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adafruit learning system

FLORA Sensors

Created by Becky Stern

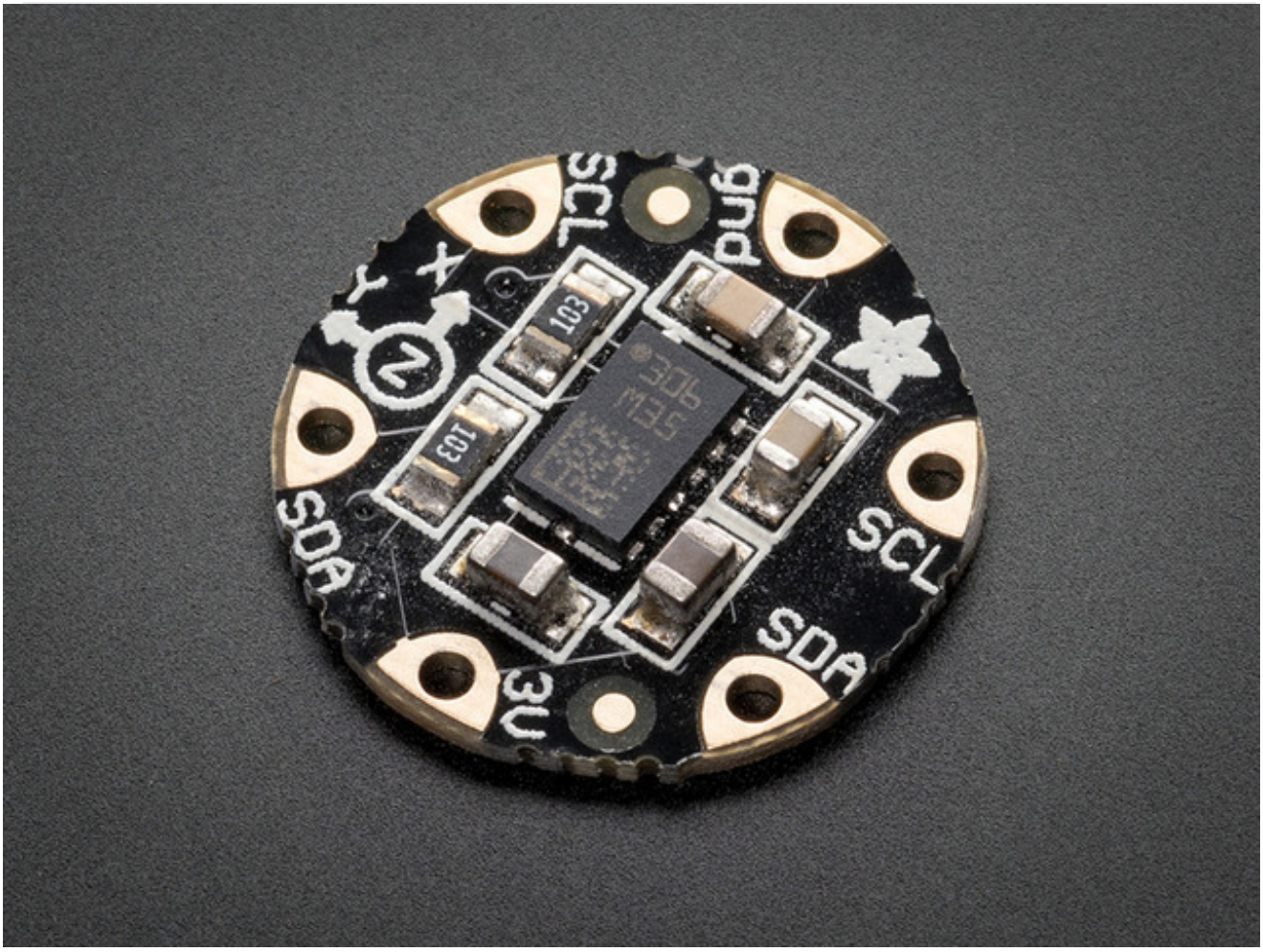
Last updated on 2015-09-02 01:00:28 PM EDT

Guide Contents

Overview

Sensors! They're great for bringing interactivity to your wearables projects, and the FLORA family of high tech sewable sensors just keeps growing. They chain together and communicate over i2c, so you can add a bunch of sensors without using all of FLORA's pins or sewing endless traces with conductive thread. Let's find the right FLORA sensor for your project. Each Adafruit wearable sensor has an Arduino library with sample code to get you started, and projects to build here on the Adafruit Learning System.

