

# Navsight Land & Air Solution

## Motion & Navigation Solution FOR SURVEYING APPLICATIONS



Motion, Navigation, and Geo-referencing

NAVSIGHT LAND/AIR SOLUTION is a full high performance inertial navigation solution designed to make surveyors' mobile data collection easier, whether it is terrestrial or aerial.



# Reliable Trajectory IN EVERY CONDITION

Navsight Land/Air Solution is an extremely versatile solution. It consists in an Inertial Measurement Unit available at three different performance levels, and connected to Navsight, a rugged equipment embedding the fusion intelligence, the GNSS receiver, and all connections to external equipment such as LiDAR, cameras, computer, etc.

## Navsight Processing Unit - Data Fusion and GNSS



Navsight Processing Unit with embedded GPS/GNSS

- » Tri-frequency receiver
- » Multi-constellations
- » RTK
- » PPP ready
- » Internal logger for Post-processing
- » One or two antennas

Navsight can also be used with your own GNSS receiver

## Inertial Measurement Unit (IMU) - Several Levels of Accuracy



**Ekinox IMU**  
Compact & Economical



**Apogee IMU**  
Good Perf/Price Ratio



**Horizon IMU**  
High Accuracy FOG IMU

Roll/Pitch	0.015°	0.005°	0.004°
Heading Land Single Antenna	0.03°	0.02°	0.008°
Heading Air Single   Dual antenna	0.1°   0.03°	0.04°   0.025°	0.008°
Position Horizontal	1cm+1ppm	1cm+1ppm	1cm+1ppm

*Post-processing Accuracy*



**Continuous Position** Continuous fusion of inertial data with GNSS information stabilizes the position output, effectively eliminating the impact of multipath and signal outages, when the vehicle is passing in dense urban areas for example.



**ROBUST AND SMOOTH TRAJECTORY**

Navsight fuses inertial and GNSS data to offer a robust and smooth trajectory at a high frequency (200 Hz).



**MAXIMIZED SIGNAL AVAILABILITY**

Four constellations can be used simultaneously to benefit from more satellites and so, more signal availability.



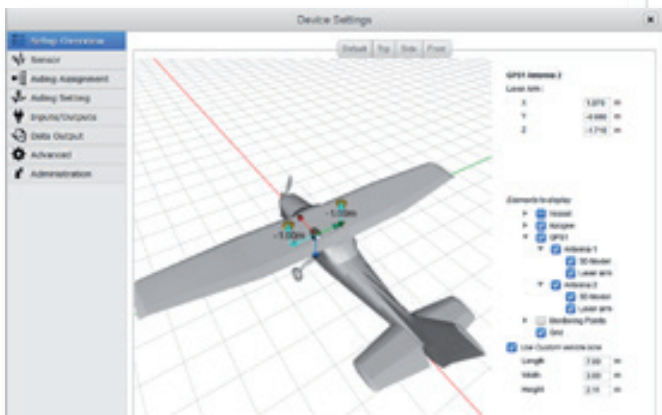
**ODOMETER AIDING**

Navsight fuses inertial, gnss, and odometer data for an even better performance in harsh conditions.

**Modern and Easy-to-use Interface**

**WEB INTERFACE**

Connect your sensor and configure it throughout the intuitive web interface.



**3D VIEW**

The new 3D View helps you to check your mechanical installation, especially your sensor position, your alignments, and levers arms.



## SBG⊕SERVICES

**NO Surprise!** Navsight solution is based on proven and maintenance-free technologies. Technical assistance is free of charge and firmware upgrades are available during the life of the product without extra cost to secure your day to day operations.



Take advantage of our SBG⊕Services:

### + Warranty Extension

All SBG inertial sensors come with a 2-year warranty. This warranty can be extended up to 5 years. Secure your budget during 3, 4, or 5 years.

### + Check & Calibration

The Check & Calibration service includes a quality check, a firmware update, cleaning, and if required, a calibration in temperature and dynamics. A certificate is delivered with the sensor. It guarantees the quality of the sensor data during 3 years.

### + Back-up System

The back-up system consists in a complete inertial system set delivered in replacement of your sensor during repair operations and during the « check and calibration » service. This service is included into the PREMIUM and ELITE packages.

## INS/GNSS Post-processing Software

Qinertia is the SBG Systems' in-house post-processing software. This full-featured software enhances SBG inertial navigation systems performance by post processing inertial data with raw GNSS observables.

### The Fastest Processing

### Tight Coupling INS/GNSS fusion

### Modern & Intuitive User Interface

### + 7,000 Base Stations always up-to-date



**Why Post-processing ?** By processing all your INS and GNSS raw data forward and backward, Qinertia PPK software greatly increases accuracy, solves GNSS outages, installation errors, etc. Qinertia can save your survey, or allow you to survey in very complicated areas.

# Specifications

All parameters apply to -20 to 60°C temperature range, unless otherwise stated.  
Full specifications can be found in the Navsight Hardware Manual available upon request.

