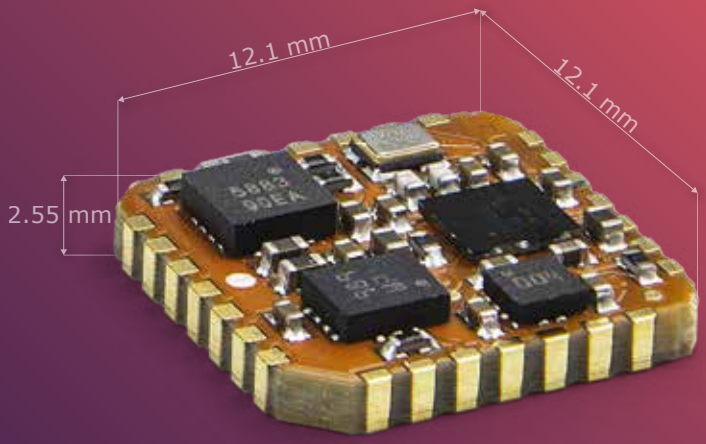
# MTi-2

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

The MTi-2 is a self-contained Vertical Reference Unit (VRU) and Active Heading Tracker (AHT) 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-2 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 | unreferenced, low drift |
| 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 |

## 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 |

## 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 |
| 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 | Online manuals, community and knowledge base |

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