LT-DMX-1809
DMX-SPI Signal Decoder Manual

LT-DMX-1809 DMX decoder works to convert universal DMX512 signal to SPI(TTL) signal. It can control LED lights based on Tm1803, TM1804, Tm1809, TM1812 via DMX console.

Tm1803, TM1804, TM1809 and TM1812 are the IC with grey scale processor. It can support 256 scale levels and only need one signal cable, which convenient for design and installation for the LED lights. These 4 chips are widely used in LED digital lights among LED dot light, SMD strip, LED Fence tubes, LED wall light, LED pixel screen, LED Hi-Power spotlight , flood light, etc.

The kernel of our LED controller adopt MCU from ATMEL to ensure the LT-1809 DMX decoder runs steady.

1. Product parameter

LT- 1809	
Input voltage	DC12V~DC24V
Input Signal	DMX512/1990
Output signal	SPI(compatible with TM1803,TM1804,TM1809, TM1812 LED driving IC)
Decoding Channels	512 channels/unit
Output Grey Scale	256 grey scales
DMX512 Connector	Standard XLR-3 Connector
Product Dimension	L125×W52×H40mm
Package Size	L135×W70×H50mm
Working temperature	-30℃~65℃
Weight (G.W)	300g

2. Configuration Diagram
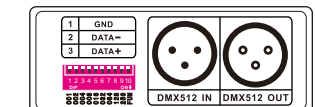
DMX signal input port
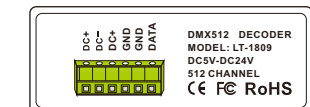
The Port of connecting Power supply & LED light

3.   Output Port definition

No.	Silk screen		Function
1	Power supply input port	DC+	LED power supply input anode
2		DC-	LED power supply input cathode
3	Output port Connect LED	DC+	LED power supply output anode
4		GND	Ground wire (power supply cathode), 2 GND ports, Only connecting 1 GND is OK.
5		GND	
6		DATA	Data cable

⚠ Attention: The power supply DC+ cannot connect to data cable. Otherwise it will damage the decoder and the LED's driving IC.

4.   How to set DMX address via dip switch

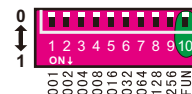1. Set DMX512 original address

Figure 1   Figure 2

📝 M1804, TM1809 and TM1812IC can choose high or low speed when used in LED design circuit. TM1803 only can choose low speed. Designed in low speed will get high PWM frequency and designed in high speed can control more LED lights. The high or low speed choosing of the decoder needs to match the light's design gears. Otherwise the LED light can not work. The general LED lights are designed in low-speed mainly.

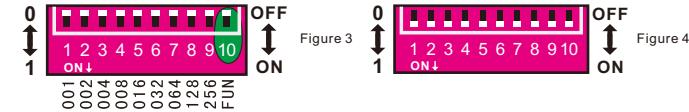| The Decoder enter into DMX control mode automatically., when receiving DMX signal. Like figure 1: Fun=off is high speed(upward), FUN=ON is low speed (downward)									
DIP	1	2	3	4	5	6	7	8	9	10
Address	001	002	004	008	016	032	064	128	256	high/ low speed
Instructions										

1.This decoder adopts Dip switch to set the address. The Dip switches from 1 to 9 are a kind of binary value coding switches which used for setting DMX512 initial address code, The 1st is the lowest one, The 9th is the highest one. Can set 511 addresses totally.
2.DMX512 initial address is the total amount of the Dip switch 1-9, down dip switch to "ON" position, User can get its place value, Up dip switch to "OFF" position, Its place value is 0.

For example, Like figure 2, Set initial address to 37, Set the "1st","3rd ","6th", bit of the DIP switch down to "1" The rest to "0" as the below figure, In this connection, the summation from 1 to 9 is 1+4+32, Namely , The DMX512 initial address code is 37.

