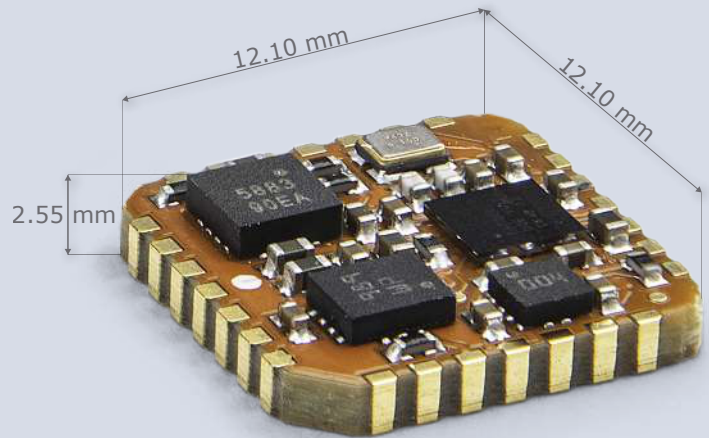


MTi-3

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

The MTi-3 is a self-contained Attitude Heading and Reference System (AHRS) as a 12.1 x 12.1 mm module. 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) applications. It relieves users from the design, integration and maintenance of gyroscopes, accelerometers and other sensors. The MTi-3 is supported by the MT Software Suite which includes MT Manager (GUI for Windows/Linux), SDK, example codes and drivers for many platforms.



Sensor fusion performance

| | |
|-----------------------------|-------------------------|
| Roll, Pitch | 0.5 deg RMS |
| Yaw/Heading | unreferenced, low drift |
| Strapdown Integration (SDI) | Yes |

Gyroscope

| | |
|-------------------------|---------------|
| Standard full range | 2000 deg/s |
| In-run bias stability | 10 deg/h |
| Bandwidth (-3dB) | 255 Hz |
| Noise Density | 0.007 °/s/√Hz |
| g-sensitivity (calibr.) | 0.001 °/s/g |

Accelerometer

| | |
|-----------------------|----------------------|
| Standard full range | 16 g |
| In-run bias stability | 30 µg |
| Bandwidth (-3dB) | 324 (x,y) 262 (z) Hz |
| Noise Density | 120 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 °C |
| Casing material | PCB |
| Mounting orientation | No restriction, full 360° 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 |

Electrical

| | |
|-------------------------|--------------|
| Input voltage | 2.19 to 3.6V |
| Power consumption (typ) | 44 mW @ 3V |

Interfaces / IO

| | |
|--------------------|-----------------------------|
| Interfaces | UART, SPI, I ² C |
| Sync Options | Yes |
| Protocols | Xbus |
| Clock drift | 10 ppm |
| Output Frequency | Up to 1 kHz, 100 Hz SDI |
| Built-in-self test | Yes |

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 |

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