

## LC-022-001 | Zigbee RF Contoller 4 Channel ZigBee & RF 6 in1 LED PWM Dimmer

- > 6 in 1 function, used for control single color, color temperature, RGB, RGBW LED strip.
- > DC12-48V input, 4 channel constant voltage output.
- > Tuya smart APP cloud control, support on/off, RGB color, color temperature and brightness adjust, delay turn on/off light, timer run, scene edit and music play function.
- > Philips HUE APP control by connect with Philips HUE bridge.
- > Voice control, support for Amazon Alexa, Google Assistant, Tmall Genie and Xiaodu voice assistant.
- > Match with RF 2.4G remote control optional.
- > User need set light type before Tuya smart APP network connection and match RF remote of the same light type.
- > Each LC-022-001 controller can also work as ZigBee-RF converter, then use Tuya smart APP to control one or more RF LED controller or RF LED dimming driver synchronously.
- > DIP switch set PWM frequency (500Hz, 1kHz, 8kHz and 16kHz) and light on/off fade time (0s/1s/2s/3s).
- > Connect with external push switch to achieve on/off, dimming, gradient speed, color temperature and RGB color adjust function.

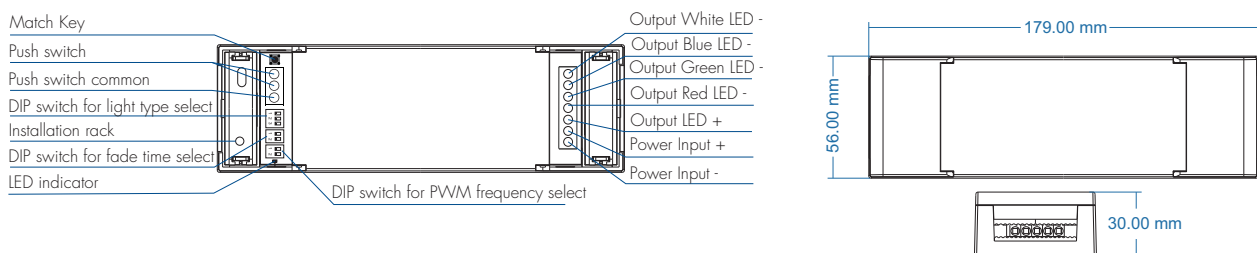


CE RoHS

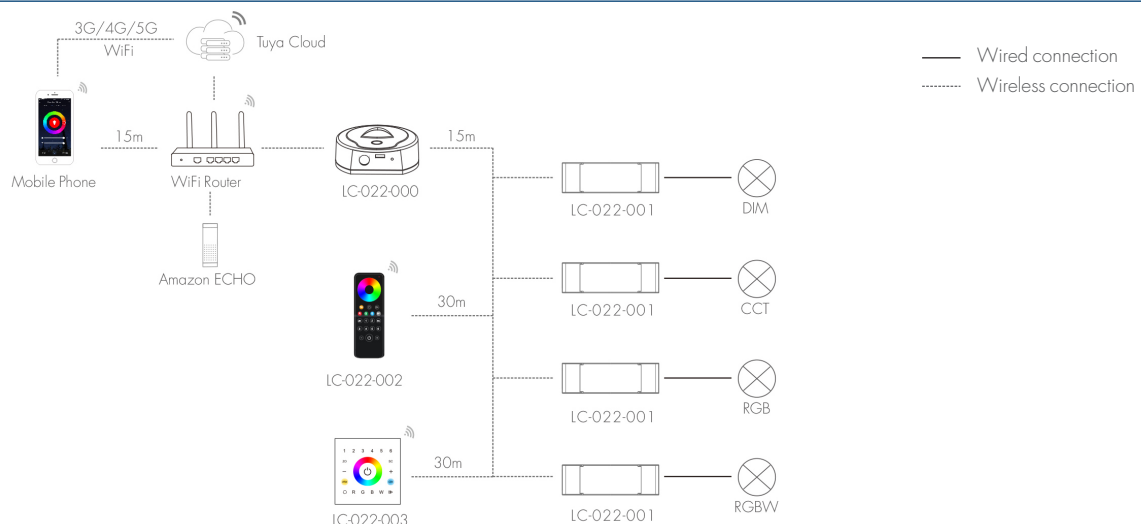
