



Bosch announces industry's first Position Tracking Smart Sensor BHI160BP for wearables

Always-on position tracking at ultra-low power

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- ▶ Ultra-low power position tracking reduces system power consumption by up to 80%
- ▶ Seamless and more reliable localization than GPS-only solutions
- ▶ Wide range of features like 3D orientation and gesture recognition
- ▶ Bosch booth at electronica Munich: hall C3, booth 522

Reutlingen / Munich, Germany – At electronica Munich, Bosch Sensortec announces the BHI160BP, the industry's first Position Tracking Smart Sensor that utilizes integrated inertial sensors to improve GPS location tracking.

Always-on position tracking

When used with a GPS or GNSS module, the BHI160BP enables users to take full advantage of pedestrian position tracking with up to 80% saving in system power consumption compared with a typical GNSS-only solution, without compromising on accuracy. Users benefit from a greatly extended battery life and longer charging intervals for wearable applications such as smartwatches and fitness trackers and other mobile devices such as smartphones or hearables. This new position tracking approach is set to enable a new class of compact devices with even smaller batteries.

The BHI160BP tracks a person's position by intelligently applying an inertial sensor based algorithm for Pedestrian Dead Reckoning (PDR). To maintain accuracy, it calculates the user's relative location based on data collected from the inertial sensors and then re-calibrates itself every few minutes to obtain the absolute position provided by the GNSS/GPS module. This means that the GNSS/GPS module can be kept in sleep mode for most of the time, which drastically reduces a device's power consumption and extends its operating time.

"Pedestrian position tracking is a crucial application for mobile applications; unfortunately, GPS modules can rapidly drain a device's battery capacity – especially when the battery is as small as in wearable devices," says Dr. Stefan

Finkbeiner, CEO of Bosch Sensortec. "Our new Position Tracking Smart Sensor solves this problem and enables users to navigate reliably while extending the operation of GPS tracking in their devices from several hours up to several days."

Straightforward integration

The position tracking capability provided by the BHI160BP also means that a device can maintain solid accuracy even when the GNSS signal is blocked or weak, e.g. near tall buildings or indoors. This ensures accurate pedestrian navigation at all times, even in shielded indoor areas such as subways.

The BHI160BP is a new member of Bosch Sensortec's BHI160 family and adds application-specific functionality for position tracking. It provides a ready-to-use solution that can be quickly and easily integrated into a system design without requiring an update to a new GNSS module, thereby significantly cutting time to market.

While the current configuration is optimized for use with GNSS receivers (such as GPS), the BHI160BP can also support most of the common global localization technologies. As well as improving localization, the BHI160BP can also serve to handle gesture recognition and 3D orientation, with 3D calculations performed by the sensor itself rather than by an application processor.

Wide range of features and functionalities

The new BHI160BP draws only 1.3 mA in active operation mode and is the industry's lowest-power solution that integrates the Fuser Core (MCU) and a 6-axis Inertial Measurement Unit (IMU). Additionally, the Position Tracking Smart Sensor offers a variety of customized virtual sensors, such as a calibrated accelerometer, orientation and wake up gesture, within a single device. Furthermore, the BHI160BP can be extended by connecting additional physical sensors, such as a magnetometer, over a secondary interface.

The new BHI160BP comes in a compact 3 x 3 x 0.95 mm³ LGA-package and is pin-to-pin compatible with the BHI160.

Availability

The BHI160BP will be available via distribution in December 2018.

Press photo: #1371263, #1371264

YouTube: [Position Tracking Smart Sensor BHI160BP video](#)

Bosch Global: Explore and experience what the Position Tracking Smart Sensor BHI160BP has got to do with Harry Potter in [Harry Potter and the “Marauder’s Map”](#).

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Bosch at electronica 2018 in Munich

- **BOOTH: Tuesday to Friday, November 13–16, 2018**, booth 522 in hall C3
- **FOLLOW** the Bosch electronica 2018 highlights on Twitter: **#BoschMEMS**
- **PANELS WITH BOSCH EXPERTS:**
 - **Monday, November 12, 12:30 p.m.:** presentation “Sensors enabling future mobility solutions” by Dr. Markus Sonnemann, Vice President Pre-Development MEMS sensors at Robert Bosch GmbH, electronica Automotive Conference at ICM Munich
 - **Tuesday, November 13, 11:30 a.m.:** presentation “MEMS – one product one process?” by Dr. Udo-Martin Gómez, Senior Vice President MEMS sensors, Robert Bosch GmbH, SEMICON Europe, Fab Management Forum at ICM Munich in room 14c
 - **Tuesday, November 13, 3:00 p.m.:** Automobilwoche panel discussion “electronica Talk from the Top” with Jens Fabrowsky, Executive Vice President Automotive Electronics at Robert Bosch GmbH, discovery stage in hall C6
 - **Tuesday, November 13, 3:30 p.m.:** presentation “MEMS Mobility Sensors for motion detection” by Michael Rupp, Senior Expert Product Management Sensors at Robert Bosch GmbH, electronica Automotive Forum in hall B4
 - **Wednesday, November 14, 3:10 p.m.:** presentation “The future of MEMS-based smart sensor nodes in the context of highly functional and ultra-low power IoT applications” by Dr. Ralf Schellin, Head of Product Area MEMS at Bosch Sensortec GmbH, International Congress Center Munich (ICM)

Bosch Sensortec GmbH, a fully owned subsidiary of Robert Bosch GmbH, develops and markets a wide portfolio of microelectromechanical systems (MEMS) sensors and solutions tailored for smartphones, tablets, wearable devices and IoT (Internet of Things) applications. The product portfolio includes 3-axis acceleration, gyroscope and geomagnetic sensors, integrated 6- and 9-axis sensors, environmental sensors, optical microsystems and a comprehensive software portfolio. Since its foundation in 2005, Bosch Sensortec has emerged as the MEMS technology leader in the markets it addresses. Bosch has been both a pioneer and a global market leader in the MEMS sensor segment since 1995 and has, to date, sold more than 9.5 billion MEMS sensors. More than every second smartphone worldwide uses a Bosch Sensortec sensor.

For more information, please visit www.bosch-sensortec.com, twitter.com/boschMEMS

The Bosch Group is a leading global supplier of technology and services. It employs roughly 402,000 associates worldwide (as of December 31, 2017). The company generated sales of 78.1 billion euros in 2017. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT company, Bosch offers innovative solutions for smart homes, smart cities, connected mobility, and connected manufacturing. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to deliver innovations for a connected life. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiary and regional companies in 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. The basis for the company's future growth is its innovative strength. At 125 locations across the globe, Bosch employs some 64,500 associates in research and development.

Additional information is available online at www.bosch.com, www.iot.bosch.com, www.bosch-press.com