

# Adafruit Sparkle Motion - All-In-One WLED and xLights Board

Product ID: 6100



## Description

The **Adafruit Sparkle Motion** is the flagship in our series of "Sparkle Motion" boards, that are our attempt to make the best small WLED-friendly smart LED driving board in the whole world. Our resident mermaid, [firepixie](#) makes a lot of projects with WLED and she loves it! So how can we make something that will be powerful enough to drive advanced LED projects with built-in sensors.

This version has a built-in antenna so it's ready to go out-of-the-box.

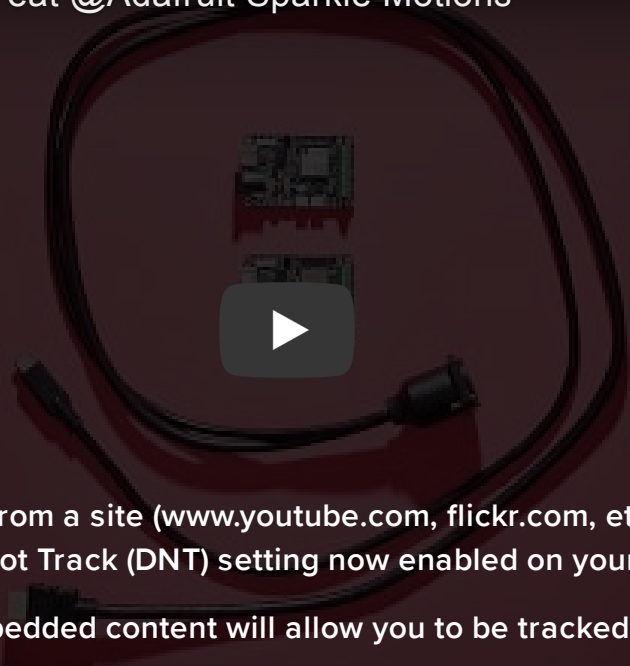
This board has everything you could possibly want for big, small, or even massive WLED/xLights projects:

- **Power option 1 via USB Type C PD** with a slide switch that selects between 5, 12 and 20V (24V pixels can usually run fine at 20V)
- **Power option 2 via 2.1mm DC jack, center positive**
- **Low forward-voltage diodes** so its good for up to 5A from either
- **5 Amp fuse** to protect from over-current drive
- **ESP32** mini module with built in antenna port - the classic ESP32 has the best WLED support even if we'd prefer the 'S2 or 'S3. Comes with 4 MB of flash, dual core 240MHz Tensilica, WiFi, Bluetooth® LE and Bluetooth® Classic support.
- **USB-serial converter** with auto-reset
- **Three output signal terminal block sets with power and ground for each** - they'll be level shifted to 5V. Use 26-20AWG stranded or solid core wires, 5A rated.
- **6 GPIO breakout pads** with a fourth level-shifted output, and 3 more GPIO plus power and ground.
- **Built-in I2S microphone** for audio-reactive projects with digital quality audio
- **Built-in IR receiver** for easy remote control integration
- **Stemma QT I2C port** to connect external sensors/OLED/etc.
- **Separate analog/digital input JST port** for analog input, potentiometer, microphone or external IR receiver
- **User button on GPIO 0** plus Reset button
- **Red built-in LED** on pin 4
- **Small built-in NeoPixel** on pin 2
- Compact enough you can use it for wearable projects - 1.3"x1.75" / 33mm x 45mm size with mounting holes

To make it super fast to get started, terminal blocks are pre-installed: use any 20-26 AWG stranded or solid core wires with a flat-head screwdriver to attach semi-permanently.

While we recommend it for use with WLED, it will also work just fine as a compact ESP32 board for use with Arduino, ESP-IDF, MicroPython, CircuitPython or any other ESP32 supported codebase.

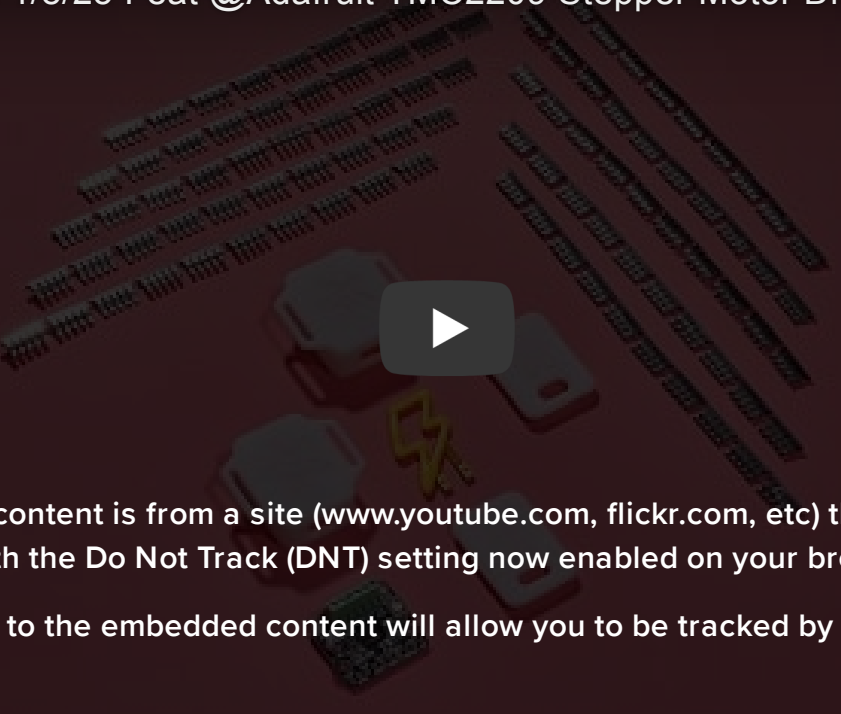
#NewProducts 1/22/25 Feat @Adafruit Sparkle Motions



