

Vehicle Inertial Navigation System

The inertial navigation system is applied in vehicle dynamic performance testing. It outputs parameters such as position, speed, acceleration, and direction using bias settings.



ADDITIONAL IMAGES

| Indicator Items | NAV500 | NAV1000 | NAV2000 | NAV3000 |
|--------------------------------|----------------|----------------|----------------|----------------|
| FUNCTION | | | | |
| Product Positioning | Vehicle-grade | Vehicle-grade | RTK-grade | RTK-grade |
| RTK grade | Vehicle-grade | Vehicle-grade | RTK-grade | RTK-grade |
| Number of antennas | 2 | 2 | 2/1 | 2 |
| Number of ports | 3 | 3 | 3 | 3 |
| Heading angle | ±0.2° | ±0.2° | ±0.1° | ±0.1° |
| Static positioning (RTK) | 0.01m | 0.01m | 0.01m | 0.01m |
| High-speed positioning (RTK) | 0.01m | 0.01m | 0.01m | 0.01m |
| Low-speed static (RTK) | 0.01m | 0.01m | 0.01m | 0.01m |
| High-speed static (RTK) | 0.01m | 0.01m | 0.01m | 0.01m |
| Distance between ports | 0.01m | 0.01m | 0.01m | 0.01m |
| Longitudinal relative distance | <1cm (1000m/s) | <1cm (1000m/s) | <1cm (1000m/s) | <1cm (1000m/s) |
| Lateral relative distance | <1cm (1000m/s) | <1cm (1000m/s) | <1cm (1000m/s) | <1cm (1000m/s) |
| Longitudinal relative velocity | <0.01m/s | <0.01m/s | <0.01m/s | <0.01m/s |
| Lateral relative velocity | <0.01m/s | <0.01m/s | <0.01m/s | <0.01m/s |
| Application for vehicle | RTK | RTK | RTK | RTK |
| OSN | Yes | - | Yes | Yes |
| OSN | Yes | Yes | Yes | Yes |
| OSN | Yes | - | Yes | Yes |
| OSN | 1.1m (1000m/s) | - | 1.1m (1000m/s) | 1.1m (1000m/s) |
| OSN | 1kg | - | 1kg | 1kg |
| OSN | 4m | - | 4m | 4m |
| OSN | 300000000 | 300000000 | 300000000 | 300000000 |
| OSN | RTK | - | RTK | RTK |

Overview

Professional Vehicle Inertial Navigation System

This high-performance inertial navigation system is engineered for dynamic vehicle performance testing and autonomous navigation applications. By integrating dual-antenna RTK GNSS receivers with temperature-calibrated accelerometers, gyroscopes, and magnetometers, it provides precise position, velocity, and orientation data. The system utilizes advanced Kalman filtering algorithms to ensure reliable navigation performance, even in challenging environments.

Performance Metrics

Key Navigation Accuracy

0.01 m

Static RTK Position

0.02 m

High-Speed RTK Position

0.1 deg

Heading Angle

Technical Specifications

Navigation System Comparison

| Feature | NAV500 | NAV3000 |
|-------------------|---------------|----------------|
| Technology | Vehicle-Grade | FOG Integrated |
| Power Dissipation | <8W | 18W |
| Weight | 1kg | 2.5kg |

Integrated Sensors

- Dual-antenna RTK GNSS Receiver
- Temperature-calibrated Accelerometer
- Gyroscope
- Magnetometer
- Pressure Sensor

Connectivity

| | |
|----------------------|-----------------------|
| Available Interfaces | CAN, Ethernet, RS-232 |
|----------------------|-----------------------|