User Guide

DMX512-SPI Decoder and RF Controller

The SPI LED controller control LED lights with the following compatible ICs:
TM1803, TM1804, TM1809, TM1812, UCS1903, UCS1909, UCS1912, UCS2903, UCS2909, UCS2912, WS2811, WS2812,SK6812, TM1829, TLS3001, TLS3002, GW6205,MBI6120, LPD6803, LPD1101, D705, UCS6909, UCS6912,LPD8803, LPD8806, WS2801, WS2803, P9813.
The SPI LED controller can work under DMX mode or RF mode to control a variety of digital IC LED strips.
While under DMX mode, it works as a DMX decoder and can be compatible with DMX512 masters.
While under RF mode, it receives RF signal and can be compatible with all kinds of RGB RF remote controls, meanwhile it also can be WiFi controlled by mobile phones through WiFi-relay controller.

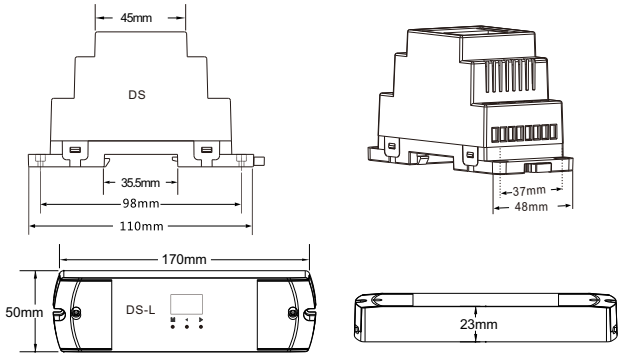
Feature

- DMX512 to SPI decoder and RF controller with digital display.
- Compatible with kinds of digital IC LED strip, IC type and R/G/B order can be set.
- DMX mode / Stand-alone mode / RF mode.
- Standard DMX512 compliant interface, DMX address display, set dmx address freely.
- Under stand-alone mode (no need RF remote), have 32 kinds dynamic mode, include horse-race, chase, flow, trail or gradual change style, adjustable speed and brightness.
- Under RF mode, match with a variety of RGB remote.
- Can be WiFi controlled by APP installed on IOS or Android mobile devices while working with WiFi-Relay controller.
- For DS, din rail or screw mounted optional.

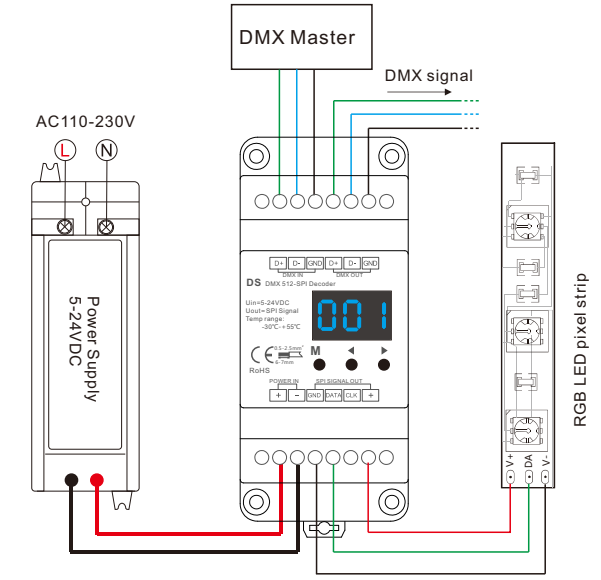
Technical parameter

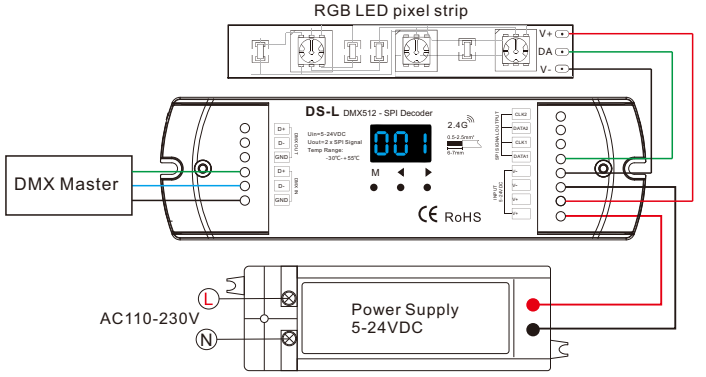
Model	Name	Input voltage	Output signal	Output dots	Size(mm)
DS	DMX-SPI decoder	5-24VDC	SPI(DATA+CLK)	1024	115x48x67
DS-L	DMX-SPI decoder	5-24VDC	SPI(DATA+CLK) x 2	1024	170x50x23

