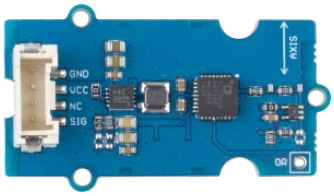
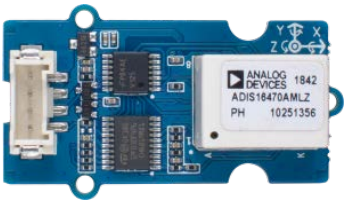
All-New Motion Sensors on NewProductsTuesday!!!

Today we are excited to release two new motion sensor modules on New ProductsTuesday! So, these are the Grove - Single Axis Analog Accelerometer ±100g (ADXL1001) and the Grove - 6-Axis Digital Accelerometer&Gyroscope ±40g (ADIS16470).

Grove - Single Axis Analog Accelerometer ±100g (ADXL1001)



Grove - 6-Axis Digital Accelerometer&Gyroscope ±40g (ADIS16470)

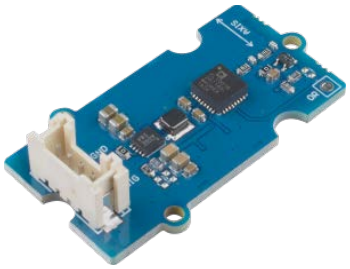


One month ago, we released four different accelerometers based on Analog Devices. If you missed last month's products release, then you can click here and visit our blog to learn more about them. This blog will also give you an idea about accelerometers; how they work, the differences between each accelerometer and so on.

The two motion sensors that released this week are also based on Analog Devices. One is a single axis accelerometer whereas the other is a 6-Axis Accelerometer&Gyroscope. The single axis accelerometer is based on Analog communication whereas the other is based on Digital communication. Let's look back from our previous blog about the difference between these 2 types of communications in accelerometers.

Digital Accelerometers	Analog Accelerometers
Measurements are done on the accelerometer itself	Measurements are done at the MCU
Uses pulse width modulation (PWM) for their output (there will be a square wave of a certain frequency, and the amount of time the voltage is high will be proportional to the amount of acceleration)	Outputs a continuous voltage that is proportional to acceleration
Immune to interference (analog noise) / Susceptible to digital noise	More susceptible to interference (analog noise)/ Immune to digital noise
Limited to the ADC in the accelerometer	Uses ADC on the MCU
Easier to interface in modern systems	Not easier to interface in modern systems (needs an additional ADC chip)

Now, let's look at the Grove - Single Axis Analog Accelerometer ±100g (ADXL1001). This accelerometer is quite different from the other accelerometers we have on bazaar, because this a single axis accelerometer. All the other accelerometers we have released so far are with 3-Axis. So, this single axis accelerometer is suitable for applications where acceleration measurements along one axis are needed.

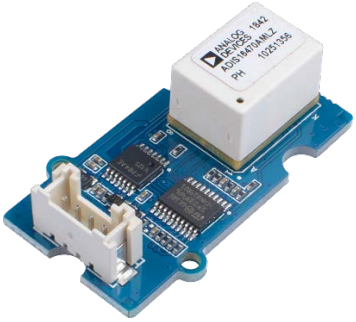


This accelerometer has a wide measurement range of -100g to +100g and is an ultralow, high frequency, high G, industrial grade MEMS accelerometer, based on ADXL10001.

The ADXL1001 has typical noise densities of 30 µg/√Hz and the linear frequency response range from dc to 11 kHz (3 dB point). Besides, the ADXL1001 have an integrated full electrostatic self-test (ST) function and an overrange (OR) indicator that allows advanced system-level features and is useful for embedded applications.

With low power and single-supply operation of 3.3 V to 5.25 V and power saving selectable standby mode, the ADXL1001 also enables wireless sensing product design.

On the other hand, Grove - 6-Axis Digital Accelerometer&Gyroscope ±40g (ADIS16470) is also quite different from the other accelerometer&Gryroscope modules we have released so far because, this uses an industrial grade accelerometer (ADIS164709) which has a wide dynamic range and has high accuracy.

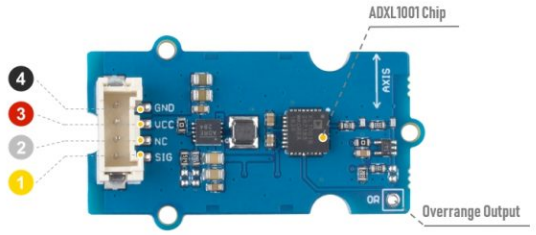


This has a 6-Axis Miniature MEMs sensor, which includes a triaxial gyroscope and a triaxial accelerometer. Also, each inertial sensor in the ADIS16470 combines with signal conditioning that optimizes dynamic performance.

Interestingly we made this module into a breakout so that you can easily get output results using the Grove I2C interface, or you can use SPI interface with the reserved pads.

Here are some pin out diagrams of these sensors:

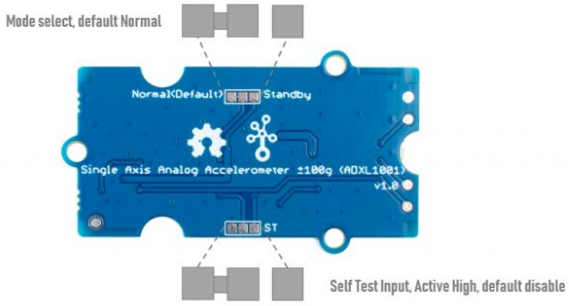
Grove - Single Axis Analog Accelerometer ±100g (ADXL1001)



4 GND: connect this module to the system GND
3 VCC: you can use 5V or 3.3V for this module
2 NC: not connected
1 SIG: analog output voltage

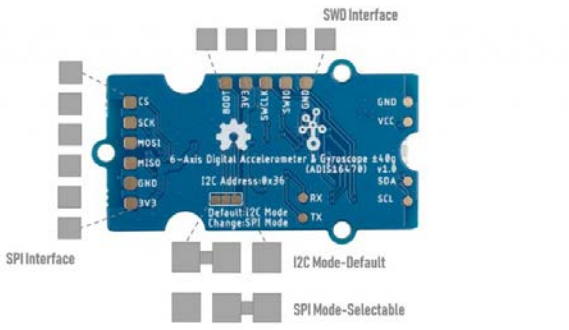
Overrange Output

This pin instantaneously indicates when the overrange detection circuit identifies significant overrange activity.



Grove - 6-Axis Digital Accelerometer&Gyroscope ±40g (ADIS16470)

4 GND: connect this module to the system GND
3 VCC: you can use 5V or 3.3V for this module
2 SDA: serial data of I2C
1 SCL: serial clock of I2C



So that is it for this week's products release! Hope you all liked our products. Stay tuned for more products that will be released in the future!