Ethernet-SPI/DMX Pixel light controller
User Manual

(Please read through this manual carefully before use)
Update Time: 2019.11.25

1. Introduction

This Ethernet-SPI/DMX pixel light controller is dedicated to converting the Artnet signal into SPI pixel signal, it is designed for large projects 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.

2. Specifications

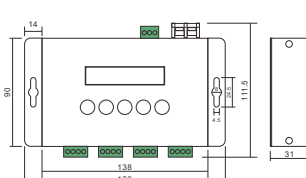| Model	ProPix
Working Voltage	DC5-DC24V Class 2 recommended
Output Current	7A X 4CH (Built-in 7. 5A fuse)
Input Ethernet control protocol	V1: ArtNet
Output Control IC	2811/8904/6812/2904/1814/1914/5603/8912/APA102/2812/9813/3001/8806/6803/2801
Control Pixels	RGB : 680 Pixels×4CH RGBW : 512 Pixels×4CH
Output DMX512	One port(1X512 Channels)
Working Temp	-20~55℃
Product Dimension	L166×W111.5×H31(mm)
Weigh(G.W)	510g

3. Basic Features

1. With LCD display and built-in WEB SERVER setting interface, easy operation.
2. Support Ethernet DMX protocol ArtNet
3. Multi SPI (TTL) signal output.
4. Output DMX512 signal at the same time, convenient for the connection of different types led lamp.
5. Support various LED driving IC,flexible control.
6. Support online firmware upgrade.
7. Adopt DIP plug-in design for the easily-worn parts, Users can repair the damage caused by wrong wiring or short circuit.
8. Built-in test mode, using a network interface with indicator light

4. Safety warnings

1. Please don't install this controller in lightning, intense magnetic or high-voltage fields.
2. To reduce the risk of component damage and fire caused by short circuit, we recommend powering the LED strips directly and only using the ProPix for Data transmission. Use a Class 2 power supply.
3. Always be sure to mount this unit in an area that will allow proper ventilation to ensure a fitting temperature.
4. Check if the voltage and power adapter suit the controller.
5. Don't connect cables with power on, make sure a correct connection and no short circuit checked with instrument before power on.
6. 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

User interface and Ports:

Status Display Window
Mode
Setup
Increase
Enter
Decrease
Power Input
Internet Port
SPI Output Port
Output DMX512

Wiring instructions of SPI output port :

To output LPD6803/LPD8806/P9813/WS2801 controlling signal , at least 3 wires are required.

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, at least 2 lines are required.

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

Connect the Lamps positive supply directly to the power supply.

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.
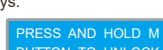
(1) Normal working mode

Normal mode is based on Ethernet transferring Artnet protocol into a control signal which can be received by various pixel lamps; Connect the lamps, plug in the network cable, after confirming connections,power on. The controller will enter into the network detection.

UNABLE TO OPERATE !
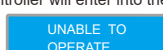
After detecting no issuess, the controller will enter into normal working mode automatically and show the IP address. IP address has static or dynamic allocation. STAT for static allocation, DHCP for dynamic allocation. The controller default IP address is static.

IP ADDRESS - STAT 192.168.0.50

This controller also comes with key lock function, if idle after 30 seconds, the system enters the lock state, then LCD displays.

PRESS AND HOLD M BUTTON TO UNLOCK

Long press "MODE" to unlock.

(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	1. SYSTEM 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
	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)"RBG"GRB"GBR"BRG"BGR"RGBW"RGWB"RBGW"RBWG"RWGB"RWBG"GRBW"GRWB"GBRW"GBWR"BRGW"BRWG"BGRW"BGWR"WRGB"WRBG"WGRB"WGBR"WBRG"WBGR"
	Signal configuration	SIGNAL CONFIG Artnet	Only supports ArtNet at present
	LCD background dormancy time selection	LCD Back Light ALWAYS ON	"ALWAYS ON" "1 MINUTE" "5 MINUTES" "10 MINUTES"
2	Channel 1 setup	2OUT1 SETUP	OUT 1-4 SETUP
	Universe setup	2OUT1 START UNIVERSE:256	Universe settings range: ArtNet Protocol 1-256

	DMX Channel	OUT1 START CHANNEL:512	DMX channel range: 1-512 The default value: 1
	Pixel	OUT1 NUM PIXELS: 680	Pixel range: 0-680 The default value: 680
	Null pixels	OUT1 NULL PIXELS: 680	Null pixel range: 0-680 The default value: 0
	Zig zag pixels	OUT1 ZIG ZAG:680	Zig zag pixel range: 0-680 The default value: 0
	Reverse Control	OUT1 REVERSED:YES	YES: Reverse control NO (Default): Not reverse control
3	Channel 2 setup	3. OUT2 SETUP	Same as channel 1
4	Channel 3 setup	4. OUT3 SETUP	Same as channel 1
5	Channel 4 setup	5. OUT4 SETUP	Same as channel 1
6	DMX512 channel setup	6. DMX512 OUTPUT	One DMX512 output
	DMX512 output selection	DMX512 OUTPUT YES	YES(Default): Output NO: Not output
	DMX512 universe setup	DMX512 UNIVERSE:256	DMX512 Domain settings range: 1~256
7	Load default	7. LOAD DEFAULT	
	Confirm to load default	LOAD DEFAULT YOU SURE?	
8	About	8. ABOUT	
	Model	Ethernet-SPI4 ID:04000012	

