

# S-8000L(RGB) Instruction Manual



## I. Features of S-8000L system:

1. The S-8000L controller can control 32-65536-level grayscale, and process it with software Gamma correction.
2. The S-8000L controller supports various point, line and area light sources, and supports various rules and special-shaped processing.
3. The S-8000L controller has 8 port outputs, each port can carry a maximum of 512/1024 lamps (DMX lamps have a maximum of 512 pixels), and enhance TTL and 485 differential (DMX) signal output.
4. The content played by the S-8000L controller can be stored in the SD card, and the SD card can store up to 32 effect programs.
5. The S-8000L controller supports 32 SD effects (only supports three-channel effects), and supports a variety of lighting control chips to work.
6. The DMX512 console is connected to the S-8000L controller through the XLR head cable or the network cable, and the console sends commands to control-controller mode, speed, lamp color change, etc.
7. The S-8000L controller can be used alone or in cascade. The cascade adopts the photoelectric isolation method: anti-interference and better stability.

Remarks: 1. The speed of 512 points of lights on the controller can reach 30 frames/second, the speed of 768 points can reach 25 frames/second, and the speed of 1024 points can reach 22 frames/second (The above parameters take 1903 protocol IC data as an example, there will be differences between different ICs)

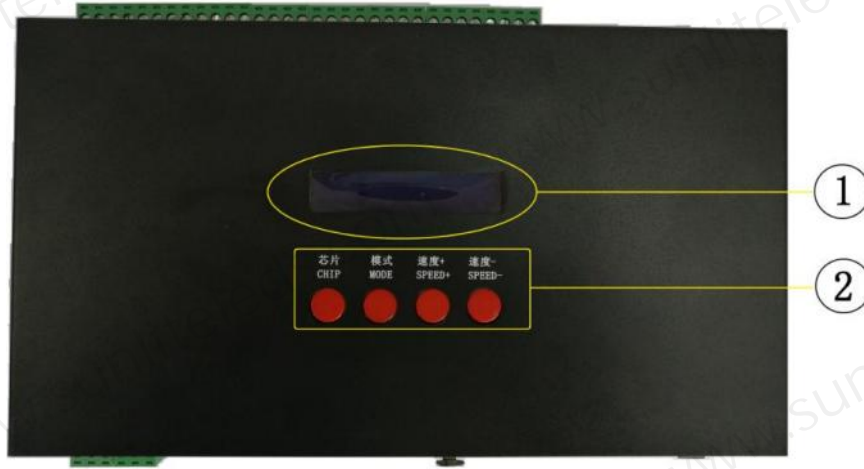
2. The international standard DMX512 (1990 protocol) has a maximum load of 512 pixels. When the tape load is the international standard 170 pixels, the speed can reach 30 frames/second, the speed of 340 pixels is about 20 frames/second, and the speed of 512 pixels is about 12 frames/second.

## II. Support chip (the host computer software chooses K-8000-L-RGB):

- 00: UCS1903,1909,1912,2903,2904, 2909,2912; TM1803,1804,1809,1812; SM16703, 16709,16712; WS2811; INK1003; LX3203,1603,1103; GS8205, 8206; SK6812 (Maximum with light 1024\*8=8192 pixels)
- 01: SM16716,16726 (Maximum with light 1024\*8=8192 pixels)
- 02: P9813 (Maximum with light 1024\*8=8192 pixels)
- 03: LPD6803 (Maximum with light 1024\*8=8192 pixels)
- 04: LX1003,1203 (Maximum with light 1024\*8=8192 pixels)
- 05: WS2801 (Maximum with light 1024\*8=8192 pixels)
- 06: LPD1886 (Maximum with light 1024\*8=8192 pixels)
- 07: TM1913 (Maximum with light 1024\*8=8192 pixels)
- 08: TM1914 (Maximum with light 1024\*8=8192 pixels)
- 09: P9883,P9823 (Maximum with light 1024\*8=8192 pixels)
- 10: DMX(Maximum with light 512\*8=4096 pixels, it is recommended to load  $\leq 320*8=2560$  pixels)
- 11: DMX 500K(Maximum with light 512\*8=4096 pixels, it is recommended to load  $\leq 320*8=2560$  pixels)
- 12: DMX 250K-CZF (Maximum with light 512\*8=4096 pixels, it is recommended to load  $\leq 320*8=2560$  pixels)
- 13: DMX 250K-CZF (Maximum with light 512\*8=4096 pixels, it is recommended to load  $\leq 320*8=2560$  pixels)
- 14: UCS5603-Test
- 15: UCS5603A
- 16: UCS5603B
- 17: TM1814
- 18: INK1003
- 19: APA102
- 20: UCS8904
- 21: SM16714
- 22: SM16813

