

# K-NAV

## Introducing Our Advanced INS Sensor with Dual Antenna GNSS



K-NAV, a dual-antenna GNSS-based positioning system, assisted by Inertial Navigation System (INS), delivers high-precision real-time position, velocity, and attitude information (heading, roll, and pitch). By integrating GNSS and IMU sensors through a sensor fusion approach, the system provides stable and reliable navigation data even under challenging environmental conditions.

### Key Features:

- **Reliable Navigation in Dynamic and Static Applications**

Provides stable and accurate navigation data for both moving and stationary platforms.

- **High-Precision Heading Determination**

Achieves accurate heading information using a dual-antenna architecture and carrier-phase difference technique, independent of magnetic sensors.

- **Multi-Band GNSS Support**

Supports multiple GNSS frequency bands for improved accuracy, robustness, and faster convergence.

- **GNSS + IMU Sensor Fusion**

Combines GNSS and inertial measurements to ensure smooth, continuous navigation data, even during temporary GNSS outages.

- **Low-Speed and Static Heading Capability**

Provides accurate heading information even at very low speeds or in stationary conditions.

- **Easy System Integration**

Easily integrates with existing systems via standard interfaces, enabling rapid deployment and enhanced navigational capabilities.

### Measured & Transmitted Parameters

3D Gyros, 3D Accels, 3D Mags, Barometer, Velocity, Position,  
GNSS Heading

**K-NAV**

SYSTEM PERFORMANCE PARAMETERS					
	K-NAV				
Positioning Accuracy	<table border="1"><thead><tr><th>Single Point</th><th>RTK</th></tr></thead><tbody><tr><td>Horizontal: 1.5 m</td><td>Horizontal: 0.8 cm</td></tr></tbody></table>	Single Point	RTK	Horizontal: 1.5 m	Horizontal: 0.8 cm
Single Point	RTK				
Horizontal: 1.5 m	Horizontal: 0.8 cm				
GNSS Heading Accuracy	0.15° RMS / 1 m baseline				
Magnetic Heading Accuracy	0.25° RMS				
Velocity Accuracy	0.03 m/s				
Time to FIX	Cold Start < 30 s Hot Start < 5 s				
Data Update Rate	Dual Antenna: 20 Hz				
Weight	<100 gr				
Dimensions	65x55x25 mm				

**KMSense is a brand of KARAKAMLAR AEROSPACE**

Karakamlar Aerospace and Defense Industry Inc. Ivedik O.S.B. 2224. Cad. No:1 E-Blok 108  
Teknopark Ankara, 06378 Yenimahalle/ANKARA

Phone: +90 312 385 88 20  
Email: [info@kmsense.com](mailto:info@kmsense.com)  
Website: [www.kmsense.com](http://www.kmsense.com)