## 1. CHOOSE YOUR IMU

IMU	 <b>Ekinox-I Surface</b>	 <b>Apogee-I Surface</b>	 <b>Horizon-I Surface Enclosure</b>	OEM Version Available 
size	86 x 100 x 58 mm	130 x 100 x 58 mm	94 x 94 x 177 mm	
Weight	425 g	635 g	1.32 kg	
Rating	IP68	IP68	IP68	

### EKINOX

	Single Point	RTK	PPK	Land RTK Outage (60 s)	PPK Outage (60 s)
Roll, Pitch	0.03 °	0.02 °	0.015 °	0.1 °	0.03 °
Heading (Land)	0.08 °	0.06 °	0.03 °	0.2 °	0.05 °
Heading (Air) Single   Dual antenna	0.3 ° / 0.05 ° *	0.2 ° / 0.05 ° *	0.1 ° / 0.03 °	-	-
Position Horizontal	1.2m	1 cm + 1 ppm	1 cm + 1 ppm	3 m	0.4 m

### APOGEE

	Single Point	RTK	PPK	Land RTK Outage (60 s)	PPK Outage (60 s)
Roll, Pitch	0.01 °	0.01 °	0.005 °	0.012 °	0.008 °
Heading (Land)	0.04 °	0.04 °	0.02 °	0.06 °	0.025 °
Heading (Air) Single   Dual antenna	0.15 ° / 0.04 ° *	0.1 ° / 0.04 ° *	0.04 ° / 0.025 °	-	-
Position Horizontal	1.2 m	1 cm + 1 ppm	1 cm + 1 ppm	0.5 m	0.1 m

### HORIZON

	Single Point	RTK	PPK	Land RTK Outage (60 s)	PPK Outage (60 s)
Roll, Pitch	0.007 °	0.007 °	0.004 °	0.01 °	0.005 °
Heading (Land)	0.01 °	0.01 °	0.008 °	0.015 °	0.01 °
Heading (Air) Single   Dual antenna	0.04 ° / 0.01 ° *	0.04 ° / 0.01 ° *	0.008 °	-	-
Position Horizontal	1.2 m	1 cm + 1 ppm	1 cm + 1 ppm	0.30 m	0.05 m

\* 4m baseline

## 2. CHOOSE YOUR PROCESSING UNIT FUNCTIONALITIES

Navigation with External GNSS Receiver

### INTERFACES

<b>Aiding Sensors (input)</b>	2X GNSS, RTCM
<b>Protocols</b>	Output: NMEA, ASCII, Binary, TSS, Simrad Input: NMEA, Trimble, Novatel, Septentrio, Hemisphere, Veripos, Fugro, PDO, PD6
<b>Logging Capacity</b>	8 GB ≈ 48h, 200 Hz
<b>Ports/Communication</b>	5x RS-232/RS-422 Tx/Rx ports
<b>Synchronization</b>	2x Sync Out (PPS) + 5x Sync In signals
<b>Ethernet</b>	5 virtual serial ports 5x UDP / TCP bidirectional ports Web interface, FTP

Navigation with Embedded GNSS Receiver

<b>Constellations</b>	<input checked="" type="checkbox"/> GPS & Glonass <input checked="" type="checkbox"/> Galileo <input checked="" type="checkbox"/> Beidou	<b>Positioning</b>	<input checked="" type="checkbox"/> L1/L2/L5 <input type="checkbox"/> RTK	<b>PPP Ready, choose:</b>	<input type="checkbox"/> Omnistar <input type="checkbox"/> Secorx Terrastar <input checked="" type="checkbox"/> Included
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### NAVSIGHT PHYSICALS & ENVIRONMENTALS

<b>Size</b>	233 x 156 x 63 mm
<b>Weight</b>	1.9 kg
<b>Wide input voltage range (isolated)</b>	9 – 36V
<b>EN-60945 compliant</b>	Isolated Interfaces and power supply
<b>Power consumption</b>	<3 W, <7W with GNSS
<b>Operating Temperature</b>	-40 to 75°C
<b>MTBF</b>	50,000 hours

RMS values for typical survey trajectories. Performance depends on velocity aiding accuracy and requires frequent turns.  
Performance may be affected by atmospheric conditions, signal multipath, and satellite geometry. All specifications subject to change without notice.

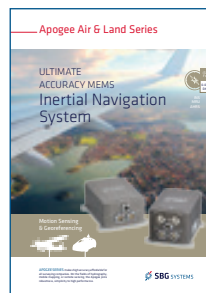


SBG Systems is a leading supplier of MEMS-based inertial motion sensing solutions. The company provides a wide range of inertial solutions from miniature to high accuracy. Combined with cutting-edge calibration techniques and advanced embedded algorithms, SBG Systems products are ideal solutions for industrial & research projects such as unmanned vehicle control, surveying applications, antenna tracking, and camera stabilization.

## PRODUCTS



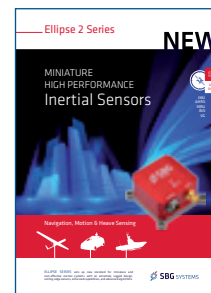
Qinertia



Apogee Series



Ekinox 2 Series



Ellipse 2 Series

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