### III. Appearance picture of the controller:

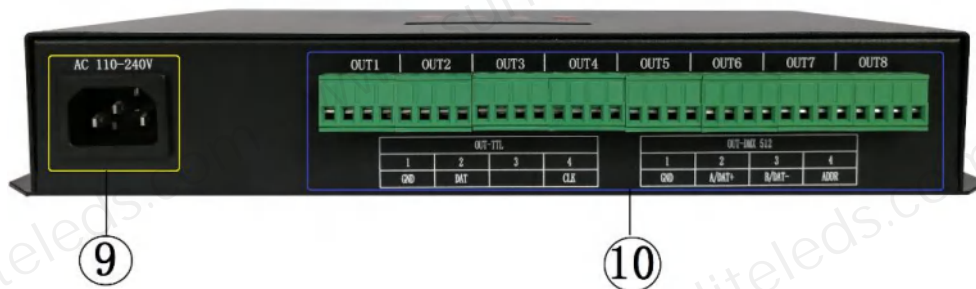
Front:



Side 1:



Side 2:



Serial No.	Indicator Number	Serial No.	Indicator Number	Serial No.	Indicator Number
1	display	2	function button	3	Cascade port INA/B OUTA/B
4	SD card slot	5	indicator light	6	Console XLR head interface
7	Console network cable interface	8	switch	9	Power outlet
10	Light signal port OUT 1-8				

## IV. Function explanation

### 1. Key Meaning

Indicator	Normal Mode		Special Function	Console Control Mode
	One button function		Power-on button function	One button function
<b>CHIP</b>	switch chip		Press "Chip" and "Speed-" at the same time to power on, then enter the interface of writing address and measuring address	-
<b>MODE</b>	switch file	Long press "Mode" to enter one-key address writing address		-
<b>SPEED+</b>	Speed up		Press "Speed-" to power on and enter the console address editing interface	-
<b>SPEED-</b>	slow down			-

### 2. Ports and Indicators

POWER LAMP POWER 1	Power Indicator	Always bright
POWER LAMP POWER 2	Power Indicator	Always bright
Status light STATUS	Status Indicator	No console signal off/with console signal strobe
Signal light SYNC	Cascade indicator	No console signal off/with console signal strobe
Power supply interface	AC100-220 50HZ input	
<b>SWITCH</b>	Controller switch I/O	
<b>SD CARD</b>	SD card slot	
<b>DMX IN/OUT</b>	Console XLR connector male 1 GND / 2 DAT- / 3 DAT+	
	Console XLR connector female 1 GND / 2 DAT- / 3 DAT+	
<b>DMX IN/OUT</b>	Console network cable interface 1 DAT+ / 2 DAT- / 3 N / 4 N / 5 N / 6 N / 7 GND / 8GND	
<b>IN (A/B)、OUT (A/B)</b>	Cascade sync input port, cascade sync output port	

### 3. Signal output (OUT 1-8)

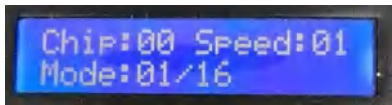
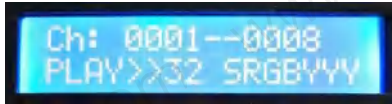
TTL output			DMX512 output		
serial NO.	Indicator	definition	serial NO.	Indicator	definition
1	<b>GND</b>	GND (negative pole)	1	<b>GND</b>	GND (negative pole)
2	<b>DAT</b>	data	2	<b>A/DAT+</b>	positive signal
3	/	/	3	<b>B/DAT-</b>	signal

