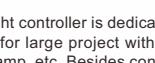


Ethernet-SPI/DMX Pixel light controller

User Manual



(Please read through this manual carefully before use)

Update Time: 2019.11.25

1. Brief Introduction

This Ethernet-SPI/DMX pixel light controller is dedicated to converting the Ethernet signal into SPI pixel signal, which is designed for large project with high-density pixel light, such as matrix panel lights, construction's contour lamp, etc. Besides converting Ethernet-based control protocols into various LED driving IC signal, it also outputs DMX512 signal at the same time, convenient for the connection of different types of led lamp, and to achieve the unified control of all kinds of led lamp in the same project.

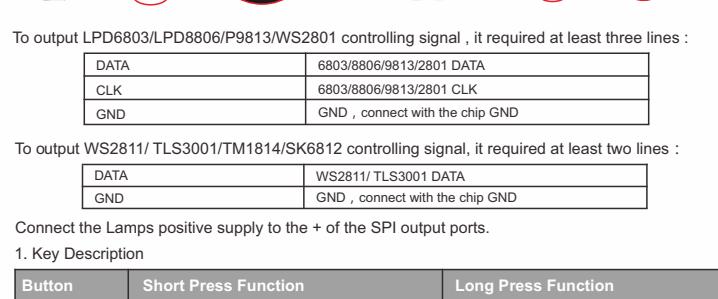
This software have 2 versions V1 and V2 , V1 version is with Artnet protocol , V2 version is with Artnet and sACN(E.1.31) protocol. Notice: The factory software of V1 can't be upgraded to V2 software, but factory software of V2 can be upgraded to V1 software.

2. Specifications

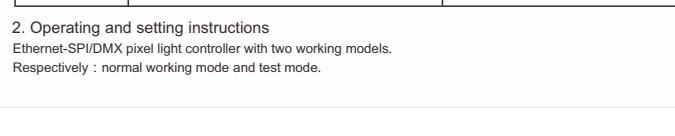
Model	204	216
Working Voltage	DC5-DC24V	DC5-DC24V
Output Current	7A X 4CH(Built-in 7.5A fuse)	3A X 16CH(Built-in 5A fuse)
Input Ethernet control protocol	V1: ArtNet V2: ArtNet, sACN(E.1.31)	V1: ArtNet V2: ArtNet, sACN(E.1.31)
Output Control IC	2811/8904/6812/2904/1814/1914/5603/9812/APA102/2812/9813/3001/8806/6803/2801	
Control Pixels	RGB : 680 Pixels×4CH RGBW : 512 Pixels×4CH	RGB : 340 Pixels×16CH RGBW : 256 Pixels×16CH
Output DMX512	One port(1X512 Channels)	Two port(2X512 Channels)
Working Temp	-20~55°C	-20~55°C
Product Dimension	L166×W111.5×H31(mm)	L260×W146.5×H40.5(mm)
Weigh(G.W)	510g	1100g

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Wiring instructions of SPI output port :



To output LPD6803/LPD8806/P9813/WS2801 controlling signal , it required at least three lines :

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

To output WS2811/ TLS3001/TM1814/SK6812 controlling signal, it required at least two lines :

DATA	WS2811/ TLS3001 DATA
GND	GND , connect with the chip GND

Connect the Lamps positive supply to the + of the SPI output ports.

1. Key Description

Button	Short Press Function	Long Press Function
MODE	Switch setting parameter type	Enter test exit mode
SETUP	Enter and switch setup	
+	Increase current set value	Increase current set value rapidly
-	Decrease current set value	Decrease current set value rapidly
Enter	Confirm and enter into next set value	

2. Operating and setting instructions

Ethernet-SPI/DMX pixel light controller with two working models.

Respectively : normal working mode and test mode.

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DMX Channel	OUT1 START CHANNEL:512	DMX channel range : 1-512 The default value : 1
Pixel	OUT1 NUM PIXELS: 680	204 : Pixel range : 0-680 The default value : 680 216 : Pixel range : 0-340 The default value : 340
Null pixels	OUT1 NULL PIXELS: 680	204 : Null pixel range : 0-680 The default value : 0 216 : Null pixel range : 0-340 The default value : 0
Zig zag pixels	OUT1 ZIG ZAG: 680	204 : Zig zag pixel range : 0-680 The default value : 0 216 : Zig zag pixel range : 0-340 The default value : 0
Reverse Control	OUT1 REVERSE: YES	YES: Reverse control NO (Default): Not reverse control
3 Channel 2 setup	3OUT2 SETUP	Same to channel 1
4 Channel 3 setup	4OUT3 SETUP	Same to channel 1
5 Channel 4 setup	5OUT4 SETUP	Same to channel 1
6 DMX512 channel setup	6DMX512 OUTPUT	204: One DMX512 channel 216: Two DMX512 channels
DMX512 output selection	DMX512 OUTPUT YES	YES(Default): Output NO: Not output
DMX512 universe setup	DMX512 UNIVERSE:255	DMX512 Domain settings range : 1-256
7 Load default	7LOAD DEFAULT	
Confirm to load default	LOAD DEFAULT YOU SURE?	
8 About	8ABOUT	
Model	Ethernet-SPI4 ID:4000012	

Control ICs type:

IC Type	Compatible ICs	Type
2811	TM1803, TM1804, TM1809, TM1812, UCS1903, UCS1909, UCS1912 UCS2903, UCS2909, UCS2912, WS2811, WS2812B, SM16703P, GS8206 etc	
2812	TM1803, TM1804, TM1809, TM1812, UCS1903, UCS1909, UCS1912 UCS2903, UCS2909, UCS2912, WS2811, WS2812B, SM16703P, GS8206 etc	
2801	WS2801, WS2803 etc	
6803	LPD6803, LPD1101, D705, UCS6909, UCS6912 etc	
3001	TLS3001, TLS3002 etc	
8806	LPD8803, LPD8806, LPD8809, LPD8812 etc	
9813	P9813 etc	
APA102	APA102, SK9822 etc	
1914	TM1914 etc	
9812	UCS9812 etc	
5603	UCS5603 etc	
8904	UCS8904 etc	
1814	TM1814 etc	
2904	SK6812RGBW, UCS2904B, P9412 etc	
6812	SK6812RGBW, UCS2904B, P9412 etc	

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Ethernet-SPI/DMX Pixel light controller

Enter the default password : 12345 , Click [Login](#) to enter the parameter setting page.

