Ekinox Micro

GNSS aided Inertial Navigation System

MADE IN FRANCE

High-Performance Compact INS for Mission Critical Applications

ITAR **No Export Restriction**

Ekinox Micro combines a high-performance MEMS inertial sensor with quad-constellation, multi-frequency dual-antenna GNSS receiver to provide unmatched accuracy even in the most challenging applications. Designed to operate in the harshest conditions, Ekinox Micro is military standard compliant, making it the ideal choice for any mission critical application.

Key Features

Compact yet Rugged

Ekinox Micro is small and lightweight, yet tough enough to be used in the toughest environments, with conformance to Military standards MIL-STD-461G, MIL-STD-1275E and MIL- STD-810H.

Optimal performance everywhere

Ekinox Micro includes pre-configured motion profiles for all land, air and sea applications enabling fast tuning of the sensor for optimum performance in every situation.

Ease of use & integration

With Ethernet connectivity and user-friendly connectors and configuration interface Ekinox Micro is fully plug and play. Developers can also integrate it using the REST API for configuration, and multiple input/ouput formats.

Single/dual antenna heading

Ekinox Micro can be used in single antenna mode and reach its maximum performance. However, for applications with low dynamics it also operates as a dual antenna GNSS compass.

SBG SYSTEMS | Motion & Navigation you can trust

ISO 9001 BUREAU VERITAS Certification

Specifications

MIL-STD 461G | MIL-STD 1275E | MIL-STD 810H | IP-68

Each of our sensors is subjected to a thorough **calibration and testing process** accross its entire operating temperature range, at our manufacturing facilities. This guarantees all delivered products will meet their specifications for their entire lifetime **without the need for a recalibration.** The specifications provided are minimum performances for typical applications and are based on multiple in field tests and real-world applications.

SYSTEM PERFORMANCE

1 sigma error over the full temperature range for a typical land application

Parameter	Single Point	RTK	PPK
Roll/Pitch	0.03°	0.015°	0.015°
Heading Single/dual antenna	0.08°	0.05°	0.035°
Velocity	0.05 m/s	0.02 m/s	0.01 m/s
Position	1.2 m	1 cm + 1 ppm	1 cm + 1 ppm

INTERFACES

Aiding sensors	GNSS, RTCM, NTRIP, Odometer, DVL
Protocols	NMEA, ASCII, sbgECom (binary), REST API
Datalogger	8 GB or 48 h @ 200 Hz
Output rate	200Hz (IMU, INS)
Ethernet	1x Ethernet Full duplex (10/100 base T) PTP / NTP, NTRIP, Web interface, FTP
Serial ports	4x serial I/O up to 921,600 bps
CAN	1x CAN 2.0 A/B bus, up to 1 Mbps
Sync I/O	4x Sync Inputs (RS232 levels) 2x Sync out (1x RS232 + 1x TTL levels)
Connectors	2x ODU AMC High-Density (maix/aux) 2x SMA connectors (antennas)

TIMING SPECIFICATIONS

Timestamp accuracy	< 200 ns
PTP accuracy	< 1 µs
PPS accuracy	< 1 µs (jitter < 1 µs)
Drift in dead reckoning	1 ppm

MECHANICAL SPECIFICATIONS

Weight	165 g
Dimensions (LxWxH)	4.2 x 5.7 x 6.0 cm

GNSS

Features	SBAS, RTK, PPK	
Signals	GPS: L1 C/A, L2C GLONASS: L1OF, L2OF	GALILEO: E1, E5b BEIDOU: B1I, B2I
Update rate	PVT: 5 Hz, RAW: 1 Hz	
Time to first fix (cold start)	< 24 s	
Jamming/Spoofing	Mitigation and advanced indicators	

HEAVE PERFORMANCE

Available in marine motion profile

Accuracy	5 cm or 5% of swell	Whichever is greater
Wave period	0 to 20 s	Auto-adjusting

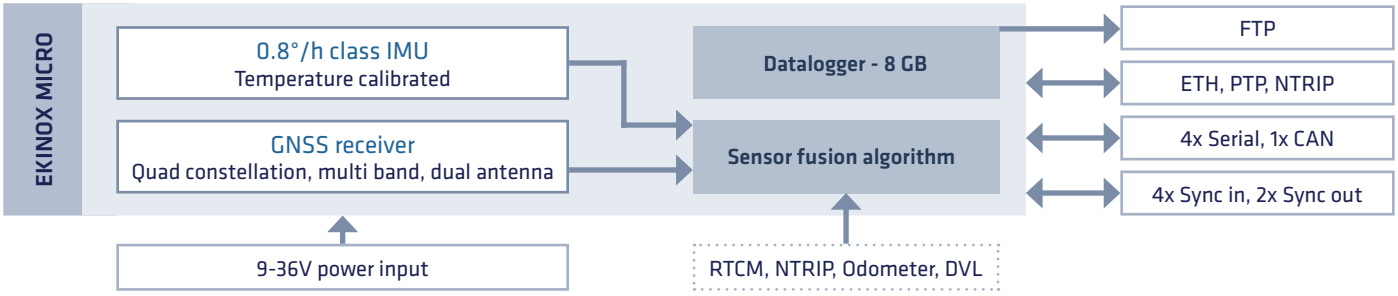
ENVIRONMENTAL SPECIFICATIONS & OPERATING RANGE

Operating Temperature	-40 to 71°C
Storage temperature	-40 to 85°C
IMU Range	± 490°/s, ± 40 g
GNSS range	500 m/s and 80 km altitude
Vibrations & Shocks	MIL-STD-810H
Ingress protection	IP-68 rated (1.5 m, 2 hours) Kerosene projections resistant
MTBF (computed)	246 000 h

ELECTRICAL SPECIFICATIONS

Power consumption	< 5.1 W with 2 survey grade antennas < 3.6 W without antennas
Supply Voltage	9 V - 36 V DC +/- 5%
Antenna power	5 V DC – max 150 mA per antenna Gain: 17 - 50 dB
Power Supply / EMC	RED (Radio Equipment Directive) IEC6100 MIL-STD 461G MIL-STD 1275E

FUNCTIONAL BLOCK DIAGRAM



Free Technical Support | Unlimited Firmware Updates | 2-year Warranty

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Contact our Experts: **www.sbg-systems.com/contact**