LED LIGHTING HUT WT-SPI RGB-RGBW SPI LED Controller User Guide

Contents

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Product Information

The WT-SPI RGB/RGBW SPI LED Controller is a multi-pixel LED strip controller that supports RGB and RGBW LED strips. It features SPI signal output and can be controlled through the Tuya APP cloud control, voice control, or wireless remote control. The controller is compatible with 47 different types of RGB or RGBW LED strips and comes with various customization options for dynamic scenario modes and music rhythms.

Technical Parameters

- Input voltage: 5-24VDC
- Input current: 8A
- Input signal: Tuya APP + RF 2.4GHz
- Output signal: SPI(TTL) x 2
- Scenario mode: 44 default and 10+ customizations
- Maximum pixel dots: 1000

Safety and EMC

- EMC standard (EMC): ETSI EN 301 489-1 V2.2.3
- Safety standard (LVD): ETSI EN 301 489-17 V3.2.4, EN 62368-1:2020+A11:2020
- Certification: CE, EMC, LVD
- Warranty: 5 years

Environment

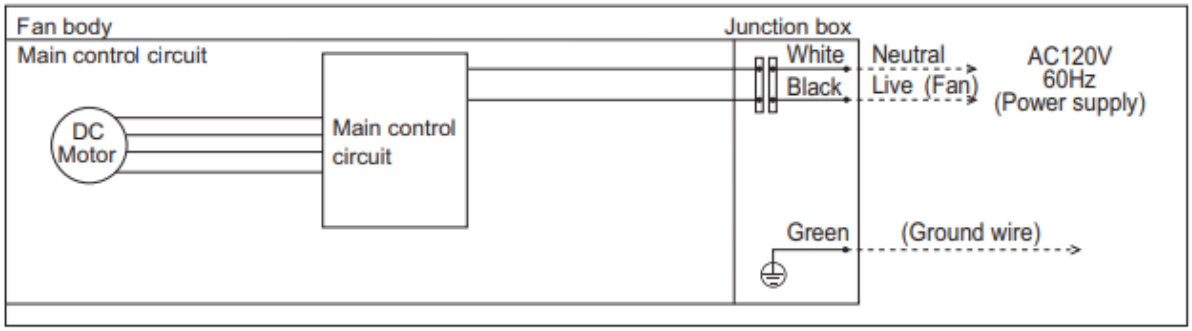
- Operation temperature: -30°C to +55°C
- Case temperature (Max.): +65°C
- IP rating: IP20
- Package Size: L120 x W43 x H27mm
- Gross weight: 0.066kg

Mechanical Structures and Installations
The controller has a power input and a power input-, an installation rack, DC socket input, LED indicator, and a match/set key.

