

Xsens Presents Upgraded Versions of MTi 1-series Modules



Xsens has released the upgraded versions of the successful MTi 1-series of motion-sensing [inertial measurement unit](#) (IMU) modules, offering improved roll, pitch and yaw measurement accuracy and higher tolerance of mechanical stress than the first generation of the product. The company has integrated into the new modules the latest, best-in-class accelerometer and gyroscope ICs alongside its high-performance sensor fusion algorithms.

The modules synthesise at very high speed the inputs from multiple motion sensors, to provide synchronised data on an object's heading, orientation, acceleration and position. The Xsens sensor fusion technology produces accurate measurements of high-frequency motion, ideal for stabilisation of [handheld laser scanners](#) and of [professional UAVs](#).

The updated design of the MTi 1-series modules has produced improved performance, including static roll/pitch measurement accuracy of $\pm 0.5^\circ_{\text{rms}}$, dynamic roll/pitch measurement accuracy of $\pm 0.8^\circ_{\text{rms}}$, and dynamic yaw measurement accuracy of $\pm 2^\circ_{\text{rms}}$.

Weight-constrained applications

Xsens has also improved the mechanical design of the modules' 12.1mm x 12.1mm x 2.6mm surface-mount package, which is less susceptible to the effects of torsional stress, and thus more robust and reliable in demanding applications that are subject to shock or vibration. Xsens has realised this more robust design without compromising the appeal of the MTi 1-series to highly weight-constrained applications such as drones: each upgraded module still weighs less than 1g.

Xsens is supporting the upgraded MTi 1-series modules with a new, high-performance development kit which includes a shield board with an Arduino-compatible header for easy integration into shield-based prototype systems. The kit is supplied with Xsens' intuitive [MT Software Suite](#) for the Windows and Linux operating platforms, and a software development kit with drivers and embedded software examples. It provides access to the module's I2C, SPI and UART interfaces and a micro-USB connection.