

SC-L

RF SPI LED Controller

SPI

Features

- RF 2.4G Multi-Pixel RGB/RGBW controller, output two group SPI signals, digital display, 3-button operation.
- Compatible with 50 kinds of digital IC RGB/RGBW or white light SPI LED strip, IC type and R/G/B/W order can be set.
Compatible ICs: 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, MBI6020, TM1914A, GS8206, GS8208, UCS2904, SM16804, SM16825, SM16714(RGBW), UCS2603, UCS5603, SM16714D, WS2818, UCS7604, UCS7804.
- Color light or white light mode set by one dip switch.
- 32 kinds color light dynamic mode, 9 kinds white light dynamic mode, include horse-race, chase, flow, trail, meteor or gradual change style.
- Three push switches can be connected for on/off, dynamic change mode and speed selection functions.
- Match with RF 2.4G remote control optional.

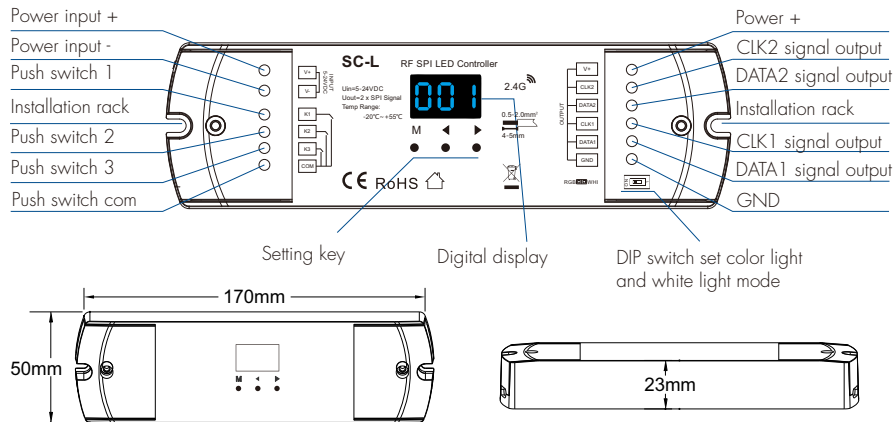


CE RoHS

Technical Parameters

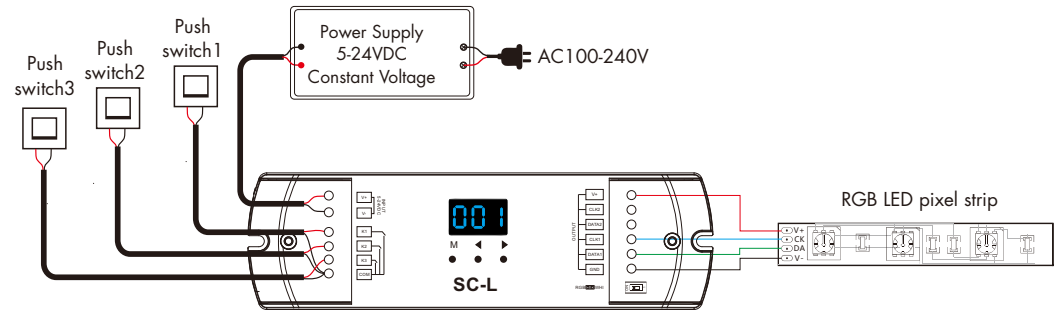
Input and Output		Environment		Safety and EMC	
Input voltage	5-24VDC	Operation temperature	Ta: -20°C ~ +55°C	EMC standard	EN IEC 55015/ EN IEC 61547 ETSI EN 301 489-1/-3
Input current	8A	Case temperature (Max.)	Tc: +65°C	Safety standard	EN 61347-1/-2
Power consumption	1W	IP rating	IP20	Radio equipment	ETSI EN 300 440
Input signal	RF 2.4GHz + push switch			Certification	CE RoHS
Output signal	SPI(TTL) x 2	Package		Warranty	
Dynamic mode	32 kinds color light, 8 kinds white light	Size	175 x 54 x 27mm(LxWxH)	Warranty	5 years
Control dots	Max. 900pixels	Gross weight	0.122kg		