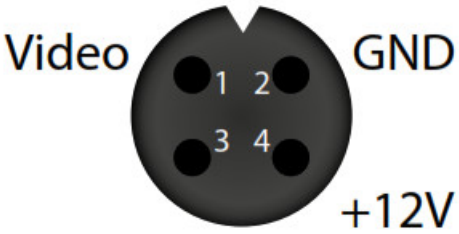
Product Usage Instructions

Wiring Diagram

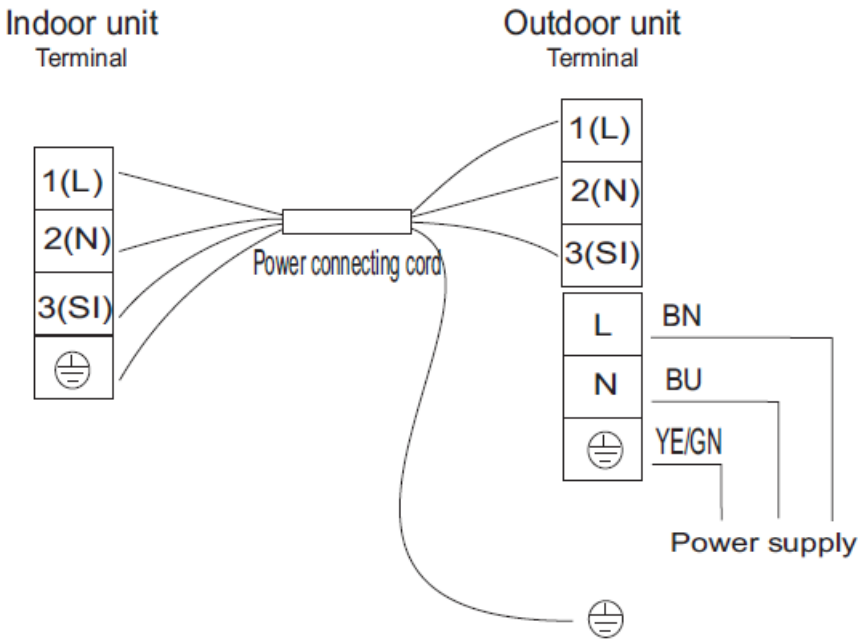
WT-SPI connect with SPI spotlights (TM1803)



WT-SPI connects with SPI pixel strips (LPD6803)



WiFi-SPI connects with SPI digital light tube (TM1809)



***Note**: If the SPI LED strip is a single-wire control method, the DATA and CLK signal line outputs of the controller are the same, and one controller can connect up to 4 LED strips. When the load exceeds 8A, the light strip needs to be powered by other power supplies. Only DATA/CLK and GND cables are connected between the controller and the light strip.*

Match R9 remote control
Match: Short press the match key, and immediately press the on/off key of the remote. The LED indicator will fast flash a few times to indicate a successful match.

Delete: Press and hold the match key for 10 seconds to delete all matches. The LED indicator will fast flash a few times to indicate that all matched remotes have been deleted.

Set the length, chip type, and RGB order of the SPI LED strip using R9 remote control
Refer to the R9 remote control user manual for detailed instructions on setting the length, chip type, and RGB order of the SPI LED strip.

WT-SPI RGB/RGBW SPI LED Controller

Model No.: WT-SPI
Tuya APP cloud control/Voice control/Compatible with 47 kinds IC/Customized dynamic scenario mode/Multiple music rhythms/Wireless remote control

Features

- Multi-pixel RGB/RGBW LED strip controller with SPI signal output, Tuya APP cloud control.
- Voice control, support for Amazon ECHO, Google, Tmall Genie, and Xiaodu smart speakers.
- Compatible with 47 kinds of RGB or RGBW LED strips.
    - Factory default controllable chip types of light strips: TM1809, TM1804, TM1812, UCS1903, UCS1909, UCS1912, SK6813,UCS2903, UCS2909, UCS2912, WS2811, WS2812, WS2813, WS2815, SM16703P.
    - Need to purchase a separate R9 remote control to set the chip type of light strips: TM1803, TM1829, TLS3001, TLS3002, GW6205, MBI6120, TM1814B(RGBW), SK6812(RGBW), WS2813(RGBW), WS2814(RGBW), UCS8904B(RGBW), LPD6803, LPD1101, D705, UCS6909, UCS6912, LPD8803, LPD8806, WS2801, WS2803, P9813, SK9822, TM1914A, GS8206, GS8208, UCS2904, SM16804, SM16825, SM16714(RGBW), UCS2603, UCS5603, SM16714D.
- Painted segment color mixing: full-color filling, color pencil segment painting, eraser segment light off.
- Rich dynamic effects: 44 default and 10+ custom dynamic scenarios, 16 variations.

- Multiple music rhythms: 6 local music rhythms, 3 APP music rhythms.
- Match with RF 2.4G RGB remote control.

