

xsens



MTi 600-series

IMU | VRU | AHRS | (RTK-)GNSS/INS



Product Overview

	MTi-610 IMU	MTi-620 VRU	MTi-630 AHRS	MTi-670 GNSS/INS	MTi-680G RTK-GNSS/INS
Calibrated Sensor Data (data)	yes	yes	yes	yes	yes
Roll/pitch	-	0.2°	0.2°	0.2°	0.2°
Yaw	-	unreferenced	1.0°	1.0°	1.0°
GNSS	-	-	-	external	internal
Position/Velocity	-	-	-	1m / 0.05m/s	0.05m / 0.05m/s
Form factor	module	module	module	module	rugged

System Specifications

Input voltage	4.5 to 24V	Interfaces	Module: CAN/RS232/UART Rugged: CAN/RS232
Typical power consumption	Module: 340 mW Rugged: <1 W	Sync options	SyncIn, SyncOut, ClockSync
IP-rating	Module: IP 51 Rugged: IP 68	Interface protocol	Xbus, ASCII (NMEA) or CAN
Temperature (in use)	-40 to 85 °C	Mounting orientation	No restriction, full 360° in all axes
Casing material	Module: PC-ABS Rugged: Aluminum	Built-in self test (BIT)	Gyroscopes, accelerometers, magnetometer and barometer
Clock drift	10 ppm or external reference	GNSS receiver	Module: External (UBX, NMEA) Rugged: Internal RTK (RTCM 3.3)
Output frequency	1kHz, 400 Hz SDI		

Sensor Specifications

	Gyroscopes	Accelerometers
Standard full range	± 2000 °/s	± 10 g
In-run bias stability	8 °/h	15 µg
Bandwidth (-3 dB)	520 Hz	500 Hz
Noise density	0.007 °/s/√Hz	60 µg/√Hz
g-sensitivity (calibrated)	0.001 °/s/g	N/A
Non-orthogonality	0.05 °	0.05 °
Non-linearity	0.1%	0.1%

	Magnetometer	Barometer
Standard full range	+/- 8 G	300-1250 hPa
Total RMS noise	1 mG	1.2 Pa
Non-linearity	0.2%	n/a
Resolution	0.25 mG	+/- 8 Pa (~0.5m)

RTK-GNSS Receiver Specifications

Receiver type	184-channel GPS L1C/A L2C, GLO L10F L20F, GAL E1B/C E5b, BDS B1I B2I, QZSS L1C/A L2C	Horizontal Pos. Accuracy	PVT: 1.5m CEP RTK: 0.05m CEP
Start-up time cold start	24 s	Velocity accuracy (@30 m/s)	0.05 m/s
Tracking sensitivity	-167 dBm		

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