WT-SPI+R9

SPI

RGB/RGBW LED SPI Controller Set

CE RoHS emc LVD

WT-SPI controller is compatible with 49 kinds of chips: TM1803, TM1804, TM1809, TM1812, UCS1903, UCS1909, UCS1912, SK6813, UCS2903, UCS2909, UCS2912, WS2811, WS2812, WS2813, WS2815, 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, SM16703P, UCS7604(RGBW), UCS7804(RGBW).

By the RF remote controls you can select a variety of dynamic lighting effects, adjust changing speed and brightness, set control pixels quantity, set the IC type and R/G/B/W color sequence, etc.

Or by the Tuya App/Smart life APP, you can perform voice control, music rhythm, drawing style segmented color adjustment of light strips, select various dynamic or custom scene modes, set the number of pixels, etc.

Features

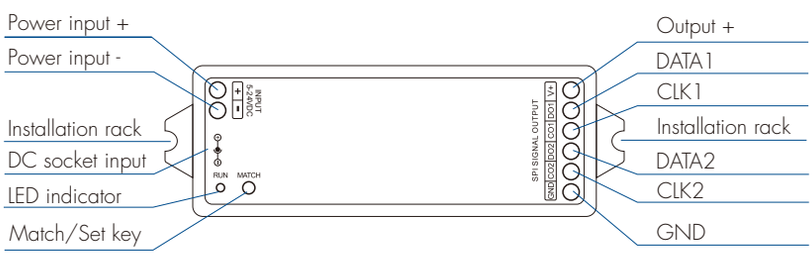
- Multi-pixel RGB/RGBW LED strip controller with SPI signal output, RF 2.4G remote + Tuya smart APP cloud control.
- Compatible with 49 types of RGB or RGBW LED light strips, the chip type and R/G/B/W color order can be set through the R9 remote control.
- Set the 40 dynamic change modes through the R9 remote control, include horse-race, chase, flow, trail or gradual change style.
- Voice control, support for Amazon Alexa, Google Assistant, Tmall Genie and Xiaodu smart speakers.
- 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.
- 3 APP music rhythms.

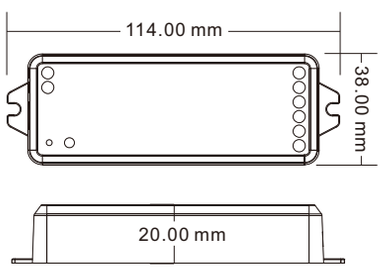
Technical Parameters

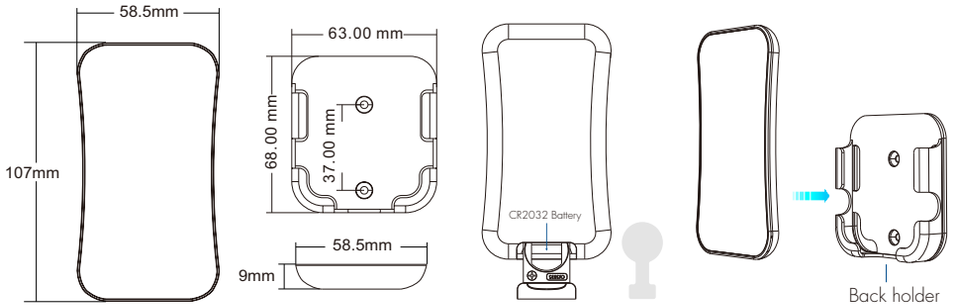
LED Remote	
Output signal	RF(2.4GHz)
Work voltage	3VDC(CR2032)
Work current	<5mA
Standby current	<2μA
Standby time	2 years
Remote distance	30m(Barrier-free space)
Size	L107xW58.5xH9mm
Safety and EMC	
EMC standard (EMC)	EN IEC 55015:2019+A11:2020 EN 61547:2009 EN IEC 61000-3-2:2019+A11:2021 EN 61000-3-3:2013+A11:2019
Safety standard	EN 61347-1:2015+A1:2021 EN 61347-2-13:2014+A1:2017
Certification	CE,EMC,LVD
Warranty	
Warranty	5 years

