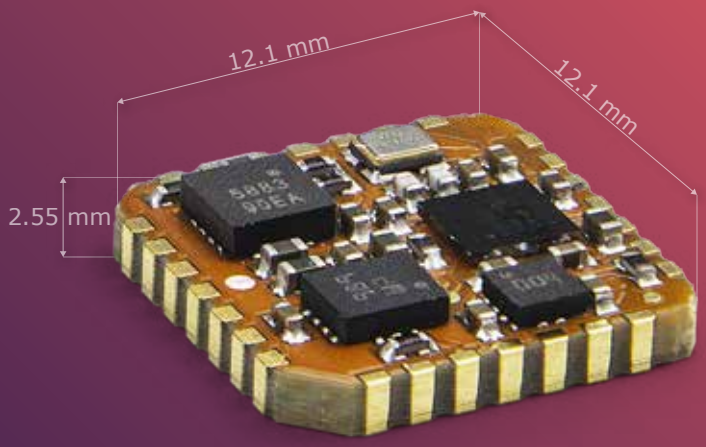
MTi-8

- **Miniature form factor (12x12 mm)**
- **Cm-level accuracy**
- **Development Kit available**

The MTi-8 is a cm-level GNSS/INS as a 12.1 x 12.1 mm module with an interface to an external GNSS receiver. The Xsens optimized strapdown algorithm (AttitudeEngine™) performs high-speed dead-reckoning calculations at 1 kHz allowing accurate capture of high frequency motions. Xsens' industry-leading sensor fusion algorithm provides high accuracy and sensor auto-calibration in a cost-effective module for a wide range of (embedded) outdoor applications. It relieves users from the design, integration and maintenance of gyroscopes, accelerometers and other sensors.

The MTi-8 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

This document is informational and not binding. Complete and detailed specifications are available at **mtidocs.movella.com**

Sensor fusion performance

Roll, Pitch	0.5 deg RMS
Yaw/Heading	1 deg RMS
Position	1 cm + 1ppm CEP[1]
Velocity	0.05 m/s RMS

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

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	UART (NMEA, UBX, beta:SBF/GSOF)
GNSS precision	High Precision (RTK)
RTCM input port	External

Barometer

Barometer interface	Yes (SPI)

[1] *GNSS receiver from DK is used, depending on GNSS conditions.*

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)	<150 mW @ 3V

Interfaces / IO

Interfaces	UART, SPI, I²C
Sync Options	Yes
Protocols	Xbus, NMEAin, UBXin, SBFin, GSOFin
Clock drift	1 ppm (external)
Output Frequency	Up to 1kHz
Built-in-self test	Gyr, Acc, Mag, Baro, GNSS

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	Online manuals, community and knowledge base

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