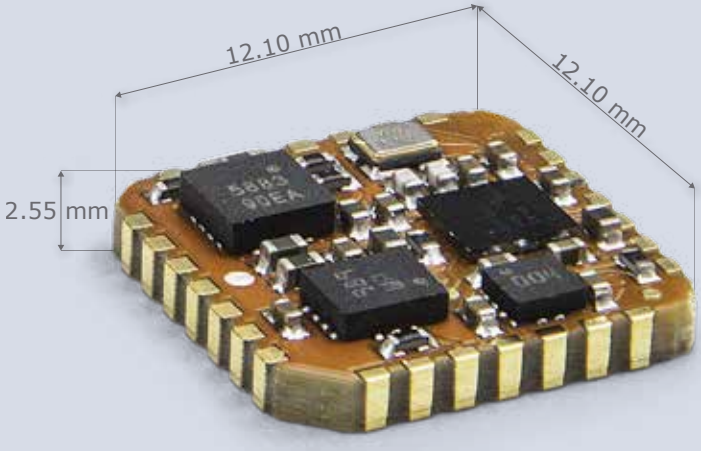
MTi-1

- **Miniature form factor (12x12 mm)**
- **Easy integration**
- **Development Kit available**



The MTi-1 is a self-contained Inertial Measurement Unit (IMU) as a 12.1 x 12.1 mm module. The Xsens optimized strapdown algorithm (AttitudeEngineTM) performs high-speed dead-reckoning calculations at 1 kHz allowing accurate capture of high frequency motions.The MTi-1 IMU is a cost-effective module for a wide range of (embedded) applications. It relieves users from the design, integration and maintenance of gyroscopes, accelerometers and other sensors.

The MTi-1 is supported by the MT Software Suite which includes MT Manager (GUI for Windows/Linux), SDK, example codes and drivers for many platforms including ROS.

- 3D models available on request
- Available online via Digi-Key, Mouser, Farnell and local distributors

IMU Performance

Accelerometer	Calibrated
Gyroscope	Calibrated
Strapdown Integration (SDI)	Yes

Gyroscope

Standard full range	2000 deg/s
In-run bias stability	6 deg/h
Bandwidth (-3dB)	230 Hz
Noise Density	0.003 º/s/√Hz
g-sensitivity (calibr.)	0.001 º/s/g

Accelerometer

Standard full range	16 g
In-run bias stability	40 µg
Bandwidth (-3dB)	230 Hz
Noise Density	70 µg/√Hz

Magnetometer

Standard full range	+/- 8 G
Total RMS noise	0.5 mG
Non-linearity	0.2%
Resolution	0.25 mG

GNSS Receiver

GNSS receiver interface	n/a
GNSS precision	n/a
RTCM input port	n/a

Barometer

Barometer interface	n/a

Mechanical

IP-rating	IP00
Operating Temperature	-40 to 85 ºC
Casing material	PCB
Mounting orientation	No restriction, full 360º in all axes
Dimensions	12.1 x 12.1 x 2.55 mm
Connector	SMD, footprint compatible with JEDEC PLCC-28
Weight	0.6 g
Certifications	CE, FCC, RoHS

Electrical

Input voltage	2.8 to 3.6V
Power consumption (typ)	<100 mW @ 3V

Interfaces / IO

Interfaces	UART, SPI, I²C
Sync Options	Yes
Protocols	Xbus
Clock drift	10 ppm or external
Output Frequency	Up to 1 kHz
Built-in-self test	Gyr, Acc, Mag

Software Suite

GUI (Windows/Linux)	MT Manager Firmware updater, Magnetic Field Mapper
SDK (Example code)	C++, C#, Python, Matlab, Nucleo, public source code
Drivers	LabVIEW, ROS, GO
Support	BASE by XSENS: online manuals, community and knowledge base

www.xsens.com