

BNO055

Sensor Fusion in a package

Bosch Sensortec



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Invented for life

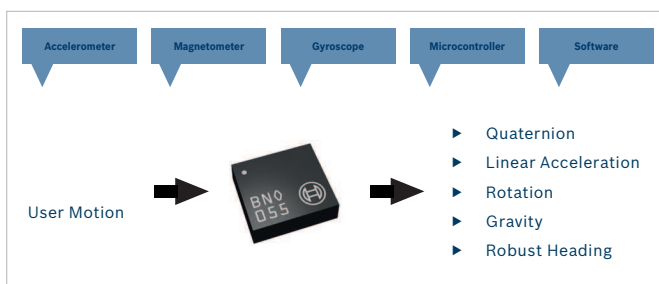
General Description

The BNO055 is the first in a new family of Application Specific Sensor Nodes (ASSN) implementing an intelligent 9-axis “Absolute Orientation Sensor”, which includes sensors and sensor fusion in a single package.

The BNO055 is a System in Package (SiP), integrating a triaxial 12-bit accelerometer, a triaxial 16-bit gyroscope with a range of ± 2000 degrees per second, a triaxial geomagnetic sensor and a 32-bit microcontroller running the company’s BSX3.0 FusionLib software. At just $5.0 \times 4.5\text{mm}^2$, it is significantly smaller than comparable discrete or system-on-board solutions.

By integrating sensors and sensor fusion in a single device, the BNO055 eases the integration process for customers, freeing them from the complexities of multi-vendor solutions so they can spend more time on product innovation, including novel applications such as wearable hardware.

It is also the perfect choice for augmented reality, more immersive gaming, personal health and fitness, indoor navigation and any other application requiring context awareness.



Components

- ▶ Acceleration Sensor (BMA)
- ▶ Gyroscope (BMG)
- ▶ Geomagnetic Sensor (BMM)
- ▶ 32-bit Microcontroller
- ▶ Sensor Fusion Algorithms

Applications

- ▶ Augmented reality
- ▶ Navigation
- ▶ Gaming
- ▶ Fitness and well-being
- ▶ Context awareness

What makes the difference

- ▶ Hardware and software co-design enables high performance with low power consumption
- ▶ Quaternion communication is 10x more efficient than raw data
- ▶ Integrated sensor fusion software reduces customer development costs and time
- ▶ All components in one package leads to simplified system integration and faster time to market
- ▶ Footprint is significantly reduced compared to discrete and system on board solutions

Headquarters Bosch Sensortec GmbH

Gerhard-Kindler-Strasse 8
72770 Reutlingen · Germany
Telephone +49 7121 3535 900
Fax +49 7121 3535 909
contact@bosch-sensortec.com
www.bosch-sensortec.com