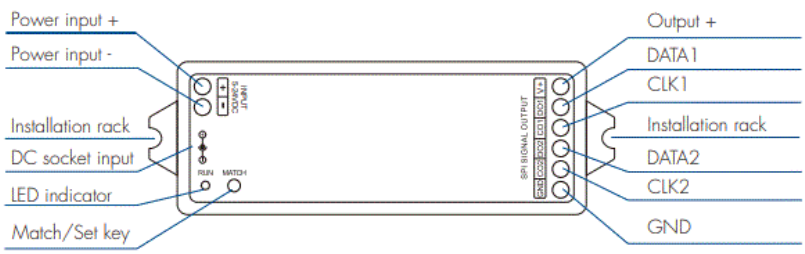
Technical Parameters

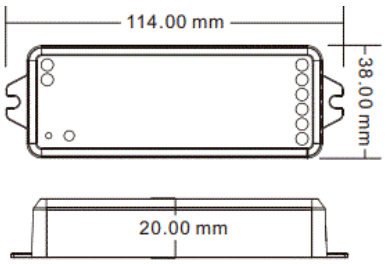
Input and Output	
Input voltage	5-24VDC
Input Current	8A
Input signal	Tuya APP + RF 2.4GHz
Output signal	SPI(TTL) x 2
Scenario Mode	44 default and 10+ customizations
Pixel Dots	MAX.1000

Safety and EMC	
EMC standard (EMC)	ETSI EN 301 489-1 V2.2.3 ETSI EN 301 489-17 V3.2.4
Safety standard(LVD)	EN 62368-1:2020+A11:2020
Certification	CE, EMC,LVD
Warranty	
Warranty	5 years

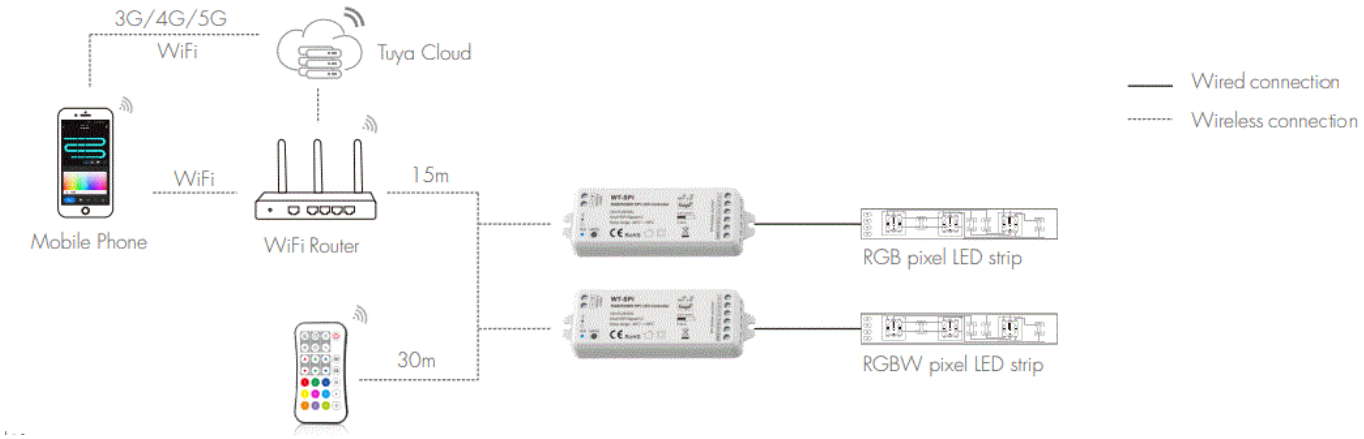
Environment	
Operation temperature	Ta: -30 OC ~ +55OC
Case temperature (Max.)	Tc: +65OC
IP rating	IP20
Package	
Size	L120 x W43 x H27mm
Gross weight	0.066kg