### Technical parameters

Input and Output		Dimming data		Safety and EMC	
Input voltage	12-48VDC	Input signal	ZigBee + RF 2.4GHz + Push-DIM	EMC standard	EN IEC 55015/EN IEC 61547 ETSI EN 301 489-1/-3/-17
Input current	20.5A	Control distance	30m(Barrier-free space)	Safety standard	EN 61347-1/-2
Output voltage	4x(12-48)VDC	Dimming gray scale	4096 (2^12) levels	Radio Equipment	ETSI EN 300 440 ETSI EN 300 328
Output current	4x5A/CH @ 12/24V 2x8A @12/24V 1x6A & 3x3A @12/24V 4x4A/CH @ 36/48V	Dimming range	0 -100%	Certication	CE RoHS
Output power	240W@12V 480W@24V 576W@36V 768W@48V	Dimming curve	Logarithmic	Max RF output power	5.56dBm (3.60mW)
Protection		PWM Frequency	500Hz, 1000Hz, 8KHz,16KHz	Package	
Reverse polarity/Short circuit/Over heat		Environment		Size	L187x W60 x H40mm
		Operation temperature	Ta: -20 OC ~ +55 °C	Gross weight	0.188kg
		Case temperature (Max.)	Tc: +85 °C		
		IP rating	IP20		

### Mechanical Structures and Installations



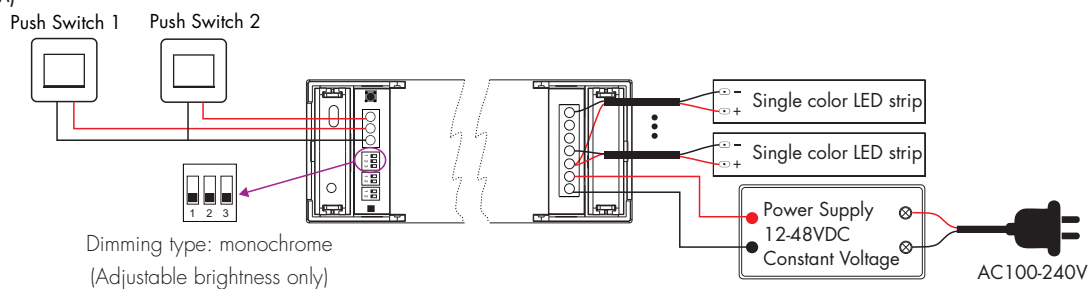
### System Wiring



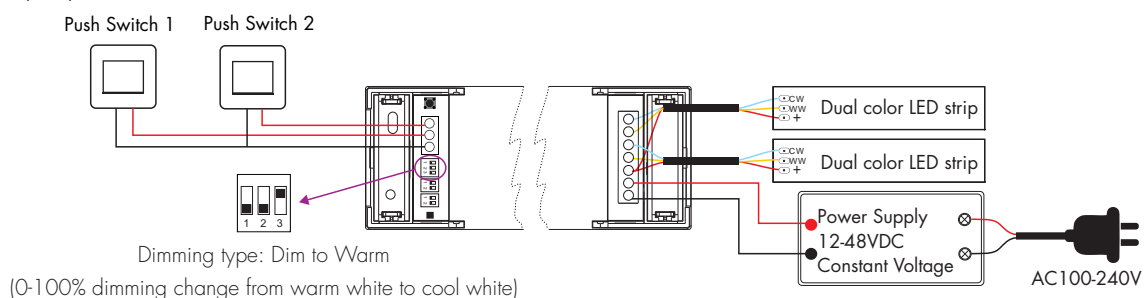
Note:

1. The above distance is measured in spacious (no obstacle) environment, please refer to the actual test distance before installation.
2. Users must use the Tuya ZigBee gateway to realize remote control and voice control.

