converter. We can also count the pixels.

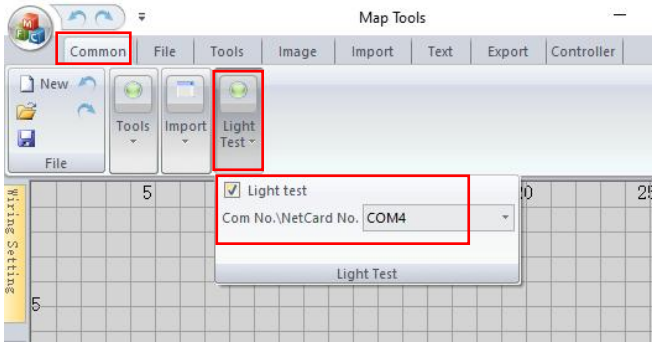
1. The mode of connection refer to 3.4. CHECK POSITION OF LUMINAIRES ONLINE.
2. Right click This PC and select Manage to open the Computer Management and check the com port. E.g. COM4.



3. Open the MAP Tools by LED Player. (Step: click the Edit Map in Mapping.)



4. Check the Light test in Common menu, e.g. COM4.



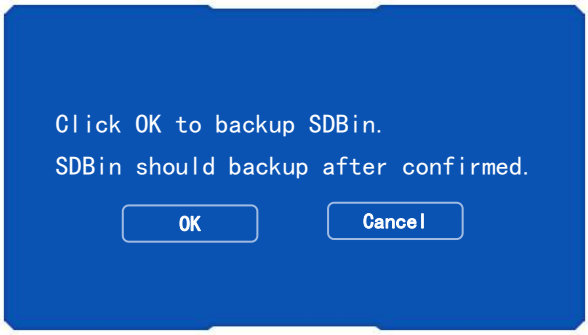
5. Normal wiring operation.

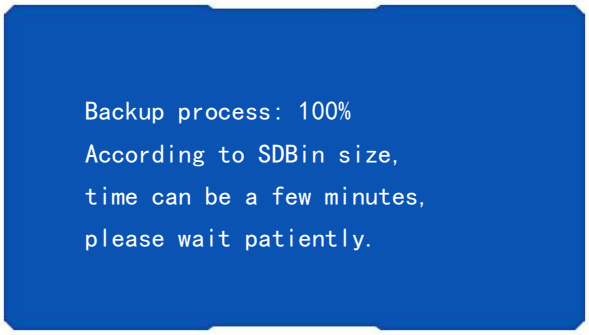
12. BACK UP OR REPAIR EFFECTS FILE

In order to avoid SD card damage, file damage, and no SD card, you can switch the effect of playing the storage disk. We need to back up the files in the SD card to the controller in advance. Specific operations are as follows:

1. Each time the controller is powered on, it automatically reads the effect file in the SD card. The operation requirement of bidirectional backup is presented.

2. If necessary, we need to click [Enter] for backup and repair.
3. If not, we can click [Cancel]. Or wait for 3 seconds, the controller will automatically cancel the backup, and enter the basic operation interface.

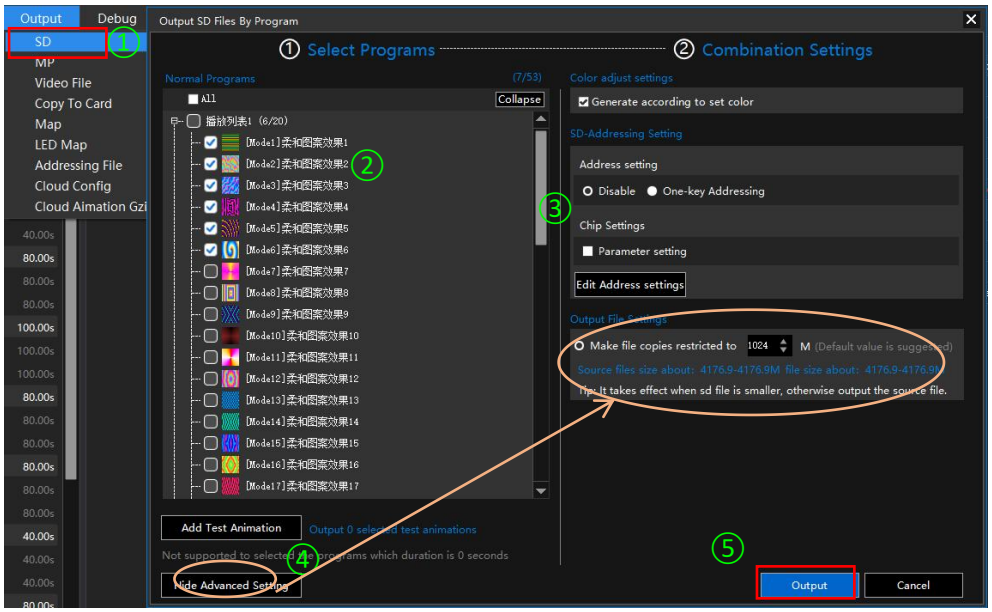




Note: No backup operation is displayed when the number of SD card files exceeds 450M, the SD card files are the same as the backup file, or an error (such as E01 displayed) is reported during startup.