Mechanical Structures and Installations





System wiring

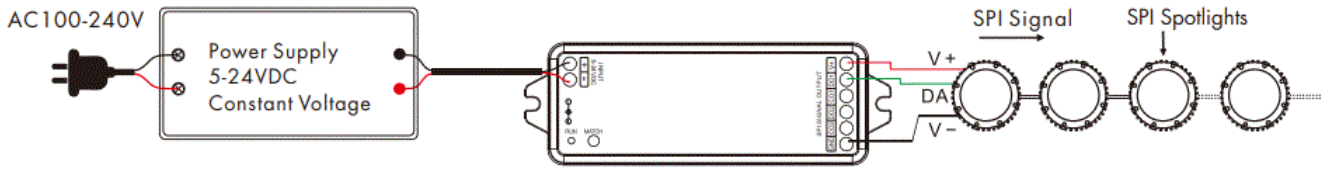


Note:

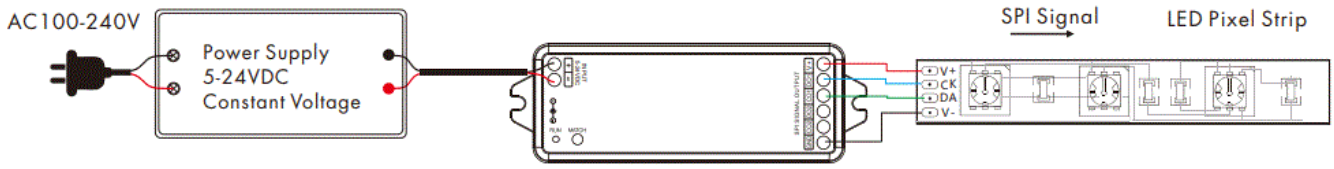
1. The above distance is in a spacious (no obstacle) environment, Please refer to the actual test distance before installation.
2. Please check if the WiFi router net in the 2.4G band, the 5G Qind is not available, and do not hide your router network.
3. Recse keeps the distance between VVT-SPI devices and router close and checks the WiFi signals.
4. WiFi signal strength detection: open the main interface of social security, click  enter the device interface, and click check device network' for testing.

Wiring Diagram

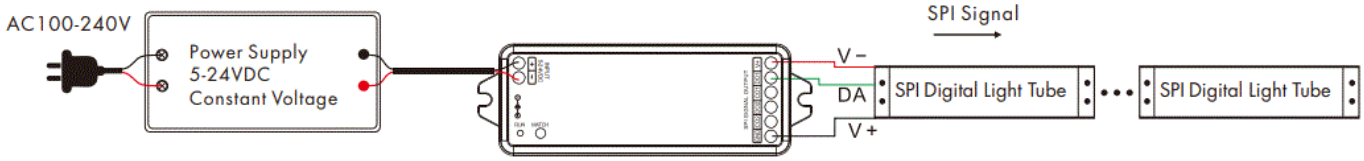
WT-SPI connect with SPI spotlights (TM1803)



WT-SPI connect with SPI pixel strips (LPD6803)



WiFi-SPI connects with SPI digital light tube (TM1809)



Note:

1. If the SPI LED strip is a single-.vire control method, the DATA and CLK signal line outputs of the controller are the same, and one controller can connect 4 LED strips.
2. When the load exceeds 8A, the light strip needs to be powered by other power supplies. Only DATA/ CLK and

GND cables are connected between the controller and the light strip.

Match R9 remote control

- Match: Short press on the match key, and immediately press on/off key of the remote. The LED indicator fast flashes a few times means the match is successful.
  Delete: Press and hold the match key for 10 to delete all match, The LED indicator fast flash a few times means all matched remotes were deleted.

