Manual Instruction

SPI+5CH PWM All In One Bluetooth LED Controller
Model No.:SP630E-12in1-01
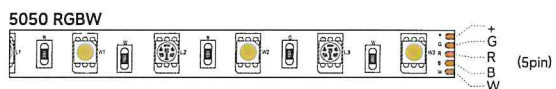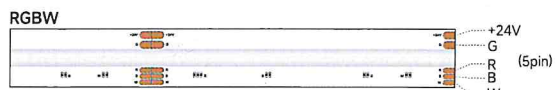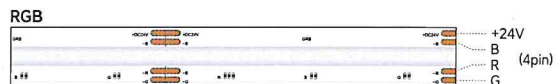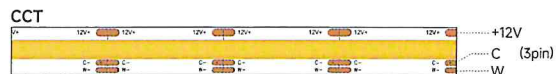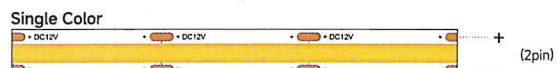
SP630E is a versatile Bluetooth controller designed specifically for controlling various types of LED. It can work with PWM Dimming/CCT/RGB/RGBW/RGBCCT LED, SPI Dimming/CCT/RGB/RGBW/RGBCCT LED, SPI RGB+PWM Dimming LED strip, SPI RGB+PWM CCT LED strip. Total 12 kinds of LED strips.
SP630E is not a WiFi controller, so it doesn't support Alexa. Please buy SP530E or DR03W SPI RGB controller if you need Alexa function.

Before using the controller, please make sure what kind of your strip is. Send us a photo of your light strip, and we can help you distinguish it.
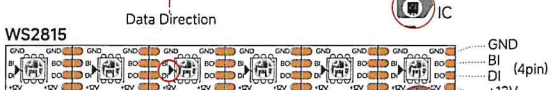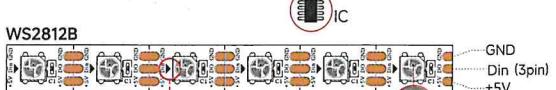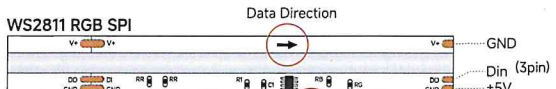Our email address: support@btf-lighting.com

1. How to distinguish SPI and PWM light strip?

PWM LED strip without IC chip, can light up only one color at a time; SPI LED strip with IC chip(such as WS2811, WS2812B, WS2813, WS2815, WS2814, WS2805,SK6812,etc) could achieve multiple colors at the same time.
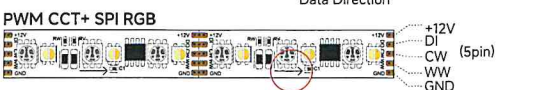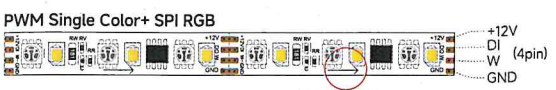
PWM

Single Color
+ DC12V   + DC12V   + DC12V   + (2pin) −

CCT
+12V C (3pin) −

RGB
+24V B R G (4pin)

RGBW
+24V G R B W (5pin)

5050 RGBW
+24V G R B W (5pin)

RGBCCT
+24V R G B CW WW (6pin)

SPI

WS2811 RGB SPI
Data Direction →
GND Din (3pin) +5V

WS2812B
GND Din (3pin) +5V
Data Direction
IC

WS2815
GND BI DI (4pin) +12V
Data Direction
IC

PWM+SPI

PWM Single Color+ SPI RGB
+12V DI W (4pin) GND
Data Direction

PWM CCT+ SPI RGB
+12V DI CW (5pin) WW GND
Data Direction

2. Features

The controller features high performance, low power consumption and 2.4G Bluetooth microprocessor. It can be controlled by RF remote, smart panel and BanlanX APP.