2. Testing function:

Figure 3

Figure 4

The DMX decoder will be entered into self control mode automatically without DMX signal input

| DIP1	DIP2	DIP3	DIP4	DIP5	DIP6	DIP7	DIP8	DIP9
Red	Green	Blue	Yellow	Purple	Cyan	White	Jumping	Gradual change

DIP8/DIP9 at "ON" (the 8th/9th DIP switch is dowanward) is changing mode.DIP switch 1-7 has 8 levels speed changing, DIP 7 is the fastest speed.DIP switch 1-7 at "OFF" is speed 0

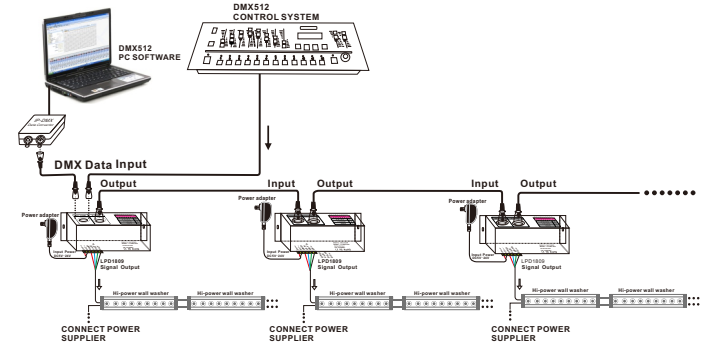| DIP1	DIP2	DIP3	DIP4	DIP5	DIP6	DIP7
Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	Speed 6	Speed 7

Like figure 4, if several DIP switch at "ON", it is subject to the maximum valueif all DIP switch at "ON", it is color fade effect of testing function, the speed is 7.

5. Configuration Diagram

1. LED point source conjunction diagram
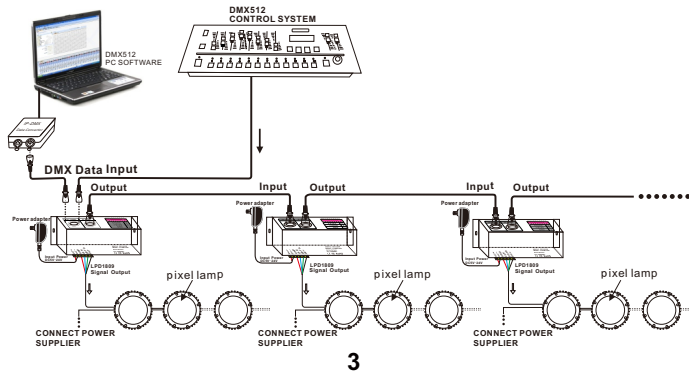
2. LED wall washer conjunction diagram

6. Attention

1. The product shall be installed and serviced by a qualified person.
2. This product is non-waterproof. Please avoid the sun and rain. When installed outdoors please ensure it is mounted in a water proof enclosure.
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 LED power supplies used comply with the working voltage of the product.
5. Please ensure that adequate sized cable is used from the controller to the LED lights to carry the current. Please also ensure that the cable is secured tightly in the connector to avoid the accidents due to overheat and poor contact on the wire.
6. Ensure all wire connections and polarities are correct before applying power to avoid any damages to the LED lights.
7. If a fault occurs please return the product to your supplier. Do not attempt to fix this product by yourself.

7. Warranty Agreement

1. We provide lifelong technical assistance with this product:
   ● A 3 year warranty is given from the date of purchase. The warranty is for free repair or replacement and covers manufacturing faults only.
   ● For faults beyond the 3 year warranty we reserve the right to charge for time and parts.
2. Warranty exclusions below:
   ● Any man-made damages caused from improper operation, or connecting to excess voltage and overloading.
   ● The product appears to have excessive physical damage.
   ● Damage due to natural disasters and force majeure.
   ● Warranty label, fragile label and unique barcode label have been damaged.
   ● The product has been replaced by a brand new product.
3. Repair or replacement as provided under this warranty is the exclusive remedy to the customer. Ltech shall not be liable for any incidental or consequential damages for breach of any stipulation in this warranty.
4. Any amendment or adjustment to this warranty must be approved in writing by Ltech only.

★ This manual only applies to this model. Ltech reserves the right to make changes without prior notice.

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