XSENS

MTi-G-710

Turnkey GNSS/INS solution for navigation and stabilization applications

Complete Xsens sensor fusion algorithm

- Compensation against long-lasting transient accelerations
- Ability to cope with GNSS outages
- Non-magnetic heading reference
- Tuned for performance under vibrations
- Selectable filter profiles for range of applications
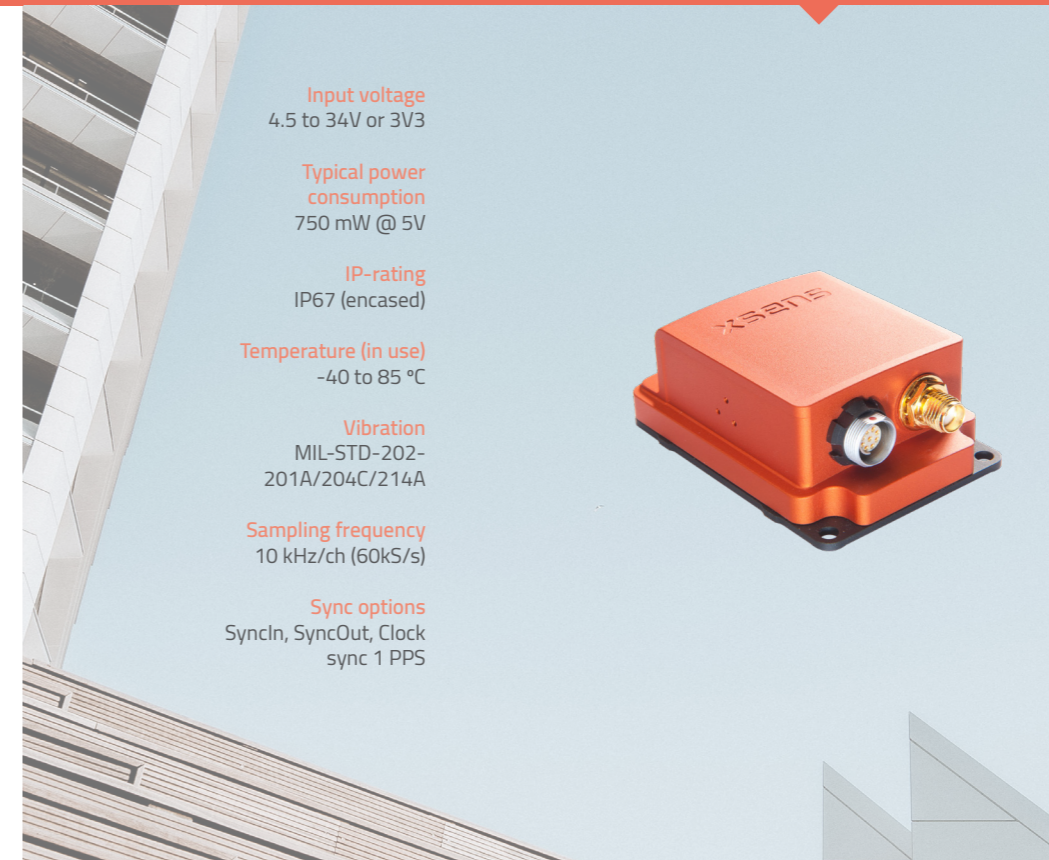
Best-in-class hardware design

- Highest quality industrial grade components
- Vibration-rejecting gyroscopes and accelerometers
- Built-in multi-GNSS receiver (GPS, GLONASS, BeiDou, Galileo) and barometer
- Wide array of (time) synchronization options

Easy software integration

- Extensive suite of configurable output formats, calculated onboard the MTi-G-710
- MT Software Suite with intuitive GUI
- Complete SDK for all operating systems
- Support for Robotic Operating System (ROS)
- Xsens Xbus protocol or ASCII (NMEA)
- Access to BASE (by Xsens), an extensive knowledge base and community forum

Specification highlights

- True North without requiring a magnetic field
- IP67 encased version or OEM board
- Choice of several interfaces and onboard USB
- All Xsens products are fully interchangeable
- Cost-effective system integrator solution
- Position, velocity and orientation outputs

System specifications

Input voltage
4.5 to 34V or 3V3

Typical power consumption
750 mW @ 5V

IP-rating
IP67 (encased)

Temperature (in use)
-40 to 85 °C

Vibration
MIL-STD-202-201A/204C/214A

Sampling frequency
10 kHz/ch (60kS/s)

Sync options
SyncIn, SyncOut, Clock sync 1 PPS

Output frequency
Up to 2 kHz

Interfaces
RS232/RS422/RS485/USB UART

Latency
<2 ms

Clock drift
1 ppm or external reference

Interface protocol
Xbus or ASCII (NMEA)

Mounting orientation
No restriction, full 360° in all axes

MTBF
300,000 hours

Product overview

Calibrated Sensor Data		MTi-G-710 GNSS/INS
		yes
Roll/pitch	Static	0.2°
	Dynamic	0.3°
Yaw		0.8°

Position and velocity		
Horizontal position	1 STD (SBAS)	1.0 m
Vertical position	1 STD (SBAS, baro)	2.0 m
Velocity accuracy	1 RMS	0.05 m/s

