# 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

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**Visit www.polyexplore.com for more information.**

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

**PolyExplore Inc.**

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# SYSTEM SPECIFICATIONS | Automotive GNSS/INS
# PolyNav 3000A

## GNSS/INS

| | |
|---|---|
| **Constellations** | GPS/GLONASS/BDS/Galileo |
| **Signal Tracking** | GPS L1C/A, L5<br>GLONASS G1*<br>BDS B1I, B2a<br>Galileo E1, E5a<br>QZSS L1, L5<br>SBAS L1C/A |
| **Position Accuracy** | |
| DGNSS Horizontal<br>DGNSS Vertical | 1.5 m<br>2.5 m |
| RTK Horizontal<br>RTK Vertical | 1 cm + 1 ppm<br>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<br>Hot Start | ≤ 26 s<br>≤ 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<br>CAN<br>2 Serial Ports<br>Odometer |

## ENVIRONMENTAL

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

\* Supported by specific firmware

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