Set the length, chip type and RGB order of the SPI LED strip using R9 remote control

Set the LED strip length[number of pixels(l O— 1 000)]:

- *032* , set the number of pixels 32. *600* , set the number of pixels
- 600. *1000* , set the number of pixels
- 1000. + 3 digits + Example:

Set the LED strip chip type: * + 2 digits +

- 11. TM1803 .
- 12 TMI 809, TMI 804, TMI 812, UCS1903, UCS1909, UCS1912, SK681 3, UCS2903, UCS2909, UCS291 2, WS281 1, WS2812, WS2813, WS2815, SM16703P
- 13 . TM1829 .
- 14 TLS3001 , TLS3002 GW6205
- *15* GW6205
- *16* MBI6120
- *17* TM1814B(RGBW)
- *18* SK6812(RGBW), WS2813(RGBW), WS2814(RGBW)
- *19* UCS8904B(RGBW)
- *21* LPD6803, LPD1101, D705, UCS6909, UCS6912
- *22* LPD8803, LPD8806
- *23* WS2801, WS2803
- *24* P9813
- *25* SK9822
- *31* TM1914A
- *32* GS8206,GS8208
- *33* UCS2904
- *34* SM16804
- *35* SM16825
- *36* SM16714(RGBW)
- *37* UCS5603
- *38* UCS2603
- *39* SM16714D

● Set LED strip RGB order * + 1 digit +*
2 •.GRB,I •.IBGR.I
Note: The factory default light strip chip type is *12*, if you need to change the chip type or RGB order, you must use the R9 remote control.

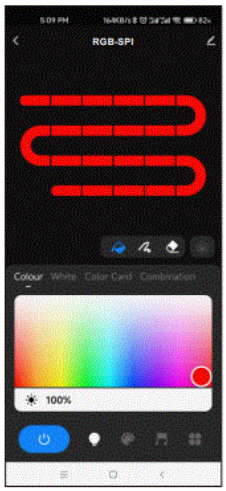
Tuya APP network connection

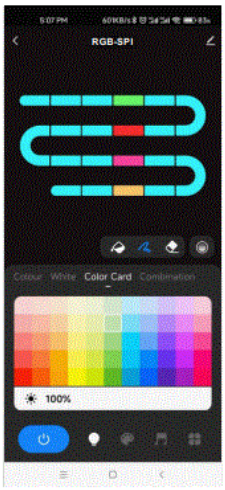
- Push twice the Match key quickly, or press and hold the Match key for 2s: clear the previous network connection, enter Smart config mode, LED indicator flash quickly.

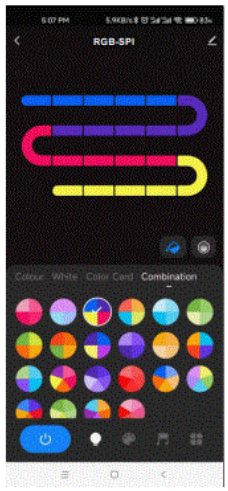
Press and hold the Match key for 5s:

- Clear the previous network connection, enter AP config mode, and LED indicator flash slowly.
- If the smart config fails, please try the AP config.
- If the Tuya APP network connection succeeds, the RUN LED indicator will stop flashing, and in the Tuya APP, you can find the RGB-SPI device.