Support PWM No IC LED Strip
Support SPI Addressable IC LED Strip
Support SPI+PWM LED Strip
Remote Control
Group Control
Bluetooth APP Control

One-to-Multi Control
Multi-to-one Control
16 Millions of colors to choose
DIY
Timer
Color Calibration
Music Lighting Effect
Default Power-on Status Setting
On/Off Animations Setting
OTA Firmware Upgrade
Power Off Memory Function
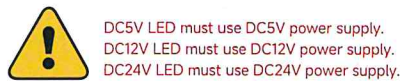Brightness Adjustment

3. Parameters

Model No.: SP630E
Input Voltage: DC5V~DC24V(Voltage depends on LED strip)
Output: 6A/Channel(Total output Max.12A)
Working Temperature: -10~60°C
Dimensions:57mm*57mm*20mm

Dual Power Input Ports
VCC R G B CW WW DAT GND
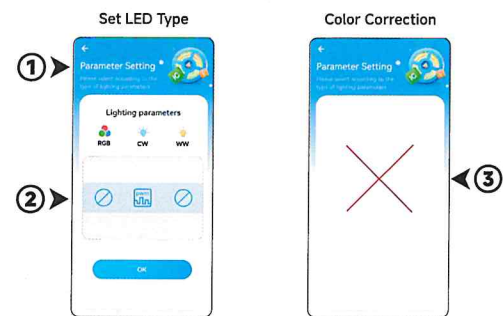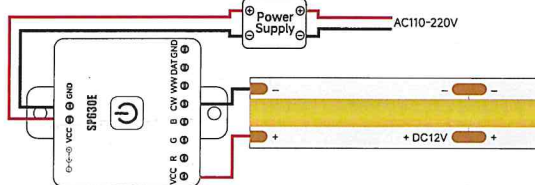V− V+
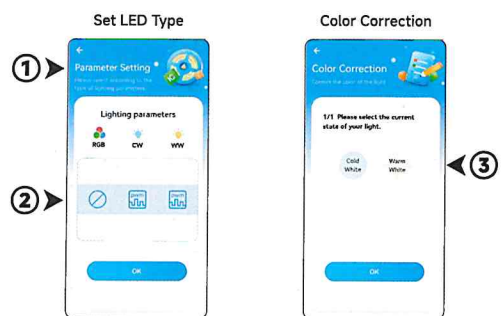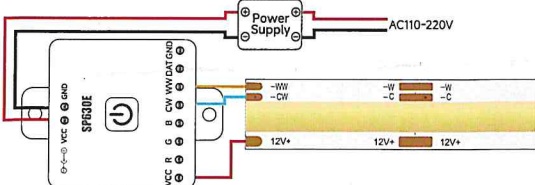DC input port Size: 5.5x2.1mm
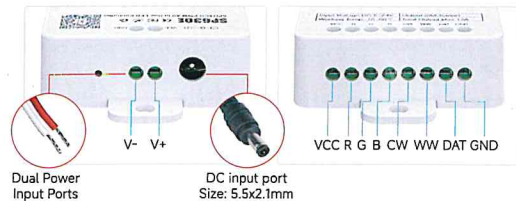
4. Connect to PWM/SPI LED Strip

Controller input voltage must be in accordance with the required voltage of LED strips.

⚠ DC5V LED must use DC5V power supply.
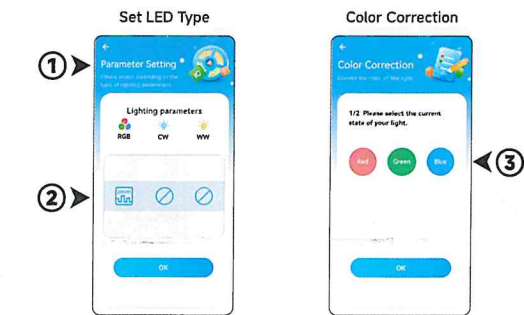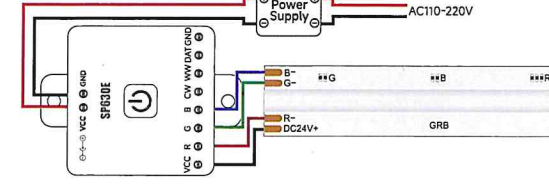DC12V LED must use DC12V power supply.
DC24V LED must use DC24V power supply.