Accelerometer/Compass LSM303

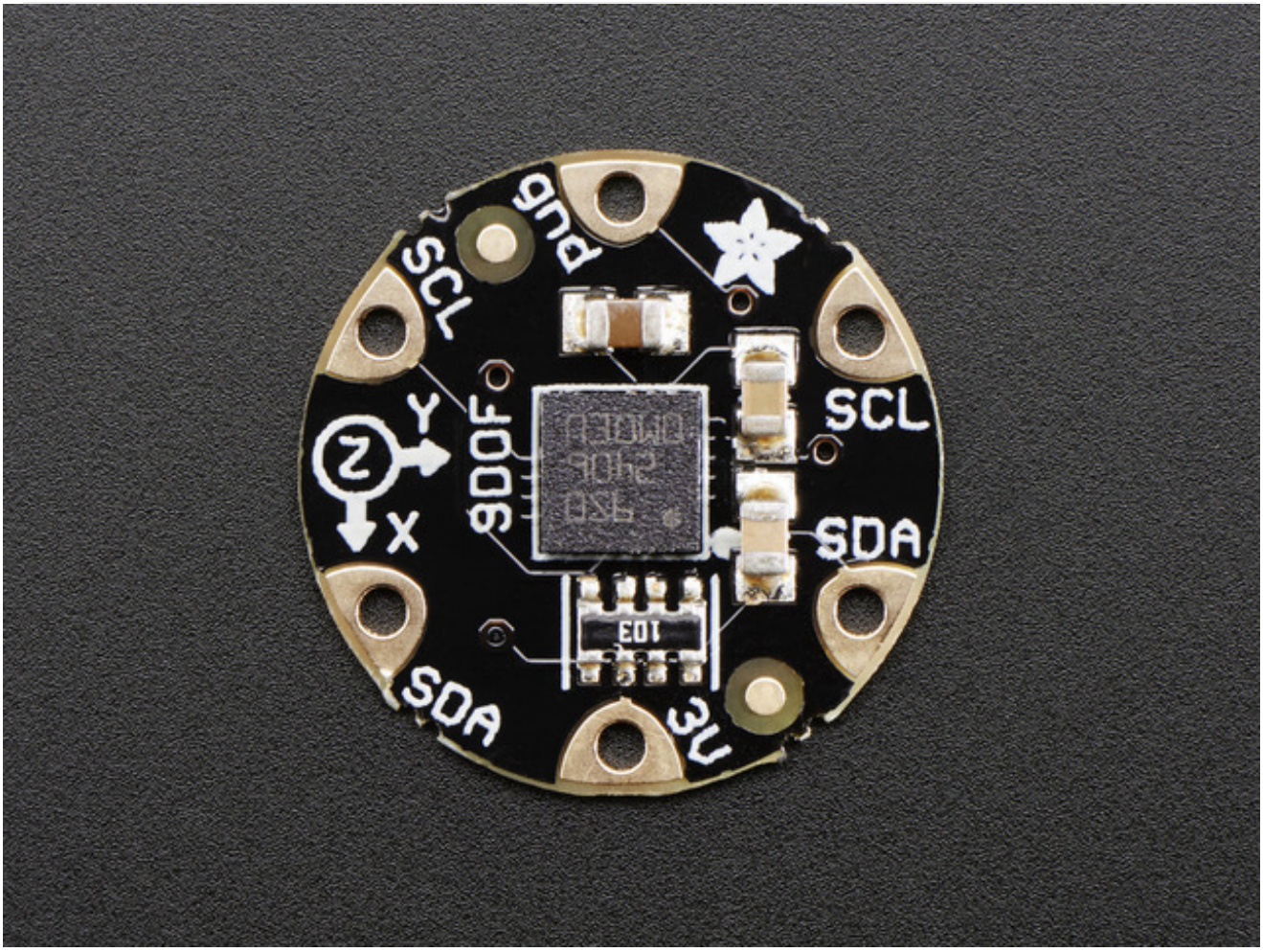


First let's get things moving. The FLORA LSM303 (http://adafru.it/dN0) contains an accelerometer, which is great for detecting your dance moves, footsteps, or roller coaster rides. We've used it in the hem of the Sparkle Skirt (http://adafru.it/dN1) and on 3D printed wristband (http://adafru.it/dN2) to flash some neopixels when you walk or shimmy.

- Get started with the FLORA LSM303 Accelerometer Compass (http://adafru.it/dN0)
- Pick up yours in the Adafruit shop! (http://adafru.it/dN3)

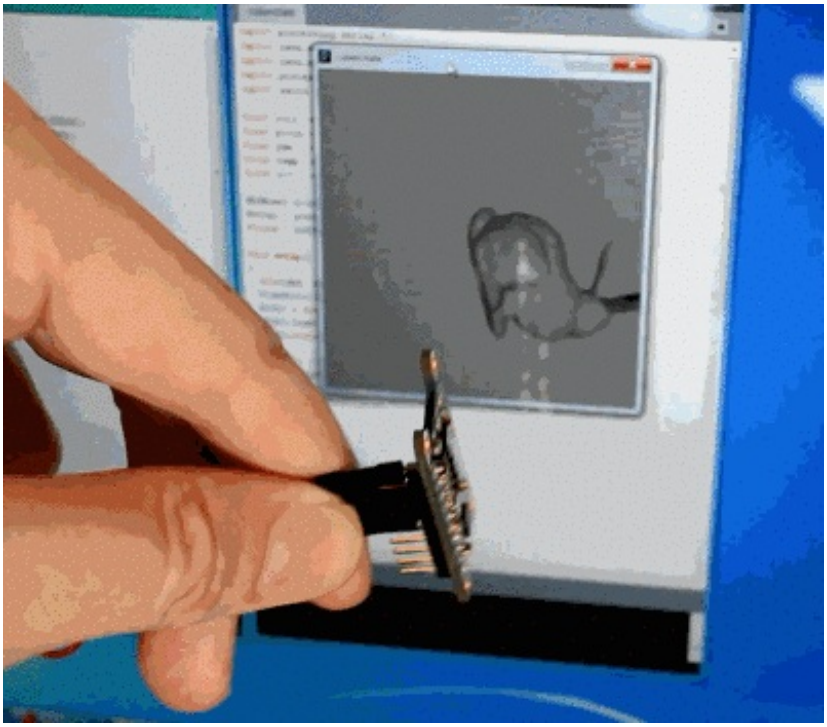
The LSM303 board also contains a compass, which you can use to tell which way you're facing. Use it alone to get your cardinal bearings, or in combination with a GPS for navigation like in the NeoGeo watch (http://adafru.it/dN4) or Citi Bike helmet (http://adafru.it/dN5).