LED Controller		
Input voltage	5-24VDC	
Input Current	8A	
Input signal	WiFi + RF 2.4GHz	
Output signal	SPI(TTL) x 2	
Scenario Mode	44 default and 10+ customizations	
Pixel Dots	Max.1000	
Size	L114xW38xH20mm	
Environment		
Operation temperature	Ta: -30°C ~ +55°C	
Case temperature (Max.)	Tc: +65°C	
IP rating	IP20	
Package		
Size / Gross weight	Color Box: L128 x W128 x H27mm	0.285kg
	Suction molding: L265 x H195mm	0.300kg

Mechanical Structures and Installations





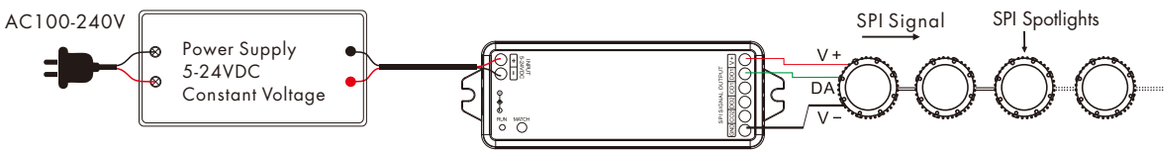


To fix the remote, two options are offered for selection:
Option 1:
fix the remote' back holder on the wall with two screws.
Option 2:
adhere the remote' back holder to the wall with paster.

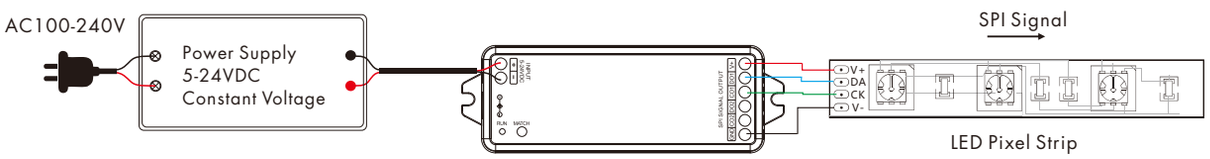
Note: Before first use,
Please remove the insulation strip from the battery

Wiring Diagram

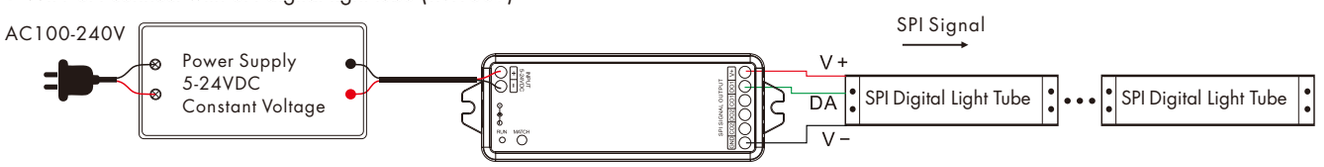
- WT-SPI connect with SPI spotlights (TM1803)



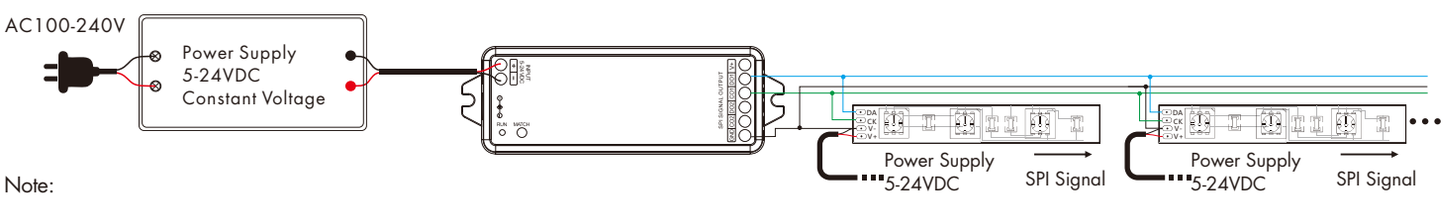
- WT-SPI connect with one SPI pixel strips (WS2801)