					negative
4	CLK		4	ADDR	address line

#### 4. List of built-in effects

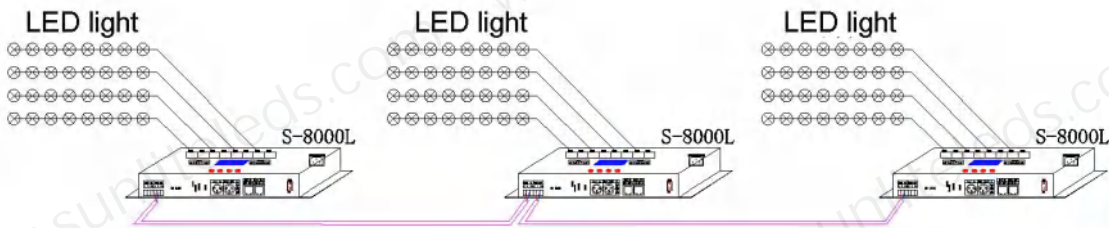
List of built-in effects							
1	Red-green-blue-white-black jump	5	red and white transition	9	yellow shift	13	White light single point scanning
2	single white long bright	6	red goes	10	cyan shift	14	red-green-blue transition
3	colorful gradient	7	green shift	11	purple goes	15	seven colors
4	Overall scan	8	blue shift	12	white shift	16	Red, green and blue swing left and right
<b>Remark</b>		<b>Internal control effect supports three-channel lamps</b>					

#### 5. Display Glossary

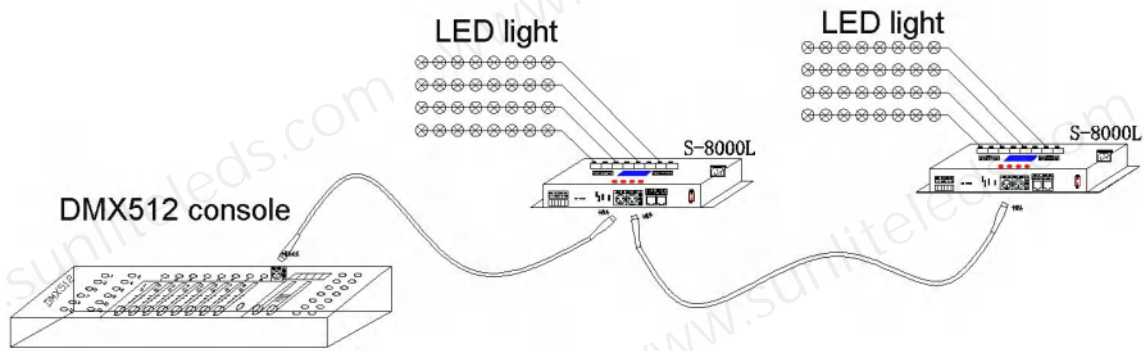
Display	Definition
 <p>Chip: 00 Speed:01 Mode: 01/16</p>	<p>Regular playback interface:</p> <p>Chip: (00-30) Speed: (01-16) Mode: (01-32)</p>
 <p>Ch:0001—0008 PLAY&gt;&gt;32 SRGBYYY</p>	<p>Console control playback interface:</p> <p>aisle: 0001—0008 play &gt;&gt;</p>

### V. Wiring

#### 1. Controller Cascade Control - Normal Mode Playback



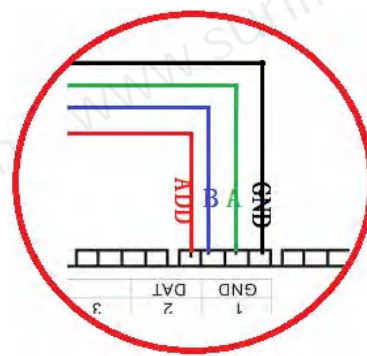
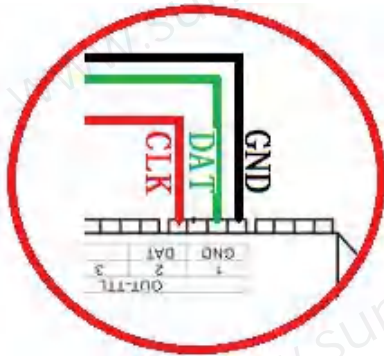
#### 2. Console Control—The console controls playback



## VI. Controller - wiring diagram of light signal output port

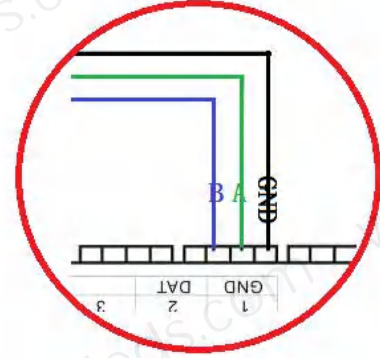
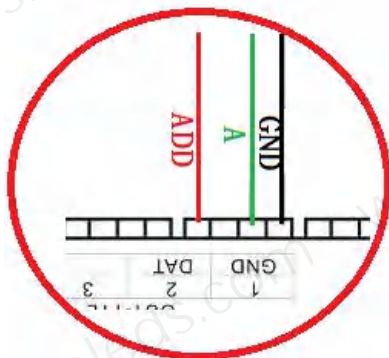
①. Conventional Lighting Wiring Diagram