4.1 PWM Single Color LED strip

Power Supply — AC110-220V

Set LED Type   Color Correction
① Parameter Setting   Parameter Setting
Lighting parameters
RGB CW WW
② ✕ ③

4.2 PWM Dual White/CCT LED strip

Power Supply — AC110-220V
WW CW 12V+

Set LED Type   Color Correction
① Parameter Setting   Color Correction
Lighting parameters   1/1 Please select the current state of your light.
RGB CW WW
② ③ Cold White Warm White

4.3 PWM RGB LED strip

Power Supply — AC110-220V
B+ G B R− DC24V+ GRB

Set LED Type   Color Correction
① Parameter Setting   Color Correction
Lighting parameters   1/2 Please select the current state of your light.
RGB CW WW
② ③ Red Green Blue

4.4 PWM RGBW LED strip

Power Supply — AC110-220V

Set LED Type   Color Correction
① Parameter Setting   Color Correction
Lighting parameters   1/2 Please select the current state of your light.
RGB CW WW
② ③ Red Warm White

4.5 PWM RGBCCT LED strip

Power Supply — AC110-220V

Set LED Type   Color Correction
① Parameter Setting   Color Correction
Lighting parameters   1/4 Please select the current state of your light.
RGB CW WW
② ③ Red Green Blue Cold White Warm White

4.6 Voltage Supplement Diagram for PWM Strips

Voltage drop and increased resistance may cause the brightness of the end LEDs to dim, which is a normal physical phenomenon, and all LED strips cannot avoid this issue.

If LED strips are connected in series more than 5 meters, please add a power supply every 5 meters(16.4ft) to supplement voltage.

Power Supply — AC 110-220V

Signal Amplifier
CH1 CH1
CH2 CH2
CH3 CH3

Power Supply — AC 110-220V

4.7 SPI Single Color LED strip
(Such as WS2811 IC FCOB Warm White,etc)
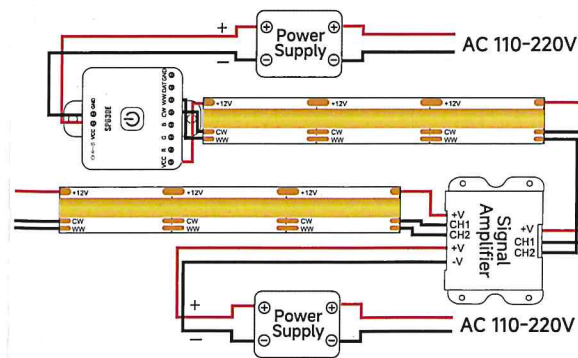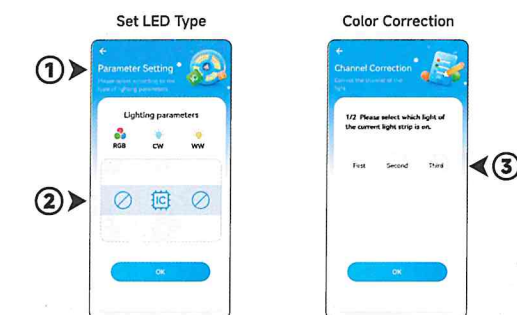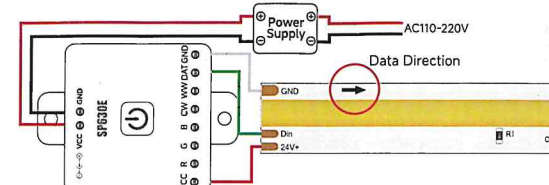
Power Supply — AC110-220V
GND Data Direction → Din 24V+

Set LED Type   Color Correction
① Parameter Setting   Channel Correction
Lighting parameters   1/2 Please select which light of the current light strip is on.
RGB CW WW
② ③ First Second Third

4.8 SPI Dual White/CCT LED strip
(Such as WS2811 IC FCOB SMD CCT, etc)

Power Supply — AC110-220V
GND Data Direction → DI 24V+

Set LED Type   Color Correction
① Parameter Setting   Color Correction
Lighting parameters   1/2 Please select the current state of your light.
RGB CW WW
② ④ Cold White Warm White
③

③ Choose "3-channel IC" or "4-channel IC". Note: If you don't know what type of IC your LED strip is, try both options and select the one that the LED strip will work with.

