

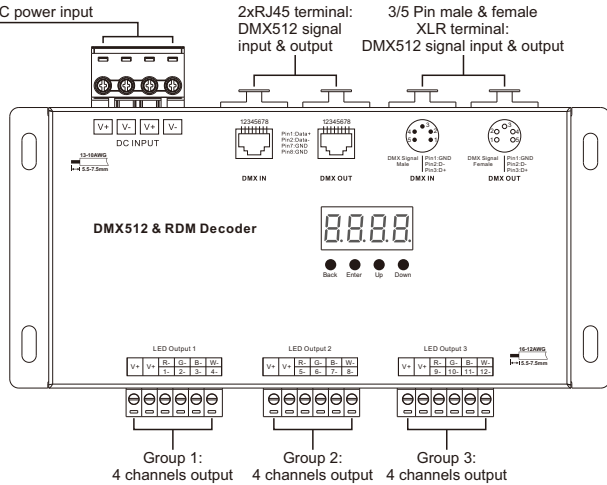
Ultra-Pro 12CH RDM DMX512 Decoder



Important: Read All Instructions Prior to Installation

Function introduction

12-48V DC power input



Product Data

Input Voltage	Output Current	Output Power	Remarks	Size(LxWxH)	Protection
12-48VDC	12CHx5A@12-24VDC 12CHx2.5A@36-48VDC	12CHx(60-120)W@12-24VDC 12CHx(90-120)W@36-48VDC	Constant voltage	197.2x92.2xmm	Short circuit

- Master & decoder mode, RDM function
- Metal housing, digital display to show data directly, easily to set and show DMX address.
- With multiple kinds of DMX in/out ports: RJ 45, XLR3/5.
- Total 12 PWM output channels, common anode. DMX channel quantity 1CH, 4CH, 6CH, 12CH settable.
- PWM output resolution ratio 8bit , 16bit settable.
- Output PWM frequency from 500HZ ~ 35K HZ settable.
- Output dimming curve gamma value from 0.1 ~ 9.9 settable.
- Decoding mode settable.
- Galvanic isolation

Safety & Warnings

- DO NOT install with power applied to device.
- DO NOT expose the device to moisture.

Operation

Before you do other settings, please set the device to be Master or Decoder mode.

run1 = DMX Decoder mode, **run2** = DMX Master mode(stand alone).

Keep on clicking Down button, to get run1 or run2, then click Enter, then click Down button to choose 1 or 2, then click Back button.

I. For run2 DMX Master mode: After set the device as run2 (Master mode), if keep on clicking Up button, you will find below menu on display:

0000 Means brightness for each output PWM channel. First 01 means PWM output channel 1 and it is selectable from 01 to 12 by clicking "UP" or "Down" button. Second 01 means brightness level, click "Enter" button, the display flashes, then click "UP" or "Down" button to select from 00-99-FL, which means 0%-99%-100% brightness, then click "Back" button to confirm.

0000 means chasing effects, total 4 effects selectable from 01-04. Click "Up" or "Down" button to select the menu, then click "Enter" button to enter into the effect, then click "Up" or "Down" button to select from 01-04.

CA01: Fade-up (0%-100%) and fade-down (100%-0%) of output 1, then output 2, output 3,, output 12, output 1,, cycling chasing

CA02: Fade-up (0%-100%) of output 1, then simultaneous fade-down (100%-0%) of output 1 and fade-up (0%-100%) of output 2, simultaneous down of output 2 and up of output 3,, simultaneous down of output 11 and up of output 12, simultaneous down of output 12 and up of output 1,, cycling chasing

CA03: Fade-up (0%-100%) of output 1, then output 2, output 3,, output 12, output 1,, cycling chasing

CA04: Fade-down (100%-0%) of output 1, then output 2, output 3,, output 12, output 1,, cycling chasing

5000 means chasing speed, it selectable from 01-09, 01 is the slowest, 09 is the fastest.

II. For run1 DMX decoder mode: After set the device as run2 (Decoder mode), if keep on clicking Up button, you will find below menu on display:

DMX signal indicator **●**: When DMX signal input is detected, the indicator on the display following after **8** turns on red **8.XXX**, if there is no DMX signal input, the indicator will not turn on, and the character **8** will flash.

8888 you will get this after power on the decoder, it means this decoder supports firmware OTA update function.

8.XXX Means DMX address. factory default setting is 001.

