MEMS Module Provides Six Degrees of Freedom in Advanced Motion-Sensing Applications

STMicroelectronics has expanded its portfolio with a new device that combines three-axis sensing of both linear and angular motion. ST's high-performance multi-sensor module with six degrees of freedom targets advanced motion-sensing applications, including remote controls, black-box recorders, and enhanced GPS systems.

ST's LSM330DL multi-sensor module detects acceleration up to 16g and angular rate up to 2,000 dps along the pitch, roll and yaw axes. The integration of a 3-axis digital accelerometer with a 3-axis digital gyroscope in a single device increases system robustness and the advanced design of the mechanical sensing structure guarantees outstanding thermal and mechanical stability.

With its inherently precise and highly reliable alignment of the sensors, ST's six-axis motion-sensing module is superior to discrete solutions in which mounting of multiple components in one package induces random alignment errors of the two sensors' reference axes.

Addressing energy efficiency on chip and at the system level, the motion-sensing module includes power-down and sleep modes and an embedded FIFO (first-in first-out) memory block, which removes the need for continuous communication between the module and the host processor. The device can operate with any supply voltage in the range of 2.4 to 3.6V.

ST's newest gyro-accelerometer 6-axis combo chip targets a wide range of applications that include intuitive user interfaces in pointers and remotes; motion monitoring in black-box recorders; dead-reckoning and map-matching in advanced navigation systems; and smart power-saving and free-fall detection in portable electronics.

The module leverages the same micromachining technology process that the Company has successfully applied to more than 1.4 billion motion sensors already

sold in the market. The device is pin-to-pin and software-compatible with the recently announced five-degrees-of-freedom LSM320DL module, so customers can easily 'hot swap' and protect their investment in application development.

ST's LSM330DL multi-sensor module is available now, with unit pricing at $3.80 for volumes in the range of 1,000 pieces. If your company has a high-volume need, please contact your ST sales office.

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