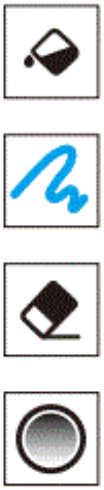
Tuya APP interface





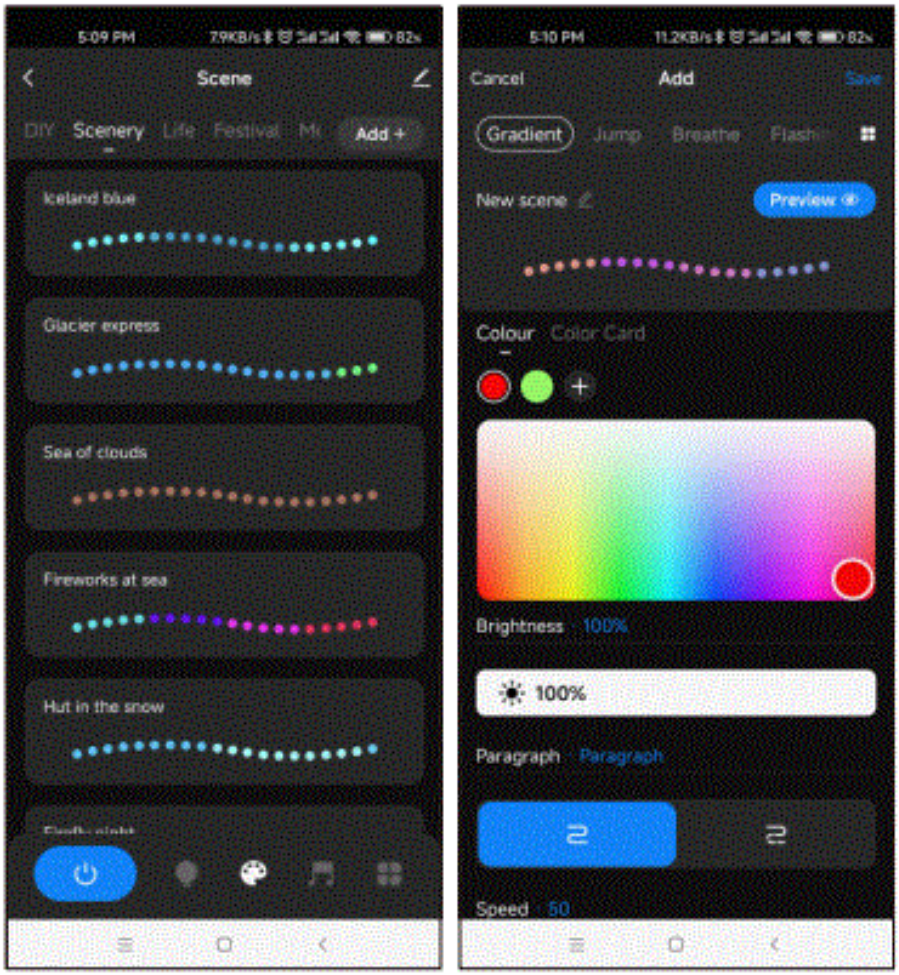


- **Colour:**
  Touch the color rectangle to adjust color and saturation. Touch the brightness slide to adjust brightness.
- **White:**
  Touch the color rectangle to adjust color temperature. Touch the brightness slide to adjust brightness.
- **Color Card:**
  Touch the color card array to select many different colors. Touch the brightness slide to adjust brightness.
- **Combination:**
  Select a proportional distribution of multi-color circle, evenly distribute these colors on the LED strip.