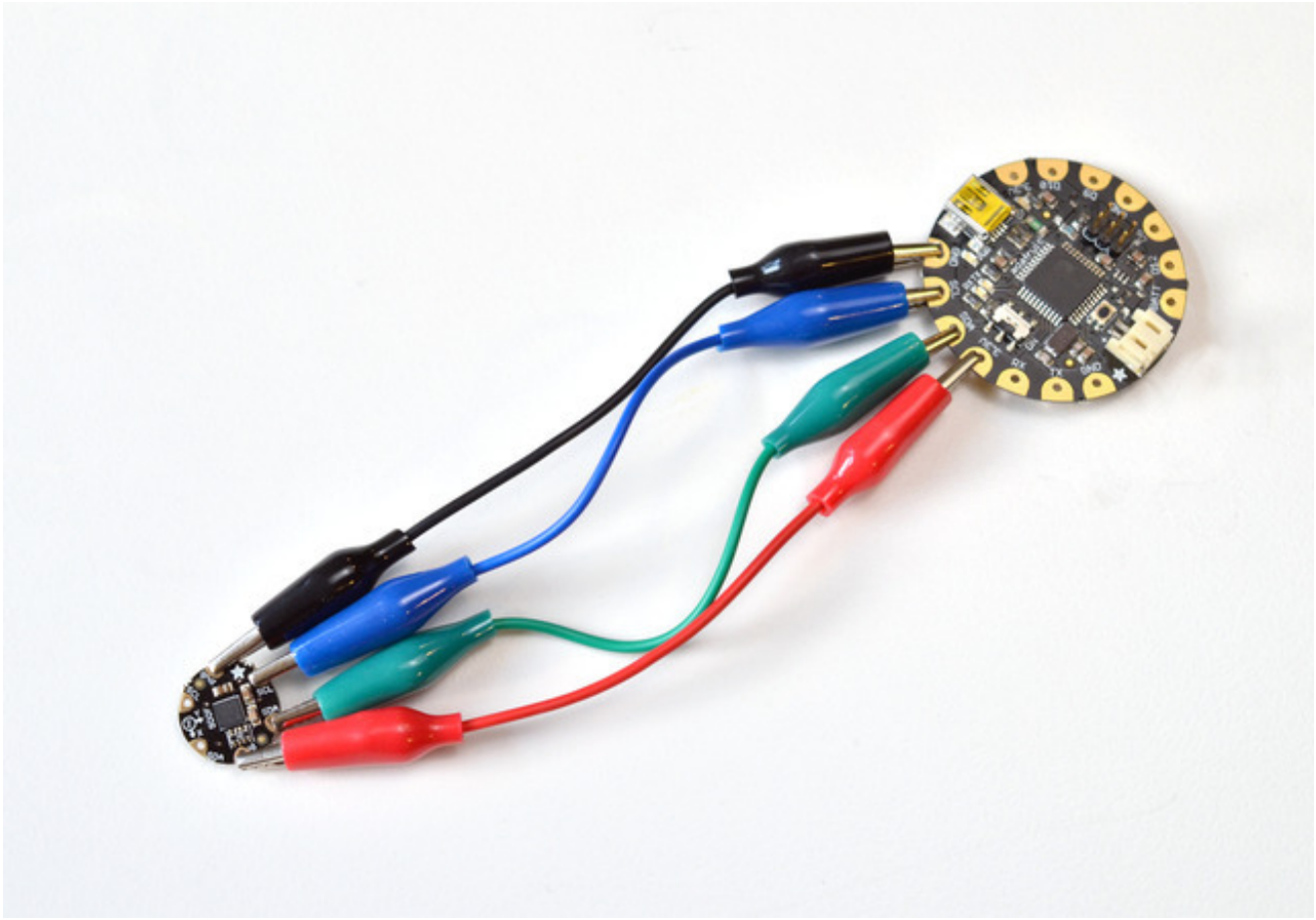
9 Degrees of Freedom LSM9DS0

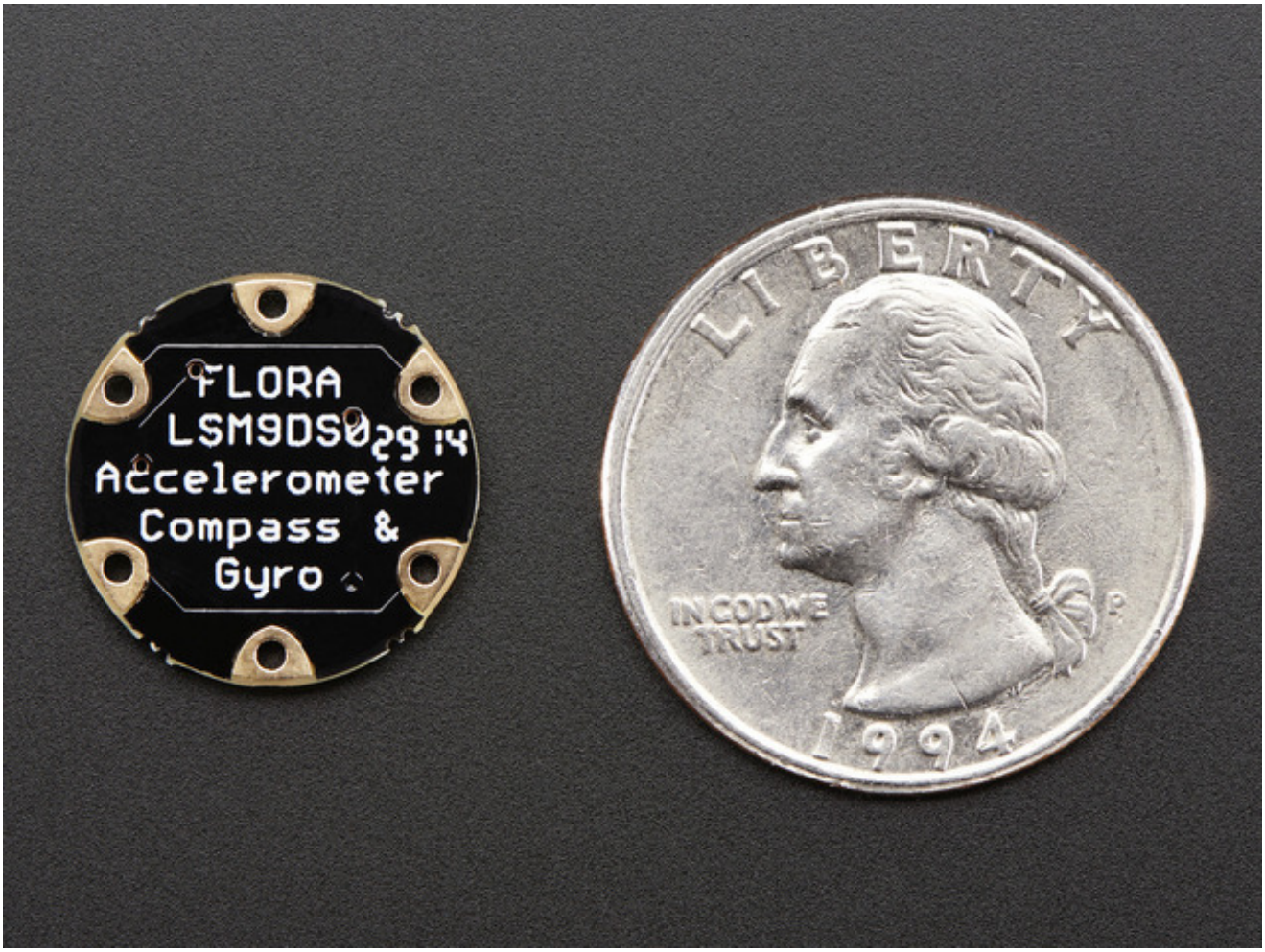


If you need even more motion data, the 9 degrees of freedom sensor is the new LSM9DS0 which has a gyroscope as well, all together great for sensing orientation and heading in 3D space.

- Get started with the FLORA LSM9DSO (http://adafru.it/dN8)
- Pick up yours in the Adafruit shop! (http://adafru.it/dN9)






