Monochrome test program list:

NO.	Built-in sequences
1	Fully bright static
2	Fading
3	chase with trail
4	Interval chase
5	Solid color: black(off)

Dual-color test program list:

NO.	Built-in sequences	NO.	Built-in sequences
1	1st gear high color temperature	12	High color temperature fade
2	2nd gear color temperature	13	Dual color temperature fade
3	3rd gear color temperature	14	Low color temperature fade
4	4th gear color temperature	15	High color temperature trailing
5	5th gear color temperature	16	Dual color temperature trailing
6	6th gear color temperature	17	Low color temperature trailing
7	7th gear color temperature	18	High color temperature chase
8	8th gear color temperature	19	Dual color temperature chase
9	9th gear color temperature	20	Low color temperature chase
10	10th gear color temperature	21	Black
11	Gradient change between high and low color temperature		

RGB/RGBW Test Program List:

NO.	Built-in sequences	NO.	Built-in sequences
1	Solid color: red	14	Blue chase with trail
2	Solid color: green	15	White chase with trail
3	Solid color: blue	16	RGB chase with trail
4	Solid color: yellow	17	Rainbow chase with trail
5	Solid color: purple	18	RGB chasing and fading
6	Solid color: cyan	19	Red chasing green, chasing blue
7	Solid color: white	20	Orange chasing purple, chasing cyan
8	RGB change	21	Rainbow chase - 7 colors
9	Full color change	22	Random twinkle: white over red background
10	RGB fading	23	Random twinkle: white over green background
11	Full color fading	24	Random twinkle: white over blue background
12	Red chase with trail	25	White fading
13	Green chase with trail	26	Solid color: black(off)

8. Kindly Reminder

Power Source Selection:

Power source must be DC constant voltage type of power supply. Due to the efficient output in some power supplies are only 80% of total, so please select at least 20% higher output power supply than the consumption of LED lights.

DMX512 Signal Decoder
CL-DMX-SPI-2989 User Manual



(Please read through this manual carefully before use)

1. Brief Introduction

Welcome to use the DMX512 signal decoder, which is developed specially for LED lamps. It adopts advanced micro-computer control technology to transfer DMX512/1990 signal to various LED driving IC signals. Enables the lamps without access to DMX512 system has the function of access to DMX512 system. This decoder can realize channel merging and pixel merging functions, monochrome lamp strip with one pixel occupies only one channel, and dual color lamp strip only occupies two channels; pixel merging can make each DMX port drive more lamp strips.

2. Specifications

Mode	DMX512 DATA Decoder(CL-DMX-SPI-2989)
Input power	DC5V-DC24V
Input signal	DMX512/1990
Output signal	UCS2903/UCS8903/UCS2904/UCS8904 selectable
Maximum Pixel Unmerging of Control Points	512(MONO)/256(DUAL)/170(RGB)/128(RGBW)
Maximum Pixel Merging of Control Points	1360(2903、8903)/1024(2904、8904)
Dimension	L176×W46×H30(mm)
Weight (G.W)	180g

3. Basic Features

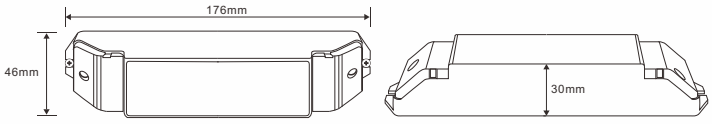
1. Automatically adapts input voltage DC5V-24V.
2. Input standard DMX512 protocol.
3. Adapts LCD display, user friendly.
4. Support various LED dream color driving ICs.
5. Support test mode or decoder mode.
6. Over current fuse protection at output port, Wrong wiring protection at DMX input port.