88XX Means DMX channels quantity. factory default setting is CH12

88XX Means Bit (8bit or 16bit). factory default setting is 16bit

88XX Means output PWM frequency. factory default setting is 10K HZ

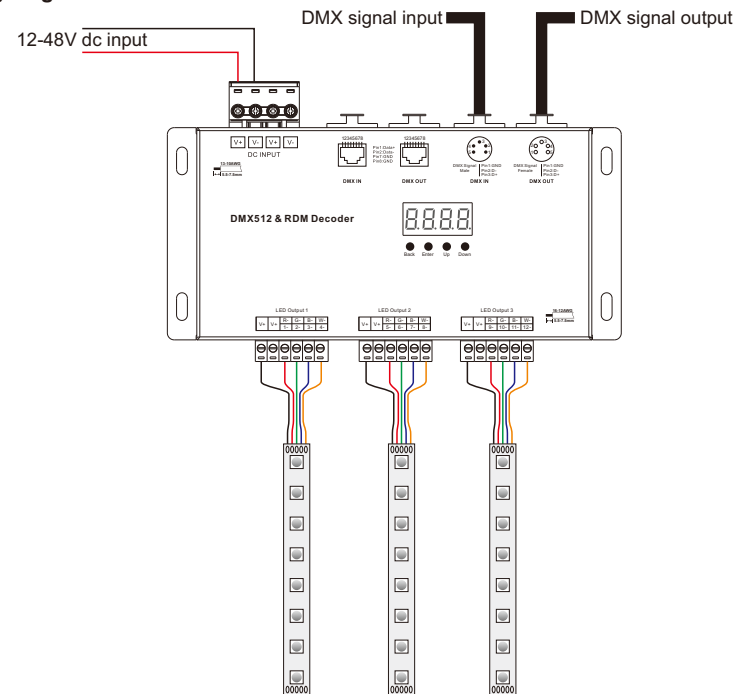
98XX Means output dimming curve gamma value, factory default setting is ga 1.5

88XX Means Decoding mode, factory default setting is dp1.1

run1 Means the device at run1 mode (DMX decoder mode).

By holding buttons Back + Enter together at the same time over 5 seconds until the display go off, it will restore default settings .

Wiring diagram



This function can be used when there is a firmware update from the manufacturer, the update can be executed through a Windows computer and an USB to serial port converter, the converter will connect the computer and the decoder's hard wire DMX port. A software RS485-OTW on the computer will be used to push the firmware to the decoder.

Run the OTA tool RS485-TTW on the computer, select the correct communication port "USB-SERIAL", baudrate "250000", and data bit "9", use default settings for other configurations. Then click "file" button to select the new firmware from the computer, then click "Open Port", the firmware will be loaded. Then click "Download Firmware", the right side state column of the OTA tool will show "send link". Then power on the decoders before "wait erase" displaying on the state column, the digital display of the decoders will show **8888**. Then "wait erase" will show on the state column, which means the updating starts. Then the OTA tool starts writing data to the decoders, the state column will show the progress, once writing data finishes, the digital display of the decoders will flash **8888**, which means firmware updated successfully.

select menu **H XXX**, click button "Enter", display flashes, then click or hold button "Up" / "Down" to set DMX address (click is slow, hold is fast.), then click button "Back" to confirm.

select menu **88XX**, click button “Enter”, display flashes, then click button “Up” / “Down” to set DMX channel quantity , then click button “Back” to confirm.
For example the DMX address is already set as 001.

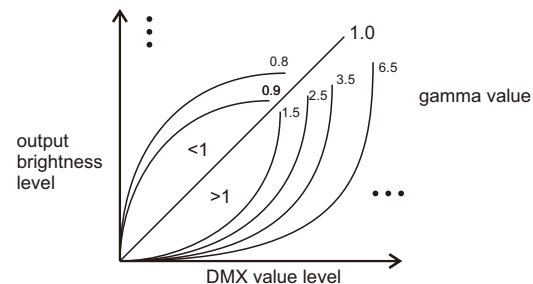
CH04=4 DMX addresses, output 1, 5, 9 will be address 001, output 2, 6, 10 will be address 002, output 3, 7, 11 will be address 003, output 4, 8, 12 will be address 004.

