

MTi-680

- **Small, IP52-rated RTK GNSS/INS**
- **0.2 deg roll/pitch & cm-level position accuracy**
- **Connects to external RTK GNSS receiver**

The MTi-680 is a RTK GNSS/INS with a small form-factor design for deep integration into your application. Building on the proven MTi 600-series technology it enables a robust and easy to use cm-level positioning and orientation tracking. It features a interface to an external RTK GNSS receiver so you can efficiently design your application. It is designed for easy integration and seamless interfacing with other equipment.

The MTi-680 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.



- White label and OEM integration options available
- 3D models available on request
- Available online via Digi-Key, Mouser, Farnell and local distributors

Sensor Fusion Performance

Roll, Pitch	0,2 deg RMS
Yaw/Heading	0.5 deg RMS
Position	<1 cm CEP
Velocity	0.05m/s RMS

Gyroscope

Standard full range	2000 deg/s
In-run bias stability	4 deg/h
Bandwidth (-3dB)	500 Hz
Noise Density	0.004 °/s/√Hz
g-sensitivity (calibr.)	0.001 °/s/g

Accelerometer

Standard full range	10 g
In-run bias stability	10 (x,y) 15(z) µg
Bandwidth (-3dB)	500 Hz
Noise Density	60 µg/√Hz

Magnetometer

Standard full range	+/- 8 G
Total RMS noise	1 mG
Non-linearity	0.2%
Resolution	0.25 mG

GNSS Receiver

Brand	External
Model	External
RTCM input port	External

Barometer

Standard full range	300-1250 hPa
Total RMS noise	1.2 Pa
Relative accuracy	+/- 8 Pa (~0.5m)

Mechanical

IP-rating	IP51
Operating Temperature	-40 to 85 °C
Casing material	PC-ABS
Mounting orientation	No restriction, full 360° in all axes
Dimensions	28x31.5x13 mm
Connector	Main: Phoenix Contact 16 pin, 1.27 mm pitch
Weight	8.9 g
Certifications	CE, FCC, RoHS

Electrical

Input voltage	4.5 to 24V
Power consumption (typ)	<1 W

Interfaces / IO

Interfaces	UART, CAN, RS232
Sync Options	SyncIn, SyncOut, ClockSync
Protocols	Xbus, ASCII (NMEA) or CAN
Clock drift	1ppm (external)
Output Frequency	Up to 2 kHz, 400 Hz SDI
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	BASE by XSENS: online manuals, community and knowledge base