Control ICs type:

IC Type	Compatible ICs	Type
2811	TM1803, TM1804, TM1809, TM1812, UCS1903, UCS1909, UCS1912 UCS2903, UCS2909, UCS2912, WS2811, WS2812B, SM16703P, GS8206 etc	RGB
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	TLS3301, 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	RGBW
2904	SK6812RGBW, UCS2904B, P9412 etc	
6812	SK6812RGBW, UCS2904B, P9412 etc	

(3) Test mode

Long press "MODE" to enter the test mode, press it again to exit, after entering the test mode, press "+" "-" to switch the mode and "SETUP" to set the parameter of the current mode. After entered into test mode, the LCD will show operation tips, as below:

PRESS AND HOLD M FOR NORMAL MODE   **PRESS "+"OR"-" TO CHOOSE MODE**

NO.	Built-in sequences	NO.	Built-in sequences
1	Solid color: Black(Off)	13	Blue chase with trail
2	Solid color: Red	14	Rainbow chase - 7 Colors
3	Solid color: Green	15	Green chasing Red, chasing Black
4	Solid color: Blue	16	Red chasing Green, chasing Blue
5	Solid color: Yellow	17	Red chasing White, chasing Blue
6	Solid color: Purple	18	Orange chasing Purple, chasing Black
7	Solid color: CYAN	19	Purple chasing Orange, chasing Black
8	Solid color: White	20	Random twinkle: White over red background
9	RGB CHANG	21	Random twinkle: White over blue background
10	full COLOR CHANGE	22	Random twinkle: White over green background
11	Red chase with trail	23	Random twinkle: White over purple, background
12	Green chase with trail	24	Random twinkle: White over orange background

3. WEB setup and Firmware upgrading online

In addition to setting parameters with the buttons, you can also set it through the Web browser a computer. The parameter settings between the two are the same.
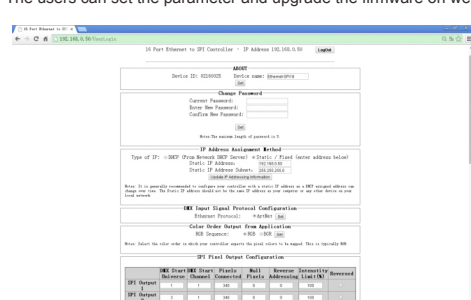
WEB operation instructions:
Open the web browser of the computer, which is on the same LAN as the controller, input the IP address (such as the default IP: 192.168.0.50), and press "Enter" to browse the controller's built-in website, as shown below:

User Login

Controller Name: [Ethernet-SPI4]
Password:
Note：Default Password: 12345
[Login]

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.
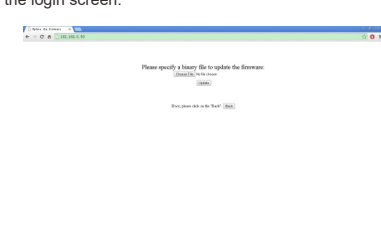
Upgrade the firmware online:
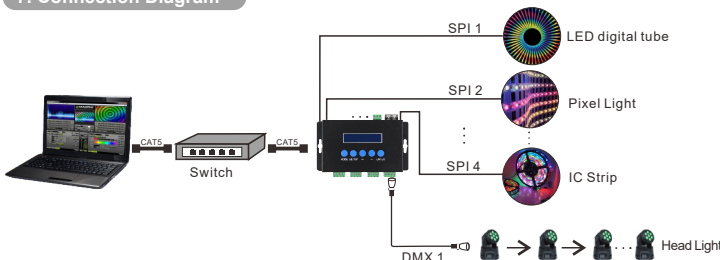Find the column "Firmware Update" on website (as below)

Firmware Update

Currently Installed Firmware Version: 1.08 / 23-MAR-2016

[After downloading updated firmware to Computer – Click to Update Firmware]

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 will use to upgrade, then click [Update] enter the firmware updating page. When complete, the website will automatically return to the login screen.

7. Connection Diagram

SPI 1 — LED digital tube
SPI 2 — Pixel Light
SPI 4 — IC Strip
Switch
CAT5 / CAT5
DMX 1 — Head Light

8. Warranty

From the day you purchase our products within 2 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 chemical.

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