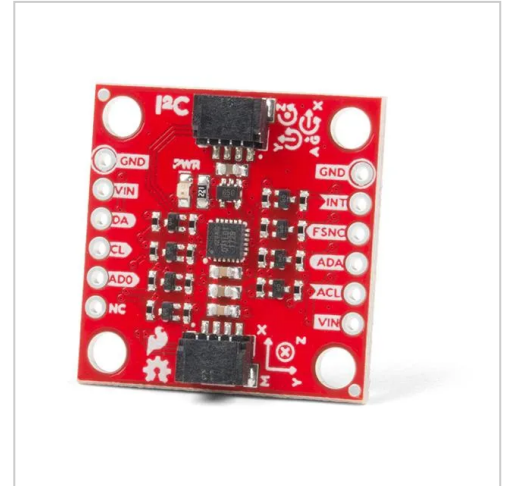


SparkFun Qwiic - 9DoF IMU Breakout, ICM-20948

The SparkFun 9DoF IMU Breakout includes all the amazing features of Invensense's ICM-20948 in a Qwiic-enabled breakout board, complete with a logic shifter and broken out GPIO pins for all your motion sensing needs

Product number SEN-15335

Weight 0.02kg



Product description

The SparkFun 9DoF IMU Breakout includes all the amazing features of Invensense's ICM-20948 in a Qwiic-enabled breakout board, complete with a logic shifter and broken out GPIO pins for all your motion sensing needs. The ICM-20948 itself is an ultra-low power, I2C and SPI enabled 9-axis motion sensing device ideal for smartphones, tablets, wearable sensors and IoT applications. By using our convenient Qwiic system, no soldering is required to connect it to the rest of your system. Nevertheless, we have broken out the pins at 0.1" spacing in case you prefer to use a breadboard.

In addition to the 3-axis gyroscope with four selectable ranges, the 3-axis accelerometer, also with four selectable ranges, and the 3-axis magnetometer with an FSR up to $\pm 4900\mu\text{T}$, the ICM-20948 also includes a digital motion processor that offloads the computation of the motion detection algorithms from the detectors, allowing for optimal performance of the sensors. We have also split all the pins of the ICM-20948 into GPIO and labelled them I2C on the front and SPI on the back for easy identification.

Note: The I2C address of the ICM-20948 is 0x69 and can be switched to 0x68 using a jumper. A multiplexer/mux is required to communicate with several ICM-20948 sensors on a single bus. If you want to use more than one ICM-20948 sensor, you should use the Qwiic Mux Breakout.

Features:

- 1.95 V to 3.6 V supply voltage
- Three-axis MEMS gyroscope with freely programmable full scale range of ± 250 dps, ± 500 dps, ± 1000 dps and ± 2000 dps
- Triaxial MEMS accelerometer with programmable full scale range of $\pm 2g$, $\pm 4g$, $\pm 8g$ and $\pm 16g$
- Triaxial monolithic silicon Hall-effect magnetic sensor with measuring range up to ± 4900 μT
- I2C with up to 100 kHz (standard mode) or up to 400 kHz (fast mode) or SPI with up to 7 MHz for communication with registers
- Built-in digital motion processor (DMP)
- Temperature sensor with digital output
- 2x Qwiic connection ports
- I2C address: 0x69 (0x68 with jumper)

Documents:

- [Get Started with the SparkFun ICM-20948 9DoF IMU Guide](#)
- [Circuit diagram](#)
- [Eagle files](#)
- [Connection instructions](#)
- [Datasheet](#) (ICM-20948)
- [Arduino library](#)
- [Python support \(Qwiic Py\)](#)
- [GitHub Hardware Repo](#)

Product properties

Gross Weight (kg)	0.020
Zolltarifnummer	85423900
Country of Origin	USA
Brand	SparkFun
Product ID	SEN-15335
Manufacturer ID	SEN-15335
EAN	8423220036574

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