FLORA
LSM9DS0
Accelerometer
Compass &
Gyro
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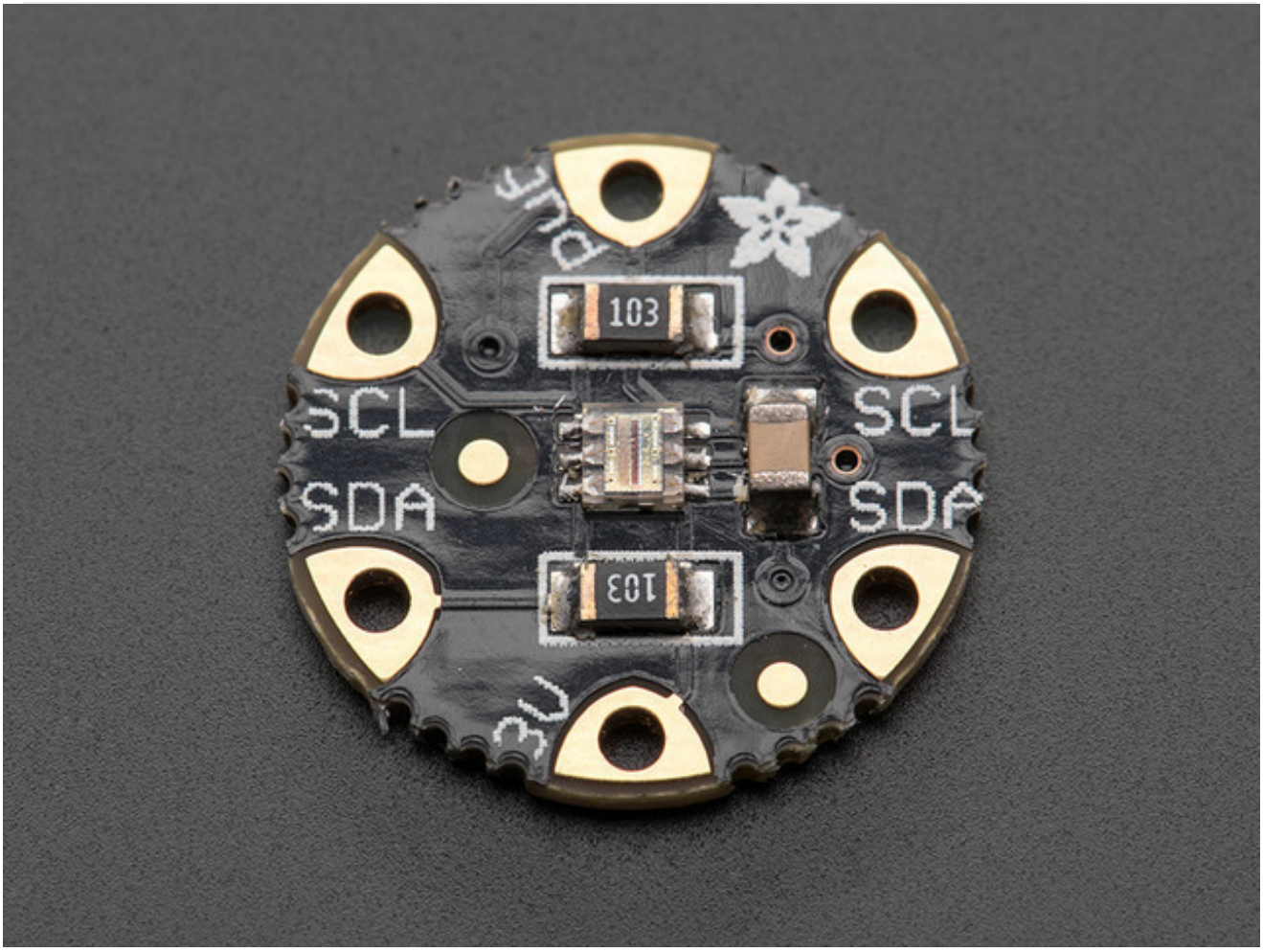
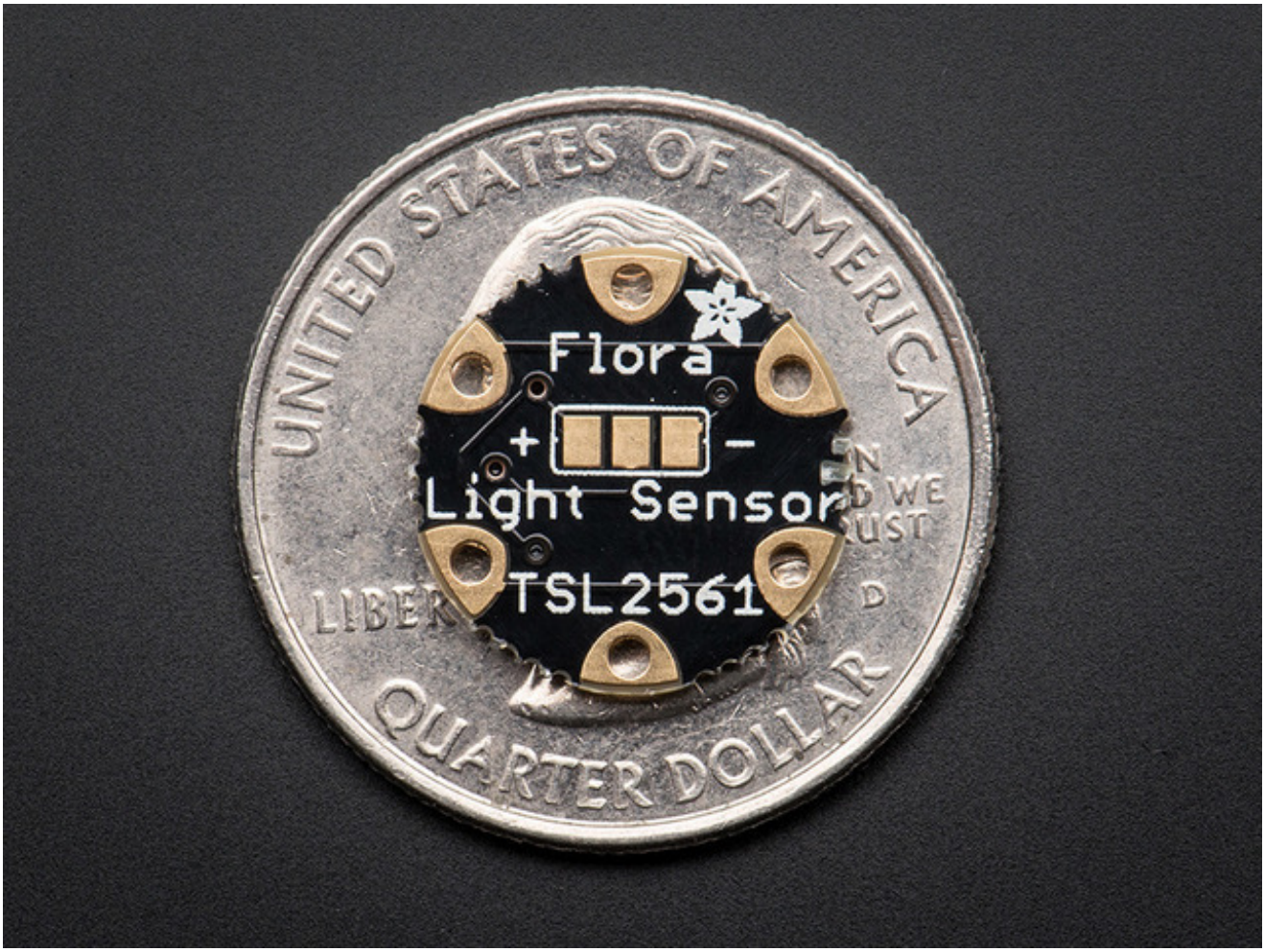
Light Sensor TSL2561

