DMX512 Data Decoder
User Manual

(Please read through this manual carefully before use)

1、Brief Introduction

The DMX512 Data Decoder adopted the advanced decoding technology to convert the international standard DMX512/1990 signal into standard LPD6803 / LPD8806 / TM1809/P9813/ TLS3001/WS2801 signals, each decoder has 96/510 DMX output channels, and the output channels can be expanded by adding decoders, therefore, most of LED lights can be controlled by DMX512/1990 protocol via the signal conversion, then widely used pixel light, digital tube light, floodlight, pixel screen, dancing floor light etc.

2、Specifications

Model	6803	8806	1809
Input Voltage	DC5V-DC24V		
Input Signal	DMX512/1990		
Output Signal	LPD6803	LPD8806	TM1809
Decode Channel	512	512	512
Control LED QTY	170	170	170
Control Chip model	LPD6803 LPD1101 D705 UCS6909 UCS6912	LPD8803 LPD8806 LPD8809 LPD8812	TM1803,TM1804 TM1809,TM1812 UCS1903,UCS1909 UCS1912,UCS2903 WS2811
DMX Socket	Standard XLR-3		
Size (mm)	L125×W52×H40(mm)		
Weight	315 g		

Model	9813	3001	2801
Input Voltage	DC5V-DC24V		
Input Signal	DMX512/1990		
Output Signal	P9813	TLS3001	WS2801
Decode Channel	512	512	512
Control LED QTY	170	170	170
Control Chip model	P9813	TLS3001 TLS3002	WS2801 WS2803
DMX Socket	Standard XLR-3		
Size (mm)	L125×W52×H40(mm)		
Weight	315 g		

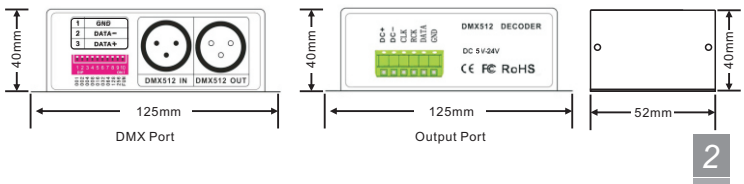
3、Basic Features

1.In put standard DMX512 protocol, Address can be set by DIP.
2.Automatically adapt input voltage DC5V-24V.
3.Self-Changing Mode exist.
4.Output TTL Signal.
5.Power loss memory function.

4、Safety warnings

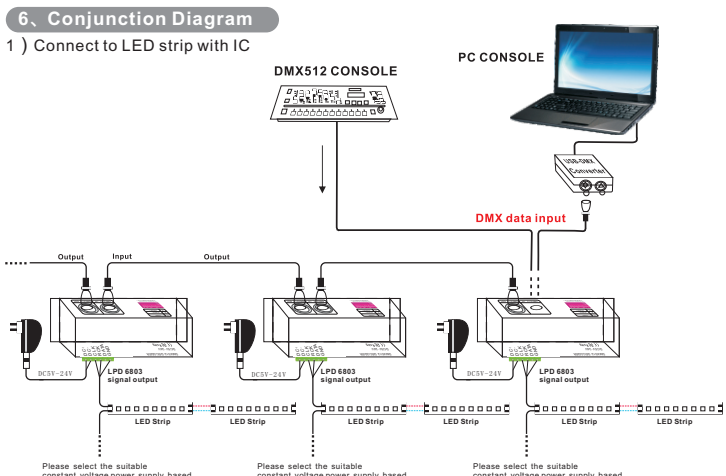
Please don't install this controller in lightening, intense magnetic and high-voltage fields.
1.To reduce the risk of component damage and fire caused by short circuit, make sure correct connection.
2.Always be sure to mount this unit in an area that will allow proper ventilation to ensure a fitting temperature.
3.Check if the voltage and power adapter suit the controller.
(please select DC5-24V power supply with constant voltage)
4.Don't connect cables with power on; make sure a correct connection and no short circuit checked with instrument before power on.
5.Please don't open controller cover and operate if problems occur.
The manual is only suitable for this model; any update is subject to change without prior notice.