CH06=6 DMX addresses, output 1, 7 will be address 001, output 2, 8 will be address 002, output 3, 9 will be address 003, output 4, 10 will be address 004, output 5, 11 will be address 005, output 6, 12 will be address 006.

select menu **88XX** click button "Enter",display flashes, then click button "Up" / "Down" to choose 08 or 16 bit, then click button "Back" to confirm.

select menu **88**XX, click button "Enter", display flashes, then click button "Up" / "Down" to choose 00~35, then click button "Back" to confirm. 00=500HZ, 01=1kHz, 02=2kHz.....25=25kHz, 35=35kHz.

select menu **9.9XX** click button “Enter”, display flashes, then click or hold button “Up” / “Down” to choose 0.1~9.9, then click button “Back” to confirm.



Select menu **PP.XX**, click button "Enter", display flashes, then click button "Up" / "Down" to choose the decoding mode, then click button "Back" to confirm. "dPxx" means the DMX address quantity used for control of corresponding PWM output channel quantity. 1st "x" is DMX address quantity, 2nd "x" is PWM channel quantity.

DMX Console Slider number	dp1.1	dp2.1	dp2.2	dp3.1
DMX channel				
1	all outputs dimming	all outputs dimming	all outputs dimming	all outputs dimming
2		all outputs fine dimming	all outputs strobe effects	all outputs fine dimming
3				all outputs strobe effects

DMX Console Slider number	dp1.3
DMX channel	
1	output 1&5&9 dimming
2	output 2&6&10 dimming
3	output 3&7&11 dimming
4	output 4&8&12 dimming

DMX Console Slider number	dp1.1	dp2.1	dp3.2	dp4.3	dp5.3	dp7.6	dp8.6
DMX channel							
1	output 1&7 dimming	output 1&7 dimming	output 1&7, 2&8 master dimming	output 1&7,2&8,3&9 master dimming	output 1&7,2&8,3&9 master dimming	all outputs master dimming	all outputs master dimming
2	output 2&8 dimming	output 1&7 fine dimming	output 1&7 dimming	output 1&7 dimming	output 1&7 dimming	output 1&7 dimming	output 1&7 dimming
3	output 3&9 dimming	output 2&8 dimming	output 2&8 dimming	output 2&8 dimming	output 2&8 dimming	output 2&8 dimming	output 2&8 dimming
4	output 4&10 dimming	output 2&8 fine dimming	output 3&9, 4&10 master dimming	output 3&9 dimming	output 3&9 dimming	output 3&9 dimming	output 3&9 dimming
5	output 5&11 dimming	output 3&9 dimming	output 3&9 dimming	output 4&10,5&11,6&12 master dimming	output 1&7,2&8,3&9 strobe effects	output 4&10 dimming	output 4&10 dimming
6	output 6&12 dimming	output 3&9 fine dimming	output 4&10 dimming	output 4&10 dimming	output 4&10,5&11,6&12 master dimming	output 5&11 dimming	output 5&11 dimming
7		output 4&10 dimming	output 5&11, 6&12 master dimming	output 5&11 dimming	output 4&10 dimming	output 6&12 dimming	output 6&12 dimming
8		output 4&10 fine dimming	output 5&11 dimming	output 6&12 dimming	output 5&11 dimming		all outputs strobe effects
9		output 5&11 dimming	output 6&12 dimming		output 6&12 dimming		
10		output 5&11 fine dimming			output 4&10,5&11,6&12 strobe effects		
11		output 6&12 dimming					
12		output 6&12 fine dimming					

[illegible]