4.9 SPI 3pin RGB LED strip
(Such as WS2811,WS2812B IC FCOB SMD RGB,etc)

Power Supply — AC110-220V
Data Direction →
24V+
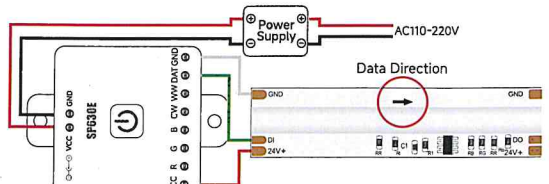
Note: For 4pin RGB IC LED strips such as WS2813, WS2815, the backup data cable(B) could be connected to DAT or GND port.

4.10 SPI RGBW LED strip
(Such as SK6812,WS2814 RGBW,etc)

Power Supply — AC110-220V
RR Data Direction →

Set LED Type   Color Correction
① Parameter Setting   Color Correction
Lighting parameters   1/3 Please select the current state of your light.
RGB CW WW
② ③ Red Green Warm White

4.11 SPI RGBCCT LED strip
(Such as WS2805 SMD FCOB RGBCCT,etc)

Power Supply — AC110-220V
GND Data Direction →
12V+

Note: The backup data cable(B) could be connected to DAT or GND port.

Set LED Type   Color Correction
① Parameter Setting   Color Correction
Lighting parameters   1/5 Please select the current state of your light.
RGB CW WW
② ④ Red Green Blue Cold White Warm White
③

③ Choose "6-channel IC" or "5-channel IC". Note: If you don't know what type of IC your LED strip is, try both options and select the one that the LED strip will work with.

4.12 Voltage Supplement Diagram for SPI Strips

Voltage drop and increased resistance may cause the brightness of the end LEDs to dim, which is a normal physical phenomenon, and all LED strips cannot avoid this issue.
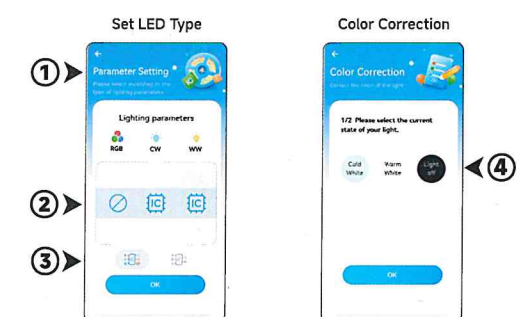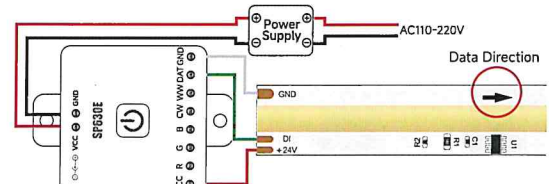
If LED strips are connected in series more than 5 meters, please add a power supply every 5 meters(16.4ft) to supplement voltage.
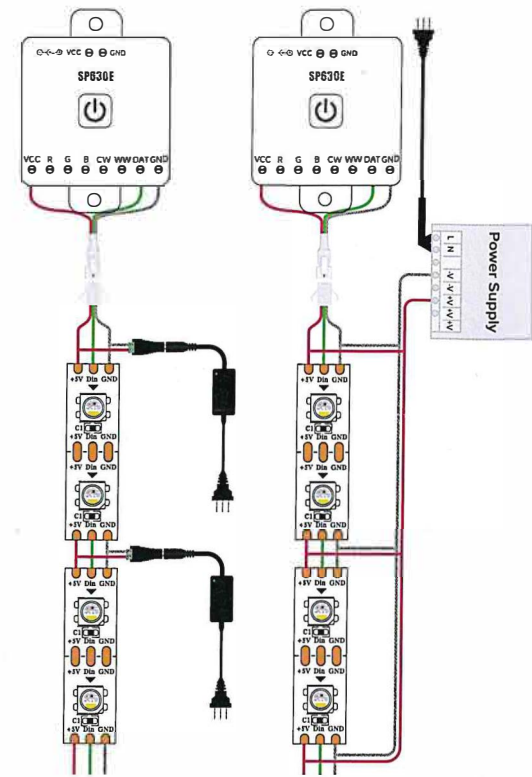
4.13 SPI RGB+PWM Single Color LED Strip

