

STMicroelectronics delivers advanced context-aware sensors in ST Sustainable Technology framework

6-axis motion sensors ready for toughest sustainable-materials codes; Advanced context sensing for smart devices and drones

GENEVA, SWITZERLAND, September 22, 2026 /EINPresswire.com/ -- STMicroelectronics' newest miniature motion sensors feature enhanced precision for accurate event reconstruction while meeting the most stringent sustainable-materials standards.



The new 6-axis sensors, or inertial measurement units (IMU), will be used in consumer devices like fitness trackers, smart tags, and professional applications such as industrial asset monitors, robots, and drone applications including photography and agricultural surveying. They are part of the ST Sustainable Technology initiative that drives responsible product development.

Sensors that support event reconstruction let smart applications distinguish between different types of incidents, enhancing capabilities such as accident alerting, tool-usage monitoring, robot teaching, sports-performance analysis, and concussion detection. ST's new IMUs, the consumer-oriented [LSM6DSK320X](#) and industrial-grade [ISM6HGK256X](#), achieve this with an advanced super-symmetric gyroscope architecture that increases sensing precision, combined with precise accelerometer tracking across a wide dynamic range. These capabilities also enhance use cases such as drone-flight stabilization, structural-condition monitoring, and game controllers.

"By maximizing the signal strength and resilience in an extremely compact form factor, the architecture of our latest 6-axis motion sensors will drive powerful new features in smart applications," said Simone Ferri, Executive Vice President, MEMS Sub-Group, STMicroelectronics. "Moreover, meeting today's leading sustainable-materials codes such as BPA-free, Pb-free and others helps smart-tech innovators address environmental and regulatory expectations as these become progressively tougher, encompassing additional classes of materials."

"ST's new LSM6DSK320X sensor delivers unprecedented vibration immunity that we just had to integrate and take advantage of immediately in our ongoing reference platform development," said Jay Blackman, Leader, Betaflight.

"The LSM6DSK320X IMU is the new performance leader for smart and context-aware consumer technology, including UAVs," said Dr. Zebo Zhou, Chief Technology Officer, Tianhe. "Drone flight controllers place extremely demanding requirements on an IMU: the sensor must not saturate during aggressive maneuvers, must maintain low noise under severe vibrations, and must be compact and power efficient. Of all the available devices we have evaluated, ST's LSM6DSK320X was the best match."

Further technical information:

The super-symmetric architecture comprises two mirrored electromechanical structures, acting in counter-phase to each other, thereby cancelling the effects of external vibrations and shocks. Combined with a fully differential signal chain, this structure maximizes detected-signal strength and resilience.

The internal structure is also extremely compact, enabling each IMU to contain one gyroscope with two separate accelerometers in a single package. The dual accelerometers allow simultaneous measurement of low-range disturbances up to ± 16 g and high-g events up to ± 320 g, ensuring these IMUs never miss an event. This contrasts with single-accelerator IMUs that cannot perform measurements while switching between low-range and high-range modes.

The consumer-oriented LSM6DSK320X and industrial-grade ISM6HKG256X also contain ST's machine-learning core (MLC) that embeds AI processing directly in the sensor to reduce the application's energy consumption and save system resources.

Developers can leverage extra libraries including ST's Motion XLF, and sensor-fusion and context-awareness software, in addition to basic libraries, that enhance power and flexibility to address diverse applications.

The new IMUs are supported within the ST MEMS Studio development environment. The STEVAL-MKI257A adapter board for the LSM6DSK320X and STEVAL-MKI258KA adapter board for the ISM6HKG256X will be available in the eStore and from distributors by November 2026.

The LSM6DSK320X for consumer applications operates over a broad temperature range, from -40°C to $+85^{\circ}\text{C}$. The industrial-grade ISM6HKG256X handles temperatures from -40°C to $+105^{\circ}\text{C}$ and is included in ST's 10-year longevity program that assures long-term component availability.

The IMUs come in 2.5 mm x 3 mm x 0.83 mm packages and available from \$4.6 for the

consumer-oriented LSM6DSK320X and \$5.1 for the industrial-grade ISM6HKG256X for orders of 1000 pieces.

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