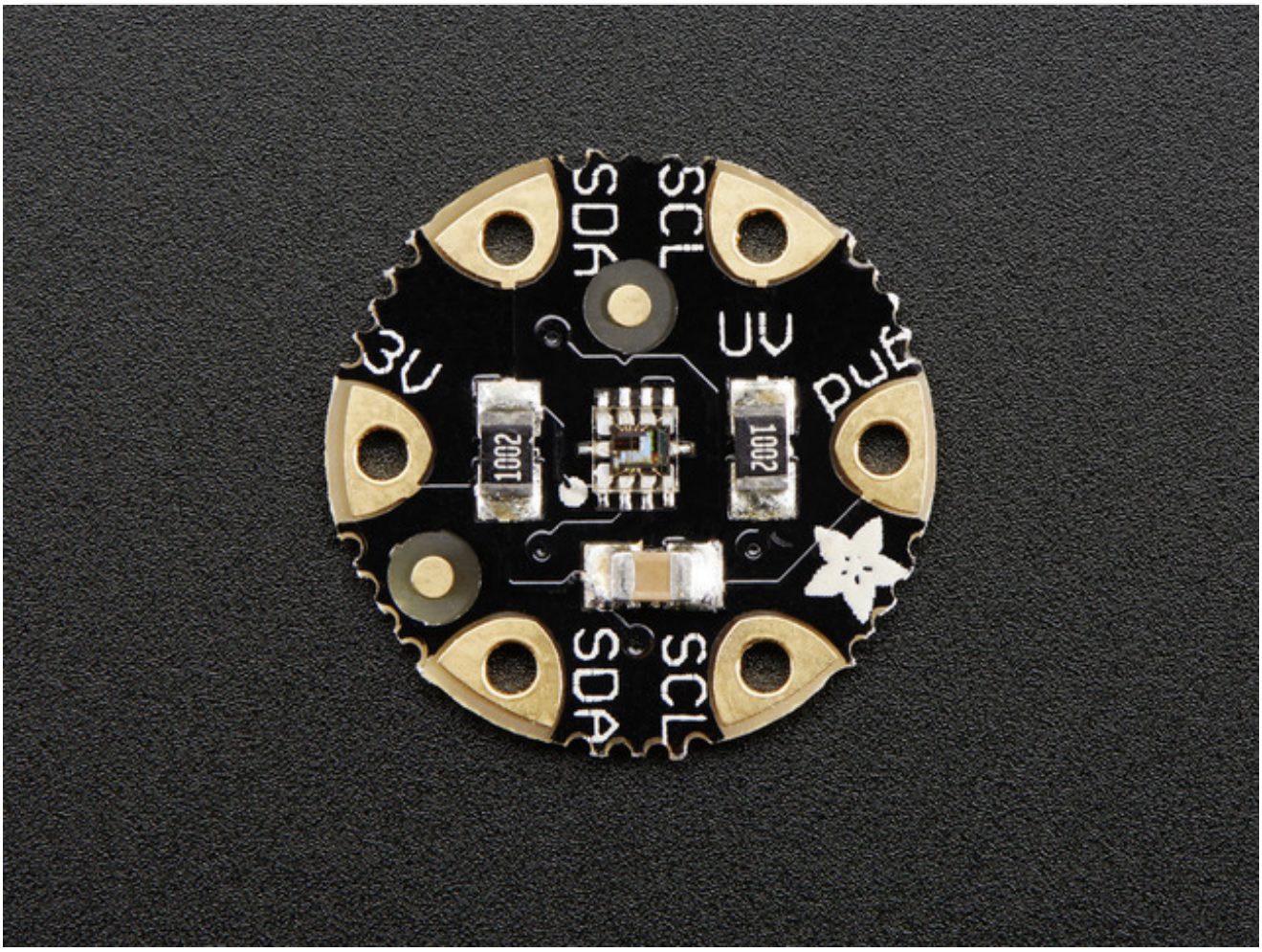


Now let's shed some light on the TSL2561 luminosity sensor. It'll read visible light, infrared, or both. Maybe you could make a darkness-activated headlamp or a hat that detects infrared security cameras.

- Get started with the FLORA TSL2561 (http://adafru.it/dNa)
- Pick up yours in the Adafruit shop! (http://adafru.it/dNb)

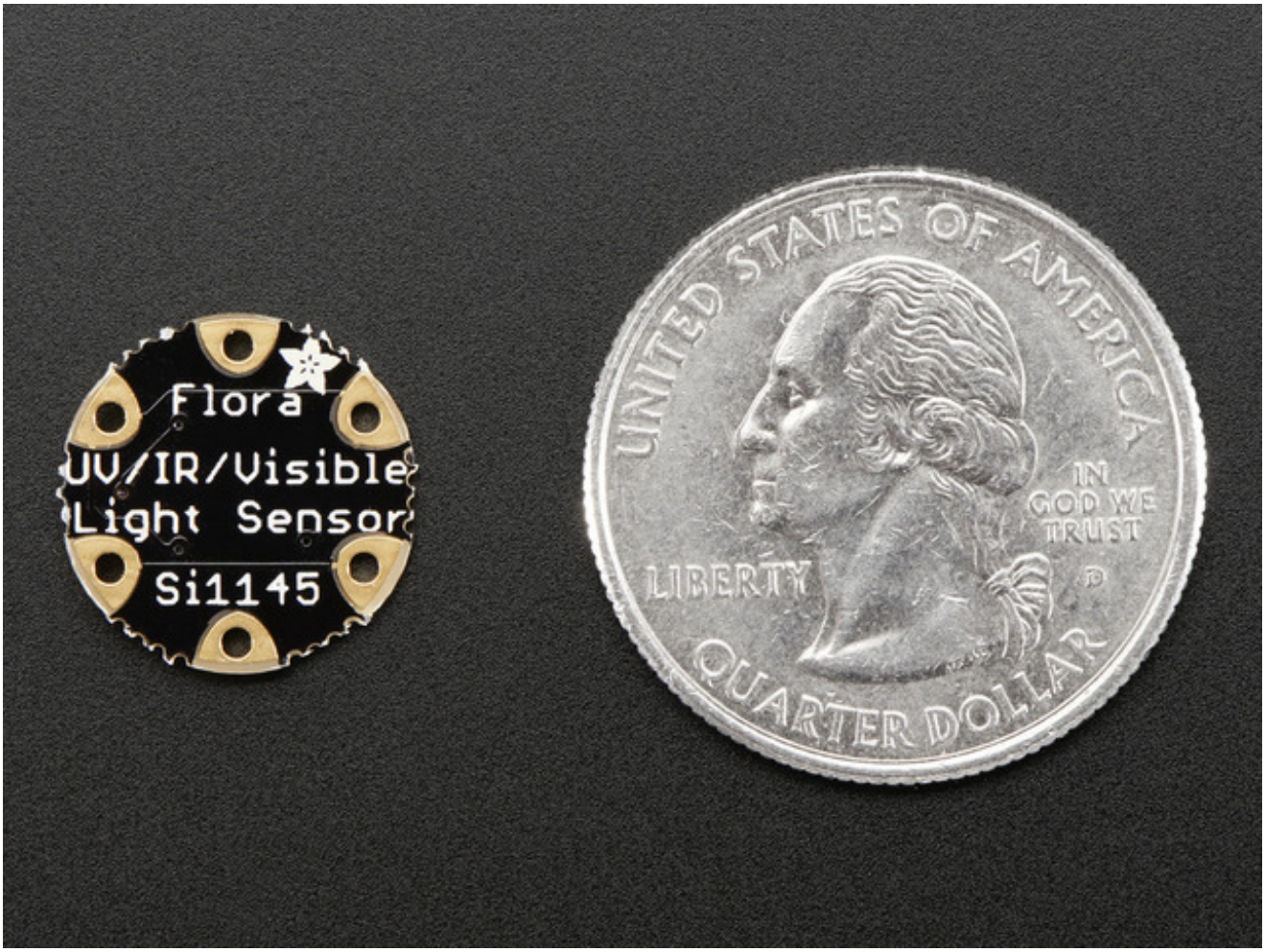

UNITED STATES OF AMERICA
Flora
+
-
Light Sensor
TSL2561
QUARTER DOLLAR

UV Index Sensor Si1145



If it's sunburn you're concerned with, the Si1145 UV Index sensor is perfect for helping you remember to reapply your SPF, like in the sunscreen reminder hat project (http://adafru.it/dNc).

