

LC-SPI-SCL

RF SPI Pixel Chasing LED Controller



Features

- Multi-Pixel RGB/RGBW controller, outputs two groups of SPI signals, digital display, 3-button operation.
- Suitable for RGB/W colour changing or single colour LED strip, the mode can easily be set by the dip switch on the controller.
- 32 pre-programmed colour changing modes, 8 kinds of single colour modes.
- Three push switches can be connected for on/off control, dynamic mode change and speed selection functions.
- Matches with our RF 2.4G remote controls
- Compatible with the following Digital IC 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, MBI6020, TM1914A, GS8206, GS8208, UCS2904, SM16804, SM16825, SM16714(RGBW), UCS2603, UCS5603, SM16714D.

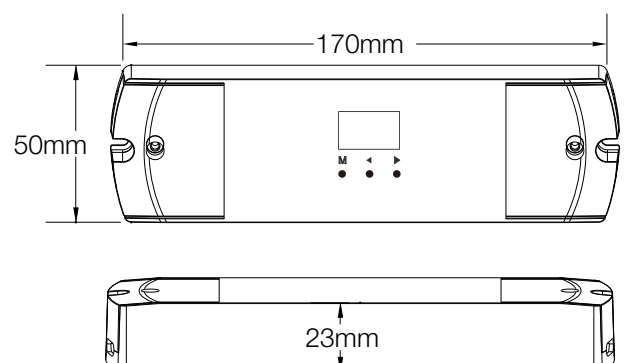
Specification

Technical Parameters	
Input voltage	5-24VDC
Input current	8 Amps
Power consumption	1 Watt
Input signal	RF 2.4GHz + push switch
Output signal	SPI (TTL) x2
Dynamic mode	32 colour & 8 white options
Control dots	Max 900 Pixels

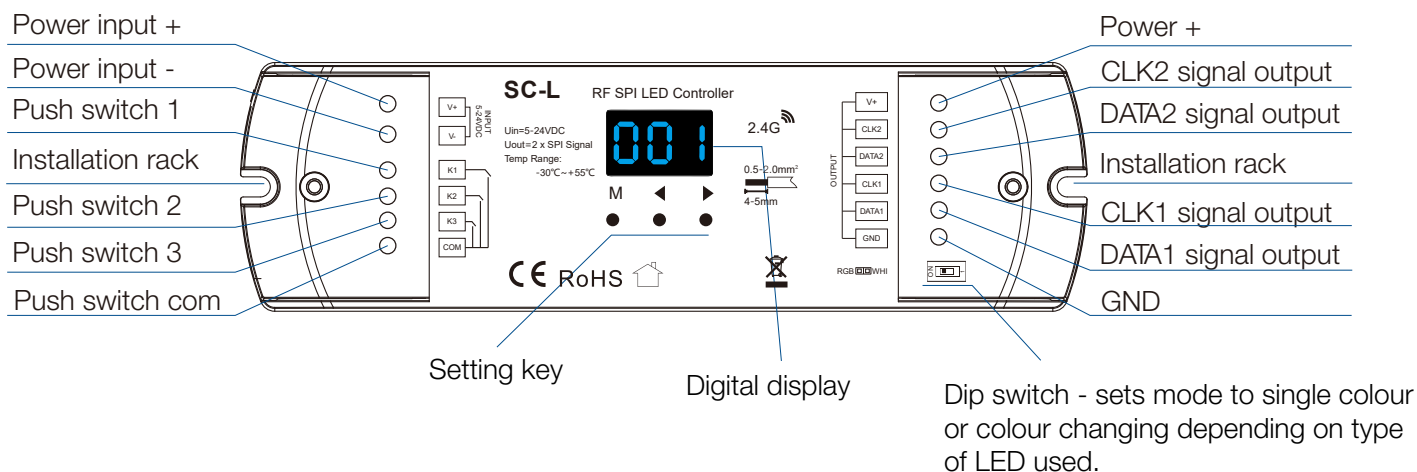
Safety and EMC	
EMC standard (EMC)	ETSI EN 301 489-1 V2.2.3 ETSI EN 301 489-17 V3.2.4
Safety standard	EN 62368-1:2020+A11:2020
Radio Equipment (RED)	ETSI EN 300 328 V2.2.2
Certification	CE, EMC, RED
Warranty	5 years

Environment	
Operation temperature	Ta: -30°C ~ +55°C
Max case temperature	Tc: +65°C
IP rating	IP20

