Press release

New SMA130 triaxial sensor
Acceleration sensor for infotainment systems

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- Acceleration sensor for telematics and built-in navigation
- World's smallest acceleration sensor for automotive applications
- Energy efficient thanks to five energy-saving modes

Bosch's new SMA130 triaxial acceleration sensor provides information for infotainment and telematics applications in vehicles. "Until now, automakers have mainly used data from acceleration sensors for safety systems," says Dr. Frank Schäfer, head of product management for automotive MEMS sensors. "The SMA130, on the other hand, delivers the data needed for eCall emergency notification and navigation systems." The sensor measures acceleration along three axes arranged at right angles, as well as inclination, movement, vibration, and shock. The new Bosch acceleration sensor, based on MEMS technology, will go into series production in late 2015.

Measuring just 2 x 2 millimeters, the SMA 130 is the world's smallest acceleration sensor for automotive applications, making it easy to install. Despite its tiny size, it provides measurements between ±2 g and ±16 g in high 14-bit resolution. This resolution, combined with the minuscule dimensions, places significant demands on the sensor's circuit design. Yet the SMA130 consumes just 130 microamperes when active, making it highly energy efficient. Five user-defined energy-saving modes also reduce power consumption to as low as one microampere. This is essential for use in alarm systems, for example, to prevent the sensor from putting excess strain on the battery when the vehicle is parked for longer periods of time. The individual modes can be activated in less than two milliseconds. This guarantees that the respective application quickly and reliably receives the corresponding information from the sensor.

Robert Bosch GmbH
Postfach 10 60 50
D-70049 Stuttgart
Germany

E-mail Stephan.Kraus@de.bosch.com
Phone +49 711 811-6286
Fax +49 711 811-5117177

Corporate Communications,
Brand Management, and Sustainability
Senior Vice President: Dr. Christoph Zemelka
www.bosch-press.com

In addition, a digital interface makes it possible to individually select four different sensor measuring ranges and set a variety of filter options. A built-in self-test ensures the reliability of the sensor signals. The new acceleration sensor is also AEC-Q100 qualified.

A sensor for a wide range of applications

The sensor signals can be used in a wide range of applications. In addition to data on vehicle acceleration, which is relevant for features such as the eCall service or the car's alarm system, the SMA130 can also support the navigation system when GPS reception is poor by providing additional information. When several roads overlap, the sensor sends data on inclination to the navigation system, for example, allowing it to pinpoint the vehicle's position.

Background to MEMS technology

Bosch has been at the forefront of MEMS (microelectromechanical systems) technology since the very beginning, and is today the world's leading manufacturer of MEMS sensors. Its portfolio includes pressure, acceleration, and yaw-rate sensors, as well as combined inertia sensors, environmental sensors, and microphones for use in motor vehicles and consumer electronics. All Bosch MEMS sensors, including the SMA130, are RoHS-compliant.

More information on Bosch sensors is available at www.bosch-sensors.com, http://twitter.com/BoschMEMS.

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Readers' contact:
Peter Spoden
Phone: +49 7121 35-38313

Contact persons for press inquiries:
Stephan Kraus
Phone: +49 711 811-6286

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