②. DMX512 differential signal line wiring diagram



③. DMX512 single-line signal line wiring diagram

④. DMX512 differential signal line wiring diagram



## VII. The controller writes the DMX address of the light and tests -- (operate before connecting to the console)

1. Press the "chip" key and the "speed-" key at the same time, turn on the power, and enter the address writing and address measurement interface, as shown in the figure below.
2. Press the "MODE" key to move the arrow correspondingly to select "WRITE ADDRESS" as shown below:



3. Press the "Chip" key to select "WRITE ADDRESS" to enter the address writing mode interface, as shown below:

①. **START CH:** start channel

(The starting address is set in the range of 0-512, usually 001)

②. **CH MODE:** spacer channel

(Interval channel setting in the range of 0-255)

③. **IC :** chip model

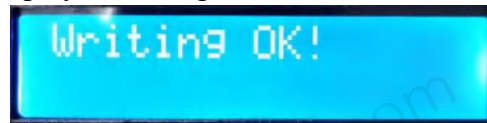
(See DMX512 IC list)



4. Press the "Mode" key to move the corresponding item of the arrow, and press "Speed+" and "Speed-" to set the start channel/interval channel/IC option respectively.

1.DMX512 IC list			
UCS512A*/B*,TM512AL1/AB	WS2821	DMX512AP	UCS512C*, TM512AC*
SM1651*-3	SM1651*-4	UCS512D*/TM512A D*	UCS512-E
SM17512*	SM1752*	UCS512-F	TM512
GS8512	SM17500	Hi512D	

5. Select to complete each item, and press "Chip" to start writing the address; at this time, the screen displays "Writing Addr...", and the completion displays "Writing OK!".



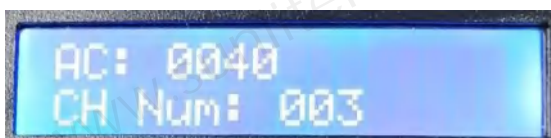
6. After completing the address writing, the controller automatically jumps to the address test function, and the screen displays:

①. **AC: \*\*\*\*** automatic testing /**MC: \*\*\*\*** Manual click test

②. **CH MODE :** Channels (interval channels are not adjustable)



7. Press the "Mode" button once to enter the "AC" automatic test mode, the lamps will start to run automatically and turn on; the controller will display as shown below:



8. Press the "Mode" button again to enter the "MC" manual test mode, "Speed+" and "Speed-" can

adjust the pixel points (long press "Speed+" or "Speed-" to quickly increase or decrease), the lamps point one by one On; the controller displays as shown below:



9. If the test is unsuccessful, press "Chip" to exit the channel test; return to the address writing interface, and reset the writing address.



10. The test is successful, shut down and restart, and return to normal playback mode.

### VIII. Lamp address test - (operate before connecting to the console)

1. Press the "chip" key and the "speed-" key at the same time, turn on the power, and enter the address writing and address measurement interface, as shown in the figure below.

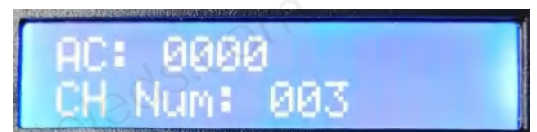
2. Press the "Mode" key to move the arrow correspondingly to select "TEST DMX ADDR" as shown in the figure



3. Press the "Chip" button to select "TEST DMX ADDR" to enter the lamp address test interface, as shown in the figure:

①. AC: \*\*\*\* automatic testing /MC: \*\*\*\* Manual click test

②. CH MODE: aisle



7. Press the "Mode" button once to enter the "AC" automatic test mode, the lamps will start to light up in sequence; the controller will display as shown below



8. If you need to click the test manually, you can press the "Chip" button to switch to "MC". Manual click test mode, "Speed+" and "Speed-" can adjust the pixel point (long press "Speed+" or "Speed-" to quickly increase or decrease), the lamps light up one by one; the controller displays as shown below:





9. Press the "Mode" key for the second time to switch the test channel options (1-99)



10. Press the "MODE" key to switch the test channel options (1-99);  
 Press the "SET" key to switch between the manual channel test mode "MC" and the automatic channel test mode "AC";  
 Press the "SPEED+" and "SPEED-" keys to adjust the fixture number in the manual channel test mode;

