# DMX512 Decoder



Before installing this product, please read this manual carefully to ensure that this specification is fully understood to avoid unnecessary damage and additional costs.

## Product Introduction

DS-DMXBM-4CH is the constant voltage decoder, can accept the international widely-used DMX512 standard digital control signal, convert it into PWM signal to actuate LED RGB lighting; suitable for all kinds of constant voltage LED lamps, such as RGB LED module, LED strip, light string and so on; Decoders can be connected with signal line through network port or XLR plug to continue expanding the channel, and accept the manual-setting address by DIP switch, control different multiple decoders lighting effects through the DMX console.

## Technical Parameters

| | | | |
|---|---|---|---|
| Working temperature | -20-60℃ | Supply voltage | DC12V~24V |
| Static power consumption | <1W | Connecting mode | common anode |
| Net weight | 285g | Gross weight | 360g |
| Output gray | RGB each 256 level | Transmit signal | DMX signal |
| External dimension | L164*W65*H40 (mm) | Packing size | L183*W82*H60 (mm) |
| Power off memory | Yes | Mode | 9 |
| PWM frequency | 1.95KHZ | Short circuit protection | Yes |
| Output | 4 channels | Output current | <8A(each Channel) |
| Output power | 12V:≤384W, 24V:≤768W | | |

## Product Feature

1. The product is a constant voltage type controller, working voltage DC12-24V.

2. The product is software Bus-based, when all DIP switch is "0", the address is "1", could set channel address through the DIP switch as well.

3.Diagnostic signal indicator: When DMX signal is normal, the signal indicator light fast flash, otherwise it will be off ( can check the problem：bad connection; wire connect sequence error; input and output confusion, etc.)

4. With Power off memory function, each time power it, the last power-down mode will be retained.

5. When used alone as a controller, with 9 modes, which could be changed by DIP switch on controller, speed could be adjusted through DIP switch when static mode; multiple decoders and LED could be synchronized controlled.

6. To achieve more lighting synchronization in same area with the DMX decoder, could connect our company's RGB signal amplifier to expand power.
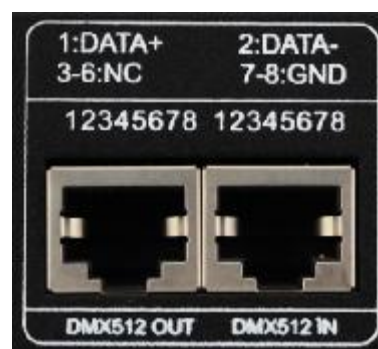
## Interface Specifications

DMX Input, Output Interface：            Network Interface：            Resistor switch:



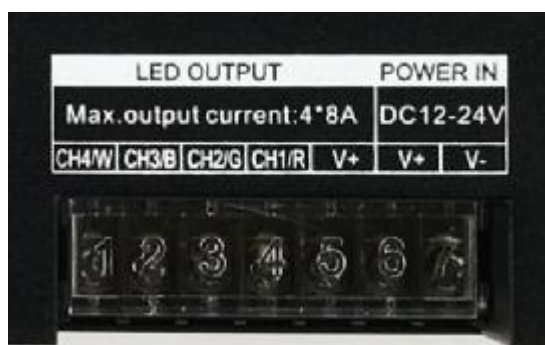Standard XLR-3 Caron socket        Standard cable RJ45 port        2 bit DIP switch

Address code and Function setting Interface:                    Power and load Interface：

Adopt 10 bit site dial type DIP switch



Adopt black column type terminal (with cap)

## Use Instruction

**This product compliance standard DMX 512 protocol, software bus-based set address manually;**

Each DMX512 decoder occupies 3 DMX addresses, adopt DIP switch to set up address: When set up the address via DIP switch, the 10th DIP switch bit is "off" status, and other 9 DIP switch(1-9)  bits are binary value code switch, which are used to set up the DMX starting address code. The first DIP switch's bit is the lowest order bit, and the ninth's is the highest order bit. That can set up 511 address codes. The DMX starting address code = (equal to ) sum of 1st to 9$^{th}$ bit. If move down the DIP switch ("ON" set as "1"), you can get the Bit value of this DIP switch. If move up (set as "0"), the bit value is 0. For example: if you want to set up DMX starting address code for 73, you should move down the 7th, 4th, and 1st DIP switch as "1", and others as "0", Then the bit value sum of 1st to 9th is 64+8+1. That is to say, the DMX512 starting address code is 73. (The correspondence dials code position is as follows)