DMX Console Slider number DMX channel	dp1.1	dp2.1	dp3.2	dp3.4	dp4.3	dp5.3	dp5.4	dp6.4	dp8.6	dp9.6
4	output 4 dimming	output 2 fine dimming	output 3&4 dimming	output 5&6 &7&8 dimming	output 3 dimming	output 3 dimming	output 3 dimming	output 3 dimming	output 3 dimming	output 3 dimming
5	output 5 dimming	output 3 dimming	output 3 dimming	output 5&7 dimming	output 4&5 &6 dimming	output 1&2 &3 strobe effects	output 4 dimming	output 4 dimming	output 4 dimming	output 4 dimming
6	output 6 dimming	output 3 fine dimming	output 4 dimming	output 6 &8 dimming	output 4 dimming	output 4&5 &6 dimming	output 5&6 &7&8 dimming	output 1&2&3 &4 strobe effects	output 5&6 dimming	output 5&6 dimming
7	output 7 dimming	output 4 dimming	output 5&6 dimming	output 9&10&11 &12 dimming	output 5 dimming	output 4 dimming	output 5 dimming	output 5&6 &7&8 dimming	output 5 dimming	output 5 dimming
8	output 8 dimming	output 4 fine dimming	output 5 dimming	output 9&11 dimming	output 6 dimming	output 5 dimming	output 6 dimming	output 5 dimming	output 6 dimming	output 6 dimming
9	output 9 dimming	output 5 dimming	output 6 dimming	output 10 &12 dimming	output 7&8 &9 dimming	output 6 dimming	output 7 dimming	output 6 dimming	output 7&8&9 &10 dimming	output 1&2&3&4 &5&6 strobe effects
10	output 10 dimming	output 5 fine dimming	output 7&8 dimming		output 7 dimming	output 4&5 &6 strobe effects	output 8 dimming	output 7 dimming	output 7 dimming	output 7&8&9 &10 dimming
11	output 11 dimming	output 6 dimming	output 7 dimming		output 8 dimming	output 7&8 &9 dimming	output 9&10&11 &12 dimming	output 8 dimming	output 8 dimming	output 7 dimming
12	output 12 dimming	output 6 fine dimming	output 8 dimming		output 9 dimming	output 7 dimming	output 9 dimming	output 5&6&7 &8 strobe effects	output 9 dimming	output 8 dimming
13		output 7 dimming	output 9&10 dimming		output 10&11 &12 dimming	output 8 dimming	output 10 dimming	output 9&10 &11&12 dimming	output 10 dimming	output 9 dimming
14		output 7 fine dimming	output 9 dimming		output 10 dimming	output 9 dimming	output 11 dimming	output 9 dimming	for output 11 &12 dimming	output 10 dimming
15		output 8 dimming	output 10 dimming		output 11 dimming	output 7&8&9 strobe effects	output 12 dimming	output 10 dimming	for output 11 dimming	output 11&12 dimming
16		output 8 fine dimming	output 11&12 dimming		output 12 dimming	output 10&11&12 dimming		output 11 dimming	for output 12 dimming	output 11 dimming
17		output 9 dimming	output 11 dimming			output 10 dimming		output 12 dimming		output 12 dimming
18		output 9 fine dimming	output 12 dimming			output 11 dimming		output 9&10&11 &12 strobe effects		output 7&8&9&10 &11&12 strobe effects
19		output 10 dimming				output 12 dimming				
20		output 10 fine dimming				output 10&11&12 strobe effects				
21		output 11 dimming								
22		output 11 fine dimming								
23		output 12 dimming								
24		output 12 fine dimming								

Short circuit protection

If short circuit of the connected load is detected, the display will flash to alarm and the load will be forced to open circuit status. Once the fault is removed, the decoder will recover after re-powered on.

RDM Discovery Indication:

When using RDM to discover the device, the digital display will flash and the connected lights will also flash at the same frequency to indicate. Once the display stops flashing, the connected light also stops flashing.

The data definitions for strobe channel are as follows:

```
{0, 7},//undefined
{8, 65},//slow strobe-->fast strobe
{66, 71},//undefined
{72, 127},//slow push fast close
{128, 133},//undefined
{134, 189},//slow close fast push
{190, 195},//undefined
{196, 250},//random strobe
{251, 255},//undefined
```

The supported RDM PIDs are as follows:

```
DISC_UNIQUE_BRANCH
DISC_MUTE
DISC_UN_MUTE
DEVICE_INFO
DMX_START_ADDRESS
IDENTIFY_DEVICE
SOFTWARE_VERSION_LABEL
DMX_PERSONALITY
DMX_PERSONALITY_DESCRIPTION
SLOT_INFO
SLOT_DESCRIPTION
OUT_RESPONSE_TIME
OUT_RESPONSE_TIME_DESCRIPTION
MANUFACTURER_LABEL
SUPPORTED_PARAMETERS
MODULATION_FREQUENCY
MODULATION_FREQUENCY_DESCRIPTION
CURVE
CURVE_DESCRIPTION
```

Restore to Factory Default Setting

Press and hold down both “Back” and “Enter” keys until the digital display turns off, then release the keys, system will reset and the digital display will turn on again, all settings will be restored to factory default.

Default settings are as follows:

DMX Address Code: a001

DMX Address Quantity: SW1=0: ch12, SW1=1: ch01

PWM Resolution Mode: bt16

PWM Frequency: pf10

Gamma: ga1.5

Decoding Mode: dp1.1

Product Size

