

MEMS technology at CES: **Bosch Sensortec sets size, performance and integration benchmarks in consumer MEMS**

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- ▶ BMA355 – industry’s smallest 3-axis MEMS accelerometer for space- constrained applications
- ▶ BNO055 – 9-axis sensor node plus sensor fusion, all in a single package
- ▶ BSX3.0 Fusion Lib – sensor fusion software providing accurate and robust "virtual sensors"

LAS VEGAS – Bosch Sensortec, a leading global provider of consumer MEMS, launches new sensors for smartphones, tablets, global positioning systems (GPS) and other consumer electronics for which sensing motion and location are critical. At the 2013 International CES, the company showcases three new products that reflect its ongoing strategy to offer customers greater design flexibility through the delivery of smaller, energy- efficient, higher-performance and more tightly integrated sensor-software combinations.

“Bosch Sensortec’s MEMS products portfolio sets the industry standard for small size, scalable performance and ease of integration,” said Dr. Stefan Finkbeiner, CEO of Bosch Sensortec. “This includes single-function MEMS inertial sensors, integrated system-in-package products, and highly intelligent sensor-fusion software. Our new products reflect these attributes, supporting our goal for sustained technology leadership. They also empower our customers to add with ease the intelligent sensing required for so many consumer electronics.”

BMA355

Featuring wafer-level chip scale package with a size of just 1.2 x 1.5 x 0.8 mm³, the BMA355 is the smallest 3-axis MEMS accelerometer on the market. It enables designers to embed accelerometer functionality in space-constrained applications.

Featuring low power consumption, 12-bit digital resolution and a flexible integrated interrupt engine, the BMA355 is ideally suited for applications requiring extremely small form factors, such as power management for hearing aids and sensor nodes in ubiquitous sensor networks (USN) for the Internet of Things. Designers of consumer devices such as smartphones, tablets, game consoles and digital cameras will also benefit from the space and power savings derived from the BMA355. The BMA355 supports motion detection, portrait-landscape orientation-switching, flat detection, tap/double-tap sensing, shock detection and free-fall protection as well as advanced power management for mobile devices.

BNO055

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 (AR), more immersive gaming, personal health and fitness, indoor navigation and any other application requiring context awareness.

BSX3.0 FusionLib

BSX3.0, the third generation of Bosch Sensortec’s FusionLib sensor-fusion software, intelligently fuses raw data from multiple sensors for optimal performance. The FusionLib software supports 9-axis and 6-axis implementations and can be scaled to run optimally on both embedded microcontroller and application processors, thus, supporting both Android and Microsoft Windows 8 operating systems today. The software’s scalable architecture also means that it can be easily adapted for other operating systems.

The FusionLib software provides a ready-to-use advanced sensor-fusion system that reduces the complexity for OEMs and helps in the rapid development of advanced sensor applications, such as augmented reality, image stabilization, pedestrian tracking and gesture recognition.

Availability

In mid 2013, Bosch Sensortec will start sampling the new sensors BMA355 and BNO055 to key development partners.

BSX FusionLib is available today under software license agreement to customers developing 6- and 9-axis solutions with Bosch Sensortec MEMS devices.

Bosch at CES

Bosch will be well represented in conference halls and on the show floor at the 2013 International CES. At a press conference, Bosch provides valuable first-hand insight into future strategies and developments in MEMS technology and applications. The Bosch press conference will take place on Monday, Jan. 7, from 8 a.m. until 8:45 a.m. at Mandalay Bay, Level 3, Banyan A.

Klaus Meder, president of the Bosch Automotive Electronics division, will give the "[MEMS Generation](#)" keynote: "Why Miniature 'Machines' are Changing the User Experience with Everything," at 9:15 a.m., on Tuesday, Jan. 8, LVCC, North Hall N264.

Bosch Sensortec showcases its newest products and innovations at the Bosch booth, LVCC, South Hall 1, stand #21322, during exhibition hours.

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Bosch Sensortec GmbH is a fully owned subsidiary of Robert Bosch GmbH. It develops and markets micro-mechanical sensors for consumer electronics, mobile phones, safety systems, industrial technology and logistics. The product portfolio includes triaxial geomagnetic and acceleration sensors, triaxial gyroscopes, barometric pressure sensors and a comprehensive software portfolio for various applications. Since its foundation in 2005 Bosch Sensortec emerged as the technology leader in the addressed markets. The Bosch Group has been the global market leader for MEMS sensors since 1998 and has to date sold more than 2 billion MEMS sensors.

Further information is available online at www.bosch-sensortec.com

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