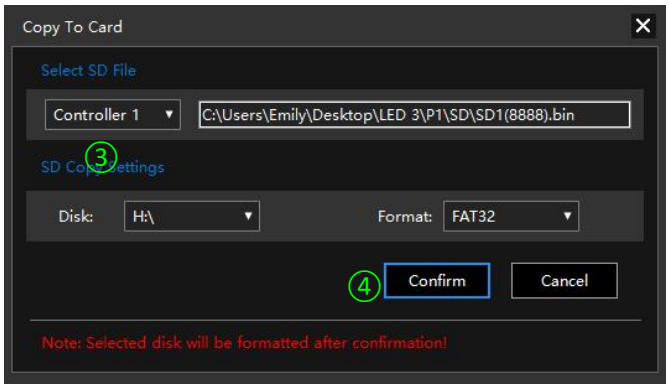
13. OUTPUT AND COPY THE SD CARD FILE

13.1. OUTPUT THE SD CARD FILE



① Click “SD” of “Output” in LED Player.
② Select the program need to output. The total number of selected programs must be less than 96.
③ Select SD-Addressing Setting (Addressing and chip Setting) as required. If this option is not selected, the one-click setting function of the controller is limited. (The chip of SPI protocol skip this step.)
④ Select Output File Settings as required.
⑤ Note: LED Player will make recommendations based on the selected effect file size with an upper limit of 1 GB, and can also be customized.
⑥ Click “Output”.

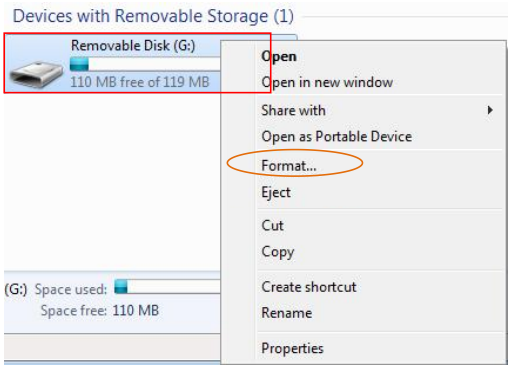
13.2. COPY THE SD FILE BY LED PLAYER



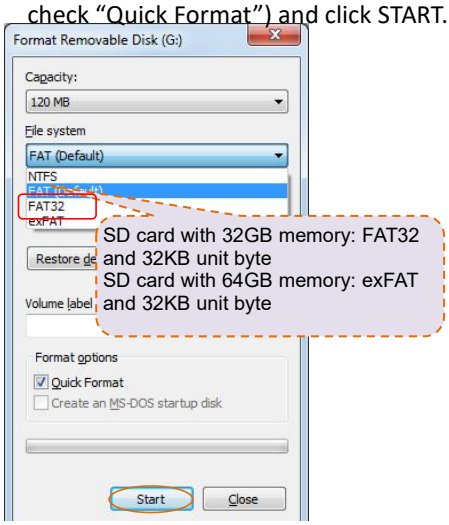
1. Input the SD card.
2. Click “Copy to SD” of Output, and open the windows.
3. Select the controller number be copied.
4. Click Confirm.

13.3. MANUAL FORMAT AND COPY CARD

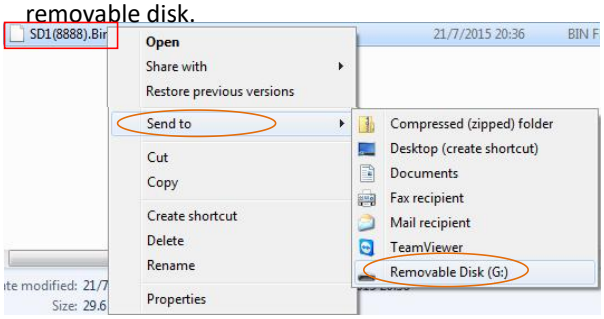
1) Right click the disk where the SD card locates.



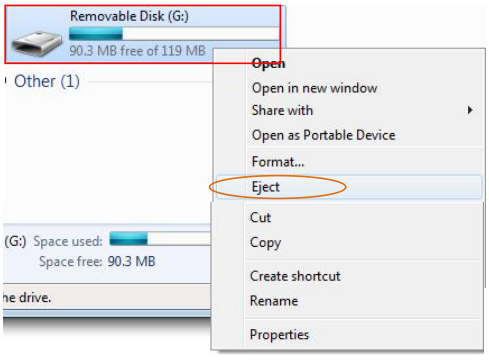
2) Select file systerm and unit byte (can check “Quick Format”) and click START.



