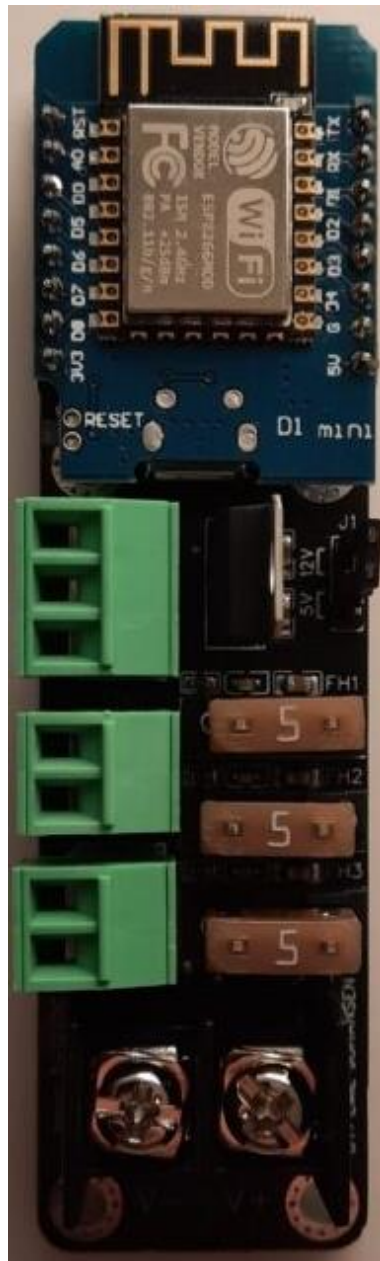


E1-WiFi

Pixel Controller V2.10



Designed by Lightish



Introduction

The E1-WiFi is an ad-on board for the D1-Mini, designed to drive and control over 1000 WS2811 pixels¹. It provides 1 fused data port and 2 fused outputs for power injection. The controller is delivered with WLED installed and preconfigured to insure a smooth and fast setup.

WLED allows for both standalone and synchronized configurations - Commonly used in a Christmas light display, where a network of controllers is receiving E1.31 or DDP data from programs like xLights and FPP.

¹Requires additional power injection

Input

At the bottom of the device is a 9.5mm Block screw terminal which is used to provide power for the device itself and the outputs. The max rated current for the connector is 15A.

Input voltage can be 5V or 12V, before powering on the device make sure to set the J1 jumper to the planned on using voltage, failing to do so can damage the device. Note that the device do not change the output voltage, make sure that the input voltage matches the pixel voltage.

Make sure to use a good quality power supply to insure stable operation. A minimum of 0.5A should be provided device besides the consumption of the connected pixels.

Outputs

Up to 1000 pixels can be driven from the 1 data port on the device with WLED installed. Supports 3-wire pixels, compatibility have been confirmed with: WS28XX series, SK6812, TM1814 and APA102.

The controller has a total of 3 power outputs, each fused with a 5A fuse² and equipped with a LED-indicator which is lit when the fuse is intact and there's power on the specific output.

The data port is connected internally to D4 (GPIO2) though a level shifter to boost the signal from 3.3V to 5V to allow long data signals³. A 33 Ohm resistor is connected in series with the data line to optimize the signal over longer distances³.

²The maximum size fuse allowed is 5A, any higher can cause damage to the device.

³ Up to 10m from controller to pixels.

Fuses

Each output is equipped with a 5A fuse. Fuse 1 is named FH1, fuse 2 FH2 and fuse 3 FH3. Do NOT replace with a fuse higher than 5A or it might cause damage.



Fuse LED indicator

Each of the 3 fuses have a green LED that indicate the status of the fuse, when the LED is lit the fuse is intact and working. If an LED is not lit the corresponding fuse is blown and need to be replaced with a identical one.

Software

The controller is delivered with WLED installed and preconfigured to 100 pixels on the data port. The custom compile can be found and downloaded from the product page.

It's possible to upload new software to the controller, such as ESPixelstick, ESPhome or Custom Arduino code.

Note: The level shifter used on the device is one directional and therefore the data port cannot be used as an input.

Specifications:

Measurements: 27mm x 97mm x 24mm

Processor: Tensilica 32-bit RISC CPU Xtensa LX106

Connectivity:

- 2.4 GHz IEEE 802.11 b/g/n wireless LAN
- 1 x Micro USB (For programming the ESP only)
- 1 x Input screw terminal (9.5mm, black)
- 1 x Pluggable Output connector (3pin, 3.81mm, green)
- 2 x Pluggable Output connector (2pin, 3.81mm, green)
- 3 x Mini auto fuse holders (rated for 5A)

Input power: 5V-12V DC via Input screw terminal

Environment: Operating temperature -20 – 35°C

Mounting holes: 5 x M3 - not connected to internal circuit (isolated)

WARNING

This product should be placed on a stable, flat and non-conductive surface when in use



Safety instructions

To avoid malfunction or damage to this product please observe the following:

- Do not expose to water, moisture or place on a conductive surface whilst in operation.
- Do not expose to heat from any source, the product is designed for reliable operation at normal ambient room temperatures.
- Take care whilst handling to avoid mechanical or electrical damage to the printed circuit board and connectors.
- Before connecting the device to power, choose the correct input voltage for the installation via the input voltage selector (marked "J1" on the printed circuit board). The device can be damaged if not set correct, warranty do not cover this mistake!
- When programming disconnect the D1-Mini, to insure no conflict between multiple power sources.
- Avoid handling the printed circuit board whilst it is powered and only handle by the edges to minimise the risk of electrostatic discharge damage.
- When not in use, store in a antistatic bag for ESD protection.