4. Safety warnings

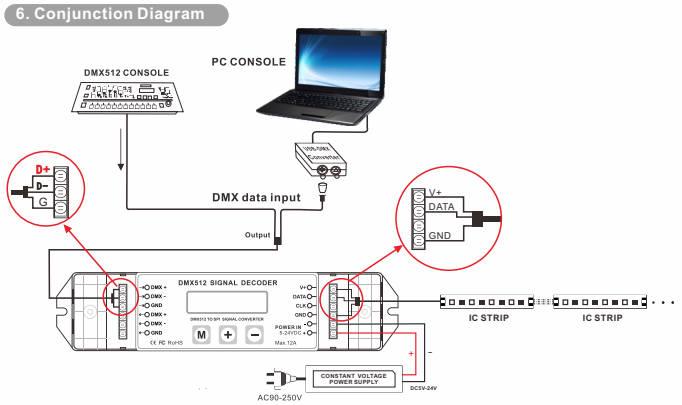
1.To ensure correct operation, please read the user manual carefully before use.
2.Please don't install this controller in lightening, intense magnetic and high-voltage fields.
3.To reduce the risk of component damage and fire caused by short circuit, make sure correct connection.
4.Always be sure to mount this unit in an area that will allow proper ventilation to ensure a fitting temperature.

5.Check if the voltage and power adapter suit the controller. (please select DC5-24V power supply with constant voltage)
6.Don't connect cables with power on; make sure a correct connection and no short circuit checked with instrument before power on.
7.Please don't open controller cover and operate if problems occur. Please contact your controller supplier at first time.

5. Dimensions



6. Conjunction Diagram



Output two lines:

DATA	Data line
GND	GND, connect with the chip GND

The input of the power supply can either wire to the output of the decoder V+, or wire seperately. When wire to V+, the inner fuse plays its role, and the max output current is 12A. here is the schematic diagram:



*Note: According to DMX512 protocol, in order to ensure a stable data transmission, you should add a metalster (metal Thin Film resistor, 90-120Ω 1/4 W) at the end of each layout of DMX data cable (between Foot 2 and Foot 3, Data + and Data -), please also refer to your dmx console manual to select a correct resistor.

7.Operating instructions

There are 3 buttons on the decoder: M (Manu), + (increase),-(decrease)

M	Parameter setting
+	Increase value
-	Decrease value

after operation, if no action within 30s, the key locks, backlight of the screen will turn off. Long press "M" for 2s to unlock the keys, and the backlight turns on.
Long press the M key to switch between test mode and decode mode when unlocked.
When at test mode, the first line of LCD shows: TEST MODE
When at decoder mode, the first line of LCD shows: DECODER MODE
the second line of the LCD shows the current parameter, such as:

Setting	LCD Display	Value
Built-in sequence	TEST MODE MODE NO : 2	1-26 (Monochrome corresponds to a monochrome program table, and dual-color corresponds to a dual-color program table.RGB and RGBW shared program table)
Built-in speed	TEST MODE RUN SPEED : 3	0-7
DMX Address	DECODER MODE DMX ADDRESS: 1	1-512
DMX Signal RGB	DECODER MODE DMX RGB SEQ: RGB	"RGB" "BGR"only effective for RGB LED strip
Pixel	DECODER MODE PIXEL QTY: 128	1-512(MONO)/1-256(DUAL)/1-170(RGB)/1-128(RGBW)
IC type	DECODER MODE IC TYPE: 2903	"2903""2904""8903""8904"
Color	DECODER MODE COLOR: MONO	MONO
	DECODER MODE COLOR: DUAL	DUAL
	DECODER MODE COLOR: RGB	RGB(2903/8903)
	DECODER MODE COLOR: RGBW	RGBW(2904/8904)
Pixel merging	DECODER MODE PIXEL MERGE: 1	01-100
RGB Sequence	DECODER MODE LED RGB SEQ: RGB	6 SEQ(RGB)/24 SEQ(RGBW). when select RGB sequence,within 5 seconds the first three pixels are red, green and blue respectively is correct ;when select RGBW sequence,within 5 seconds the first four pixels are red, green, blue and white respectively is correct
Integral Control	DECODER MODE ALL CONTROL: NO	"YES"," NO"
Reverse Control	DECODER MODE REV-CONTROL: NO	"YES"," NO"
Overall brightness	DECODER MODE BRIGHTNESS: 100	01-100 can be set, factory default 100

Note: The actual maximum control pixels of the controller are 1360 (2903/8903) ,1024 (2904/8904). Please set the pixel and pixel combination value reasonably, which are in accordance with the actual situation, and make the product less than the maximum