Data Direction

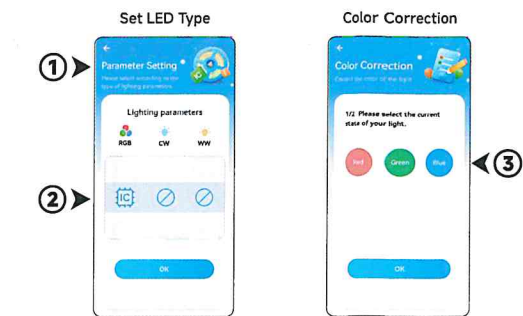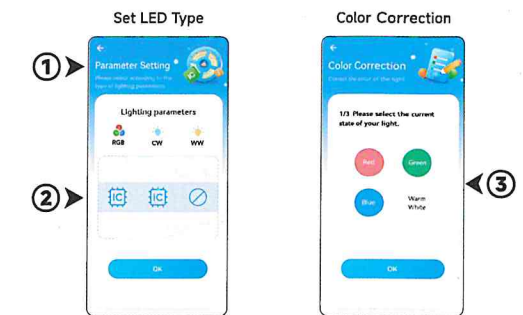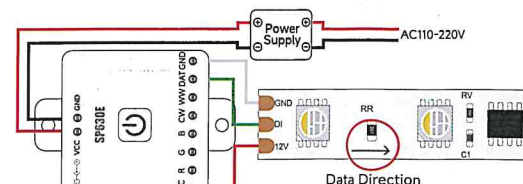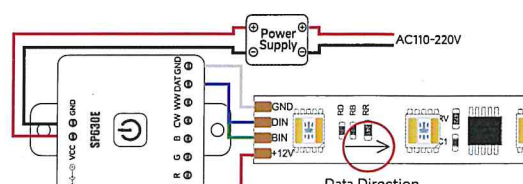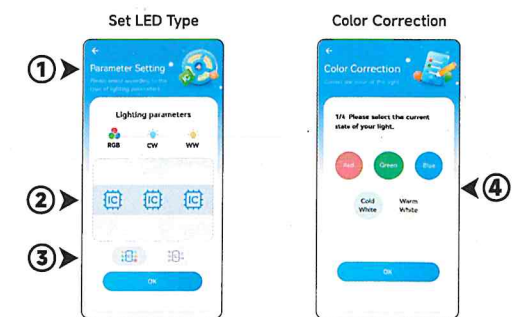Set LED Type   Color Correction

4.14 SPI RGB+PWM CCT LED Strip

Data Direction

Set LED Type   Color Correction

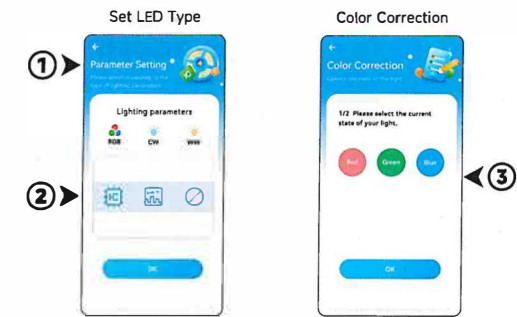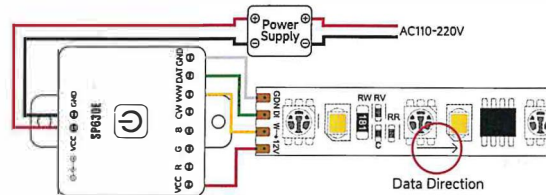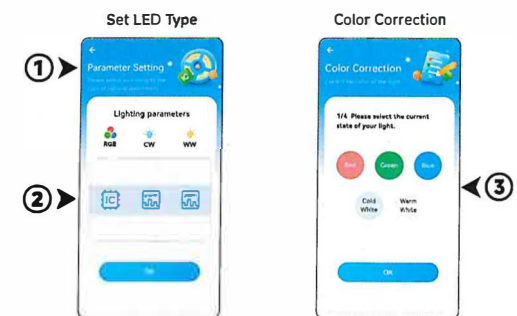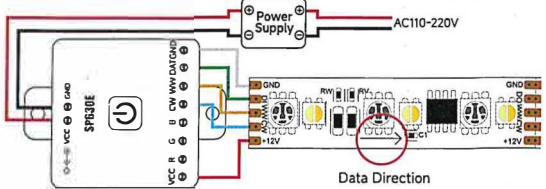Different types of LED correspond to different output ports; The ports should match the selected LED type, and the specific port descriptions as follows:

	LED Type	VCC	R	G	B	CW	WW	DAT	GND	Key Parameters
1	1CH PWM Single Color	✓					✓		✓	Output:6A/CH
2	2CH PWM CCT	✓				✓	✓		✓	Output:6A/CH
3	3CH PWM RGB	✓	✓	✓	✓				✓	Output:6A/CH MAX12A
4	4CH PWM RGBW	✓	✓	✓	✓		✓		✓	Output:6A/CH MAX12A
5	5CH PWM RGBCCT	✓	✓	✓	✓	✓	✓		✓	Output:6A/CH MAX12A
6	SPI Single Color	✓						✓	✓	Max Pixel: 600 IC chips
7	SPI CCT	✓						✓	✓	Max Pixel: 600 IC chips
8	SPI RGB	✓						✓	✓	Max Pixel: 600 IC chips
9	SPI RGBW	✓						✓	✓	Max Pixel: 450 IC chips
10	SPI RGBCCT	✓						✓	✓	Max Pixel: 300 IC chips
11	SPI RGB+1CH PWM Single Color	✓				✓	✓	✓	✓	Output 6A/CH/Max Pixel: 600 IC chips
12	SPI RGB+2CH PWM CCT	✓				✓	✓	✓	✓	Output 6A/CH/Max Pixel: 600 IC chips

5. 2.4G RF Remote/Smart Panel Control (Purchased separately)

Please set the LED type on the APP before using the remote/panel to control LED controller.

1 CH PWM Single Color	2 CH PWM CCT	3 CH PWM RGB	4 CH PWM RGBW	5 CH PWM RGBCCT	SPI Single Color
RB1 RC1	RC2 RC2	RB3 RC3	RB3 RC3	RC4 RC4	RB1 RC2
SPI CCT	SPI RGB	SPI RGBW	SPI RGBCCT	SPI RGB +1CH PWM	SPI RGB +2CH PWM CCT
RC2 RC2	RC4 RC4	RC4 RC4	RC4 RC4	RC4 RC4	RC4 RC4

Handheld RF Remote (Purchased separately)

RB1   RB3   RB3   RB4

86-Type RF Wall panel remote (Purchased separately)

RC1   RC2   RC3   RC4

6. 4 Zones Group Control

The Remotes support 4 zones control and unified control. One RF remote can control up to 4 groups of lights. Each group can control LED strips within 30m (98ft). Besides, one RF remote can control multiple controllers and each controller is able to bind up to 5 RF remotes.

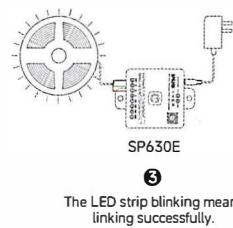### Linking Instructions
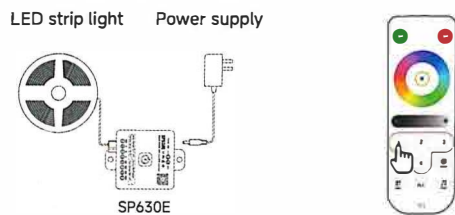
LED strip light   Power supply

SP630E

❶ Disconnect the LED controller from the power supply for 10 seconds and reconnect it.
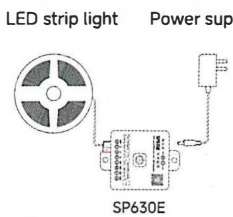
❷ When the light is on, long press any key of 4 zones within 20 seconds to set the remote to control a specific zone.

