RT500 v1

Low cost INS for vehicle dynamics testing

The RT500 combines a high-grade IMU with cost-effective GNSS technology to deliver a vehicle dynamics solution on a budget.

Applications

/ Vehicle dynamics analysis
/ Ride and handling testing
/ Coast-down testing
/ Acceleration testing
/ Brake testing

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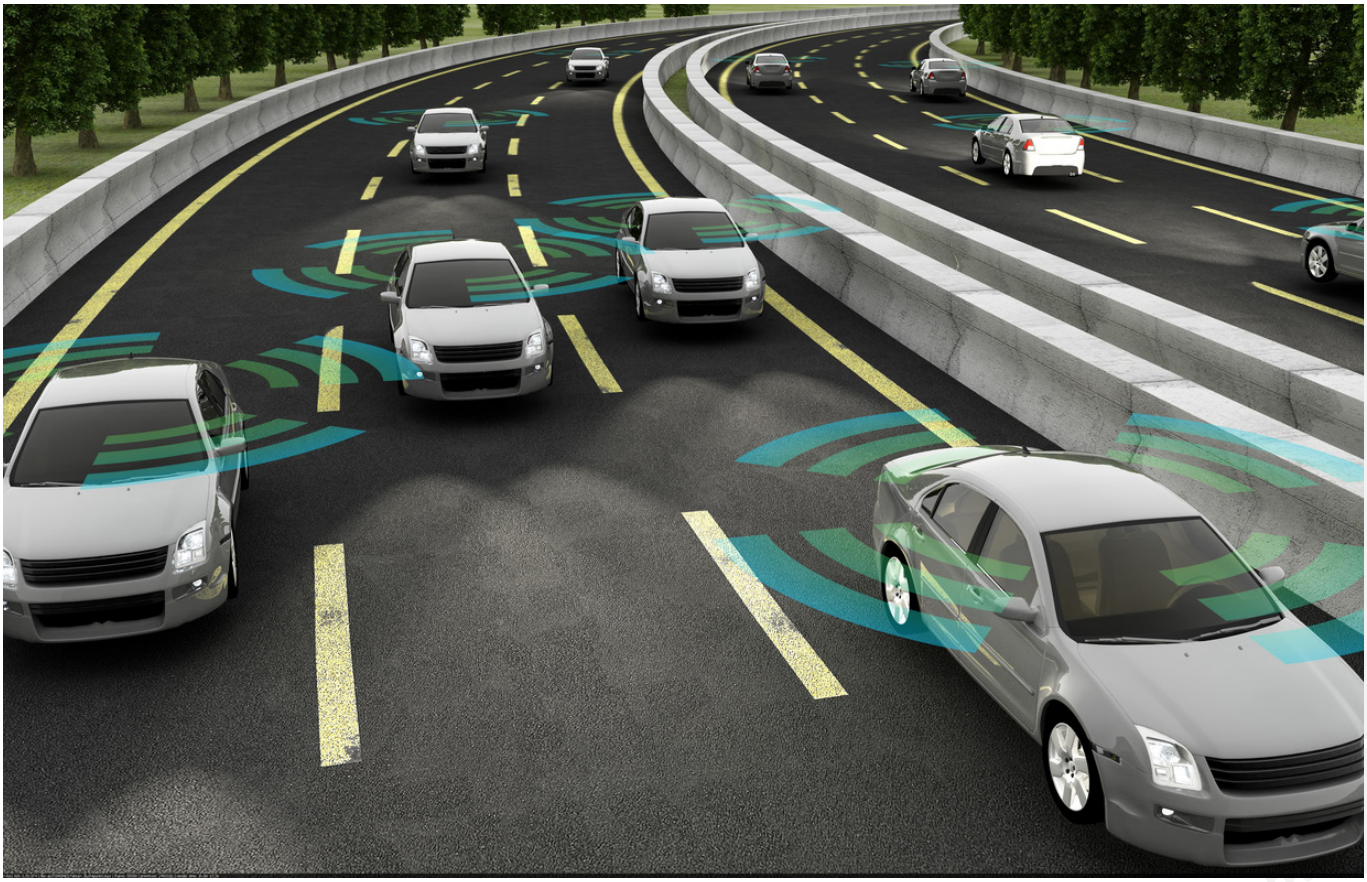
Our entry-level INS for slip angle measurement and brake testing

The RT500 v1 is the INS of choice for automotive companies who want to capture consistent, reliable measurements for low dynamics testing, where RTK is not required. e.g. coastdown testing, brake testing, and slip angle measurement.