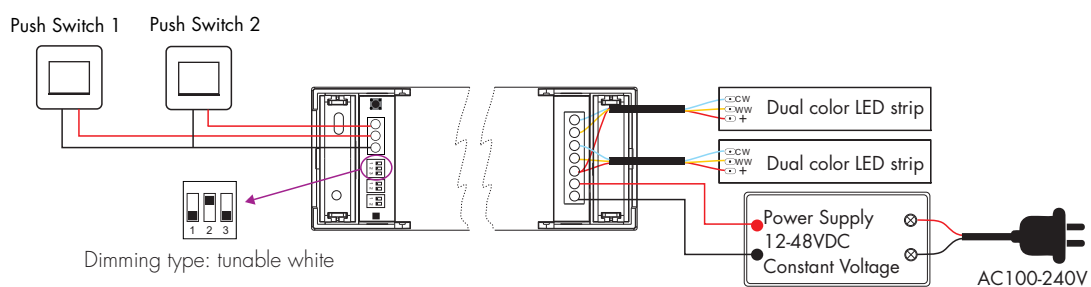
## • For monochrome(DIM)



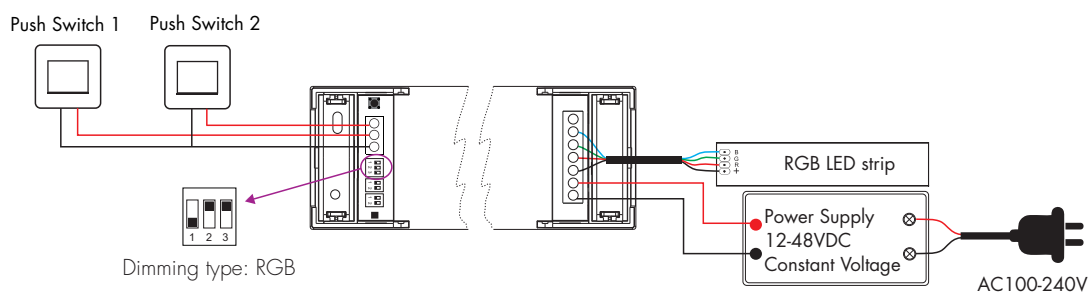
## • For Dim to Warm(DIM)



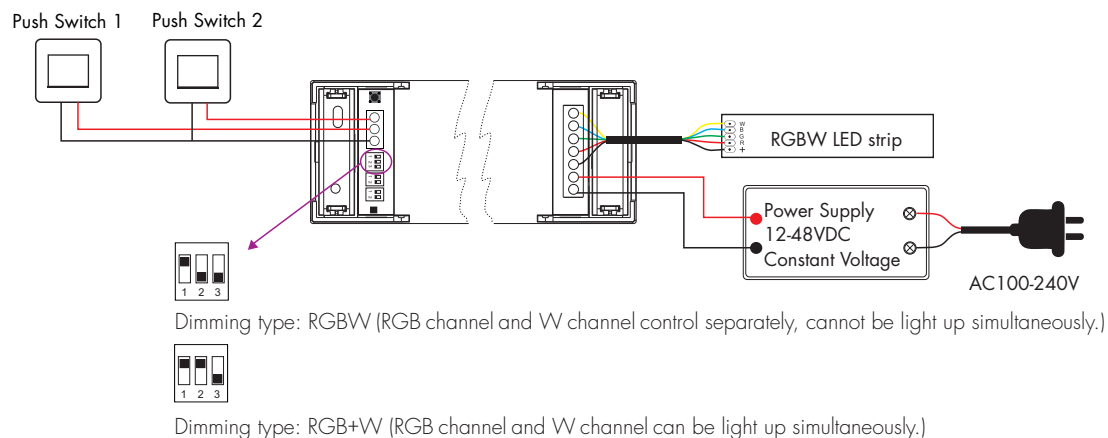
## • For Tunable White(CCT)



## • For RGB



## • For RGBW



### Note:

1. After changed the light type by DIP switch, please redo the Tuya smart APP config operation.
2. Dimming memory: Light returns to the previous dimming level when switched off and on again, even at power failure.

