

# RT1003

Compact ADAS test and validation system

The RT1003 is a compact new dual antenna product for space constrained ADAS applications such as VRU tests and low-profile robotic vehicles. Despite its small size, the RT1003 captures measurements with the same reliability as our other INS products, and perfectly suits the requirements of the current NCAP, NHTSA and IIHS roadmaps.

## » Key features

- Ideal for Euro NCAP AEB VRU tests where size and weight are critical
- No hidden costs—antennas and software included free
- One box solution with real-time CAN, Ethernet and serial output
- Dual antenna GPS/GLONASS for accurate heading in all conditions
- No export control—ship and operate worldwide without hassle
- RTK 2 cm position accuracy. 0.25° slip angle accuracy

## » Applications

- AEB City, inter-urban validation
- Motorcycle dynamics testing
- AB Dynamics recommended for steering robot guidance
- AEB VRU pedestrian/cyclist tests



An RT1003 and RT3000 for scale.



## » No compromise on reliability

It may be small, but that does not mean the RT1003 lacks in ability. In fact the RT1003 has been designed to meet the needs of ADAS engineers who want the reliability and functionality of our top-end products, but need to use the product in space constrained applications like VRU testing and low-profile robotic vehicles. Keeping in mind the current NCAP, NHTSA and IIHS roadmaps, the RT1003 can deliver real-time 2 cm RTK integer accuracy via a base station or NTRIP server.

## » Compatible with RT-Range

As well as sharing the same connector as our RT3000 and RT4000 products, the RT1003 is also fully compatible with our RT-Range system and can be connected and configured in minutes. This allows engineers to accurately generate single-point measurements between static and mobile targets in real-time.

## » Work quickly

The free software supplied with the RT1003 has been designed to allow engineers to work as quickly and efficiently as possible. While it has the power to allow detailed analysis of the measurements both internally and via its export options, the software also allows real-time tests to be defined that can provide instant pass/fail feedback to drivers.

## » Small and lightweight

The small size and low weight of the RT1003 make it ideal for pedestrian and VRU testing where space restrictions are important considerations. With a mass of just 0.435 kg, this is our lightest fully-featured automotive system and can easily be carried for extended periods. Measuring just 142 × 77 × 41 mm, it is also our smallest too.

## » Performance

Positioning	GPS L1, L2 (GLONASS L1, L2 optional)
Position accuracy (CEP)	1.6 m SPS 0.6 m SBAS 0.4 m DGPS 0.02 m RTK
Position drift after 60 s GNSS outage* (RMS)	0.95 m
Velocity accuracy (RMS)	0.1 km/h
Roll/pitch	0.05° 1σ
Heading (2 m antenna baseline)	0.1° 1σ
Accelerometers	
– Bias stability	0.08 mg
– Linearity (±1 g range)	0.05 %
– Scale factor	0.05 %
– Range	10 g
Gyros	
– Bias stability	3 °/hr
– Linearity (±200° range)	0.05 %
– Scale factor	0.05 %
– Range	300 °/s
Slip angle (at 50 km/h)	0.25° 1σ
Update rate	100 Hz (200/250 Hz optional)
Calculation latency	215 μs with 250 μs jitter
Power	10–31 V dc, 9 W
Dimensions	142 × 77 × 41 mm
Mass	0.435 kg
Operating temperature	–40–70 °C
Specification temperature	–10–70 °C
Vibration	10–2000 Hz 4.12 g RMS
Shock survival	60 g
Environmental protection	IP65
Internal storage	32 GB

Valid for open-sky.

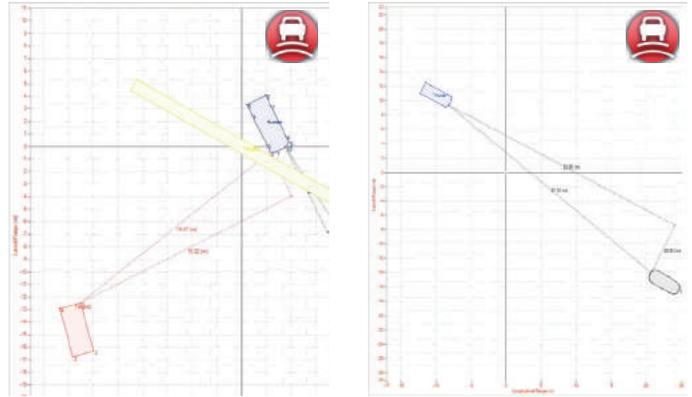
\* Post-process figures.

## » Interfaces

Ethernet	10/100 Base-T
CAN	Up to 1 Mbit/s
Serial	Configurable RS232
Digital I/O	Wheel speed input (quadrature), two configurable IO triggers

## RT-RANGE

When connected to the RT-Range, the RT1003 is a powerful but cost effective ADAS test and validation tool. Some of the capabilities and accessories for the RT1003 are shown below.

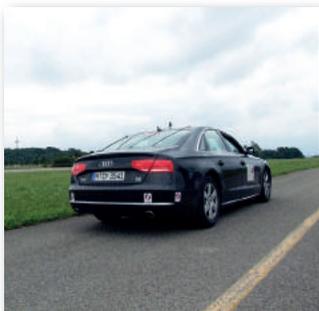


Screen captures of the RT-Range Birds-eye view, showing real-time vehicle measurements created using the RT1003 and an RT-Range system.



### » Optional accessories

- The RT-Strut (left) is a quick and easy to use vehicle mounting system. Brackets for mounting the RT1003 on the RT-Strut are available.
- The RT Base S (right) is a self-contained, weatherproof and portable GNSS base station. Quick and easy to set-up, it transmits corrections to local receivers via radio modem or (optionally) via Wi-Fi.



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