Its predecessor, the RT2500, earned itself industry-wide recognition as the hero INS solution for low dynamics testing.

Now, with the RT500 v1, the solution replacing the RT2500, the industry's trusted INS for low dynamics testing has been designed to offer even greater connectivity, mobility and efficiency. And it does so while maintaining the well-revered precision accuracy and affordable price of the RT2500.



Benefits

- Capturing vehicle dynamics data
- Internal memory allows you to capture days of data in one go
- Up to 250Hz output even during GNSS dropouts
- Post-processing software included to improve on real-time performance

Firmware applications

- Multiple slip points – INS computes slip angle from up to eight user configured points on the vehicle
- Local coordinates – Data is displaced from an origin on a local coordinates grid
- Surface tilt – Roll and pitch are compared to an inclined surface
- Analogue output – Enables measurements to be output on 16 analogue channels
- Acceleration filters – Applied to reduce unwanted noise on angular and acceleration measurements

Why choose the RT500?

WiFi connectivity – enabling wireless device monitoring and communication to a laptop

/ The inclusion of an on-board Wi-Fi router in the next-generation RT allows for communication between a laptop and the INS.

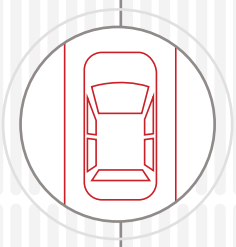
Precision, greater accuracy and efficiency

/ CAN 2.0 and CAN-FD configuration and interface

/ 48v power supply

/ Same trusted performance as the RT2500

/ Dual antenna multi-frequency GNSS receiver.



Streamlining and simplifying low dynamics testing

/ Position, time, velocity, acceleration, heading pitch and roll in one data stream.

/ Combined IMU/GNSS data ensures you don't lose data when you drive in poor GNSS environments.

/ Data output at low latency in real-time to reduce the need for post-processing.

The complete, compliant, affordable solution

/ One of the most economically priced low dynamics test solutions on the market.

/ Meets all needs for low dynamic testing, for both current and future ISO compliance requirements.

Features

/ Tightly coupled GNSS/INS

/ High accuracy orientation measurement

/ 50cm position accuracy

/ Dual antenna

/ GPS + GLONASS

/ Inbuilt WiFi and NTRIP

Options

/ 250Hz output

/ CAN acquisition

/ External GNSS interface

/ ISO 17025 calibrated

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Performance (dual antenna)

Positioning	GPS L1 GLONASS L1
Position accuracy (CEP)	
SPS SBAS DGPS	2.0 m 1.0 m 0.5 m
Velocity accuracy (RMS)	0.1 km/h
Roll/pitch accuracy	0.05°
Heading accuracy	0.1°
Track angle accuracy	0.15°
Slip angle accuracy	0.25°

Sensors

Type	Accelerometers	Gyros
Technology	MEMS	MEMS
Range Optional	10 *g* 30 *g*	100°/s 300°/s
Bias stability	5 µ*g*	3°/hr
Linearity	0.01%	0.05%[5]
Scale factor	0.1%	0.1%
Random walk	0.005 m/s/√hr	0.2°/√hr
Axis alignment	<0.05°	<0.05°

Hardware

Operating temperature	-10° to 50° C
Environmental protection	IP65
Vibration	0.1 g^2/Hz, 5–500 Hz
Shock survival	100 g, 11 ms
Internal storage	2 GB
Mass	1.4 kg
Dimensions	184 x 120 x71 mm
Power consumption	15 W
Input voltage	10-50 V dc

Interfaces

Ethernet x4	
CAN 2.0/CAN-FD	
Serial x 3	
Digital1/0	Wheel speed input (quadrature), two configurable triggers
WIFI	
NTRIP Client	

Optional Accessories

RT-Strut
A quick and easy-to-use mounting system for vehicles

RT-UPS
Uninterruptible power supply for worry-free testing

Wireless LAN

Radio	IEEE 802.11 ab/g/n/ac/d/h/j
Data Rates	5GHz: 802.11a/n/ac - Up to 433 Mpbs 2.4GHz: 802.11b/g/n - Up to 150 Mpbs
Operating Channels	Channel 1-14 (2412 - 2484 MHz) Channel 36-165 (4900 - 5845 MHz) Channel Bandwidth: 20, 40, 80 MHz[6]

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Setting the standard in automotive testing

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