

Motion-Sensing Realism with New Digital Gyroscope

STMicroelectronics has expanded its motion-sensor portfolio with a new high-performance three-axis digital-output gyroscope. Housed in a 4x4x1 mm package, ST's L3GD20 combines high sensing resolution with outstanding immunity to audio noise and vibrations, making motion-sensing user interfaces more realistic in mobile phones, tablets, game consoles, and other smart consumer devices.

With a resonant frequency above the audio bandwidth, ST's newest 3-axis digital gyroscope operates with greater accuracy and reliability, because it is completely immune to both mechanical vibrations coupled through the printed circuit board and to audio noise, such as from speakers mounted close to the sensor. Furthermore, its advanced design, with a single sensing structure for motion measurement along all three orthogonal axes,[2] further increases sensing accuracy and reliability and guarantees excellent output stability over time and temperature.

The L3GD20 gyroscope offers a wide set of user-programmable full-scale ranges from ± 250 dps[3] up to ± 2000 dps, with the low full-scale values for high accuracy of slow-motion sensing and the high range to detect and measure very fast gestures and movements. The device provides a 16-bit data output, together with additional embedded digital features, such as configurable low- and high-pass filters.

Addressing power constraints in battery-operated portable devices, ST's new gyroscope includes power-down and sleep modes and an embedded FIFO (first-in first-out) memory block for smarter power management. It can operate with any supply voltage over the range of 2.4 to 3.6V.

In addition to enabling intuitive man-machine interfaces in portable devices, ST's gyroscopes are used for dead-reckoning and/or map-matching in enhanced navigation applications and for compensating digital video or still camera shaking for sharper shots.

ST's L3GD20 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 new gyroscope is pin-to-pin adaptable and software-compatible with the current-generation device, the L3G4200D, so customers can easily 'hot swap' and protect their investment in application development.

The device is sampling now and volume production is scheduled for Q4 2011, with unit pricing at \$2.95 for volumes in the range of 1,000 pieces.

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Further information on ST can be found at www.st.com [1].

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[1] <http://www.st.com>