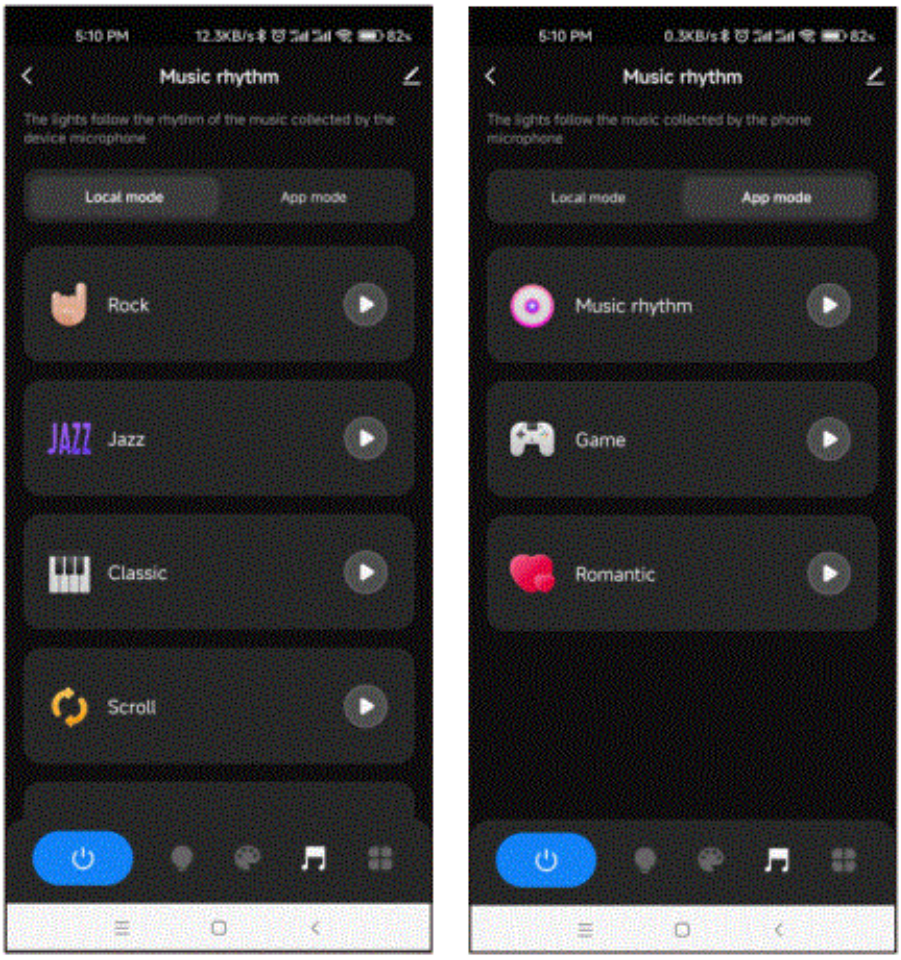
- Color Fill: Change the color of the full segment of the LED strip.
- Color pen: change the color of a single segment of the LED strip.
- Eraser: Erase the color of a single segment of the LED strip, i.e., turn off the light.
- Color transition: When there are multiple colors in the LED strip, you can set to turn on or off the color segment gradient transition.

Scene interface



44 predefined scenarios and 10+ custom dynamic scenarios selectable. The custom scenarios can select 16 types variations (fade, jump, breath, flash, flow, rainbow, shooting star, pile-up, floating down, chasing light, floating, flashing, bouncing, shuttle, chaotic flashing, open and close), the 1-8 colors, full or segment control, forward or reverse motion direction, adjustable brightness and speed.

