








**Bosch Sensortec offers innovative sensing solutions to enable smart wearable and hearable applications with exciting features**

Bosch Sensortec enables wearable and hearable applications with ultra-low power, accurate and highly integrated sensing solutions. The sensor portfolio offers a broad range specially designed for wrist-worn wearables, such as smart watches, hearable devices and smart clothes: accelerometers (BMA456, BMA400), absolute orientation sensors (BMX160), inertial measurement units (BMI270) and pressure sensors (BMP388).

The BMA456 hearable accelerometer is the industry's only accelerometer with optimized hearable features integrated in one sensor and complements the existing BMA456 wearable variant. Manufacturers can now design smaller and more accurate hearables at lower power while increasing the devices' performance. The new BMA456 accelerometer variant integrates hearable-specific gestures for intuitive user interactions such as tap, double-tap and triple-tap.

<p><b>BMA400</b></p>	<p><b>BMA456</b></p>	<p><b>BMX160</b></p>	<p><b>BMI270</b></p>	<p><b>BMP388</b></p>
	<p><b>NEW</b></p> 			
<ul style="list-style-type: none"> <li>▶ BMA400 is an ultra-low-power solution for wearable and IoT applications</li> </ul>	<ul style="list-style-type: none"> <li>▶ Industry's only accelerometer with optimized hearable features for user interaction and activity tracking</li> </ul>	<ul style="list-style-type: none"> <li>▶ World's smallest 9-axis motion sensor with a compact package of only 2.5 x 3.0 x 0.95 mm<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>▶ Ultra-low power IMU optimized for wearable applications</li> <li>▶ Strongly increases system battery life</li> </ul>	<ul style="list-style-type: none"> <li>▶ Barometric pressure sensor enabling accurate altitude tracking for wearable applications such as calorie counting and GPS accuracy</li> </ul>


- ▶ Draws ten times less current than existing accelerometers while delivering solid high performance
- ▶ Intelligent power management for always-on-devices enhances battery life significantly
- ▶ Built-in step counter drawing only 4  $\mu$ A
- ▶ BMA400 sets new industry standards for ultra-low power acceleration sensors

- ▶ Completely new integrated features: triple-tap and in-ear/out-of-ear recognition
- ▶ High-accuracy accelerometer due to low noise (120  $\mu$ g/Hz) low offset ( $\pm$ 20 mg) and low TCO (0.35 mg/K)
- ▶ Decreased system power consumption for extended battery life

- ▶ Ideally suited for wearable devices, AR/VR and IoT
- ▶ Ultra-low power consumption helps extend usage intervals of battery driven device
- ▶ Enables smartwatch gestures, step counting, heading and device orientation
- ▶ Built-in power management unit and ultra-low power background application features

- ▶ Includes intuitive gesture, context and activity recognition with an integrated plug-and-play step counter, which is specially optimized for accurate step counting in wrist-worn devices
- ▶ Game-changing enhancement of accelerometer performance combined with automotive-proven gyroscope technology

- ▶ Best in class TCO between 0-65°  $\rightarrow$  accurate altitude measurement over wide temperature range
- ▶ More accurate and operates at low power while optimizing ease of use and data access due to FIFO and interrupt function.
- ▶ Small sized-package of 2.0 x 2.0 x 0.75 mm<sup>3</sup> complies with the new industry benchmark
- ▶ Maximizes ease of use, offers great design flexibility and provides an attractive price-performance ratio



**Bosch Sensortec**  
Sensor solutions enable wearable devices

[YouTube Video](#)