# MEMS Accelerometers Advance Smart Sensing

STMicroelectronics, a global semiconductor leader and a leading supplier of MEMS (Micro-Electro-Mechanical Systems) for consumer and portable applications, introduced the industry's first three-axis high-resolution accelerometer with two embedded finite-state machines. These programmable blocks enable custom motion recognition inside the sensor, raising the bar in reducing system complexity and power consumption in motion-sensitive mobile phones and other smart consumer devices that let users answer calls, turn the ringer on or off, or launch applications like a pedometer, with a defined motion.

The embedded finite-state machines allow the user to implement customized motion-detection-based applications with a high level of flexibility, reducing the workload of the microprocessor by moving programming functionality inside the sensor. These basic programs identify specific motions or gestures, custom-defined in the instruction set that runs inside the sensor firmware, and initiate associated actions or applications.

"Integrated processing capability in MEMS sensors decreases power consumption at the system level, which is especially crucial in battery-hungry portable devices," said Benedetto Vigna, Corporate Vice President and General Manager of ST's Analog, MEMS and Sensor Group. "An industry-unique feature, programmable state machines embedded in the sensor, also bring more freedom and flexibility to the design of motion-enabled consumer electronics."

ST's LIS3DSH accelerometer provides extremely accurate output across full-scale ranges of ±2g/±4g/±8g/±16g and boasts excellent stability over time and temperature. Other features include power-down and sleep modes, an embedded

FIFO (first-in first-out) memory block, a temperature sensor, and a self-test function.

Leveraging the same micromachining technology process that ST has successfully applied to more than 1.6 billion motion sensors already sold, ST's LIS3DSH three-axis linear accelerometer with embedded finite-state machines will start mass production in Q1 2012, with unit pricing  $1.2 in quantities of 1,000 pieces. For further information on ST's complete MEMS portfolio see www.st.com/mems [1].

Further information on ST can be found at www.st.com [2].

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