LED strip light   Power supply   Linking/Unlinking Teaching Video

SP630E

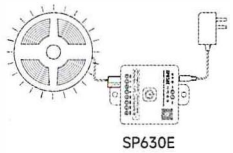❸ The LED strip blinking means linking successfully.

⚠️ If LED strip doesn't light up, it may be due to the poor connection between the controller and the LED strip. Please try to reconnect all wires. To avoid signal interference when setting the specific zone control, please only power up the controller of that zone.

Unlinking Instructions

LED strip light   Power supply

SP630E

❶ Disconnect the LED controller from the power supply for 10 seconds and reconnect it.

❷ When the light is on, long press the "ALL" key within 20 seconds to set the remote to unlink the controllers.

LED strip light   Power supply

SP630E

❸ The LED strip blinking means unlinking successfully.

⚠️ If LED strip doesn't light up, it may be due to the poor connection between the controller and the LED strip. Please try to reconnect all wires. If LED strip doesn't blink, it means unlinking failed. Please follow above steps to try it again.

7. APP Installation

1. SP630E supports APP control for iOS and Android devices.
2. Apple devices require iOS 10.0 or higher, and Android devices require Android 4.4 or higher.
3. You can search "BanlanX" in App Store or Google Play to find the APP, or scan the QR code to download and install.

8 APP Operation Instructions

8.1 Add Device

- Enter the Device Search Page: Click the "Add Device" button to the device search page. To ensure searching smoothly, please make sure your phone is close to the target device and Bluetooth is turned on.

- Select and Add the Device: Select the target device and complete the addition process.
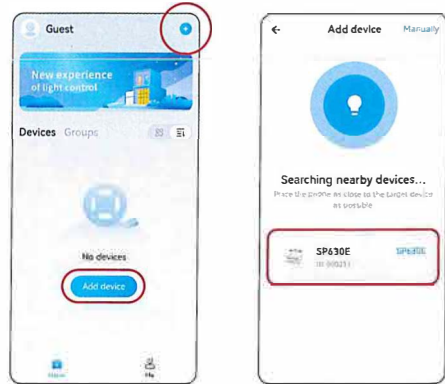
### 8.2 LED Type Setting and Color Correction

Please enter the setting page to adjust the LED parameters based on the connected LED type and follow the prompts to complete the color correction test.
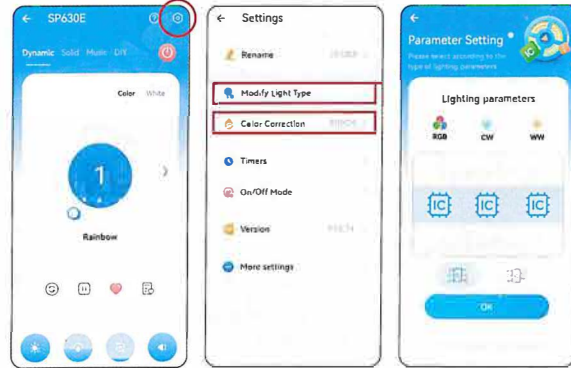
8.3 Group Control

Before setting group control, please set the LED type and complete the color correction of each controller first. LED strips and controllers must be of the same type.

Then enter the Groups setting page to add devices to group.
(Note: At least 2 and up to 5 devices)
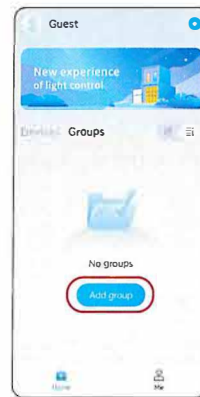
8.4 Function Introduction

Four APP operating interfaces: Dynamic, Static, Music and DIY. Besides, click the ⚙ icon to enter the settings page, where you can modify the name, modify the type of LED, calibrate the color order, set the timings, set the on/off effect,etc.

- **Music Function:** Adjust the color and lighting effect according to the music automatically. Support 3 kinds of music capture modes: player streaming, built-in microphone, cell phone microphone (phone microphone requires access from phone).

- **DIY Function:** You can adjust light color, number of IC chip and light mode to set the lighting effect for your LED strip as you wished.