Dimensions

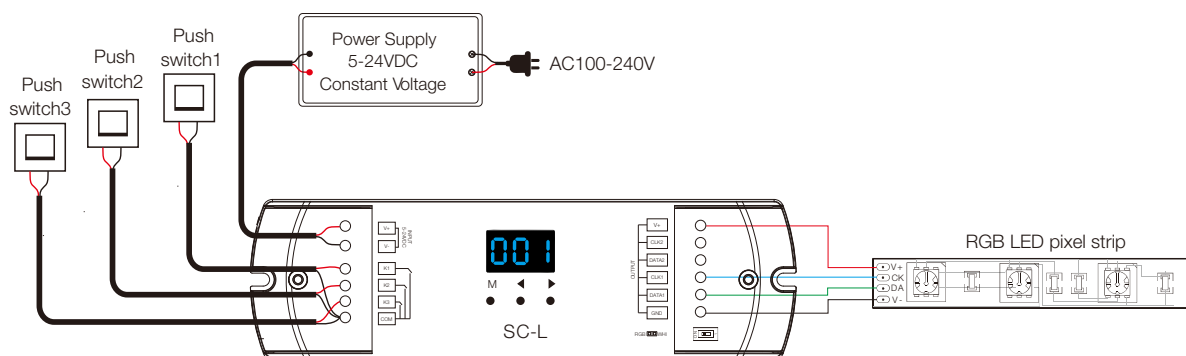


Mechanical Structures & Installation

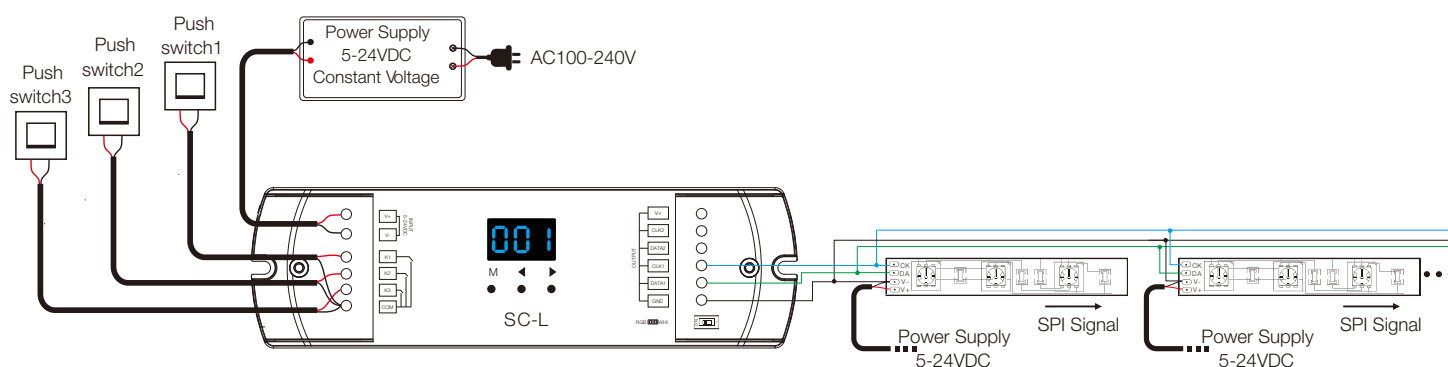


Wiring Diagram

SC-L set up with one SPI Pixel LED strip



SC-L set up with multiple SPI Pixel LED strip (LED strip load over 8A)



Things to Note

- If the SPI LED pixel strip is single-wire control, the DATA and CLK output is the same, you can connect up to 4 LED strips.
- If the SPI LED pixel strip is two-wire control, you can connect up to 2 LED strips.
- When the load of the LED strip exceeds 8A, then the strip needs to be powered by another power supply (the LED 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 LED strip.
- The output power of the constant voltage power supply is at least 1.2 times that of the output load (LED strip), otherwise the full power output of the load will easily cause the lights to flicker or shake automatically.

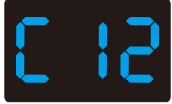
LED Strip Parameter Setting

IC type, RGB order and pixel length setting

- Check you have the correct IC type loaded, RGB order and pixel length of the LED strip
- Long press M and ◀ key for 2 seconds, enter the IC chip type, RGB order and pixel length, short press M key to switch between the four items.

Press ▶◀ key to set up value of each item.

Long press M key for 2 seconds, or timeout 10 seconds to quit setting.



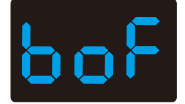
IC Type



RGB order



Pixel length



**Disable automatic
blank screen**

IC Type listed below


No.	IC Type	Output Signal
C11	TM1803	DATA
C12	TM1809,TM1804,TM1812,UCS1903,UCS1909,UCS1912,SK6813 UCS2903,UCS2909,UCS2912,WS2811,WS2812,WS2813,WS2815	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

- RGB order: O-0 ~ O-5 indicate six order (RGB, RBG, GRB, GBR, BRG, BGR).
- Pixel length: Range is 008-900.
- Automatic blank screen: enable ("bon") or disable("boF") automatic blank screen.

Restore factory default parameter

- Long press ◀▶ key for 2 second, 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.

Colour changing and single colour dynamic mode change

- When the dip switch is switched to colour 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 8 dynamic change modes: P01~P08.
- Each mode can adjust speed and brightness.

Long press M key for 2 seconds, prepare for setup mode speed and brightness.

Short press M key to switch through two items. 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 levels brightness (b-1, b-9, b-F).

Long press M key for 2 seconds, or timeout 10 seconds to quit setting.

Dynamic Colour Change Mode List

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

Dynamic Single Colour 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

Push Switch Operation

Push Switch 1 (ON/OFF button)

Short press: Turn on or turn off the light.

Long press(1-6s): Adjust 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 (8 level).

RF Remote Operation

Using a remote gives you the ability to turn the light on/off, switch the dynamic change mode, set the brightness and speed and memorize or recall the scene via RF remote control.

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