Select Channel by DIP Switch:

:

| Decimals | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Weightnumber | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | FUN |

1.  Example 1:

Like figure 1, to set up the DMX starting address code for 37, should move down the 6th, 3rd, 1st DIP switch as"1", others as "0". Then the bit value sum of 1st to 9th DIP switch is 32+4+1, as is for 37.
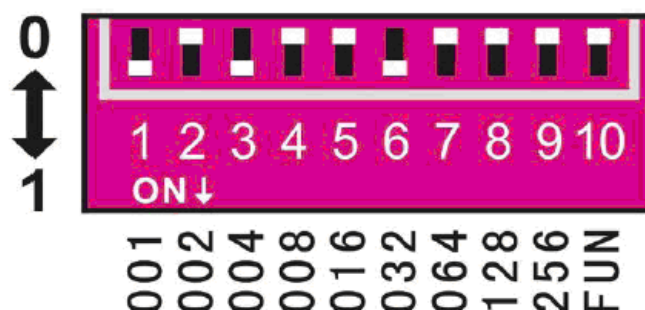


Figure 1

2. Example 2:

Like figure 2, to set up the DMX starting address code for 328, should move down the 9th, 7th, 4th DIP switch as"1", others as "0". Then the bit value sum of 1st to 9th DIP switch is 256+64+8, as is for 328.
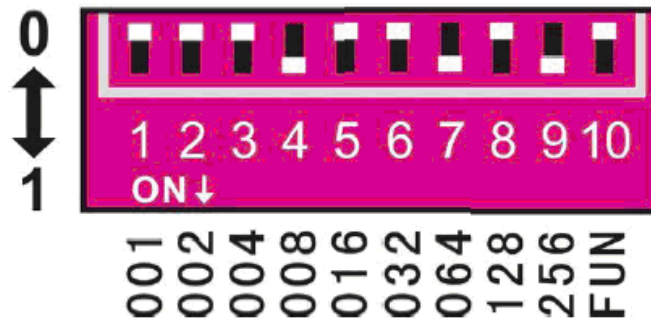
Figure 2

## Other function use Instruction

**1.** Function Test:

The10th DIP switch is "FUN", for built-in function key. When "FUN"="OFF"(up as 0), this product is for DMX decoder function, which adopt DMX signal; The test function like figure 3:

1－9 Switch OFF：black

Switch 1＝ON: red

Switch 2＝ON: green

Switch 3＝ON: blue

Switch 4＝ON: Yellow

Switch 5＝ON: All light

Switch 6＝ON: Flash

Switch 7＝ON: jumpy changing

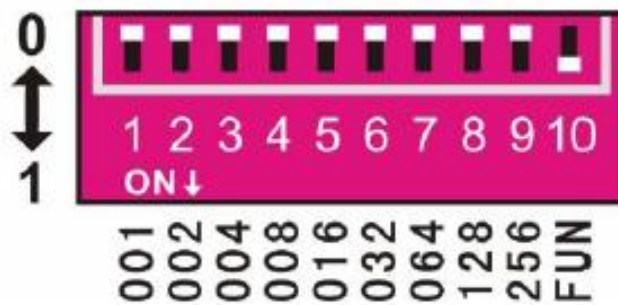Switch 8＝ON: Flowing

Switch 9＝ON: All-color gradual changing



Figure 3

2. When Fun(10)=ON(down as 1), switch 6 to 9 are for static mode. There are 6 grades speeds avaialbe:

1－5 Switch OFF: 0 grades of speeds

Switch 1＝ON: 1 grades of speeds

Switch 2＝ON: 2 grades of speeds

Switch 3＝ON: 3 grades of speeds

Switch 4＝ON: 4 grades of speeds

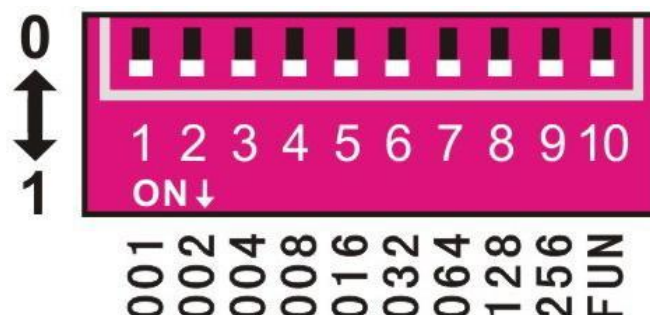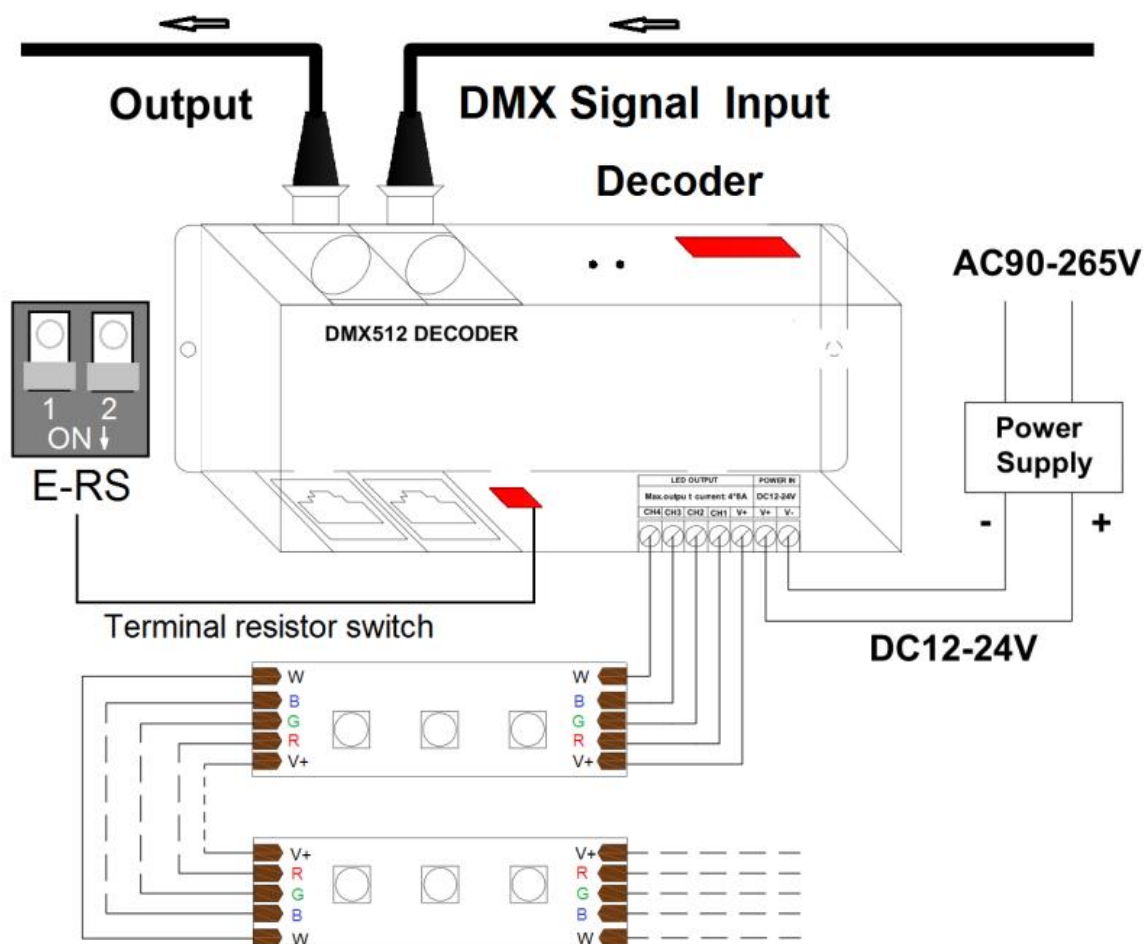Switch 5＝ON: 5 grades of speeds (Fast speed)