Dynamic   Static   Music

❻ Number 6 represents the number of IC chip

DIY   Pure White

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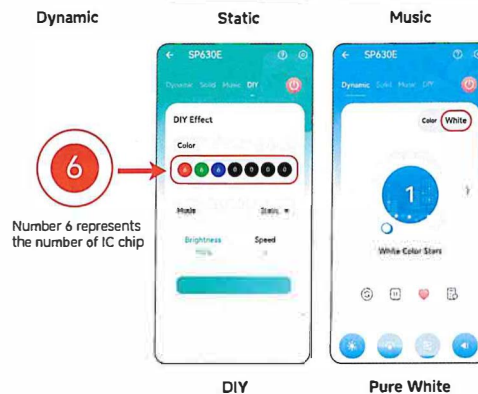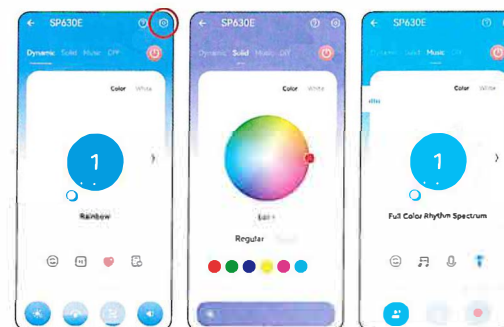
9. Causes of Connection Failure and the Solution

(1) LED Strip only lights up Red light. No other color can be lit.

A: Please check if the power supply voltage matches the voltage of LED light. If your strip is DC24V, use a DC24V power supply.

(2) LED strip goes off when lighting up White light.

A: If your light is RGB type, we suggest you don't light up white light as the mixed white(R+G+B) consumes very high power. Insufficient power causes the strip to go off.

(3) Not connect the light strip with the controller correctly.

A: Please read the wiring diagram of the manual carefully before connecting. Make sure you have connected them correctly then to connect the power supply.

(4) Not set the LED type correctly.

A: Please check if you have set the LED type on the APP correctly. You could refer to Part 4 of the manual for specific settings.

(5) Bluetooth is not turned on.

A: Please turn on Bluetooth and make sure it didn't connect other devices such as earphones, stereos, etc.

(6) The insufficient power of the power supply may cause the controller disconnection, Bluetooth disconnection, or light flickering .

A: Please use a power supply with higher power. Insufficient power will cause many problems. If you don't know how to calculate the power of LED light strips, please contact us and we could help.

(7) RF remote/Panel can't link to the controller.

A: Please power off, then power on again. Make sure your operation is within 20 seconds after the controller is powered on.

(8) You can use the BanlanX APP but the LED strip can't be lit.

A: The controller and the LED strip are in poor connection. Please try to reconnect all wires.

A: The data direction of SPI LED strip is wrong, please check the little arrow on the PC board.

10. Attention

1. Please connect the strip and the controller according to the wiring diagram correctly.

2. Please select a right RF remote/panel for the exact LED type.

3. Please select an appropriate power supply according to the light. If the light is DC12V, then do not use a DC5V/DC24V power supply.

4. Please do not connect power supply above 24V. The working voltage of the controller is DC5-24V.

5. Please do not touch the smart panel within 2s after installing the new battery.

6. Please do not use the product in high humidity, high temperature, dusty and high pressure environment.

7. Please do not use controller around the mental area and high magnetic field, otherwise it will seriously affect the remote control distance.

8. Please take the strip off the roll when powering on as the strip on the roll is not conducive to heat dissipation, which may damage the strip.
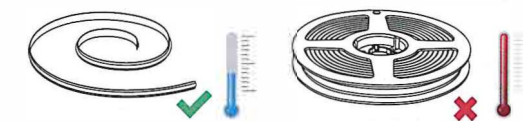
Our team can also provide you with such services!

If you are not sure about the strip lighting project for stairs, wine cabinet, ceiling, hallway, cabinet, please contact us in time, we will provide professional design proposal.

Global customer service: contact@btf-lighting.com
US Amazon customer service: support@btf-lighting.com
EU/UK Amazon customer service: rachel@btf-lighting.com

Made in China