

SMART ULTRA-LOW POWER IMU BMI270 OPTIMIZED FOR WEARABLES

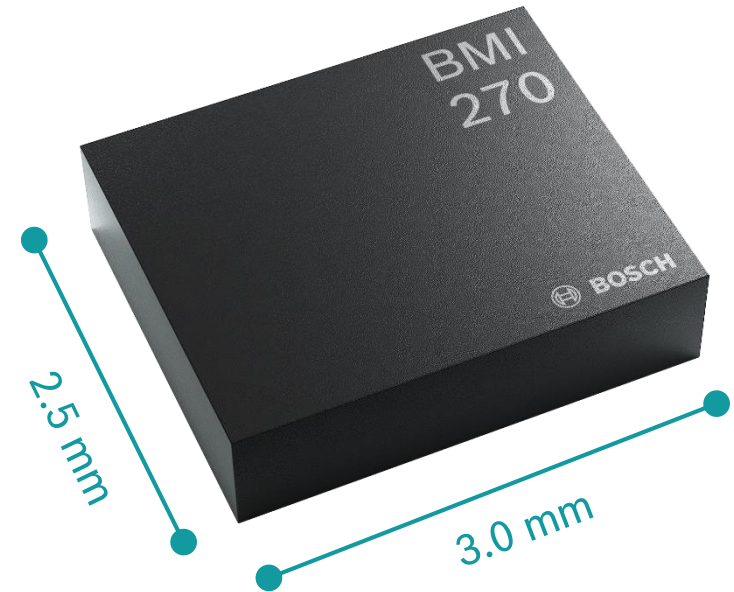


BMI270:
Smart ultra-low power IMU optimized
for wrist-worn wearable devices

The new BMI270

Smart ultra-low power IMU optimized for wearables

- The BMI270 is a smart ultra-low power IMU optimized for wearable and hearable applications.
- Includes intuitive activity, context and gesture recognition.
- Compact package of 3.0 x 2.5 x 0.8 mm³.



Gesture recognition

BMI270

Get more out of your wearables with this Wear OS compliant IMU! Comprehensive gesture recognition such as flick in and out, wrist tilt and up and down arm push enables an intuitive user experience.



Context and activity recognition

BMI270

Never again forget where you parked your car! Our ultra-low power IMU recognizes the required context and activity changes, for example being in a vehicle, standing and walking.

The new BMI270

Overview devices and applications

Wearable devices:

- ▶ Fitness trackers, wrist bands, smartwatches
- ▶ Hearables and head-worn devices
- ▶ Ankle bands, neck bands
- ▶ Smart clothes

Applications:

- ▶ Always-on
 - ▶ Step counting
 - ▶ Gesture recognition
 - ▶ Activity recognition
 - ▶ Context recognition



► Technical features BMI270

The new BMI270

Technical features



Application-specific versions: gesture & context/activity

Includes Wear OS features: flick in/out, arm up/down, wrist tilt and advanced features for recognizing context and activity change

Significant power reduction

Intelligent power management unit enables always-on features to run inside the ultra-low power domain of the IMU

Self-calibrating gyroscope

Features industry's first self-calibrating gyroscope using motionless CRT (Component Re-Trimming) functionality

Wide range of target devices

Fitness trackers, wristbands, smartwatches, hearables, ankle bands, neck bands, smart clothes, augmented and virtual reality glasses and controllers

Improved step counter/detector

Integrated plug-and-play step counter/detector optimized for wrist-worn devices

Integrated state-of-the-art MEMS sensors

16-bit accelerometer and 16-bit gyroscope

Package dimensions

3.0 x 2.5 x 0.8 mm³ (14-pin) LGA package

BMI270

Ultra-low power smart IMU for wearables

The new BMI270

Technical features

Parameter	BMI270
Dimensions	3.0 mm x 2.5 mm x 0.8 mm
Typ. current consumption Accelerometer only (LPM) Advanced features A+G suspend mode	685 μ A (at full ODR) 10 μ A ~3 ... 35 μ A (depending on feature set) 5.5 μ A
Sensitivity error	(A): $\pm 0.4\%$ (G): $\pm 0.4\%$ (with CRT)
Max. ODR	(A): 1.6 kHz (G): 6.4 kHz
Noise density	(A): 160 μ g/ $\sqrt{\text{Hz}}$ (G): 0.008 dps/ $\sqrt{\text{Hz}}$
Offset vs PCB strain	(A): ± 0.01 mg/ $\mu\epsilon$ (G): ± 1.5 mdps/ $\mu\epsilon$

Typical target values, values will be verified in final qualification