Mechanical Structures and Installations

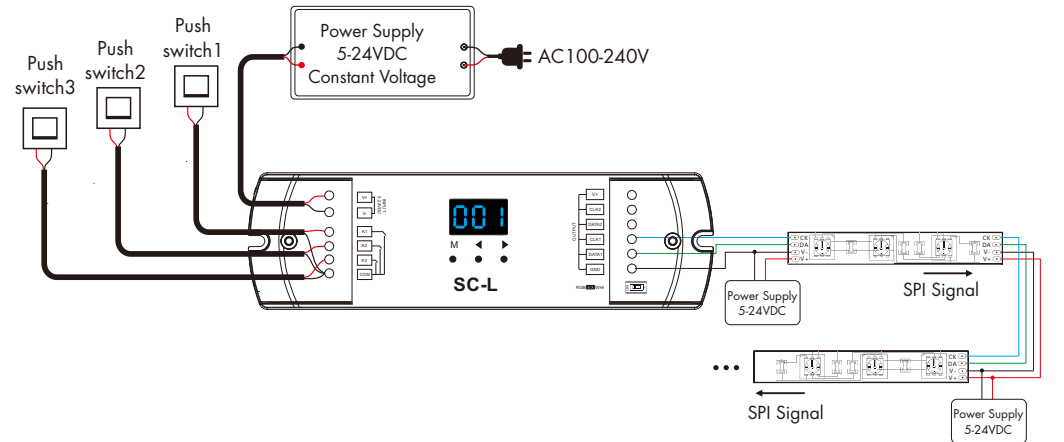


Wiring Diagram

- SC-L connect with one SPI pixel strips



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



Note:

- If the SPI LED pixel strip is single-wire control, the DATA and CLK output is same, we can connect up to 4 LED strips.
- If the SPI LED pixel strip is two-wire control, we can connect up to 2 LED strips.
- When the load of the light strip exceeds 8A, the light strip needs to be powered by another power supply (the light strip, the power supply and the controller must share the same ground), and only the DATA/CLK and GND lines are connected between the controller and the light strip.
- 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

LED Strip Parameter Setting

IC type, RGB order and pixel length setting

- You must first assure IC type, RGB/RGBW order and pixel length of the LED strip is correct.
- Long press M and ◀ key for 2s, prepare for setup IC type, RGB/RGBW order, pixel length, automatic blank screen, Short press M key to switch four item.
Press ▶ or ◀ key to setup value of each item. Long press M key for 2s, or timeout 10s, quit setting.



IC type



RGB order



W&RGB order
(RGBW only)



pixel length



disable automatic
blank screen

- IC type select table:

No.	IC type	Output signal
C11	TM1803	DATA
C12	TM1809, TM1804, TM1812, UCS1903, UCS1909, UCS1912, SK6813 UCS2903, UCS2909, UCS2912, WS2811, WS2812, WS2813, WS2815, WS2818	DATA
C13	TM1829	DATA
C14	TLS3001, TLS3002	DATA
C15	GW6205	DATA
C16	MBI6120	DATA
C17	TM1814B(RGBW)	DATA
C18	SK6812(RGBW), WS2813(RGBW), WS2814(RGBW)	DATA
C19	UCS8904B(RGBW)	DATA
C21	LPD6803, LPD1101, D705, UCS6909, UCS6912	DATA, CLK
C22	LPD8803, LPD8806	DATA, CLK
C23	WS2801, WS2803	DATA, CLK
C24	P9813	DATA, CLK
C25	SK9822	DATA, CLK
C26	MBI6020	DATA, CLK
C31	TM1914A	DATA
C32	GS8206, GS8208	DATA
C33	UCS2904	DATA
C34	SM16804	DATA
C35	SM16825	DATA
C36	SM16714(RGBW)	DATA
C37	UCS5603	DATA
C38	UCS2603	DATA
C39	SM16714D	DATA
C41	UCS7604	DATA
C42	UCS7804	DATA

- RGB order: 0-0 ~ 0-5 indicate six order (RGB, RBG, GRB, GBR, BRG, BGR).
- W&RGB order: 04c indicates W before RGB; 0c4 indicates W after RGB.
- Pixel length: Range is 008~900.
- Automatic blank screen: enable ("bon") or disable("boF") automatic blank screen.