- Get started with the FLORA Sii1145 (http://adafru.it/dJP)
- Pick up yours in the Adafruit shop! (http://adafru.it/dJL)


Flora
UV/IR/Visible
Light Sensor
Si1145
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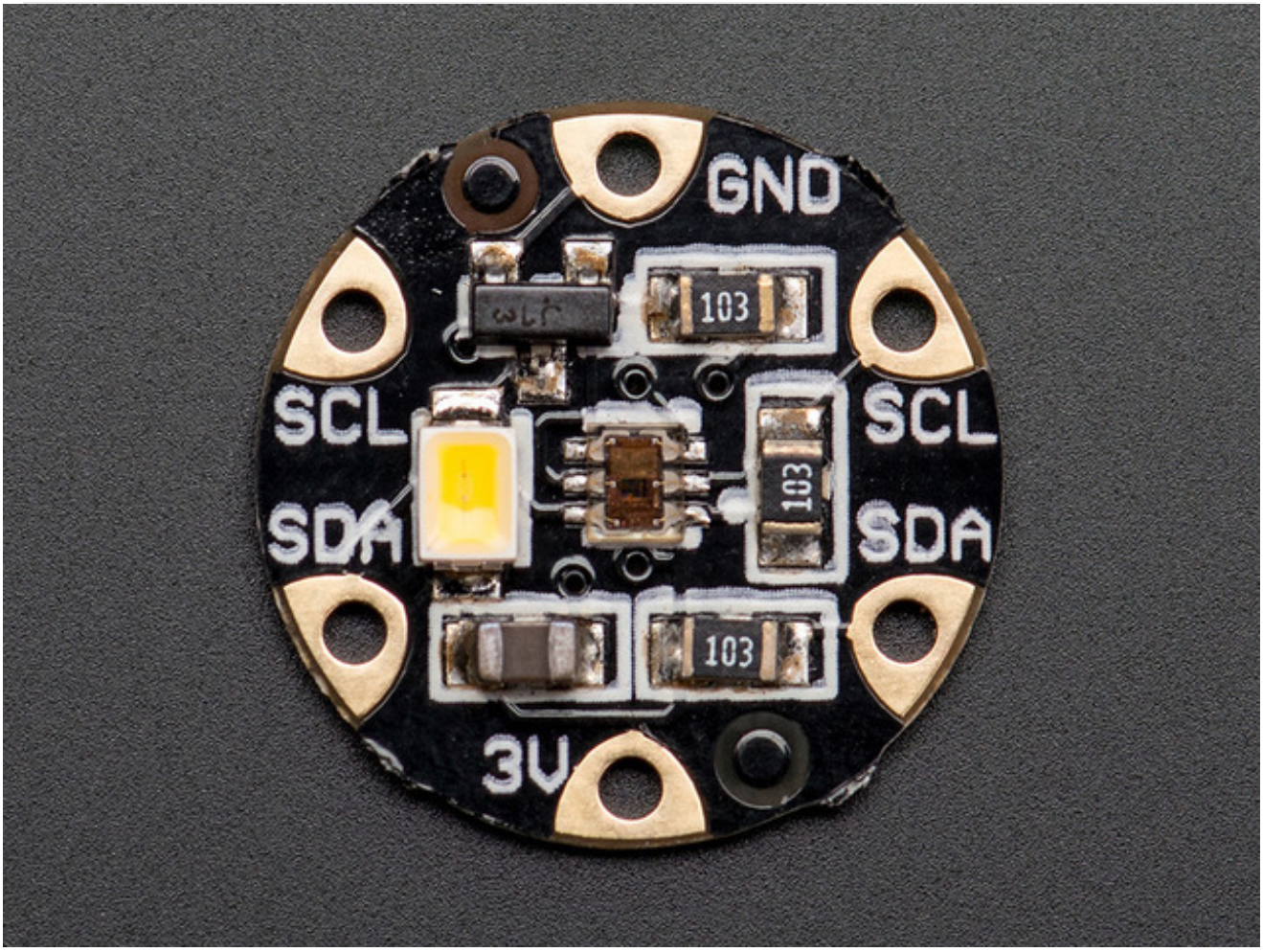
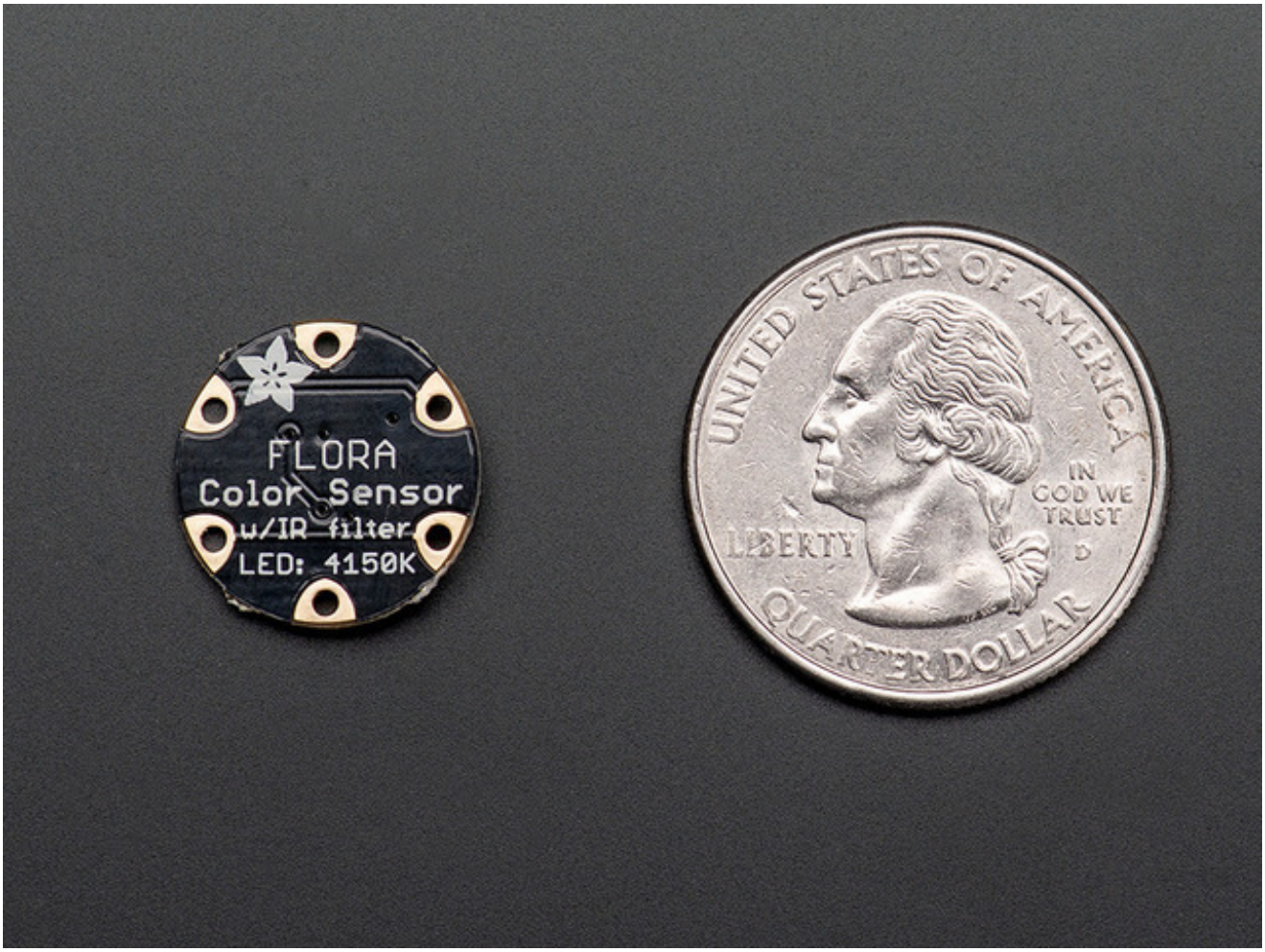
Color Sensor TCS34725



