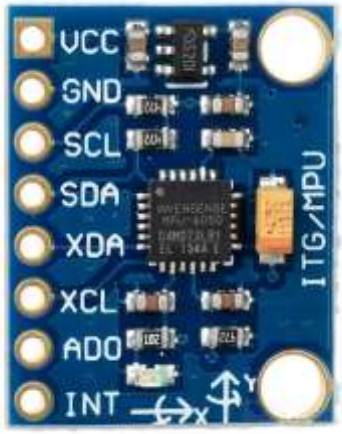
MPU6050 MODULE

MPU6050 is a Multi-Sensor Board combining 2 sensors together with an onboard Digital Motion Processor into a single tiny package. All the sensors are accessible via I2C bus.



MPU6050 has the following sensors on board:

3 Axis Accelerometer - Measures acceleration. Can be used to sense linear motion, vibration, and infer orientation and force.

3 Axis Gyroscope - Measures angular rotation which can be used to infer orientation.

DMP –Digital Motion Processor - The MPU6050 IMU contains a DMP (Digital Motion Processor) which fuses the accelerometer and gyroscope data together to minimize the effects of errors inherent in each sensor. The DMP computes the results in terms of quaternions, and can convert the results to Euler angles and perform other computations with the data as well

All sensors are accessible via I2C bus for basic operation. You need only 4 wires to get started:

1. VCC- 6050 is 5v and 3.3v compatible. Use one of the following depending on your interface voltage:
    - VCC - For +5v power
    - VCC_3.3v - For +3.3v power
2. GND - Ground
3. SCL - I2C Clock
4. SDA - I2C Data

In this theme, we will be using Accelerometer and Gyroscope to find the orientation.

To get more familiar with MPU6050 sensor please try to complete following exercises:

1. Interface the module with microcontroller and read the sensor data individually and print them on serial/XBee port.
2. Also try to read other sensor values and convert them into proper readable format and units.