Restore factory default parameter

- Long press ◀ and ▶ key for 2s, restore factory default parameter, display "RES".
- Factory default parameter: chip number is C12(TM1809), RGB order is 0-0, pixel length is 300, disable automatic blank screen, without matched RF remote.

Color Light and White Light Dynamic Change Mode

- When the dip switch is switched to color light mode (RGB WHI), short press ◀ or ▶ to switch 32 dynamic change modes: P01~P32.
- When the dip switch is switched to white light mode (RGB WHI), short press ◀ or ▶ to switch 9 dynamic change modes: P01~P09.
- Each mode can adjust speed and brightness.
Long press M key for 2s, prepare for setup mode speed and brightness.
Short press M key to switch two item. Press ◀ or ▶ key to setup value of each item.
Mode speed: 1-10 level speed(S-1, S-9, S-F).
Mode brightness: 1-10 level brightness(b-1, b-9, b-F).
Long press M key for 2s, or timeout 10s, quit setting.



Dynamic change mode



Speed
(10 level) Brightness
(10 level, 100%)

Color light dynamic change mode list

No.	Name	No.	Name
P01	Red horse race white ground, forward	P17	Purple meteor, backward
P02	Green horse race white ground, forward	P18	White meteor, backward
P03	Blue horse race white ground, forward	P19	7 color meteor, backward
P04	Yellow horse race blue ground, forward	P20	Red float, forward
P05	Cyan horse race blue ground, forward	P21	Green float, forward
P06	Purple horse race blue ground, forward	P22	Blue float, forward
P07	7 color multi horse race, forward	P23	Purple float, forward
P08	7 color horse race close + open	P24	RGBW float, forward
P09	7 color multi horse race close + open	P25	Red Yellow float, forward
P10	7 color scan close + open	P26	Green Cyan float, forward
P11	7 color multi-scan close + open	P27	Blue Purple float, forward
P12	Blue White chase, forward	P28	Blue White float, forward
P13	Green Cyan chase, forward	P29	6 color float, forward
P14	RGB chase, forward	P30	6 color smooth sectionally, forward
P15	7 color chase, forward	P31	7 color jump sectionally, forward
P16	Blue meteor, backward	P32	7 color strobe sectionally, forward

Note: In color light mode, P01-P32 dynamic modes are applicable to SPI type color light strip.

White light dynamic change mode list

No.	Name
P01	White horse race
P02	White smooth horse race
P03	White starlight
P04	White smooth starlight
P05	White flow, forward
P06	White flow, forward on +backward off
P07	White flow, forward on +backward on
P08	White float, forward
P09	Static white

Note: In white light mode, P01-P09 dynamic modes are applicable to SPI type white light strip.

RF Remote Operation

You can turn on or off the light, switch the dynamic change mode, set the brightness and speed, memorize or recall the scene, etc. via RF remote control.

- Match: Long press M and ► key for 2s, display "RLS", within 5s, press on/off key of the RF remote, display "RLO", match is successful.
- Delete: Long press M and ► key for 5s, until display "RLE", delete all matched RF remote.

Push Switch Operation

Push Switch 1 (ON/OFF button)

Short press: Turn on or turn off the light.

Long press(1-6s): Adjustment brightness, with every other long press, the light level goes to the opposite direction.

Push Switch 2 (Mode button)

Short press: Sequential switching of dynamic change modes.

Long press(2s): Run dynamic change modes cycle.

Push Switch 3 (Speed button)

Short press: Sequential switching of 10 level speed.

Long press(2s): Restore default speed level (7 level).