BNO055 9 DOF Absolute Orientation IMU

The BNO055 IMU, developed by Adafruit, is a 3.3-5V logic board that has three 3-axis sensors. The Accelerometer, Gyroscope, and Magnetometer are used to measure acceleration forces, orientation and angular velocity, and magnetic fields respectively. The BNO reports the absolute orientation using two different output methods. Quaternions, a number system that extends complex numbers through a 4-D vector space over real numbers. Euler Angles, three angles that describe the orientation of a body with respect to a fixed coordinate system. Vectors are also obtained when requesting a specific data reading such as Magnetic Field Strength. These readings are acquired over an I2C bus.

**FEATURES:**

* ARM Cortex-M0 based processor
* Built on a fusion breakout board
  + Blends individual sensor data into a stable three-axis orientation
* Three 3-axis sensors
  + Accelerometer, Gyroscope, and Magnetometer
* I2C native connection

**DATA OUTPUT AND ACQUISITION**

* Utilizes the Adafruit\_BNO055 driver library and the Adafruit\_Sensor Library
* Raw Sensor Data Functions
  + getVector (adafruit\_vector\_type\_t vector\_type)
  + getQuat (void)
  + getTemp (void)

**DIMENSIONS**

* Size: 20mm x 27mm x 4mm / (0.8" x 1.1" x 0.2")
* Weight: 3g

The BNO055 IMU does not contain any internal EEPROM. New calibrations must be performed on startup before absolute data can be acquired. Alternatively, manual restoration of previous calibration values can be performed. The calibration data will be stored until the BNO is powered off.

Enclosures: Electrical Specifications; Electrical and Physical Characteristics

[BNO055 IMU Specification Sheets.pdf](BNO055%20IMU%20Specification%20Sheets.pdf)