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



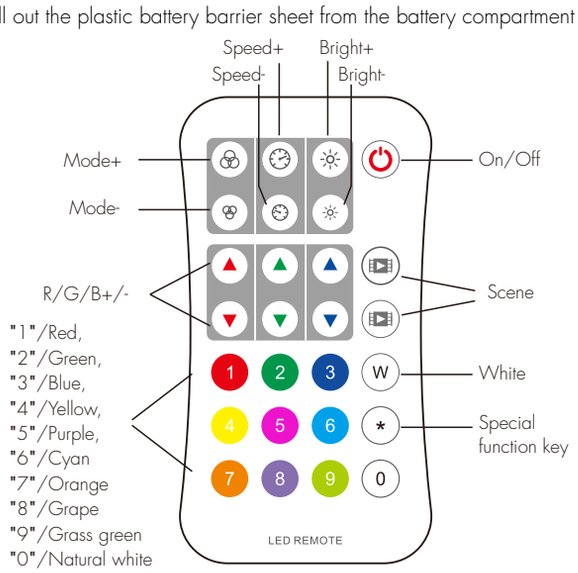
- WT-SPI connect with multiple SPI pixel strips (LED strip load over 8A)



Note:
1. If the SPI LED strip is a single-wire control method, the DATA and CLK signal line outputs of the controller are same, and one controller can connect 4 LED strips.
2. When the load of the light strip exceeds 8A, the light strip needs to be powered by another power supply (the light strip and the power supply must share the same ground), and only the DATA/CLK and GND lines are connected between the controller and the light strip.
3. The output power of the constant voltage power supply is at least 1.2 times that of the output load (light strip), otherwise the full power output of the load will easily cause the lights to flicker or shake automatically.

Remote Key Function

Pull out the plastic battery barrier sheet from the battery compartment located on the bottom of the remote before key operation.



Mode+/-: Short press switch dynamic mode built in controller,
long press 2s Mode+ run mode cycle, long press 2s Mode- run the first mode.
Default 32 dynamic modes, long press the Mode+ key for 2s will automatically get the current number of dynamic modes of the controller.
Speed+/-: Adjust dynamic mode speed,
short press 10 levels, long press 2s get the fastest / slowest speed.
Bright+/-: Adjust brightness,
short press 10 levels, long press 1-6s for continuous 256 levels adjustment.
R/G/B+/-: Adjust R/G/B brightness respectively, short press 10 levels,
long press 1-6s for continuous 256 levels adjustment to achieve millions of colors.
White: Adjust white color,
for RGB light, short press turn on/off white(RGB mix),
long press 1-6s adjust saturation continuously.
For RGBW light, press W key will adjust W channel brightness.
short press turn on/off W channel,
long press 1-6s adjust W channel brightness continuously.
Scene: Short press recall the scene, long press 2s save the current color into the scene.
The LED indicator will light up longer when save OK.

Match R9 Remote Control

Match: Short press on the match key, immediately press on/off key of the remote. The LED indicator fast flash a few times means match is successful.
Delete: Press and hold match key for 10s 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

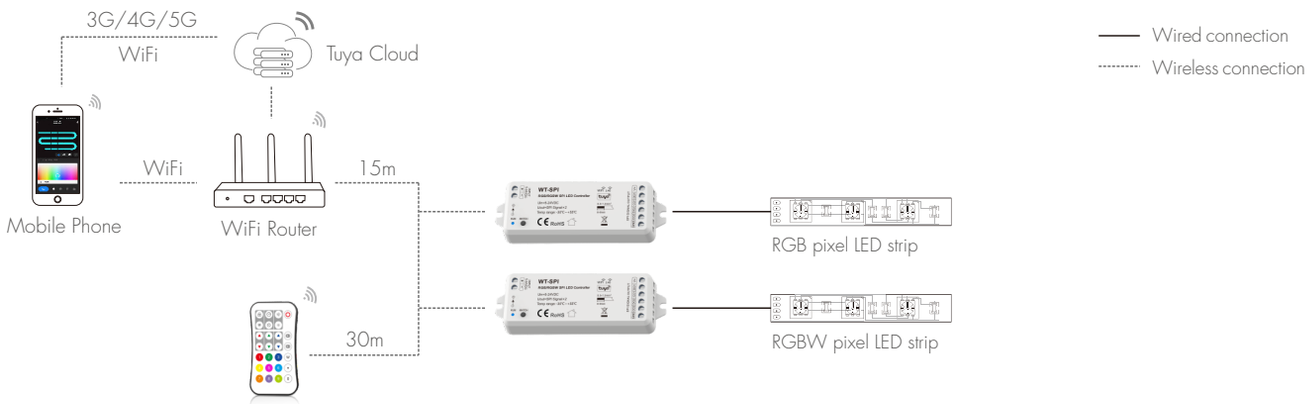
- Set the LED strip length[number of pixels(10~1000)]: * + 3 digits + * , for example:
  032, set the number of pixels 32.
  600, set the number of pixels 600.
  1000, set the number of pixels 1000.
- Set the LED strip chip type: * + 2 digits + *
  11: TM1803
  12: TM1809, TM1804, TM1812, UCS1903, UCS1909, UCS1912, SK6813, UCS2903, UCS2909, UCS2912, WS2811, WS2812, WS2813, WS2815, SM16703P
  13: TM1829
  14: TLS3001, TLS3002
  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
  41: UCS7604(RGBW)
  42: UCS7804(RGBW)
- Set LED strip RGB order: * + 1 digit + *
  1:RGB, *2*:RBG, *3*:GRB, *4*:GBR, *5*:BRG, *6*:BGR.
- Set RGBW LED strip RGB and W order.
  7:W after RGB
  9:W before RGB
  Example: *1* + *7* set RGBW order, *1* + *9* set WRGB order.

