

Ekinox Micro

GNSS aided Inertial Navigation System

MADE IN FRANCE



High-Performance Compact INS for Mission Critical Applications



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.

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/output formats.



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.

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.



Specifications



Each of our sensors is subjected to a thorough **calibration and testing process** across 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 (main/aux) 2x SMA connectors (antennas) |

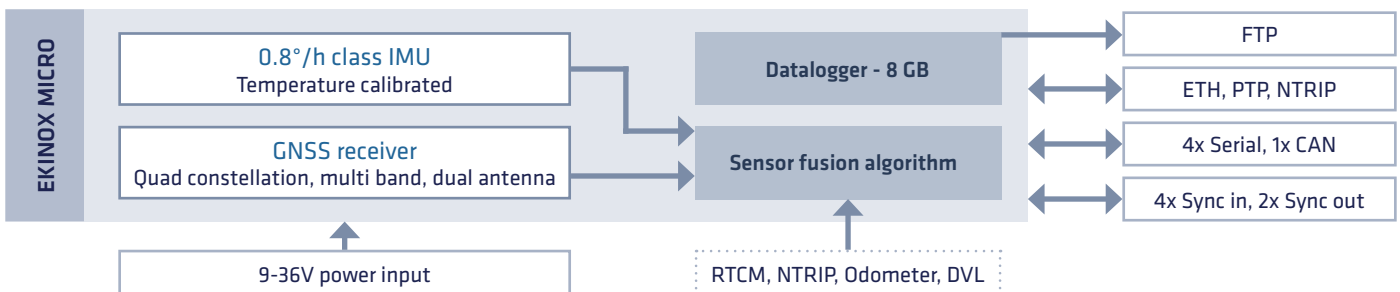
TIMING SPECIFICATIONS

| | |
|-------------------------|------------------------|
| 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 |

FUNCTIONAL BLOCK DIAGRAM



GNSS

| | | |
|--------------------------------|------------------------------------|------------------|
| Features | SBAS, RTK, PPK | |
| Signals | GPS: L1 C/A, L2C | GALILEO: E1, E5b |
| | GLONASS: L10F, L20F | 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 |

Free Technical Support

Unlimited Firmware Updates

2-year Warranty



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