Multi-Sensor MEMS Module Packs 6 Degrees of Freedom into 20 Cubic Millimeters

STMicroelectronics, a global semiconductor leader serving customers across the spectrum of electronics applications and a leading supplier of MEMS (Micro-Electro-Mechanical Systems) for consumer and portable applications, announced a new state-of-the-art iNEMO inertial module that integrates three-axis sensing of linear and angular motion in a 4 x 5 x 1mm package. Combining a size reduction by almost one half over devices currently in production with unbeatable sensing precision and stability, ST's newest multi-sensor module creates new possibilities for high-precision gesture and motion recognition in mobile phones, gaming controls, personal navigation systems and other smart consumer devices.

Fully software-compatible with ST's latest-generation 3-axis digital accelerometers (LIS3DH) and gyroscopes (L3GD20), the new iNEMO six-degrees-of-freedom (6DoF) module makes it easy for customers using ST's single-function sensors to upgrade their designs, reaping the package-level integration benefits of size reduction and outstanding reliability. The module solution provides inherently precise alignment of the two sensors' reference axes and the advanced design of its mechanical sensing structure ensures unparalleled thermal and mechanical stability.

ST's LSM330DLC multi-sensor module combines a user-selectable full-scale acceleration range from 2 to 16g with angular-rate detection from 250 to 2500 dps along the pitch, roll and yaw axes. Addressing power constraints in battery-operated portable devices, the module includes power-down and sleep modes and an embedded FIFO (first-in first-out) memory block for smarter power management. In addition, it can operate with any supply voltage over the range of 2.4 to 3.6V.

ST's new iNEMO 6DoF inertial module targets a wide range of applications that include motion-activated user interfaces in mobile phones, tablets and other smart consumer devices; dead-reckoning and map-matching in personal navigation devices; and intelligent power saving and free-fall detection in portable electronics.

Leveraging the same micromachining technology process that ST has successfully applied to more than 1.54 billion motion sensors already sold, the LSM330DLC multi-sensor module is available in engineering samples, with unit pricing at $3.2 for volumes in the range of 1,000 pieces. If your company has a high-volume need, please contact your ST sales office.

The LSM330DLC is the smallest 6 DoF device in ST's iNEMO inertial module family, which comprises complementary multiple-axis single-package devices aimed at delivering better user experience and motion-sensing realism in mobile phones, gaming controls and other consumer electronics.

For further information on ST's complete MEMS portfolio see www.st.com/mems [1]

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[1] http://www.st.com/mems