

Documentation

E8-WiFi Pixel Controller

V1.00



Documentation for E8-WiFi Pixel Controller V1.00

The E8-WiFi is an 8 port WiFi pixel controller, with 8 Fused outputs. It's designed to drive RGB-addressable pixels for Christmas light shows, smart home lighting, and other lighting applications.

Features:

8 Outputs for driving pixels - 8 individual pixel ports.

Fused outputs - Each output is fused with a 5A fuse.

Control up to 4096 pixels - Up to 512 pixels pr output @20FPS.

Strong Data signal - The data signal is boosted by the onboard logic level shifter.

Chunky Input screw terminal - Can handle up to 32A peak current.

Strong ESP32 module - ESP32 for strong performance.

WLED installed - The device comes with WLED-0.13.0-4b installed

USB type C for programming - You can change/update the software through the USB C port.

Control with the WLED APP - For both Android and IOS.

Can be controlled with Xlights - WLED Supports E1.31 and DDP protocols.

Compatible with different software - Like ESP-Home, ESPixelstick, custom Arduino code, or WLED.

Controlling pixels:

Power:

The controller can control up to 4096 pixels @20FPS and with the use of all 8 outputs 512 pixels per port.

For Perfect performance, it's recommended to not exceed 2048 pixels.

The total controllable amount of pixels through xLights depends on the WiFi strength and speed.

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WLED Setup Process:

1. Set the input voltage jumper (J1), to match the input voltage (5V or 12V). Input voltage must still match the pixel voltage! As the device doesn't change the voltage for the pixel output.
2. Connect wires to the input screw connector, according to the wiring described on the board.
3. Connect pixels to the 3 pin plugs, according to the wiring described on the board.
4. Turn on the power and wait a bit.
5. The device has now made a hotspot called "WLED-AP", connected to it with the password wled1234.
6. Go to 4.3.2.1 in a browser, go to "configure wifi" and then configure your WiFi.
7. The device has been connected to your network, find the new IP-Adress and connect to it.
8. Go to the control panel
9. Enjoy your awesome new led installation.

Setup in xLights:

From the xLights version 2021-33 and up, the controller can be added under the controller tab and support features like Configuration, "Upload Outputs" and "Visualize".

1. Add ethernet controller and enter the IP-Adress of the device.
2. Under the "Vendor" tab choose "WLED" And then "E8-WiFi"
- Make sure that WLED is set up to receive E1.31 or DDP data.

Data Ports:

The data signal is tested up to 10m with 3 core cables, the data signal length may vary. To improve length a Null-Pixel or data booster may be used.

Each of the 8 outputs is "boosted" by a logic level shifter and sent through a 33 Ω resistor, which is optimized to 3 core cable runs (where the Data, Power, and Ground is in the same cable)

A flat 2mm screwdriver can be used for the 3pin Plugs.

Fused outputs: 5A fuse, do NOT replace with higher than 5A!

Plug type: 3-pin, 3.81mm

Only support 3 pin pixels (without clock line)

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Board Specifications:

Power:

Operating voltage: 5V-12V

Fuse ratings: Replace with MAX 5A

MAX current handling: 32A peak current

Average power consumption: 100mA

Physical Measurements:

Dimensions: 110x52x23 mm

Operating Environment:

Temperature: -25 ~ 30°C

Humidity: Dry

Communication:

Wifi Protocol: 802.11 b/g/n (802.11n up to 150 Mbps)

Wifi Range: 2.4 GHz ~ 2.5 GHz

Bluetooth: V4.2 BR/EDR and BLE

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ESP32 pin configuration:

GPIO:	Pin:	On the device:
GPIO 4	4	Port1 / CN1
GPIO 16	16	Port2 / CN2
GPIO 17	17	Port3 / CN3
GPIO 18	18	Port4 / CN4
GPIO 19	19	Port5 / CN5
GPIO 21	21	Port6 / CN6
GPIO 23	23	Port7 / CN7
GPIO 22	22	Port8 / CN8
GPIO header:		
GPIO 25	25	25
GPIO 26	26	26
GPIO 27	27	27
GPIO 36	36	36

Wiring:

Input:

V- = GND - From the Power Supply

V+ = Positive - From the Power Supply

Output:

- = GND - To the pixels

D = Data - To the pixels

+ = Positive - To the pixels

Note: If wired incorrectly the device may get damaged! Even if it's just briefly.

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Contact Us:

If you have any questions or suggestions, you are welcome to contact us via email that can be found on our website:

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WLED Software preinstalled:

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