

Introduction

BNO055 is a new sensor IC for implementing an intelligent 9-axis Absolute Orientation Sensor. It is a System in Package, integrating a triaxial 14-bit accelerometer, a triaxial 16-bit gyroscope, a triaxial geomagnetic sensor, and a 32-bit microcontroller.

With a size of 5.2 x 3.8 x 1.1mm, the BNO055 is significantly smaller than comparable discrete or system-on-board solutions and also is the sensor-hub product of the smallest size that supports Windows 8.1 at present.

BNO055 is able to provide not only single data of the three kinds of sensors (accelerometer/gyroscope/geomagnetic), but also integrated data, such as quaternions, Euler angles, or vectors. Besides, the built-in MCU frees the users from the complexities of algorithm processing, which provides application support in many aspects for smartphones, wearable devices, and so on.

Project. [The Offensive Maker | Homemade # Posture-controlled Gamepad# to Shame Among Us Players](#)

Features

- High Accuracy
- I2C Communication
- Small Size
- Low Power Consumption

Specification

- Operating Voltage: 3.3V-5.5V
- Communication Interface: I2C (Support 5V) or SPI(Non-I2C ports only support 3.3V)
- Default I2C Address: 0x28
- BNO055 Accelerometer:

Acceleration ranges $\pm 2g/\pm 4g/\pm 8g/\pm 16g$

Low-pass filter bandwidths 1kHz~<8Hz

Operation modes: normal, suspend, low power, standby, deep

suspend

- BNO055 Gyroscope:

Ranges switchable from $\pm 125^\circ/\text{s}$ ~ $2000^\circ/\text{s}$

Low-pass filter bandwidths 523Hz~12Hz

Operation modes: normal, fast power up, deep suspend, suspend, advanced power save.

On-chip interrupt control: motion-triggered interrupt-signal

- BNO055 Geomagnetic:

Magnetic field range typical $\pm 1300\mu\text{T}$ (x-,y-axis); $\pm 2500\mu\text{T}$ (z-axis)

Magnetic field resolution: ~ 0.3

Operating modes: low power, regular, enhanced regular, high accuracy

Power modes: normal, sleep, force

- Outline Dimension: 19 x 21mm/0.75 x 0.83"
- Mounting Hole Position: 16mm
- Mounting Hole Size: inner diameter 2mm/outer diameter 3.7mm

Documents

[Product wiki](#)

Shipping List

BNO055 Intelligent 9-axis Sensor Module x1

2.54 Single Row 5PIN Connector x2