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## Technical Details

Revision History:

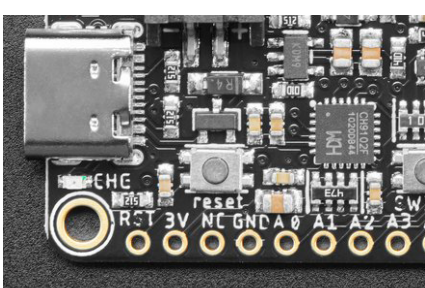
- **As of August 4, 2025** - The microphone may be located on the top or bottom of the Sparkle Motion board.



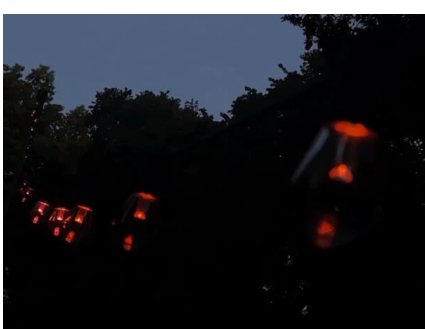
## Learn



[Primary Guide: Adafruit Sparkle Motion](#)  
Get up and running with your Sparkle Motion Board



[How To Install Drivers for WCH CH34X / CH340 / CH341 / CH342 / CH343 / CH344 / CH346 / CH347 / CH9101 / CH9102 / CH9103 / CH9104 / CH9111 / CH9114 / CH9143 USB to Serial Chips](#)  
Get setup to transfer your serial data over USB



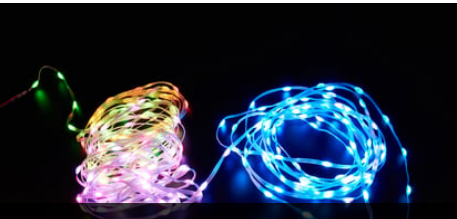
[Programmable 12v Outdoor Cafe Lights](#)  
Set the mood in your yard with gorgeous colored lights



[xLights for Sparkle Motion Board](#)  
Sequence your Pixels to create a dazzling display

[See All Guides](#)

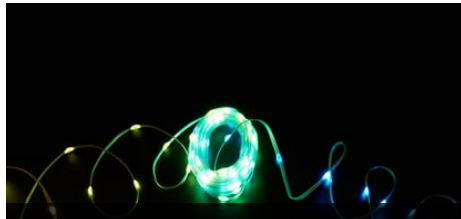
## May We Also Suggest...



Adafruit NeoPixel Pebble / Seed LED Strand - 300 LEDs - 2" Pitch - 15 meters long



Adafruit NeoPixel Pebble / Seed LED Strand - 200 LEDs - 2" Pitch - 10 meters long



Adafruit NeoPixel Pebble / Seed LED Strand - 100 LEDs - 4" Pitch - 10 meters long




Adafruit NeoPixel Pebble / Seed LED Strand - 150 LEDs - 4" Pitch - 15 meters long



USB C to USB C Cable w/ 100W Watt Display - 1 meter Black Woven




Official Raspberry Pi 27W PD Power Supply 5.1V 5A with USB C




Mini Remote Control



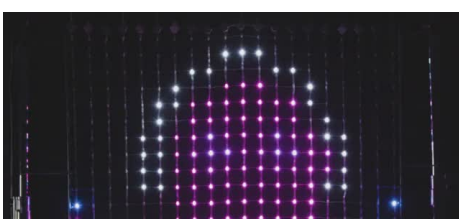
Adafruit I2S MEMS Microphone Breakout - ICS-43434



Mini Sparkle Motion - WLED-friendly ESP32 NeoPixel LED Driver



Adafruit Sparkle Motion with wFL External Antenna - WLED and xLights Board



NeoPixel LED Outdoor Netting - 20 x 20 LEDs - 1x1 Meter Sizing



NeoPixel LED Outdoor Netting - 100 x 20 LEDs - 1x5 Meter Sizing





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“ *The economy of human time is the next  
advantage of machinery in manufactures*”

– Charles Babbage



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