3) Right click SD1(8888).Bin file, send the file to removable disk.



4) Right click removable disk and click “Eject”.



14. UPDATE SD FILE OR FIRMWARE PROGRAMS LOCALLY

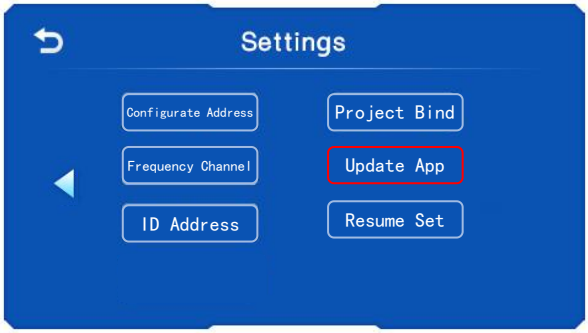
The controller can read the firmware file of the SD card xxxxxx.bin to upgrade the hardware program.

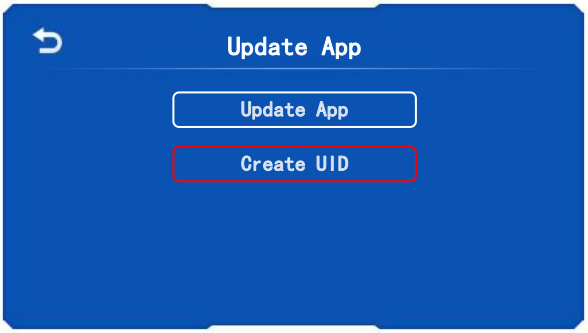
14.1. GETTING FIRMWARE INFORMATION

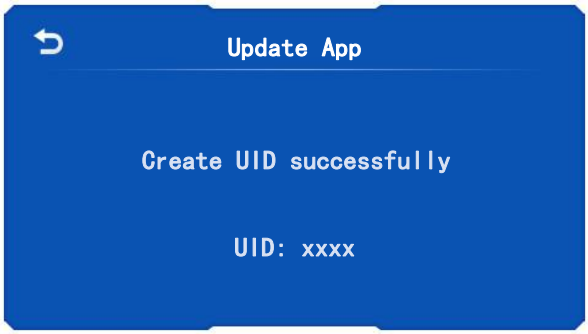
Before updating, need to provide the sequence code of the controller to our company. The operation is as follows.

1. When the controller is off, insert the SD card and power it on.

2. Select “Create UID” in the Settings.
3. The unique code is read successfully. At this time, please be sure to power off the controller and take out the SD card. Send the SeekwayID.bin file in the SD card back to us.