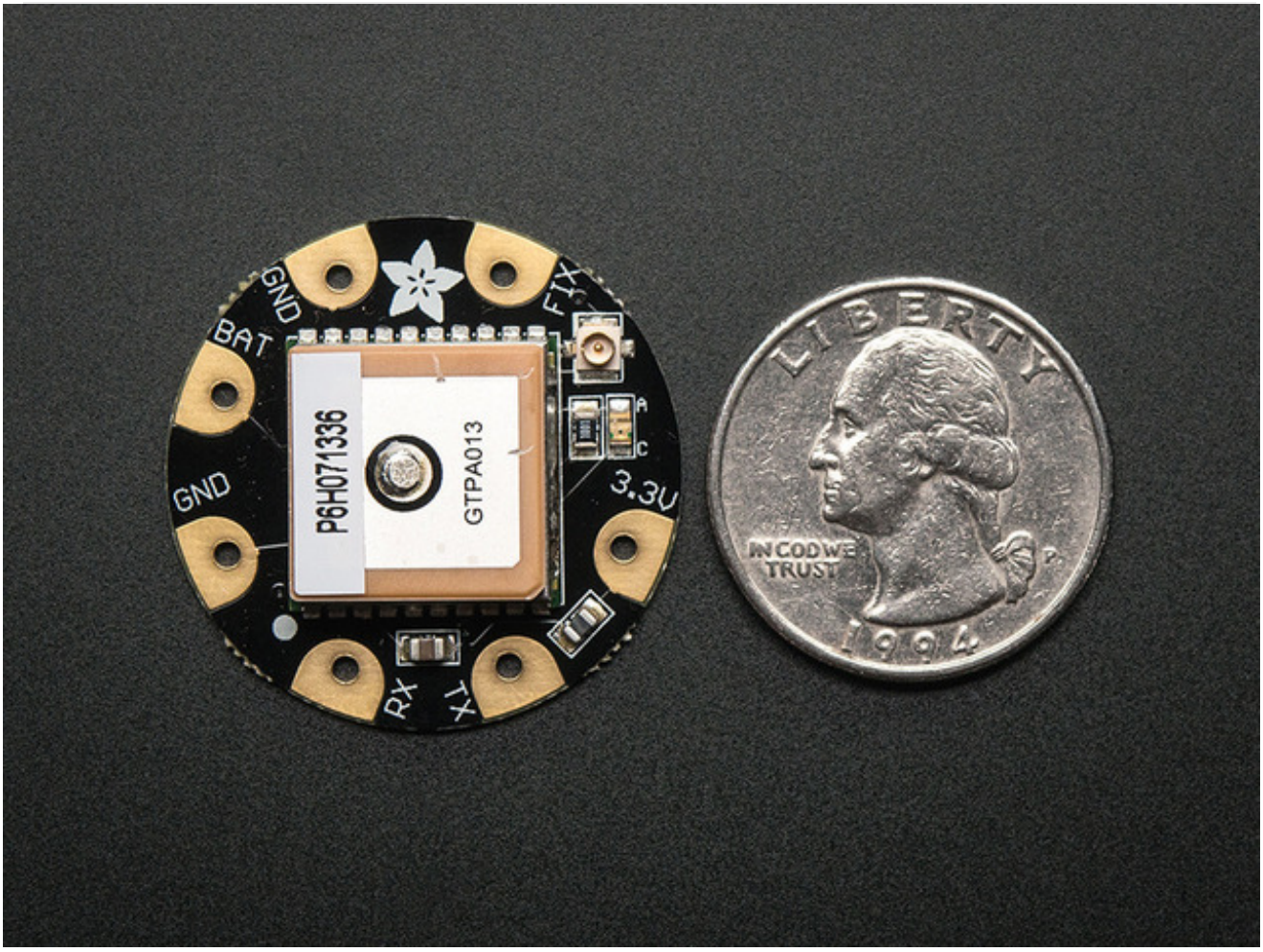
You can detect the color of an object with the TCS34725 color sensor. The onboard LED shines onto the object, reflecting light into the sensor for an accurate color reading, great for matching your accessories to your outfit like in the Chameleon Scarf (http://adafru.it/dNd) or FLORAbrella (http://adafru.it/dNe).

- Get started with the FLORA TCS34725 (http://adafru.it/dj8)
- Pick up yours in the Adafruit shop! (http://adafru.it/1356)