All above specifications based on typical application scenarios

MTi 100-series
Development Kit:
MTi, software and cabling

MTi-G-710 encased:
57x42x23.5 mm, 55g,
9-pins push-pull connector

MTi-G-710 OEM:
37x33x12 mm, 11g,
16-pins header

Sensor specification

	Gyroscopes	Accelerometers
Standard full range *	+/- 450 °/s	+/- 20 g
Initial bias erro	0.2 °/s	5 mg
In-run bias stability	10 °/h	15 µg
Bandwidth (-3 dB)	415 Hz	375 Hz
Noise density	0.01 °/s/√Hz	60 µg/√Hz
g-sensitivity (calibrated)	0.003 °/s/g	N/A
Non-orthogonality	0.05 deg	0.05 deg
Non-linearity	0.01%	0.1%

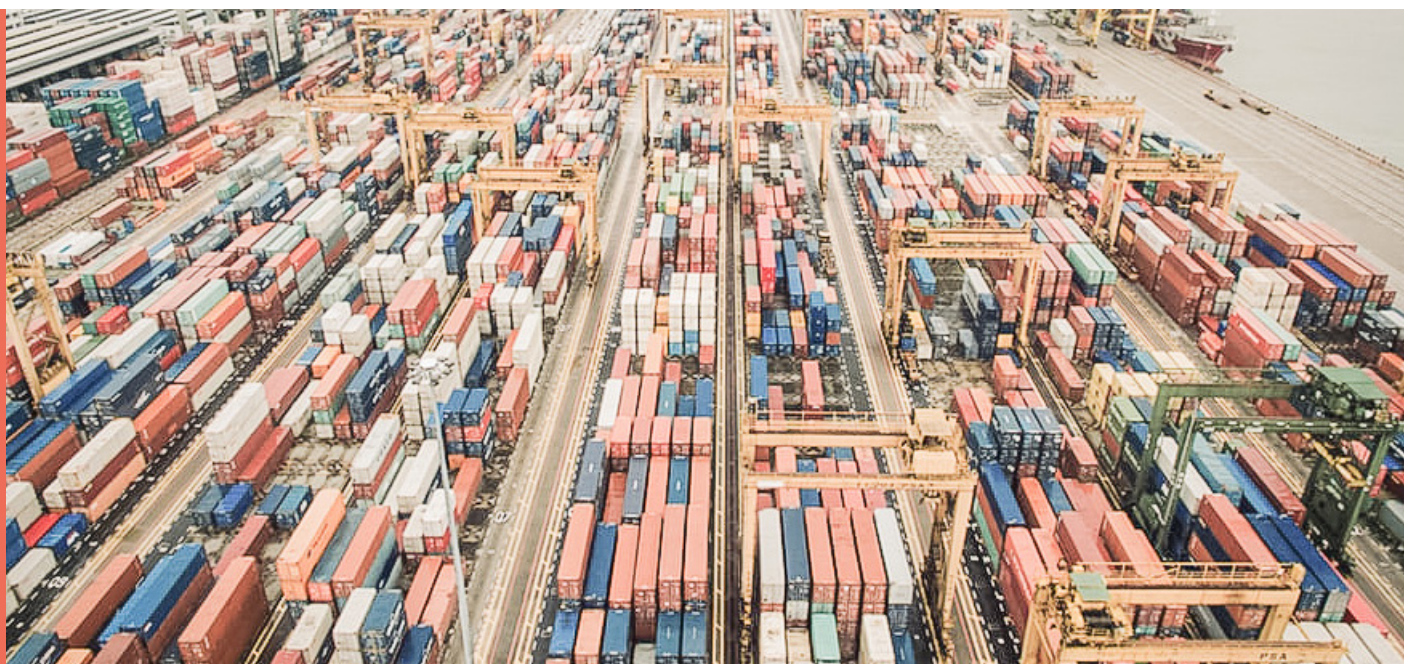|	Magnetometer	Barometer
Standard full range	+/- 8 G	300-1100 h
Total RMS noise	0.5 mG	3.6 Pa
Non-linearity	0.2%	N/A
Resolution	0.25 mG	8 cm (sea level, 15 °C)

GNSS receiver

Receiver type	72-channel, 4 Hz GPS/QZSS L1 C/A, GLONASS L10F, BeiDou B1, SBAS L1 C/A: WAAS, EGNOS, MSAS	Horizontal accuracy (CEP)	2.0 m (SBAS) 2.5 m (Autonomous)
Start-up time cold start	26 s	Velocity accuracy (@30 m/s)	0.05 m/s
Tracking sensitivity	-167 dBm		

* Optional +/- 1000 °/s available on request

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ABOUT XSENS

Xsens is the leading innovator in 3D motion tracking technology and products. Its sensor fusion technologies enable a seamless interaction between the physical and the digital world in applications such as industrial control and stabilization, health, sports and 3D character animation. Clients and partners include Electronic Arts, NBC Universal, Daimler, Autodesk, ABB, Siemens and various other leading institutes and companies throughout the world. Xsens is part of mCube, the provider of the world's smallest MEMS motion sensors, key enablers for the Internet of Moving Things. Xsens has offices in Enschede, Los Angeles, Shanghai and Hong Kong.

Visit xsens.com/distributors for an overview of Xsens' worldwide distributor network

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Unless stated otherwise, all specifications are typical.Specifications subject to change without notice.
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ISO 9001 2015 CERTIFIED

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