<b>Luminaire Test Vocabulary Definitions</b>			
<b>automatic mode:AC</b>	<b>definition</b>	<b>manual mode:MC</b>	<b>definition</b>
AC: **** ALL CH MODE: 001	1 channel automatic test	MC: **** ALL CH MODE: 001	1 channel manual test
AC: **** ALL CH MODE: 002	2-channel automatic test	MC: **** ALL CH MODE: 002	2 channel manual test
AC: **** ALL CH MODE: 003	3-channel automatic test	MC: **** ALL CH MODE: 003	3-channel manual test
AC: **** ALL CH MODE: 004	4-channel automatic test	MC: **** ALL CH MODE: 004	4-channel manual test
.....	...	.....	...
AC: **** ALL CH MODE: 099	4-channel automatic test	MC: **** ALL CH MODE: 099	4-channel manual test

11. After completing the test, restart the controller; return to the normal playback interface.

## IX. One-key address writing of DMX512 lamps

### 1. One-click address writing: (as shown in the figure: Step 1)

When the software writes the program output, click the button to enter the one-key address writing interface



## 2. Interval channel input (picture: step 2)

The interval channel is input according to the actual number of the fixture, and the number is the number of channels occupied by a DMX512 IC to control the pixel point of the fixture.

## 3. Chip model selection (as shown in the figure: Step 3)

Click the drop-down button to select the chip model corresponding to the DMX512 IC loaded by the lamp.

## 4. Complete one-key address setting

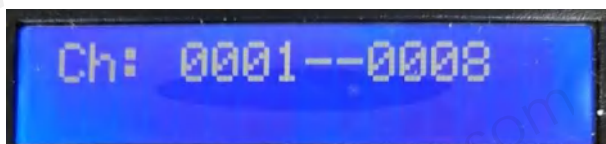
Confirm that the settings are correct, and click the OK button to complete the program output.

## 5. Controller One-key writing operation

- ① SD card inserted into the controller;
- ② The controller is powered on and turned on;
- ③ Press and hold the "MODE" button for 5 seconds, the controller will display Writing Addr..., until the address writing is completed, it will display Writing OK;
- ④ After completing the address writing, the controller will also enter the channel test mode (same as the channel test after manual address writing).
- ⑤ After the channel test is completed, press the "CHIP" button to exit the test mode, and the controller returns to the playback mode to work normally.

## X. Controller address code setting (occupy console address)

1. Long press the "speed-" button, the controller is powered on and the display is as follows



2. Press "Speed+" and "Speed-" to adjust the address code (the controller occupies 8 address channels of the console)

For example, the following figure shows that the controller occupies the channels 0005 to 0012 of the console:



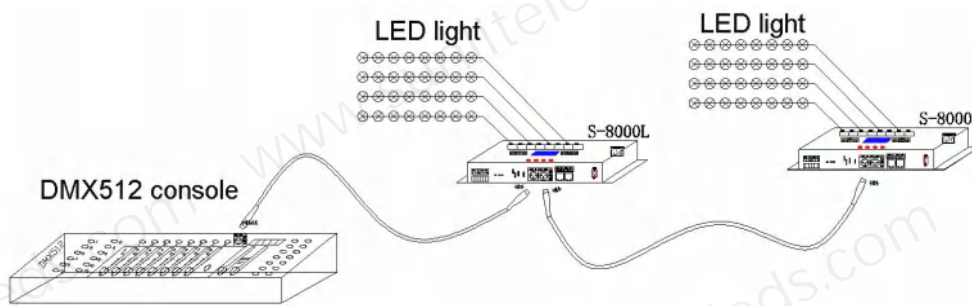
3. Press the "Chip" key to confirm the selection, and the following display indicates that the setting is successful



4. Restart the controller, the power-on detection will display the controller address code.



5. Connect the console to the controller.



6. After activation, the console can perform control operations.

## XI. Controller channel description:

1. After the controller is normally connected to the console, the console fader is activated or the lamp library is called, the controller will display as follows



Definition	model	speed	red	green	blue	total on/off	play / Pause	overall brightness
active state	01-32	S	R	G	B	Y	Y	Y
inactive state	00	N	0	0	0	N	N	N