Figure 4

Like figure 4, when all switches are "ON" at the same time, the more value is taken as final. The state of decoder is Flowing of test function. Its variable speed is 5. In addition, when signal indicator (green) blinks slowly, it runs the built-in program effectiveness of decoder. When the decoder receives the DMX signal, signal indicator will flash rapidly.
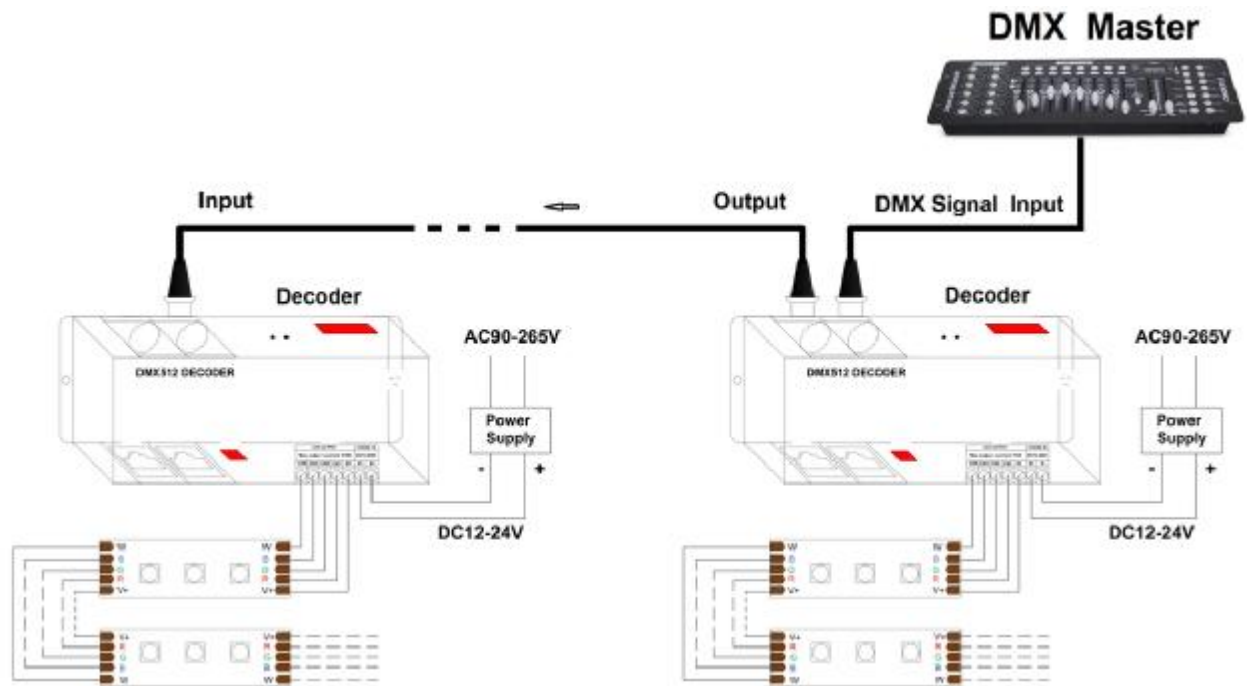
Tips:
  * An amplifier is needed when more than 32 decoders are connected, signal amplification should not be more than 5 times continuously.
  * If the recoil effect occurs because of longer signal line or bad line quality, please try to take two E-RS switches on at the end of each line(the last one only) .
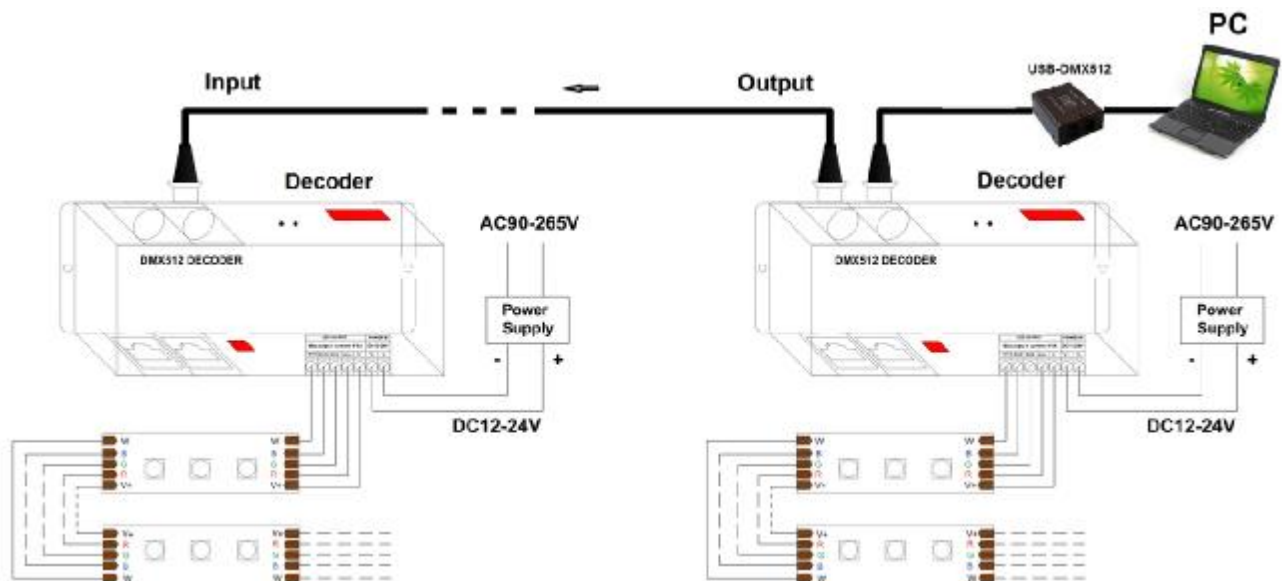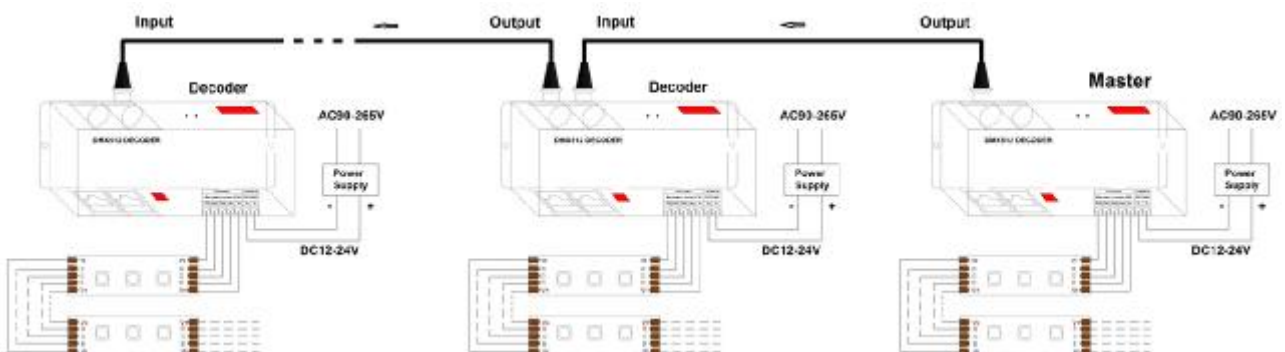
## Typical Applications



**Application 1:**（**Connection with DMX Console**）

**Application 2:**（**Connect with PC**）



**Application 3:**（**Multiple online synchronization**）

## ⚠ Notice

1. This product supply voltage is DC12V~24V, don't connect to other voltage.
2. The lead wire should be properly connected according to the connection diagram.
3. Overload may destroy the product, please avoid overload.
4. 3 years warranty, not including manual damage or overload work.

## FAQ

| Problem | Possible reason | Solution |
|---|---|---|
| 1. Light off after power on | bad connection with power supply or no output power from power supply | Connect wire with power supply well or change power supply |
| | Power supply line not connect well or short circuit | connect  power supply wire line well |
| 2. Not work after connecting some loads | Overload and burn out some components of controller | Change the component or change controller |
| 3. Synchronization not work after one of controllers | Signal line loose | reconnect signal line |