5、Interfaces

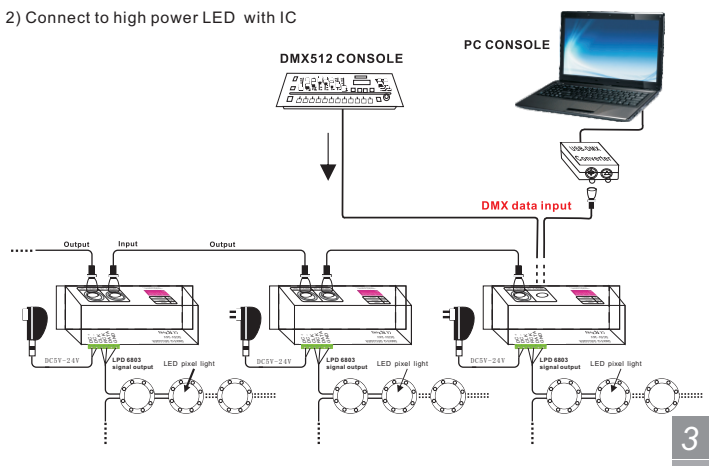


6、Conjunction Diagram

1) Connect to LED strip with IC



2) Connect to high power LED with IC

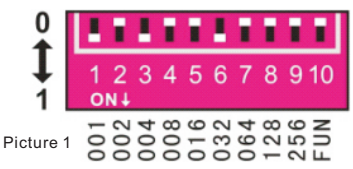


7、Operating instructions

1) Decoder address setting

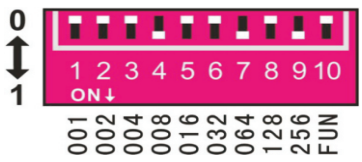
This decoder occupies 3 addresses, adopted Dip switch to set the address, the Dip switches from 1 to 9 are a kind of binary value coding switches used to set DMX512 initial address code, the correlative bits is the 1-9 bits of the DIP switch, the 1st bit is LSC, the 9th bit MSC , 512 addresses totally.
DMX512 initial address code is equal to the total amount of the Dip switches' number from 1 to 9, press Dip switch downward (ON: at position "1"), user can get the number of its position, if pressing upward (at position "0"), the number of its position is 0.
Accept DMX512 signal only when the DIP switch FUN=OFF (at position "0")

Example 1: Set to 37
Set the 6th, 3rd, 1st bit of the DIP switch downward to "1", others to "0" (picture 1), the total sum from 1 to 9 is 32+4+1, so the DMX512 initial address code is 37.



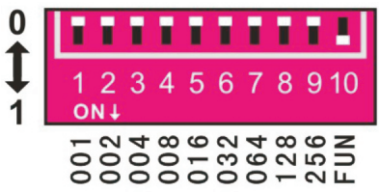
Picture 1

Example 2:
Set DMX512 original address code as 328: Set the 9th, 7rd, 4st bit of the DIP switch downward to "1", the rest to "0" (as picture 2), the total sum from 1 to 9 is 256+64+8, so the DMX512 original address code is 328.



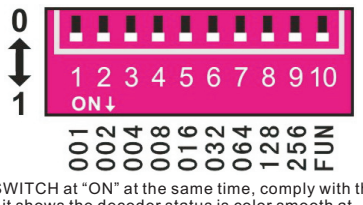
Picture 2

VI. **Instructions for other functions**
1.Testing function:
The 10th DIP switch is FUN, acting as the function key.
DMX512 Decoder works when FUN is at OFF, receiving DMX512 signals.
Decoder testing mode works when FUN is at position" ON" as Picture 3:
SWITCH1-9 OFF：BLACK
SWITCH1 IS ON：RED
SWITCH2 IS ON: GREEN
SWITCH3 IS ON: BLUE
SWITCH4 IS ON: YELLOW
SWITCH5 IS ON: PURPLE
SWITCH6 IS ON: CYAN
SWITCH7 IS ON: WHITE
Picture 3
SWITCH8 IS ON: 7 CLOLOR JUMPING
SWITCH9 IS ON: 7 COLOR SMOOTH



Picture 3

2. Color jumping & color smooth speed
When decoder is at testing mode, DIP Switch 8 is at "ON", it's the 7 Color Jumping, when DIP Switch 9 is at "ON", it's the 7 Color Smooth, with 8 speed levels for each effect.
SWITCH 1-7 OFF：SPEED 0
SWITCH 1=ON：SPEED 1
SWITCH 2=ON：SPEED 2
SEITCH 3=ON：SPEED 3
SWITCH 4=ON：SPEED 4
SWITCH 5=ON：SPEED 5
SWITCH 6=ON：SPEED 6
SEITICH7=ON：SPEED 7;



Picture 4

As Picture 4. When several DIP SWITCH at "ON" at the same time, comply with the largest value switch; In Picture4, it shows the decoder status is color smooth at testing function, and is at Speed 7.

8、Operating instructions

1) Port definition:

Port	Function
DC+ DC-	DC5-24V Power Input
DATA	Data
CLK	Clock
RCK	Register Clock
GND	Ground

Warning: Do not connect the power cable to data port, otherwise it will damage the decoder!

9、Conjunction Instruction:

Model 6803/8806/9813/2801 output LPD6803/LPD8806/P9813/WS2801 signal, three lines:

DATA	6803/8806/9813/2801 DATA
CLK	6803/8806/9813 /2801CLK
GND	GND, connect with the chip GND

Model 1809/3001 output TM1809/TLS3001 signal,two lines:

DATA	TM1809/TLS3001 DATA-CLK
GND	GND, connect with the chip GND

*Note: According to DMX512 protocol , in order to ensure a steady 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.

10、After-Sales

From the day you purchase our products within 3 years, if being used properly in accordance with the instruction, and quality problems occur, we provide free repair or replacement services except the following cases:
1.Any defects caused by wrong operations.
2.Any damages caused by inappropriate power supply or abnormal voltage.
3.Any damages caused by unauthorized removal, maintenance, modifying circuit, incorrect connections and replacing chips.
4.Any damages due to transportation, breaking, flooded water after the purchase.
5.Any damages caused by earthquake, fire, flood, lightning strike etc force majeure of natural disasters.
6.Any damages caused by negligence, inappropriate storing at high temperature and humidity environment or near harmful chemicals.
7.Product has been updated.

11、Kindly Reminder

1.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.