## APP Network Connection

**Step 1:** Please download Tuya Smart/Smart Life APP according to your region.

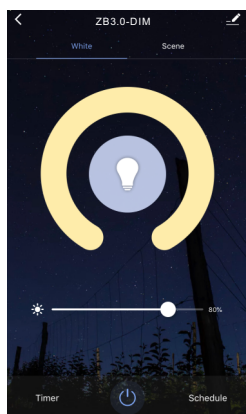
**Step 2:** Connect to the Zigbee gateway via APP (see gateway connection manual for specific steps).  
Click „Add Sub-device“ in the gateway interface to search for the current device.

**Step 3:** Network pairing, long press Match/Set key for 5s, or push twice Match/Set key fastly, clear previous network connection, enter Smart config mode, the LED indicator will fast flash, the output LED will flash 10 times. (Smart config mode keep 30s, after 30s smart config mode will exit automatically).

**Step 4:** The LED stops flashing to indicate that the device has been successfully added to the TUYA Smart/Smart Life APP. In APP, you can find ZB3.0-DIM device (or other ZB3.0-CCT, ZB3.0-RGB or ZB3.0-RGBW).



## APP Interface



### White interface

**For DIM type:**

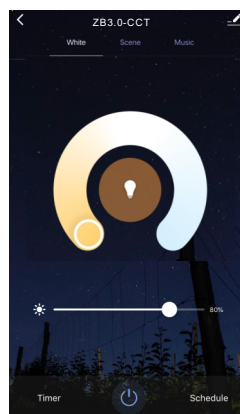
Touch brightness slide to adjust brightness.

**For RGB type:**

Touch brightness slide, get RGB mixed white firstly, then to adjust white brightness.

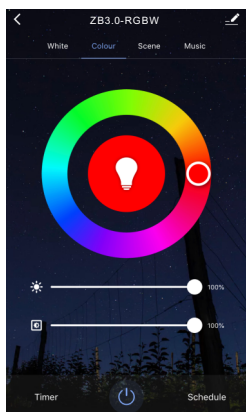
**For RGBW type:**

Touch brightness slide, adjust white channel brightness.



### Color temperature interface

Touch color wheel to adjust color temperature.  
Touch brightness slide to adjust brightness.



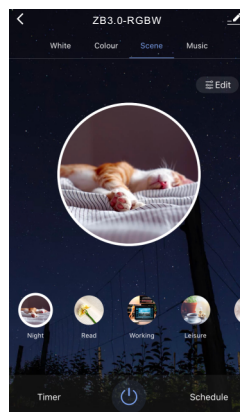
### Colour interface

**For RGB or RGBW type:**

Touch color wheel to adjust static RGB color.

Touch brightness slide to adjust color brightness.

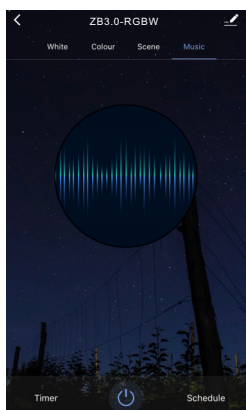
Touch saturation slide to adjust color saturation, namely gradient from the current color to white(RGB mixed).



### Scene interface

The 1-8 scene can be edited.

3 ways of color change can be set: Static, Jump, Fade. The color change speed can be set for the jump change and fade change.



### Music, Timer, Schedule

The music play can use smart phone music player or micro-phone as music signal input.

The Timer key can turn on or turn off light in the next 24 hours.

The Schedule key can add multiple timers to turn on or turn off light according to different time periods.

## Push Switch Function

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The provided Push-Dim interface allows for a simple dimming method using commercially available non-latching (momentary) wall switches. We recommend the maximum length of the wires from push to controller should be no more than 20 meters.

### 1. Monochrome / Dim to Warm dimming type

Both push switch have the same function.

- > **Short press:** Turn on/off light.
- > **Long press(1-6s):** Brightness adjustment, with every other long press, the light level goes to the opposite direction, dimming range 1%-100%.