Dimension



Wiring diagram





Operation

IC type, RGB order and pixel length length setting

- You must first assure IC type, RGB order and pixel length of the LED strip is correct.
- Long press M and ◂ key, prepare for setup IC type, RGB 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 table:

No.	IC type	Output signal
C11	TM1803	DATA
C12	TM1809,TM1804,TM1812,UCS1903,UCS1909,UCS1912, UCS2903,UCS2909,UCS2912,WS2811,WS2812,SK6812	DATA
C13	TM1829	DATA
C14	TLS3001,TLS3002	DATA
C15	GW6205	DATA
C16	MBI6120	DATA
C21	LPD6803,LPD1101,D705,UCS6909,UCS6912	DATA,CLK
C22	LPD8803,LPD8806	DATA,CLK
C23	WS2801,WS2803	DATA,CLK
C24	P9813	DATA,CLK

- RGB order: O-1 - O-6 indicate six order(RGB, RBG, GRB, GBR, BRG, BGR).
- Pixel length: Range is 008-1024, b00-b24 indicate 1000-1024.
- Automatic blank screen: enable ("bon") or disable("boF") automatic blank screen.

DMX mode

- Short press M key, when display 001-999, enter DMX mode.
- Press ◂ or ▸ key to change DMX decode address(001-999), long press for fast adjustment.
- Long press M key for 2s, prepare for setup decode number and multiple of pixels.
  Short press M key to switch two item.
  Press ◂ or ▸ key to setup value of each item.
  Decode number(display "dno") : DMX decode channel number, range is 003-900.
  Multiple of pixels(display "Pno") : Each 3 DMX channel control length, range is 001-100.
  Long press M key for 2s, or timeout 10s, quit setting.
- If there is a DMX signal input, will enter DMX mode automatically.

DMX mode

Stand-alone mode

- Short press M key, when display P01-P32, enter stand-alone mode.
- Press ◂ or ▸ key to change dynamic mode number(P01-P32).
- 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.
- Enter stand-alone mode only when DMX signal is disconnected or lost.

Stand-alone mode

Speed
(8 level)

Brightness
(10 level,100%)

Dynamic mode list

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

RF mode

Match with R9, R10, R14 or other RGB remote.

Match: Long press M and ▸ key for 2s, display RLS,
within 5s, press any key of the RGB remote, display RLO, match is done,
then use remote to change mode number, adjust speed and brightness.

Delete: Long press M and ▸ key for 5s, until display RLE, delete all matched RF remote.

Restore factory default parameter

- Long press ◂ and ▸ key, restore factory default parameter, display"RES".
- Factory default parameter: DMX decode mode, DMX first address is 1, decode number is 510, multiple of pixels 1, dynamic mode number is 1, chip type is TM1809, RGB order, pixel length is 170, disable automatic blank screen, without matched RF remote.

Malfunctions analysis & troubleshooting

Malfunctions	Causes	Troubleshooting
No light	1. No power. 2. Wrong connection or insecure.	1. Check the power. 2. Check the connection.
Wrong color	1. Chip type error. 2. RGB order error. 3. DMX decode address error.	1. Set chip type according to strip. 2. Set RGB order according to strip. 3. Set corrrect decode address.
No response from the remote	1. The battery has no power. 2. Beyond controllable distance. 3. The controller did not match the remote.	1. Replace battery. 2. Reduce remote distance. 3. Re-match the remote.

Safety information

1. The product shall be installed and serviced by a qualified person.
2. This product is non-waterproof. Please avoid the sun and rain.
3. Good heat dissipation will prolong the working life of the controller, please ensure good ventilation.
4. Please check if the output voltage of any power supplies used comply with the working voltage of the product.
5. Ensure all wire connections and polarities are correct and secure before applying power to avoid any damages to the LED lights.
6. If a fault occurs please return the product to your supplier. Do not attempt to fix this product by yourself.

Warranty agreement

1.5-year warranty:

- The warranty is for free repair or replacement and covers manufacturing faults only.
- Do not include fees of on site maintenance and consumable parts.

2. Limited Warranty

- Artificial damage caused by improper use, such as use inappropriate power supply, improper accessories, improper installation, did not follow the instructions, error using or negligence.
- Any damages caused by force majeure, such as natural disaster, abnormal voltage.
- The normal use of products caused by aging, wear and tear, but it does not affect the normal use.