



INS1000

RTK INERTIAL NAVIGATION SYSTEM

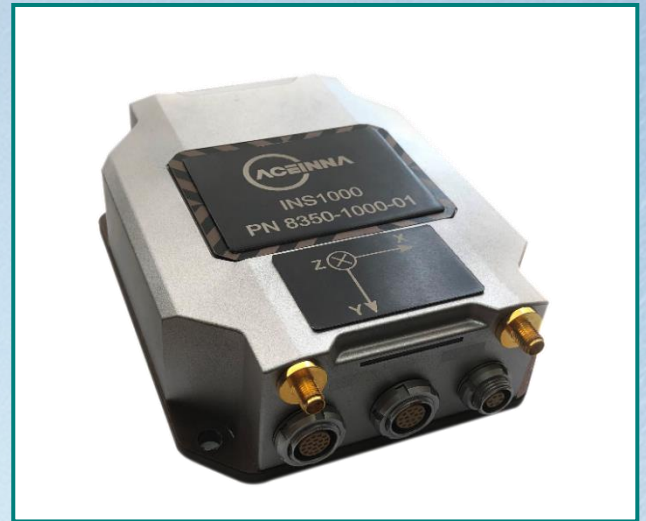


The INS1000 is a state-of-the-art, high performance GNSS with built-in inertial sensors. It offers dual frequency RTK and tight coupling between GNSS and inertial sensors to provide cm-level accuracy, enhanced reliability, and superior performance during GNSS outages. The Automotive Dead Reckoning (ADR) solution delivers strong performance in GNSS challenged urban environments.

The ACEINNA INS1000 is compatible with all major global satellite systems; it supports USB, Ethernet, CAN, and RS-232 interfaces; and it supports dual GNSS antennae for accurate heading in static and dynamic scenarios, and difficult magnetic environments.

Applications

- Autonomous Vehicles
- Precision Agriculture
- Construction Vehicles
- Automotive testing



Features

- Tightly coupled GNSS + Inertial solution
- Internal MEMS Gyros and Accelerometers
- GPS, GLONASS, Beidou, Galileo, SBAS
- Dual antennae for accurate heading
- Dual frequency (L1 / L2) RTK
- 100 Hz navigation solution (position, velocity, pitch, roll, heading)
- Calibrated over -40C to +85C
- High Reliability, MTBF > 50k hours

This product has been developed exclusively for commercial applications. It has not been tested for, and makes no representation or warranty as to conformance with, any military specifications or its suitability for any military application or end-use. Additionally, any use of this product for nuclear, chemical or biological weapons, or weapons research, or for any use in missiles, rockets, and/or UAV's of 300km or greater range, or any other activity prohibited by the Export Administration Regulations, is expressly prohibited without the written consent and without obtaining appropriate US export license(s) when required by US law. Diversion contrary to U.S. law is prohibited. Specifications are subject to change without notice.

Technical Characteristics

Accuracy ¹	
Horizontal Position Accuracy (RMS)	
SPS	1.2 m CEP
SBAS	0.6 m
DGPS	0.4 m
RTK ²	0.02 m
10s GNSS Outage	0.3 m
Vertical Position Accuracy (RMS)	
SPS	1.8 m CEP
RTK ²	0.03 m
10s GNSS Outage	0.4 m
Velocity Accuracy (RMS)	
Horizontal	0.01 m/s
Vertical	0.02 m/s
Heading Accuracy (RMS) ³	
0.1°	
Attitude Accuracy (Roll/Pitch, RMS)	
0.05°	
Operating Limits	
Velocity	515 m/s
Acceleration	8 g
Angular Rate	400°/s
Temperature Calibration Range	
-40°C to +85°C	
Timing	
Time to First Fix ⁴	
Cold Start ⁵	< 60 s
Warm Start ⁶	< 45 s
Hot Start ⁷	< 11 s
Signal Re-acquisition	< 2 s
RTK Initialization Time	
< 1 min	
Output Data Rate	
100 Hz (200Hz max)	
Environment	
Operating Temperature (°C)	
-40 to +85	
Non-Operating Temperature (°C)	
-55 to +105	
Enclosure Rating	
IP67	
Vibration	
IEC 60068-2-6 (5g)	
Shock survival	
MIL-STD-810G (40g)	
Electrical	
Input Voltage (VDC)	
12V (10 - 24)	
Power Consumption (W)	
5	
Digital Interface	
Ethernet, CAN, USB, RS-232	
Physical	
Size (mm)	
145 x 120 x 45	
Weight (gm)	
680	

Note 1: Typ values, subject to ionospheric/tropospheric conditions, satellite geometry, baseline length, multipath and interference effects.