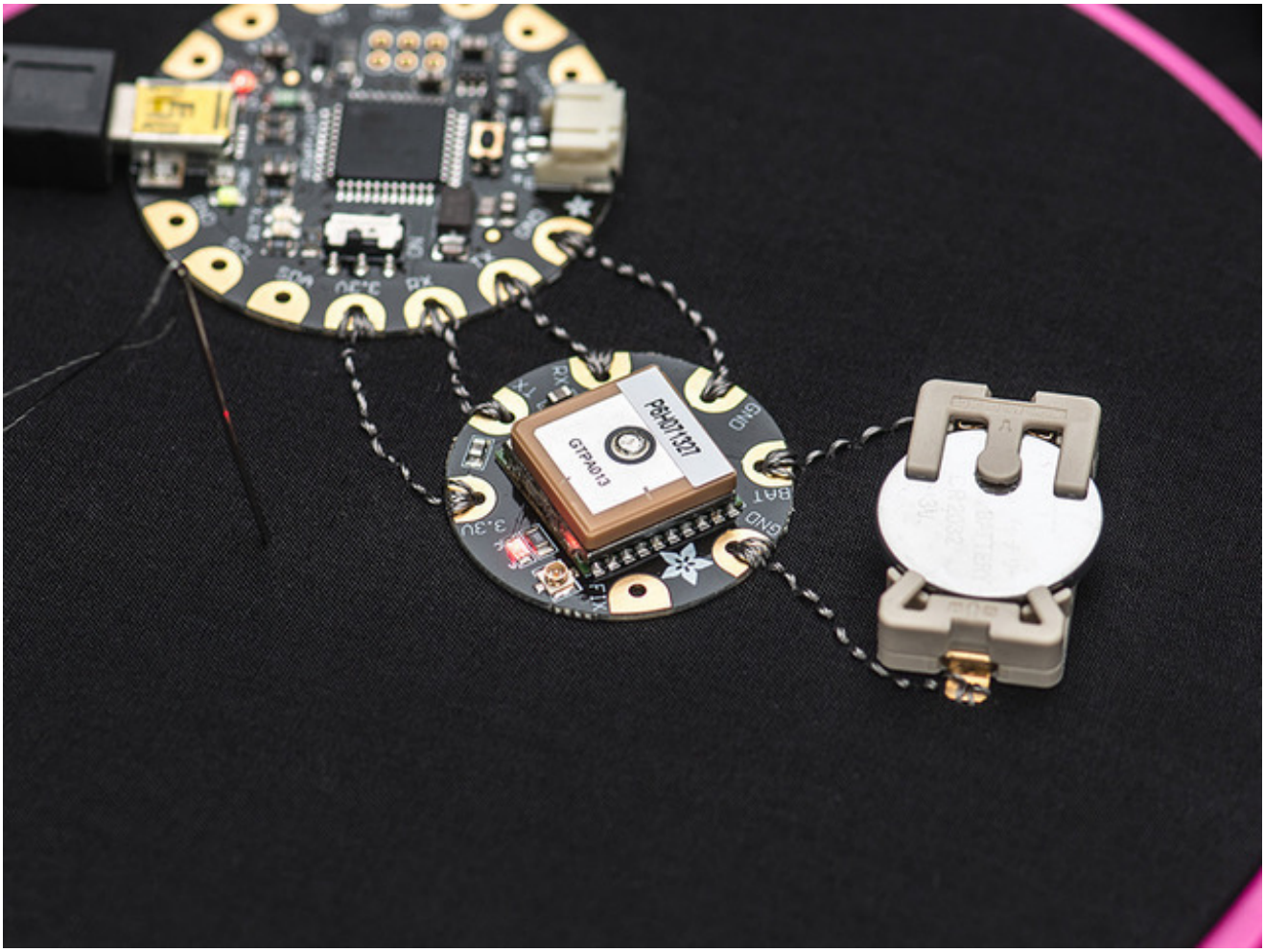
Piano Glove (http://adafru.it/dNf)

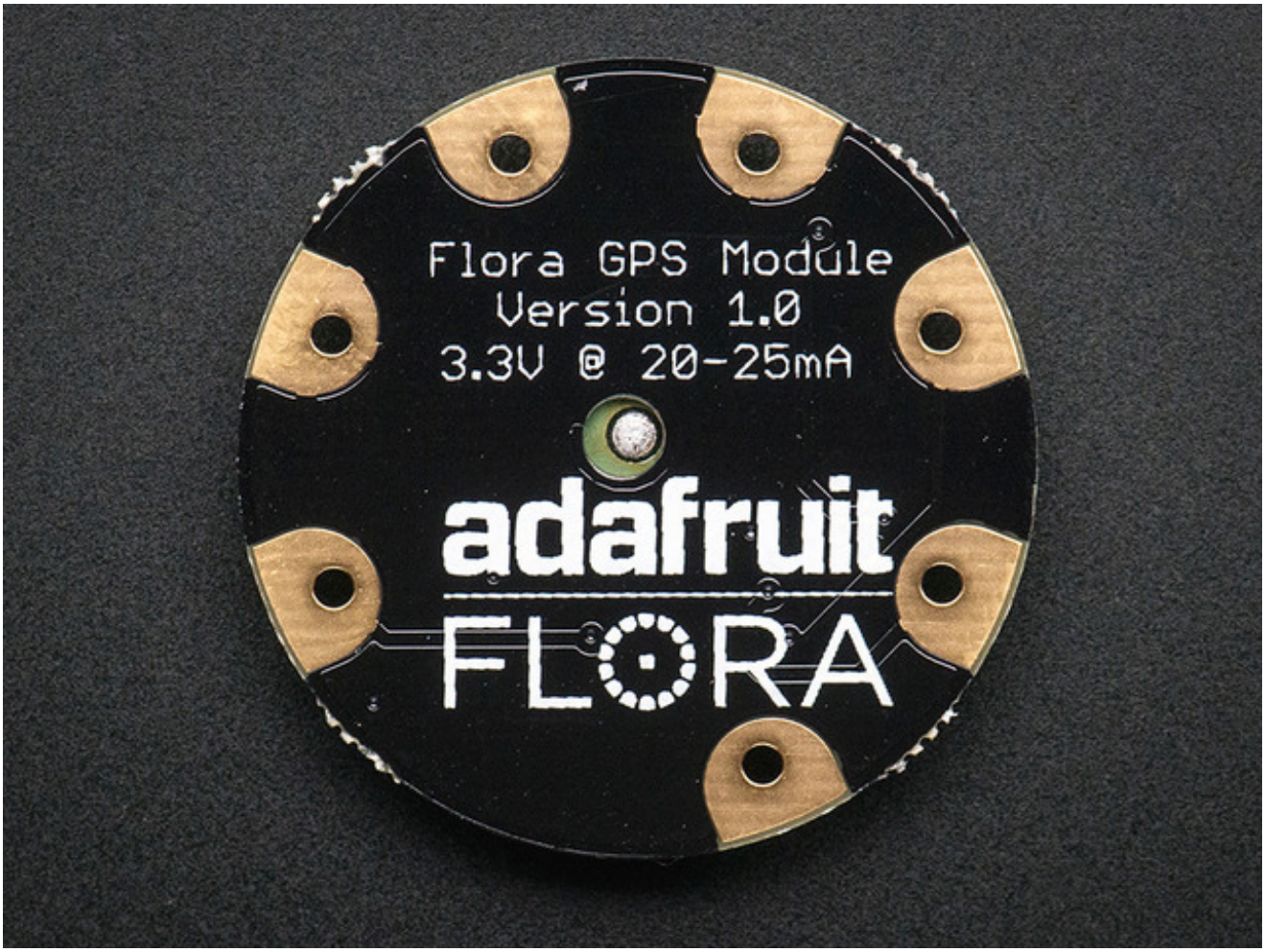
Wearable GPS Module



This module is the best way to add a GPS to your wearable project. Installed on the PCB is the latest of our Ultimate GPS modules, a small, super-thin, low power GPS module with built in data-logging capability! This module's easy to use, but extremely powerful. It's does not use i2c like the other sensors, but rather communicated over serial to FLORA. Use it for a GPS Jacket (http://adafru.it/dNi) of GPS logging dog harness (http://adafru.it/dNj).

- Get started with the FLORA Ultimate GPS (http://adafru.it/dwe)
- Pick up yours in the Adafruit shop! (http://adafru.it/1059)


GTPA013
GND
BAT
GND
3.3V



Citi Bike helmet (http://adafru.it/dN5)

FLORA NeoGeo Watch (http://adafru.it/dN4)

NeoPixel Ring Clock (http://adafru.it/dNk)