RTK GNSS/INS

POLYNAV 2000S

The PolyNav 2000S is a top of the line ultra-high-performance, GNSS aided MEMS Inertial Navigation System (INS) designed and built by PolyExplore Inc. The quad-constellation, dual antenna system features dual-frequency RTK with a centimeter-level accuracy and compact, robust design.

The PolyNav 2000S provides near FOG performance and ideal for such applications as HD Mapping, Bathymetry, Autonomous Driving, and many more. The system provides superior performance during GNSS signal outages through tightly coupled GNSS and INS systems as well as digital quadrature counter when used as a distance measurement indicator (DMI). Furthermore, the PolyNav 2000S is capable of continuously generating highly accurate attitude measurements regardless of whether the platform is moving or static. The system can output an internal PPS signal and timestamps even in the absence of the GPS signal. A Heave message for the Marine applications is available.

FEATURES

- Centimeter level positioning with precise attitude and heading whether the platform is static or moving
- Precision, velocity, acceleration, attitude (Roll, pitch, heading), and angular rate
- GPS, GLONASS, Beidou, Galileo*, and SBAS, QZSS; 240 Tracking Channels
- Dual frequency (L1 & L2) RTK
- Global PPP
- Dual antenna for accurate heading
- Best in class price-performance ratio
- 100 Hz navigation solution and the raw measurement output
- Tactical grade, near FOG performing solid-state IMU sensor
- Multiple sensor fusion
- ROS driver ready
- Heave message

** Upon request*

POLYEXPLORE

Visit polyexplore.com For More Information.

High End, Cost-Effective Navigation Solutions.

PolyExplore, Inc.

2210 O'Toole Ave, Suite 240, San Jose, CA 95131
contact@polyexplore.com

REV. 1.01

TECHNICAL DATA

RTK GNSS/INS
POLYNAV 2000S

POLYNAV 2000S CHARACTERISTICS

Constellation	GPS/GLONASS/BeiDou/Galileo/SBASS/QZSS
Satellite signals	L1 & L2C/L2P (GPS), E1&E5b (Galileo)
Accuracy	
Position	1.6 m CEP SPS, 0.02 m RTK
Velocity (RTK)	1 cm/s
Roll/Pitch (RTK)	0.015°
Heading	0.08° (1 m base),
Measurement rate	125 Hz
Sensitivity	-160 dBm
Number of antennas	2

HARDWARE SPECIFICATIONS

Mechanical:
Dimension: 166 x 134 x 70
Weight: approx. 800 g.

Electrical:
Input voltage: 12–24 V DC
Power consumption: 10W
Interface: Ethernet, UART, RS232, CAN, DMI, PPS, Event Input

Environmental:
Operating temperature: -40° to 85° C

GNSS SENSOR PERFORMANCE

Time to First Fix (TTFF)
Cold start: < 60 seconds
Warm Start: < 45 seconds
Hot Start: < 11 seconds
Signal re-acquisition: < 2 seconds

Velocity Accuracy
0.02 m/sec HRMS

Precise Positioning Performance *(RTK fixed solution)*
Accuracy (HRMS): < 8 mm + 1 ppm
Initialization time: < 1 min typical
Operating range: < 40 km

POLYNAV 2000F INERTIAL SENSORS

Sensor Type	Gyros	Accelerometers
Dynamic Range	400°/s	10g
Bias Instability	0.3 °/h	0.003 mg
Random Walk	0.15°/√h	0.015 m/s/√h

POLYEXPLORE

Visit polyexplore.com For More Information.

High End, Cost-Effective Navigation Solutions.

PolyExplore, Inc.

2210 O'Toole Ave, Suite 240, San Jose, CA 95131
contact@polyexplore.com

REV. 1.01