R9 remote control selectable dynamic mode list

No.	Name	No.	Name
P01	Red horse race white ground, forward	P21	Green float, forward
P02	Green horse race white ground, forward	P22	Blue float, forward
P03	Blue horse race white ground, forward	P23	Purple float, forward
P04	Yellow horse race white ground, forward	P24	RGBW float, forward
P05	Cyan horse race white ground, forward	P25	Red Yellow float, forward
P06	Purple horse race white ground, forward	P26	Green Cyan float, forward
P07	7 color multi horse race, forward	P27	Blue Purple float, forward
P08	7 color horse raceclose + open	P28	Blue White float, forward
P09	7 color multihorse race close + open	P29	6 color float, forward
P10	7 color scan close + open	P30	6 color smooth sectionally, forward
P11	7 color multi-scan close + open	P31	7 color jump sectionally, forward
P12	Blue White chase, forward	P32	7 color strobe sectionally, forward
P13	Green Cyan chase, forward	P33	White horse race (RGB jump)
P14	RGB chase, forward	P34	White smooth horse race (RGB smooth)
P15	7 color chase, forward	P35	White starlight (RGB random jump)
P16	Blue meteor, backward	P36	White smooth starlight (RGB random smooth)
P17	Purple meteor, backward	P37	White flow, forward
P18	White meteor, backward	P38	White flow, forward on + backward off
P19	7 color meteor, backward	P39	White flow, forward on + backward on
P20	Red float, forward	P40	White float,forword

Note:
P33-P40 dynamic modes are applicable to SPI type white light strip.
P33-P36 dynamic modes,
if the color SPI strip is connected,
the corresponding color effect will appear.

System wiring



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

Tuya smart APP network connection

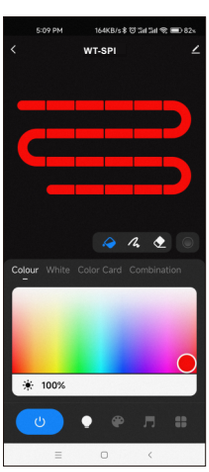
Pleace dwomload Tuya APP/Smart life APP acoording to your zone.
Push twice Match key fastly, or press and hold Match key for 2s:
clear previous network connection, enter Smart config mode, LED indicator flash fastly.

Press and hold Match key for 5s:
Clear previous network connection, enter AP config mode, LED indicator flash slowly.
If smart config failed, please try AP config.

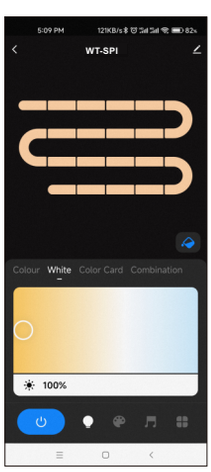
Smart life APP Tuya smart APP

If Tuya smart APP network connection succeed, the RUN LED indicator will stop flash, and in Tuya smart APP, you can find WT-SPI device .

