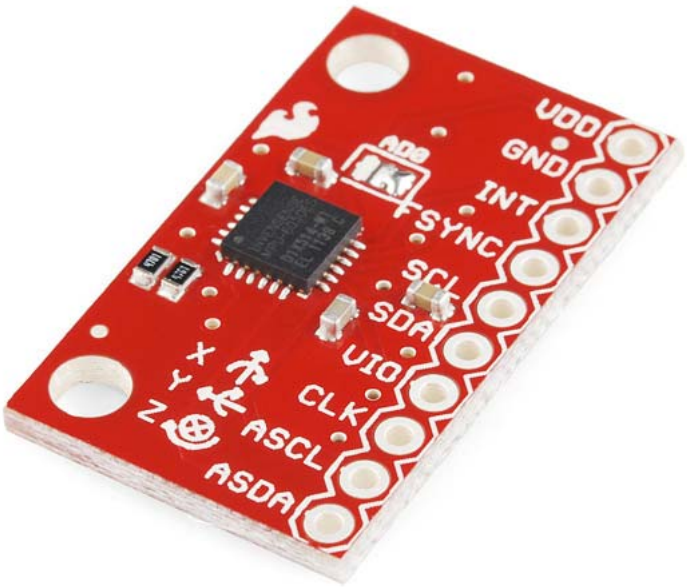
SparkFun Triple Axis Accelerometer and Gyro Breakout - MPU-6050

SEN-11028 ROHS

★★★☆☆ 1



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SparkFun Triple Axis Accelerometer and Gyro Breakout - MPU-6050 project on

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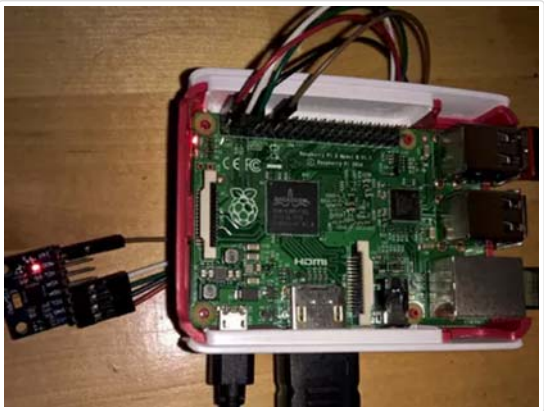

MPU-6050 for Windows IoT

by Graham Chow

Description: The MPU-6050 is a serious little piece of motion processing tech! By combining a MEMS 3-axis gyroscope and a 3-axis accelerometer on the same silicon die together with an onboard Digital Motion Processor™ (DMP™) capable of processing complex 9-axis MotionFusion algorithms, the MPU-6050 does away with the cross-axis alignment problems that can creep up on discrete parts.

Our breakout board for the MPU-6050 makes this tiny QFN package easy to work into your project. Every pin you need to get up and running is broken out to 0.1" headers, including the auxiliary master I2C bus which allows the MPU-6050 to access external magnetometers and other sensors.

Having a hard time picking an IMU? Our Accelerometer, Gyro, and IMU Buying Guide might help!

Dimensions: 1 x 0.6 x 0.09" (25.5 x 15.2 x 2.48mm)

Features:

- I2C Digital-output of 6 or 9-axis MotionFusion data in rotation matrix, quaternion, Euler Angle, or raw data format
- Input Voltage: 2.3 - 3.4V
- Selectable Solder Jumpers on CLK, FSYNC and AD0

- Tri-Axis angular rate sensor (gyro) with a sensitivity up to 131 LSBs/dps and a full-scale range of ±250, ±500, ±1000, and ±2000dps
- Tri-Axis accelerometer with a programmable full scale range of ±2g, ±4g, ±8g and ±16g
- Digital Motion Processing™ (DMP™) engine offloads complex MotionFusion, sensor timing synchronization and gesture detection
- Embedded algorithms for run-time bias and compass calibration. No user intervention required
- Digital-output temperature sensor

Documents:

- Schematic
- Eagle Files
- Datasheet (MPU-6050)
- Example Code
- I2Cdevlib Page
- GitHub

Recommended Products

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SPARKFUN RECOMMENDED
SparkFun IMU Breakout - MPU-9250
SEN-13762
$14.95
★★★½☆ 2

SPARKFUN RECOMMENDED
SparkFun 6 Degrees of Freedom IMU Digital Combo Board - ITG3200/ADXL345
SEN-10121
$39.95
★★★½☆ 4

SPARKFUN RECOMMENDED
Magnetometer Digital Triple Axis - HMC5883L
COM-10494

SPARKFUN RECOMMENDED
3-Axis Gyro/Accelerometer IC - MPU-6050
SEN-10937
$12.95

COMMENTS **208** | **REVIEWS** ★★★☆☆ **1**

Customer Reviews

★★★☆☆ 3 out of 5

Based on 1 ratings:

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

3 of **3** found this helpful:

★★★☆☆ Average 6DOF, convenient board though.

about 2 years ago by Member #154127 ✔ verified purchaser

This is probably one of the easiest boards to hook-up and use, and the on-board DMP is pretty nice. That being said, I found the results from the MEMS accel and gyro on this guy to be pretty wildly inaccurate. Adding an external compass helped to rectify that a little but in that case you'd want to move up to the MPU 9150 break-out board instead as it's an all-in-one single die solution and easier to do than adding a compass as an afterthought to this board. I found a much more reliable MEMS 9DOF chip in the Bosch BNO055 chip thats even easier to use, though, and have been using that for my projects with better results. Hopefully Sparkfun will make a break-out board for that chip soon! Because of these things I only rated this board as "Okay" - it will generally work for you and it's easy to use, but there are much better chips for the price.