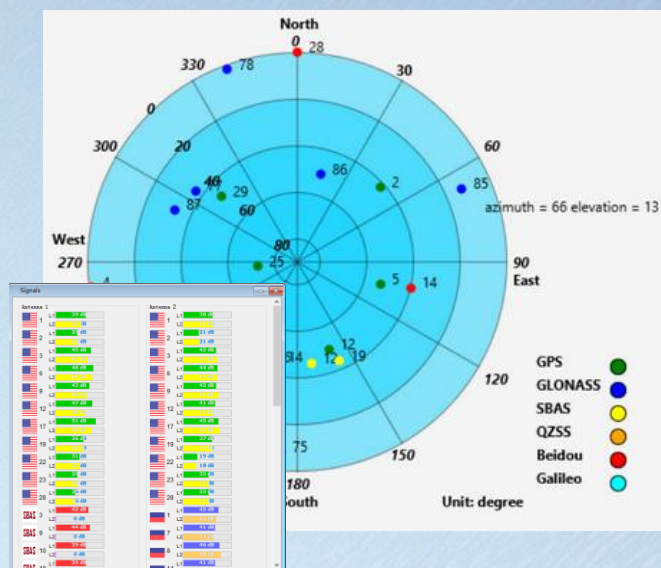
Note 2: Add 1ppm of baseline length.

Note 3: Based on 2m baseline between antennae.

Note 4: Typical values.

Note 5: No previous satellite or position information.

Note 6: Using ephemeris and last known position.



Ordering Information

Model	Description
INS1000-MT	Inertial Navigation System- Mobile Unit with IMU
INS1000-BASE	Remote Base-station for RTK

Support

For more detailed information, please refer to the INS1000 Developer Manual. It is available at the following location:

<https://docs-ins1000.readthedocs.io/en/latest/index.html>

AceinnaNav Control Software (ACS) is a graphical user interface for the AceinnaNav integrated navigation system. It displays continuous position, velocity, attitude, and trajectory information from the system. Additionally, it also provides tools to configure the system and log output data from the system.

Hardware

- INS1000 DEV KIT
 - INS1000 (INS1000 Rover)
 - Antenna GPS (2x Rover GPS Antenna)
 - INS1000-Base (INS1000 Base Station)
 - Antenna-GPSB (High Gain Survey Grade GPS Antenna)
 - INS1000-CKit (Cables/Connectors)
 - INS1000-Pbox (Pelican Box)
- Note: The DEV KIT comes disassembled. Some basic assembly is required.

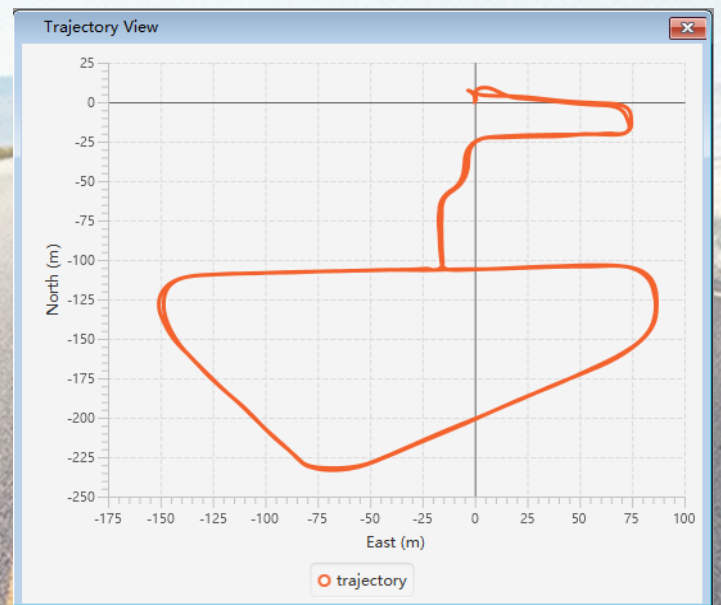
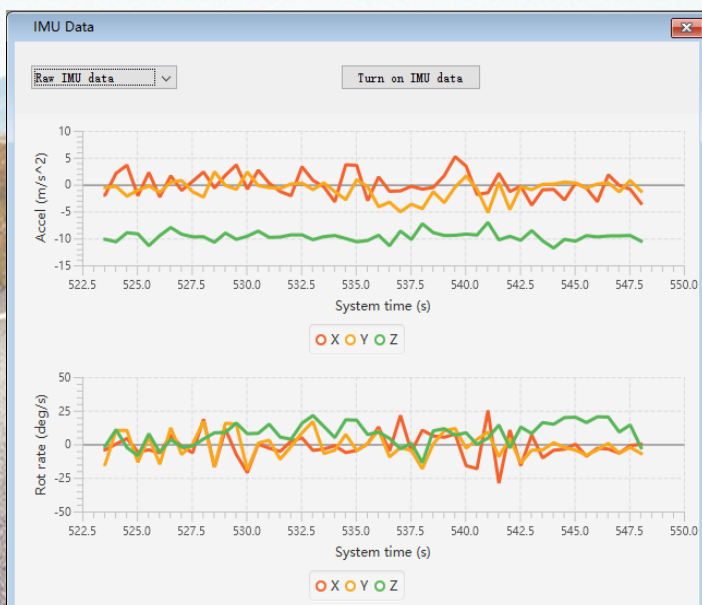


Developer Tools

- System Setup Guide – How to connect the hardware, install and configure the system.
 - https://docs-ins1000.readthedocs.io/en/latest/system_setup_guide.html
- Base station Guide – How to set up and configure the base station.
 - https://docs-ins1000.readthedocs.io/en/latest/base_outline.html#
- Reference Manual – How to use the system.
 - https://docs-ins1000.readthedocs.io/en/latest/ref_outline.html
- Software Guide – How to use the GUI.
 - https://docs-ins1000.readthedocs.io/en/latest/user_outline.html#

System Requirements

- Rover Internet connection



Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9