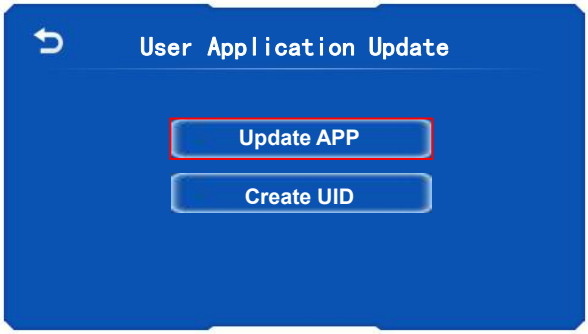


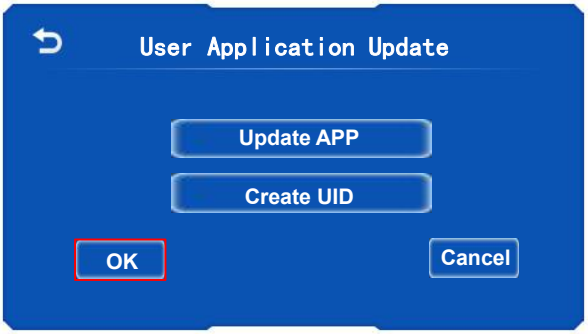


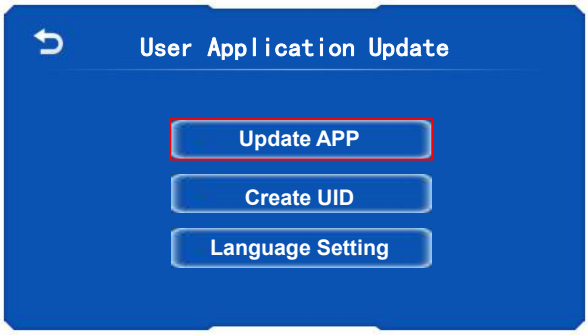


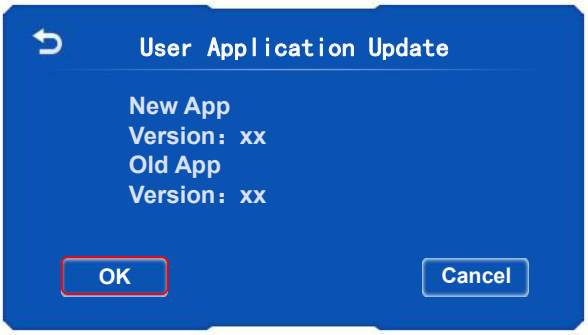
14.2. UPDATE FIRMWARE VIA SD CARD

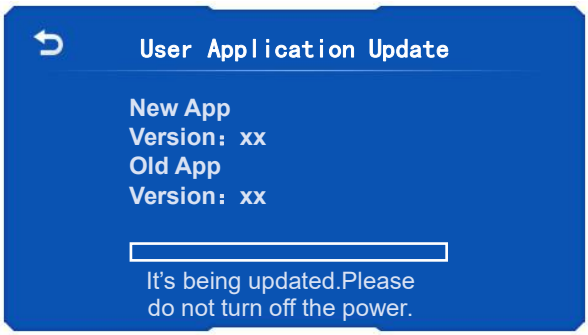
1. Copy the xxxxxx.bin file (generate it according to SeekwayID.bin.) into the SD card refering to MANUAL FORMAT AND COPY CARD.
2. Pug SD card into the controller and power on. Select the “Update App” in the settings and select “confirm” to update.
3. Re-power on the controller, and it starts to upgrade. The update is done when the controller restarts automatically.
4. The controller automatically restarts, and in the pop-up interface, select”Update APP”. The interface prompts the new firmware and the original firmware version number, and select”OK”.
5. The controller displays an update progress bar, and after the update is completed, it displays "Update completed, about to jump". The update is completed when the controller automatically restarts.

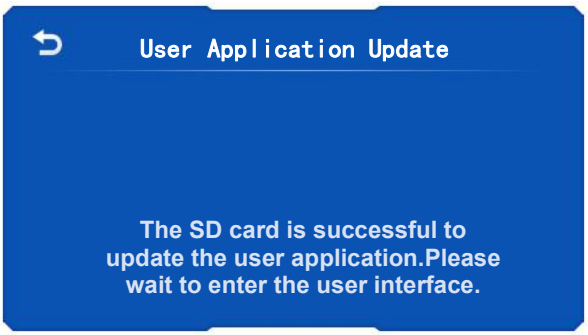












15. ERROR CODE AND TROUBLE SHOOTING

Error	Reason	Measure
E01.**.**	No SD card or SD card port is broken.	Insert the SD card. If an error occurs when inserting the SD card, the SD card holder is damaged. Contact us.
E02.**.**	SD card no response or breakdown.	Please replace the new SD card. If an error occurs when inserting the SD card, the SD card holder is damaged. Contact us.
E03.**.**	There is no file in the SD card or SD card is breakdown.	Copy SD card file again.
E05.**.**	Cannot read part of the card or bad connection.	Please replace the new SD card .
E07.**.**	SD card file sequence doesn't match the controller.	SD card file error. or unfinished video merging.Please open the corresponding code to output the SD card file and copy again.
E08.**.**	UID does not match.	Use the corresponding code to output the SD card file and copy again.
E18.**.**	The number of loaded pixels exceeds the upper limit.	Please reduce the number of project pixels.
E24.**.**	Fail to update firmware.	Please use the correct updated file to update.
E25.**.**	There is no update file in SD card.	Please copy the update file into SD card and operate again.
E26.**.**	Fail to generate UID confirmation.	Check whether an SD card is inserted into the controller； Please replace the SD card and generate the UID code again.
E27.**.**	The SD card has too many bad areas.	Please replace the new SD card.

Error	Reason	Measure
E36.**.**	Error encrypting message	Program upgrade error. Contact us.

Description: The code is 6 digits. The first two digits are the fault code, and the last four digits are the subarea code to facilitate us to analyze the specific problem.

16. FITTINGS

Shows	Item	Number	Remark
	SD Card	1	
	Power line	1	
	5P Terminal	8	
	Audio Cable	1	
	Cat5E (T568B to T568B)	1	
	GPS Antenna	1	GPS control fitting
	Radio Frequency Remote and Antenna	1	RF remote control fitting
	Wifi Antenna	1	WiFi control fitting
	Bluetooth Antenna	1	Bluetooth control fitting
	Bluetooth remote controller	1	Bluetooth control fitting