## 2. Channel description

aisle	Definition	show
Channel 1	Mode (levels 1-32)	01-32
Channel 2	Speed (levels 1-16)	N or S
Channel 3	R (red) (level 1-255)	0 or R
Channel 4	G (green) (level 1-255)	0 or G
Channel 5	B (blue) (level 1-255)	0 or B
Channel 6	Total on and off ( $\geq 128$ is total on, $< 128$ is total off)	N or Y
Channel 7	Play pause ( $\geq 128$ is play, $< 128$ is pause)	N or Y
Channel 8	Overall brightness adjustment (1-255 levels)	N or Y

## XII. Specific parameters:

### memory card:

Type: SD card

Capacity: 128MB—32GB

Format: FAT or FAT32 format

Save file: \*.led

### Physical parameters:

Working temperature:  $-20^{\circ}\text{C}$ — $75^{\circ}\text{C}$

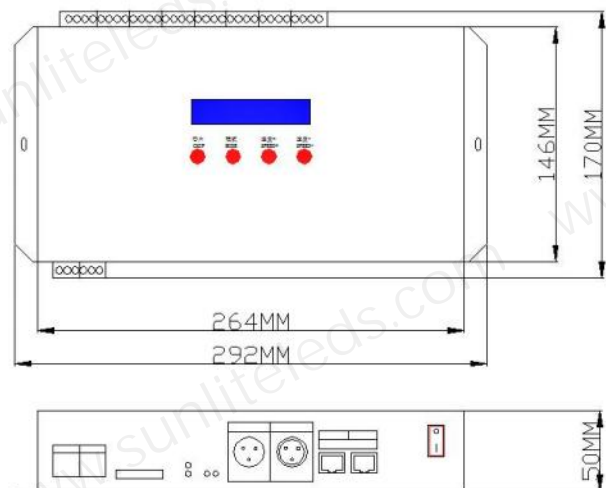
Working power supply: AC 100-240V input

Power consumption: 10W

Weight: 1.5Kg

Size: L292mm \* W170mm \* H50mm

### S-8000L



## XIII. Precautions:

1. Before copying files to the SD card, you must format the SD card first. Note that formatting must be done before each copy.
2. The SD card must be formatted as "FAT" or "FAT32".
3. The SD card on the controller cannot be hot-swapped, that is, each time the SD card is inserted or removed, the power of the controller must be disconnected first.



#### XIV. Common problem handling:

Question 1: After power on, it is found that SD Error is displayed on the screen of the controller, and there is no effect output

A: The screen displays SD Error, which proves that the controller does not read the card correctly. The possible problems are:

- ① The SD card is empty, and there is no effect file.
- ② The effect file \*.led file in the SD card does not match the controller model, please select the controller model correctly in the software, chip model, and recreate the effect file \*.led.
- ③ Re-test after replacing the SD card to rule out the possibility of the SD card being damaged.

Question 2: After the controller is powered on, the indicator lights are normal, but the lamps have no effect.

A: This is the case for the following reasons:

- ① Please check whether the signal line of the lamp and the controller are properly connected.
- ② The signal of conventional lamps is divided into in and out, and it is determined whether the control is the signal input of the first lamp.

Question 3: After the controller and the lamps are connected, the lamps flicker frequently, and the effect changes, and the indicator lights of the controller display normally.

Answer: ① The ground wire between the controller and the lamp is not connected.

- ② The effect made in the SD card is wrong, and the lamp chip selected when doing the effect does not match the actual lamp chip.
- ③ If the chip is not locked when doing the effect on the software, press the chip of the controller to the corresponding chip of the lamp. For details, please refer to IC sequence on the sticker on the controller.
- ④ The power supply voltage of the lamps is insufficient.

Question 4: SD card cannot be formatted.

- A: ① First, confirm whether the protection switch on the side of the SD card has been unlocked. The unlocking direction is the gold pin end of the SD card.
- ② The protection lock has been designed as required, but it still cannot be formatted. If this happens, the SD card reader is mostly broken, please replace the SD card reader (it is recommended to use a card reader with better quality, and SSK (Biao) is recommended. King) card reader).
- ③ If the above operations cannot solve the formatting problem, please replace the SD card and test again

Question 5: After the console is connected to the controller, there is no response to the lighting control by the console.

Answer: ① First, confirm whether the connection between the console and the controller is correct.

②The controller displays whether each channel is normally activated.

③ Check whether the SD card in the controller is normal, remove the connection with the console, and confirm the operation effect (the effect can be run, that is, there is no problem with the SD card, otherwise, the SD is abnormal)