sparkfun

SparkFun Triple Axis Accelerometer Breakout - MMA8452Q

SEN-12756 ROHS✔ ✿

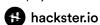★ ★ ★ ★ ⯪ 6
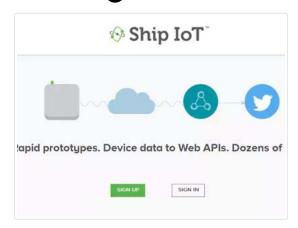
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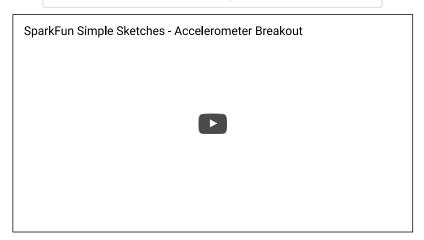by Mark Easley

Description: This breakout board makes it easy to use the tiny MMA8452Q accelerometer in your project. The MMA8452Q is a smart low-power, three-axis, capacitive MEMS accelerometer with 12 bits of resolution. This accelerometer is packed with embedded functions with flexible user programmable options, configurable to two interrupt pins. Embedded interrupt functions allow for overall power savings relieving the host processor from continuously polling data.

The MMA8452Q has user selectable full scales of ±2g/±4g/±8g with high pass filtered data as well as non filtered data available real-time. The device can be configured to generate inertial wake-up interrupt signals from any combination of the configurable embedded functions allowing the MMA8452Q to monitor events and remain in a low power mode during periods of inactivity.

This board breaks out the ground, power, I^{2}C and two external interrupt pins.

Not sure which accelerometer is right for you? Our Accelerometer and Gyro Buying Guide might help!

Note: If you are looking for the SparkFun Triple Axis Accelerometer Breakout with headers, it can be found here or in the *Recommended Products* below.

SparkFun Simple Sketches - Accelerometer Breakout

Features:

- 1.95 V to 3.6 V supply voltage
- 1.6 V to 3.6 V interface voltage
- ±2g/±4g/±8g dynamically selectable full-scale
- Output Data Rates (ODR) from 1.56 Hz to 800 Hz
- 12-bit and 8-bit digital output
- I2C digital output interface (operates to 2.25 MHz with 4.7 kΩ pullup)
- Two programmable interrupt pins for six interrupt sources
- Three embedded channels of motion detection
- Orientation (Portrait/Landscape) detection with set hysteresis
- High Pass Filter Data available real-time
- Current Consumption: 6 µA – 165 µA

Documents:

- Schematic
- Eagle Files
- Hookup Guide
- Datasheet (MMA8452Q)
- GitHub (Design Files & Example Code)
- GitHub (Library)

Recommended Products

SPARKFUN RECOMMENDED
SparkFun Sensor Kit
DEV-13754
$129.95
★★★★☆ 1

SPARKFUN RECOMMENDED
SparkFun Triple Axis Accelerometer Breakout - ADXL345
SEN-09836
$17.95
★★★½☆ 8

SPARKFUN RECOMMENDED
SparkFun Essential Sensor Kit
SEN-12862
$39.95
★★★★½ 3

SPARKFUN RECOMMENDED
SparkFun Triple Axis Accelerometer Breakout - LIS3DH
SEN-13963
$4.95

Customer Reviews

★ ★ ★ ★ ☆ 4.5 out of 5

Based on 6 ratings:

5 star	3
4 star	3
3 star	0
2 star	0
1 star	0

★ ★ ★ ★ ★ Works as expected!

last year by Member #767323 ✔ verified purchaser

Accelerometer works great!

0 of **1** found this helpful:

★ ★ ★ ☆ still struggling with MMA8452Q

about a year ago by Member #334301 ✔ verified purchaser

First, Sparkfun is amazing ! I use a PICAXE 14M2. I found some helpful code on PICAXE FORUM. But my HI2CIN instruction does not bring in data from my accelerometer. I have had good luck with I2C protocol until I tried this device for use with my QUAD and also another device T5403 barometric pressure sensor. But I have not given up on these while I'm pursuing other approaches for my experimental QUAD. Note that I bypass RC and speak to QUAD directly from my micro-controller.

★ ★ ★ ☆ Easy to use

about 10 months ago by Member #780445 ✔ verified purchaser

Easy to find libs and code examples. Works as expected.

★ ★ ★ ★ ★ This is awesome!

about a year ago by mattmunee ✔ verified purchaser

I love this device. I'm completing a security system within intrusion sensors based on this device, and I am quite impressed. There are many interrupt functions that allow this to be used in low-power battery applications. I'm currently using this with a Moteino, and when the circuit is asleep, the entire system consumes roughly 30uA! The accelerometer interrupts are what make this possible. For those interested, I've expanded on Sparkfun's library here:

https://github.com/mattmunee/MMA8452Q_Arduino_Library

It's a work in progress, but it now has code for using ALL of the interrupt functionality.

★ ★ ★ ★ ★ Works easily with the Teensy 3.1

about a year ago by Member #222293 ✔ verified purchaser

I found that setup was easy, and the I2C connection worked out-of-the-box, with the example program. I found it easy to incorporate into my project. 10 minutes soldering to add the pins 20 minutes of software learning inside the Arduino/Teensyduino environment Done.