### 2. Tunable white dimming type

Short press any push switch 5 times fastly to switch two button mode or single button mode.

#### (1) Single button mode

Both push switch have the same function.

- > **Short press:** Turn on/off light.
- > **Long press (1-6s):**  
When in static mode, brightness or color temperature adjustment, default is brightness adjustment;  
When in color temperature change mode, brightness or speed adjustment, default is brightness adjustment.  
Every other long press will go to the opposite direction.  
When you short press to turn on the light, long press to adjust brightness by default.  
The static mode and color temperature change mode have the same the brightness.
- > **Short press two times(ON state):**  
When in static mode, switch between long press to adjust color temperature or brightness;  
When in color temperature change mode, switch between long press to adjust speed or brightness.
- > **Short press three times (ON state):** Switch between static mode or color temperature change mode.

#### (2) Two button mode

Push switch 1 controls brightness; push switch 2 controls color temperature.

- > **Short press:** Turn on/off light.
- Push switch 1:**
  - > **Long press(1-6s):** Continuous adjustment brightness.
- Push switch 2:**
  - > **Long press(1-6s):** Continuous adjustment color temperature.

### 3. RGB dimming type

Both push switch have the same function.

- > **Short press:** Turn on/off light.
- > **Long press (1-6s):**  
When in static mode, brightness or color adjustment, default is brightness adjustment;  
When in dynamic mode, brightness or speed adjustment, default is brightness adjustment.  
Every other long press will go to the opposite direction.  
When you short press to turn on the light, long press to adjust brightness by default.  
The static mode and dynamic mode have the same the brightness.
- > **Short press two times(ON state):**  
When in static mode, switch between long press to adjust color or brightness;  
When in dynamic mode, switch between long press to adjust speed or brightness.
- > **Short press three times(ON state):** Switch between static mode or dynamic mode.  
4 dynamic mode selectable:
  1. RGB change: R → G → B → R ...
  2. RGBW change: W → R → G → B → W ...
  3. Warm color change: Orange → Red → Purple → Red → Orange ...
  4. Cool color change: Blue → Green → Blue ...In dynamic mode, each time you turn off the light, immediately turn on again to switch to the next dynamic mode.

### 4. RGBW dimming type

Push switch 1 controls RGB light; push switch 2 controls white light.

**Push switch 1:**

- > **Short press:** Turn on/off color light(RGB).
- > **Long press (1-6s):**  
When in static mode, brightness or color adjustment, default is brightness adjustment;  
When in dynamic mode, brightness or speed adjustment, default is brightness adjustment.  
Every other long press will go to the opposite direction.  
When you short press to turn on the light, long press to adjust brightness by default.  
The static mode and dynamic mode have the same the brightness.
- > **Short press two times(ON state):**  
When in static mode, switch between long press to adjust color or brightness;  
When in dynamic mode, switch between long press to adjust speed or brightness.
- > **Short press three times(ON state):** Switch between static mode or dynamic mode.  
4 dynamic mode selectable:
  1. RGB change: R → G → B → R ...
  2. RGBW change: W → R → G → B → W ...
  3. Warm color change: Orange → Red → Purple → Red → Orange ...
  4. Cool color change: Blue → Green → Blue ...In dynamic mode, each time you turn off the light, immediately turn on again to switch to the next dynamic mode.

Push switch 2:

- > Short press: Turn on/off white light(W).
- > Long press(1-6s): White light brightness adjustment, with every other long press, the light level goes to the opposite direction, dimming range 1%-100%.

Note:

1. For Monochrome, Dim to Warm, RGB dimming type, two push switch have the same function, you can select any of the push switches for dimming control.
2. Long press match key for 15s, restore factory default setting.

### 3. Push switch operation with LED indicator:

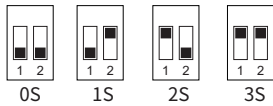
Short press: blink once;  
Long press: continuous blinking;  
Short press two times: blink 2 times;  
Short press three times: blink 3 times;  
Short press five times: blink 5 times.

