AUTOMOTIVE GNSS/INS

PolyNav 3000A

Figure 1. Dual Antenna 3000A

The PolyNav 3000A is a high-performance positioning system designed for the automotive market. It is integrated with a multi-constellation GNSS receiver and a MEMS IMU. With the built-in RTK engine, it delivers up to centimeter level positioning accuracy. Fusing wheel speed and the gear position from the vehicle, the PolyNav 3000A provides continuous positioning, velocity, attitude and time synchronization, even in GNSS challenged environments and during GNSS outages.

The PolyNav 3000A is scalable for high-volume applications and is developed to support autonomous driving level 2 and above (L2+). It can be deployed in passenger vehicles for multiple ADAS (Advanced Driver Assistance System) features, such as highway driving assist and automated valet parking features. Furthermore, it can be integrated into self-driving buses and robotaxi.

FEATURES

- Multi-constellation tracking provides high availability
- Dual-frequency (L1/L5) signal tracking enables high accuracy
- Scalable for mass production
- Leading sensor fusion algorithm
- Lane-level precision
- Over-the-air software update
- Customizable onboard data storage
- 1 PPS output
- Support accessories: Ethernet, CAN, UART
- System options
    - Single antenna (Figure 2)
    - Dual antenna (Figure 1)

Figure 2. Single Antenna 3000A

APPLICATIONS

Autonomous Vehicles

Advanced Driver Assistance Systems

POLYEXPLORE

Visit www. polyexplore.com for more information.

High-Performance, Cost-Effective Navigation & Mapping Solutions.

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REV. 1.00

SYSTEM SPECIFICATIONS

Automotive GNSS/INS

PolyNav 3000A

GNSS/INS

Constellations	GPS/GLONASS/BDS/Galileo
Signal Tracking	GPS L1C/A, L5 GLONASS G1* BDS B1I, B2a Galileo E1, E5a QZSS L1, L5 SBAS L1C/A
Position Accuracy	
DGNSS Horizontal DGNSS Vertical	1.5 m 2.5 m
RTK Horizontal RTK Vertical	1 cm + 1 ppm 1 cm + 1 ppm
Velocity Accuracy	0.05 m/s
Pitch/Roll	0.1°
Heading	0.2°
Data Rate	100 Hz
Time to First Fix	
Cold Start Hot Start	≤ 26 s ≤ 2 s
Signal Reacquisition	≤ 2 s

IMU

Gyroscope	
Technology	MEMS
Dynamic Range	125 °/s
Bias Instability	3 °/hr
Angular Random Walk	0.2 °/√hr
Accelerometer	
Technology	MEMS
Dynamic Range	8 g
Bias Instability	0.05 mg
Velocity Random Walk	0.04 m/s/√hr

PHYSICAL & ELECTRICAL

Dimension	144 mm x 122 mm x 32 mm
Weight	400 g
Power	12 VDC
Interfaces	Ethernet CAN 2 Serial Ports Odometer

ENVIRONMENTAL

Operating Temperature	-40℃ to +85℃
Storage Temperature	-55℃ to +95℃

* Supported by specific firmware

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