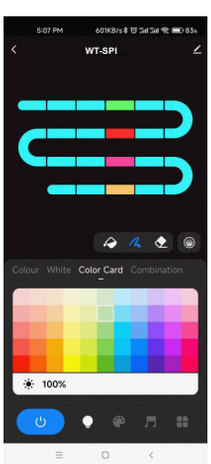
Tuya smart APP interface



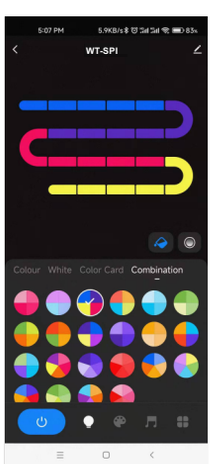
Colour:
Touch the color rectangle to adjust color and saturation.
Touch the brightness slide to adjust brightness.



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.



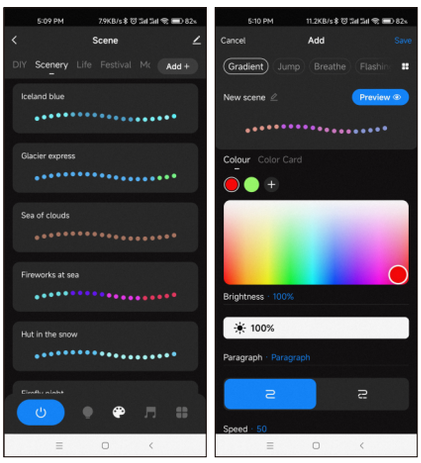
Combination:
Select a proportional distribution of multi-color circle,
evenly distribute these colors on the LED strip.


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.

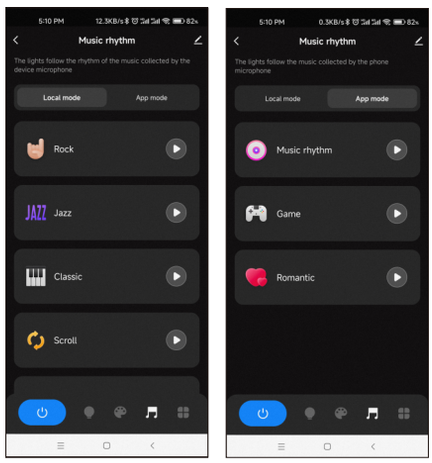

Eraser: Erase the color of a single segment of the LED strip, i.e., turn off the light.


Color transition: When there are multiple colors in the LED strip, you can set to turn on or off the color segment gradient transition.



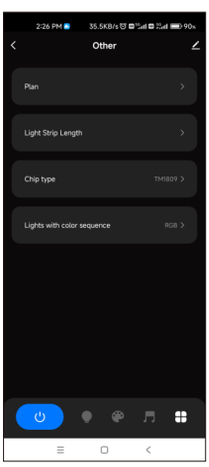
Scene interface

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.



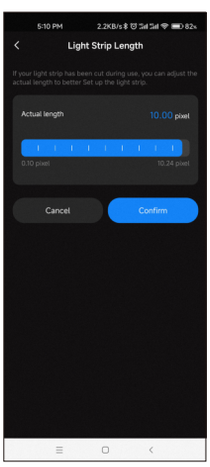
Music rhythm interface

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.



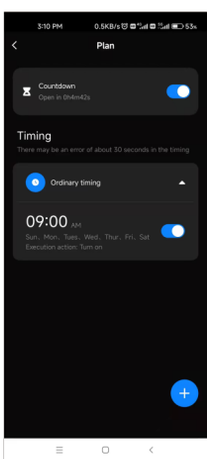
Other interface

For the first time use,
set LED strip length,
chip type and color sequence.



Light Strip Length interface

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



Plan interface

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

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.
7. When the selected dynamic mode cycle running interval is too long, please reset the correct pixel length.
8. When the static or dynamic mode color display is not consistent with the APP interface, please re-select the light strip color sequence.

Installation Precautions

1. When installing, the length of the signal line (DATA/CLK) needs to be ≤ 10 metres, and if it exceeds 10 metres,
   it needs to be connected to an SPI signal amplifier (common ground) for signal amplification, to avoid signal interference due to the line being too long.
2. When installing, the SPI signal lines (DATA, CLK) need to be separated from the strong power (100~240VAC) lines
   at a distance of ≥15cm to avoid the magnetic field generated by the strong power from interfering with the signal transmission.
3. Each signal output port (DATA/CLK) can only be connected to one set of light strips.
4. The light strip is always on without control, it may be that the signal line (DATA/CLK) is open or the chip of the light strip is damaged,
   it is recommended to replace the signal line or the light strip.