### 4. For RGBW change dynamic mode:

In RGB mode, W is the mix white from RGB.  
In RGBW mode, W is the pure white.  
In RGB+W mode, W is pure white.  
In RGBW or RGB+W mode, when run RGBW change dynamic mode, Push switch 2 is not valid.

## Light ON/OFF Fade Time Setting

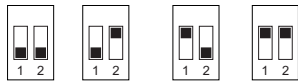
Fade time DIP switch:



DIP switch set 4 kinds of light on/off fade time: 0s/1s/2s/3s.

## PWM Frequency Setting

PWM Freq DIP switch:



500Hz	1000Hz	8000Hz	16000Hz
4x5A	4x5A	4x4A	4x4A (12-24V)
4x4A	4x4A	4x3A	4x3A (36-48V)

DIP switch set 4 kinds of PWM frequency: 500Hz, 1000Hz, 8000Hz or 16000Hz. Higher PWM frequency, will cause lower output current, higher power noise, but more suitable for camera(No flickers for video).

## LC-022-001 Match Remote Control (Optional)

End user can choose the suitable match/delete ways. Two options are offered.

Use the LC-022-001's Match key

**Match:** Short press match key of LC-022-001, immediately press on/off key on the remote. The LED indicator fast flash a few times means match is successful.  
**Delete:** Press and hold match key of LC-022-001 for 10s, The LED indicator fast flash a few times means all matched remotes were deleted.

Use Power Restart

**Match:** Switch off the power of LC-022-001, then switch on power, repeat again. Immediately short press on/off key (single zone remote) or zone key (multiple zone remote) 3 times on the remote. The light blinks 3 times means match is successful.  
**Delete:** Switch off the power of LC-022-001, then switch on power, repeat again. Immediately short press on/off key (single zone remote) or zone key (multiple zone remote) 5 times on the remote. The light blinks 5 times means all matched remotes were deleted.

## LC-022-001 Work as ZigBee-RF Converter to Match Other RF Dimming LED Controller or Driver

End user can choose the suitable match/delete ways. Two options are offered.

### Use the Match key

**Match:** Short press match key of the controller, immediately press on/off key on the Tuya smart APP.

The LED indicator fast flash a few times means match

**Delete:** Press and hold match key of the controller for 5s, The LED indicator fast flash a few times means all matched remotes were deleted.

### Use Power Restart

**Match:** Switch off the power of the controller, then switch on power, repeat again.

Immediately short press on/off key 3 times on the Tuya smart APP.

The light blinks 3 times means match is successful

**Delete:** Switch off the power of the controller, then switch on power, repeat again. Immediately short press on/off key 5 times on the remote. The light blinks 5 times means all matched remotes were deleted.

## Dynamic Mode List (by RF Remote)

No.	Name	No.	Name
1	RGB jump	6	RGB fade in and out
2	RGB smooth	7	Red fade in and out
3	6 color jump	8	Green fade in and out
4	6 color smooth	9	Blue fade in and out
5	Yellow cyan purple smooth	10	White fade in and out

## Safety information

1. The product must be installed and maintained by a qualified person.
2. The receiver is not waterproof, please do not use it outdoors.
3. Please avoid direct sunlight and moisture.
4. Always mount the controller in a well-ventilated place to avoid overheating.
5. Check that the power supply unit matches the controller and the LEDs.
6. Do not connect any cables that are live. Check that you have connected everything correctly to avoid a short circuit or other sources of error when switching on.
7. Do not open the cover to repair the appliance yourself.
8. Keep children and pets away from power cables (prevent them from biting or chewing on power cables)
9. This product may contain small parts that pose a choking hazard to children under 3 years of age. Therefore, keep small parts away from children and out of their reach.
10. These instructions are only valid for this model. Subject to further updates and changes.

Hereby, AUTLED GmbH declares that this radio equipment is in conformity with Directive 2014/53/EU.

The full text of the EU Declaration of Conformity is available at the following internet address:

[https://autled.com/daten/info/Zusatzinfo\\_Zigbee-RF-4CH-Controller.zip](https://autled.com/daten/info/Zusatzinfo_Zigbee-RF-4CH-Controller.zip)

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