The users can set the parameter and upgrade the firmware on website.



Then click [After downloading updated firmware to Computer – Click to Update Firmware](#) , to enter the firmware update page(as below), click [Choose file](#) , then choose the BIN file you need to upgrade, then click [Update](#) enter into firmware updating page, After upgrade, the website will automatically back to the login screen.



3. Basic Features

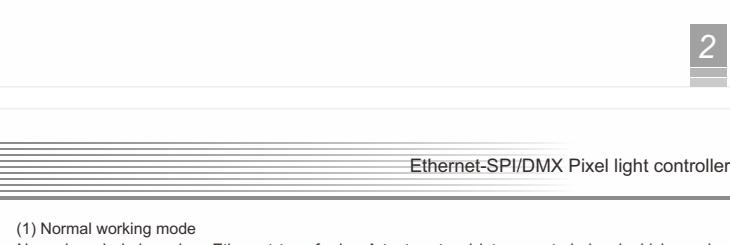
- With LCD display and built-in WEB SERVER setting interface, easy operation.
- Support Ethernet DMX protocol ArtNet, sACN(E1.31)(only V2 versions), can be expanded to other protocols.
- Multi SPI (TTL) signal output.
- Output DMX512 signal at the same time, convenient for the connection of different types led lamp.
- Support various LED driving IC, flexible control.
- Support online firmware upgrade.
- Adopt DIP plug-in design for the easily-worn parts, Users can repair the damage caused by wrong wiring or short circuit.
- Built-in test mode, using a network interface with indicator light, work status is clear when at a glance.

4. Safety warnings

- Please don't install this controller in lightning, intense magnetic and high-voltage fields.
- To reduce the risk of component damage and fire caused by short circuit, make sure correct connection.
- Always be sure to mount this unit in an area that will allow proper ventilation to ensure a fitting temperature.
- Check if the voltage and power adapter suit the controller.
- Don't connect cables with power on, make sure a correct connection and no short circuit checked with instrument before power on.
- 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. Dimensions

Unit: mm



6. Operating Instructions

204 216 Instruction of interface and ports:

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Ethernet-SPI/DMX Pixel light controller

(1) Normal working mode

Normal mode is based on Ethernet transferring Arnet protocol into a control signal which can be received by various pixel lamps; Connecting the lamps, plugging the network cable, after checking, power on. The controller will enter into the network detection.

UNABLE TO OPERATE ...

After detecting without problems, the controller will enter into normal working mode and show the IP address, IP address has static and dynamic allocation. STAT for static allocation, DHCP for dynamic allocation, the controller default IP address is static.

IP ADDRESS - STAT
192.168.0.50

This controller also comes with key lock function, no operation after 30 seconds, the system enters the lock state, then LCD shows.

PRESS AND HOLD M
BUTTON TO UNLOCK

Long press "MODE" to unlock, unlocked before next operation.

(2) Parameter Setting

In normal working mode, press "MODE" to switch parameter setting type, "SETUP" to enter the setup, then press "ENTER" to get back to previous level.

NO.	Setting	LCD display	Value
1	System setup	1SYSTEM SETUP	
	IP static and dynamic selection	DHCP: YES PRESS OK TO SAVE	YES: Dynamic IP NO: Static IP(Default)
	IP Address	STATIC IP 192.168.0.50	Static IP address (Default) : 192.168.0.50
	Subnet Mask	SUBNET MASK 255.255.255.0	(Default) : 255.255.255.0
2	IC type	PIXEL PROTOCOL 2811	"2811(Default)" "8904" "6812" "2904" "1814" "1914" "5603" "9812" "APA102" "2812" "9813" "3001" "8806" "6803" "2801"
	RGB Sequence	LED RGB SEQ RGB	"RGB(Default)" "RGB" "GRB" "BRG" "BGR" "RGBW" "RGWB" "RBGW" "RWBG" "RWBG" "GRBW" "GRWB" "GBRW" "GBWG" "GWBG" "GWRB" "BRGW" "BRWG" "BGRW" "BWGR" "BWRG" "WRBG" "WRGB" "WRBG" "WGRB" "WBRG" "WBRC" "WBRC"
	Signal configuration(V1 versions)	SIGNAL CONFIG ARNet	Only support ArtNet at present
	Signal configuration(V2 versions)	SIGNAL CONFIG sACN(E.1.31)	Protocol selection: "sACN(E.1.31)(Default)", "ArtNet"
	LCD background dormancy time selection	LCD Back Light ALWAYS ON	"ALWAYS ON" "4 MINUTE" "5 MINUTES" "10 MINUTES"
3	Channel 1 setup	2OUT1 SETUP	204:OUT1-4 SETUP 216:OUT1-16 SETUP
	Universe setup	2OUT1 START UNIVERSE:256	Universe settings range: sACN(E.1.31) Protocol:1-65536 Art