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Press release

New Precision MEMS Sensor from STMicroelectronics Supports Accurate Positioning and Control for Cars

- *Advanced inertial sensor provides highly accurate dead reckoning for automotive navigation, telematics, and highly automated driving systems*
- *3-axis accelerometer and 3-axis gyroscope integrated on a single chip leverage ST-proprietary end-to-end MEMS process for best quality and customer supply-chain assurances*
- *Chosen by Magneti Marelli for new advanced telematics system*

Geneva, July 9, 2018 – STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, has introduced the automotive-grade ASM330LHH six-axis inertial sensor for super-high-resolution motion tracking in advanced vehicle navigation and telematics applications.

Serving demands for continuous, accurate vehicle location to support automated services, the ASM330LHH lets advanced dead-reckoning algorithms calculate precise position from sensor data if satellite signals are blocked. This often happens in urban canyons, tunnels, covered roadways, parking garages, or dense forests. Its advanced, low-noise, temperature-stable design enables dependable telematics services such as e-tolling, tele-diagnostics, and e-Call assistance. Precision inertial data in six axes also meets the needs of advanced automated-driving systems.

Magneti Marelli has selected the ASM330LHH for advanced telematics systems, to be fitted as original equipment by global automotive groups in upcoming vehicle ranges.

For the ASM330LHH, as with all its MEMS sensors, ST owns the entire manufacturing process, from designing the sensors, through wafer fabrication, packaging, test, calibration, and supply. Full end-to-end control enables ST to create high-performing sensors and assure customers of a robust and responsive supply chain, with rigorous end-of-line quality screening.

"*ST is the largest supplier of MEMS sensors for automotive non-safety applications, such as navigation and telematics*[1]," said Andrea Onetti, Analog, MEMS and Sensors Group Vice President, STMicroelectronics. "*Our latest-generation inertial sensor, the automotive-grade ASM330LHH, enables precise positioning for safer, smarter driving.*"

Engineering samples will be available for evaluation by Q3 2018, and volume production will begin the following quarter. Budgetary pricing starts at $5.00 for orders of 1000 pieces.

Further technical information on the ASM330LHH:

- Temperature range up 105°C giving designers extra freedom to locate electronic controls in hot areas such as in smart antennas on the vehicle roof, or near the engine compartment;

[1] Source: IHS Market Tracker Automotive MEMS H1 2017

- Ultra low noise allows greater measurement resolution by minimizing integration errors when positioning is reliant on sensors only;
- High linearity and built-in temperature compensation eliminate any need for external compensation algorithms over its operating range;
- Lowest power consumption in class, with features for optimizing power management if battery usage becomes crucial;
- Qualified according to AEC-Q100 automotive-grade robustness standard;
- Built on ST's proven, proprietary ThELMA[2] MEMS process technology, which enables integration of both the 3-axis accelerometer and 3-axis angular-rate sensor (gyroscope) on the same silicon for optimum yield, quality, and reliability;
- The electronic interface integrates the signal chain for both sensors on a single die using ST's 130nm HCMOS9A technology;
- Reference designs, as well as ST's Teseo™ satellite-positioning modules and related software are available. The dead-reckoning algorithm included with the Teseo III GNSS-receiver chipset already supports the ASM330LHH to generate a high-accuracy output suitable for autonomous navigation;
- Tiny, low-profile 3mm x 2.5mm x 0.83mm device for minimal impact on the size of any on-board module;
- Packaged as a leadless Land Grid Array (LGA) device.

Further information is available at www.st.com/asm330lhh-pr

About STMicroelectronics

ST is a global semiconductor leader delivering intelligent and energy-efficient products and solutions that power the electronics at the heart of everyday life. ST's products are found everywhere today, and together with our customers, we are enabling smarter driving and smarter factories, cities and homes, along with the next generation of mobile and Internet of Things devices.

By getting more from technology to get more from life, ST stands for life.augmented.

In 2017, the Company's net revenues were $8.35 billion, serving more than 100,000 customers worldwide. Further information can be found at www.st.com.

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[2] Thick Epitaxy Layer for Micro-gyroscopes and Accelerometers (ThELMA) is a surface micro-machining process that combines variably thick and thin polysilicon layers for structures and interconnections.