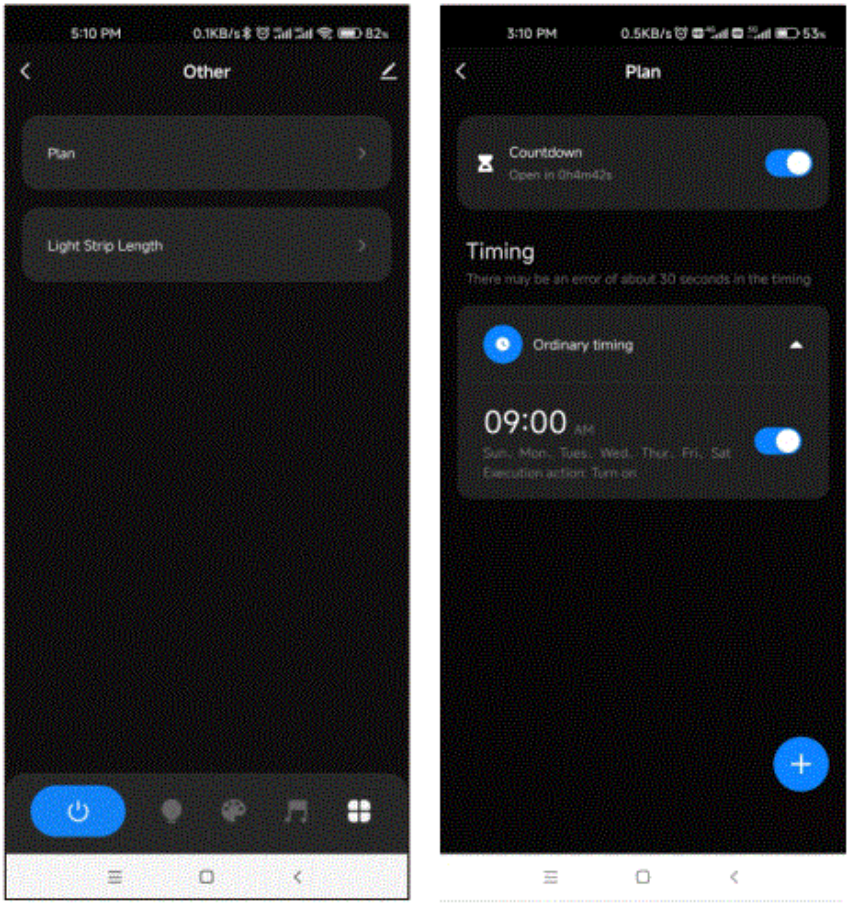
Music rhythm interface



- 6 local music modes (rock, jazz, classical, rolling, energy, spectrum) selectable. 3 APP modes (music rhythm, game, romance) selectable.
- Adjustable sensitivity of the received sound.
- The light follows the rhythm according to the music collected by the phone microphone.

  Note: the controller only supports App mode.

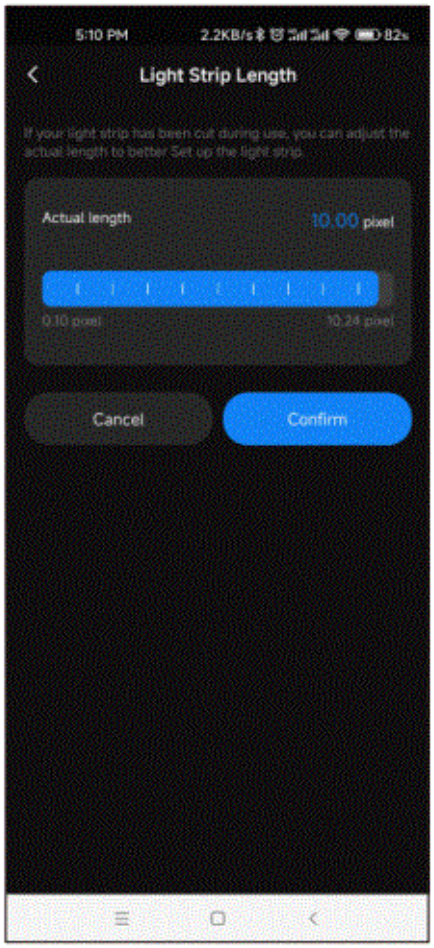
Plan interface



- Countdown: Customize the countdown time (Max.24 hours) to perform the on/off action. Timer: Customize multiple times (days of the week) to perform the on/off light action.

Light Strip Length interface

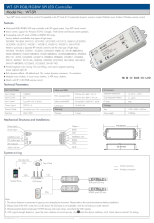
Strip length setting: Select the appropriate number of pixels according to the actual length of the strip, 10 -1000.



Notes.

1. In APP, a light strip is fixed with 20 segments,
   Strip length (total number of pixel points) ÷ 20 segments = number of pixel points per segment.
2. The maximum length of the light strip is 1000 pixels, for example, a light strip of 5 meters long with 60 pixels per meter, you can set the length to 300 pixels. The whole light strip is divided into 20 segments, each segment has 15 pixels.
3. When the light strip length is less than or equal to 20 pixels, for example, 10-20, each pixel sequentially corresponds to each segment from the beginning.
4. When the light strip length is not an integer multiple of 20, the remainder of the strip will display the color of the last segment.
5. When the actual light strip length is not an integer multiple of 20, it is recommended to set the length longer and increase the value to a multiple of 20.
6. When the set of the light strip length is less than the actual length, the back part of the light strip can not be controlled.

Documents / Resources



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WT-SPI RGB-RGBW SPI LED Controller, WT-SPI, RGB-RGBW SPI LED Controller, SPI LED Controller, LED Controller, Controller