

Radar Sensor Production Test



Radar sensors are core autonomous-driving elements and their testing concepts need to meet current and future challenges for connected cars and sensor fusion. The UTP-5065 radar test system from NOFFZ Technologies offers a compact vertical design and contains everything you need for state-of-the-art measurement and sensor calibration. The test-bench setup and component selection are tuned for highly accurate and cost-efficient automotive radar sensor production testing.

Application Challenges

- High-volume production and automation capability with short cycle time and a design that saves floor space
- Highly accurate measurement and calibration offering azimuth and elevation DUT motion in the same test system
- Clean anechoic environment and small DUT motion unit for stable and reproducible measurement quality

The Noffz Advantage

- Integration of NI VRTS radar object simulation ranging from 76–81 GHz and 4 GHz bandwidth for single- or multi-angular deviating objects
- State-of-the-art test system offers best conditions in environmental quality, functionality, modularity, flexibility, accuracy, and cost-efficiency
- Flexible and modular end-of-line test solutions, including run-in/screening solution integration for environmental tests

The Noffz Radar Test Solution

Vertical design saves up to 70 percent on the footprint and is compatible with manual and automated DUT test system input.

Best reflection suppression and analysis are achieved through a clean anechoic environment and small DUT motion.

Two-axis DUT motion for target detection and recognition and designed specifically for a vertical compact antenna test range (CATR) solution.

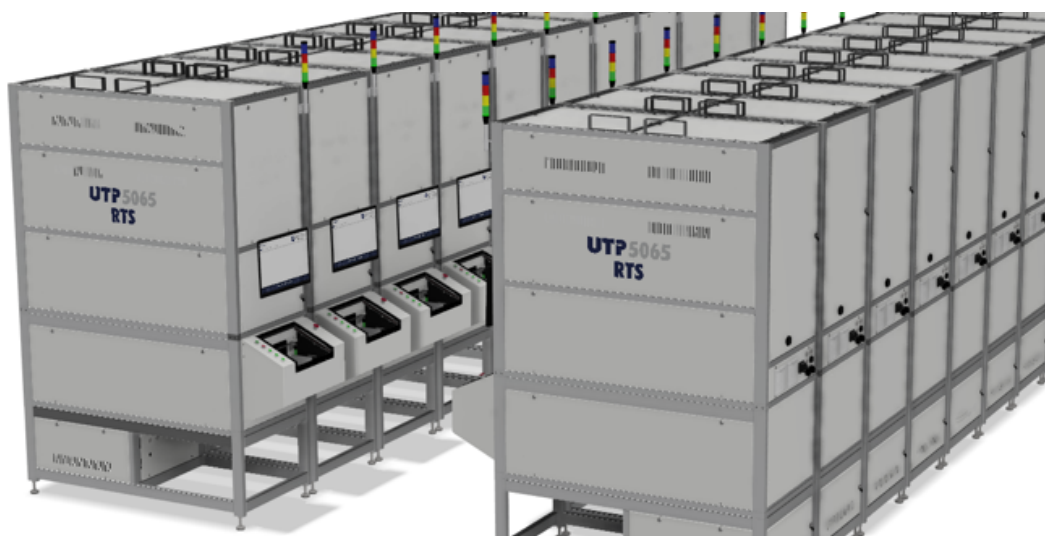


Figure 1. Noffz Radar Test System in production environment

Key Specifications

| | DUT / RTS Setup | Direct-Beam or CATR Design |
|--------------------------|----------------------------|--|
| Key Features | Internal DUT Handling | Automated |
| | External DUT Handling | Manual handling or fully automated with robot or pick-and-place |
| | Frequency Ranges | 76-81 GHz/24 GHz (other frequencies upon request) |
| | Radar Objects | Single target or multiple angular deviating targets |
| | Radar Object Definition | Variable distance, power level (RCS), and target velocity |
| | Target Simulator Bandwidth | Up to 5 GHz |
| | Measurement Axis | Azimuth and elevation |
| | Axis Motion | Both $>\pm 90$ deg |
| | Motion Accuracy | >0.01 deg position repeatability |
| | RF Measurement | Frequency Domain Analysis |
| Time Domain Analysis | | Chirp power, power over time |
| Chirp Analysis | | Chirp's rate, length, and rate deviation |
| Further Measurements | | Radiation pattern, noise, spectrum occupancy, beam width |
| Mechanics / Power Supply | Housing Dimensions | 800 x 1500 (1800) x 2700 mm (WxDxH) |
| | Setup | Vertical/distance between radar sensor and target simulator 1.0 - 2.5 m (CATR) available for far-field distances > 2.5 m |



System Integration on Your Terms

NI offers a variety of solution integration options customized to your application-specific requirements. You can use your own internal integration teams for full system control or leverage the expertise of our worldwide network of NI Partners to obtain a turnkey system. To learn how you can increase product quality and shorten test timelines, contact your account manager or NI at (888) 280-7645 or info@ni.com.

Contact your NI account manager or Noffz Technologies to learn more about how NI + Noffz can help you increase product quality and accelerate testing timelines.

+49 2151-99878-0
info@noffz.com

©2020 National Instruments. All rights reserved. National Instruments, NI, and ni.com are trademarks of National Instruments Corporation. Other product and company names listed are trademarks or trade names of their respective companies. An NI Partner is a business entity independent from NI and has no agency, partnership, or joint-venture relationship with NI.