Case Study

Far Range Radar EOL Test

Horizontal Production EOL Tester KT-Rapter

About the Cooperation

The customer was looking for a flexible and standardized radar end-of-line testing system with support in Europe and China. Ordering directly from the right branch office in the country of deployment saved on logistics costs and ensured strong local capabilities and support.

The customer chose Konrad due to global support and manufacturing capabilities, flexibility to integrate radar test equipment from different vendors, and flexibility to upgrade and change the system based on new customer requirements.

The customer needed a system that can specifically test FRR (Far-Range-Radar) types.

We designed a horizontal layout system that provides enough space for a proper setup distance for these radar types.

Project Scope

Challenges

- Incorporate dual nests for loading to allow for electrical and CAN testing on one DUT in the loading area while the other is in the RF testing area.
- Meet the high demands of cycle time.
- We have integrated R&S test equipment into our standard solution

Objectives

- Enable the Radar EOL turntable solution to easily adjust the rotation center and eliminate errors introduced by machining.
- Ensure the DUT is constantly powered throughout the entire test.
- Set up and calibrate the equipment with a setup distance for more than two meters from the radar to the antenna.

Solution

A radar sensor is a device that can detect objects by sending out radio waves at high frequency. Those waves are bouncing off real world objects and the receiver in the radar sensor can detect them with a time delay. With this collected information the software on the controller unit can calculate the distance, speed and size of the object.

The Konrad Technologies solution provides:

- A Radar Sensor End of Line Tester with robot, including a high-precision robotic system for DUT loading and RF testing, ensuring a continuous power supply once the DUT leaves the loading area and keeping it powered throughout the entire test.
- Automated DUT handling and movement is executed by a robot in complex movement patterns for radar function tests, CAN communication, RF tests in the 77Ghz radar band (76-80 GHz)
- FCT
- EOL

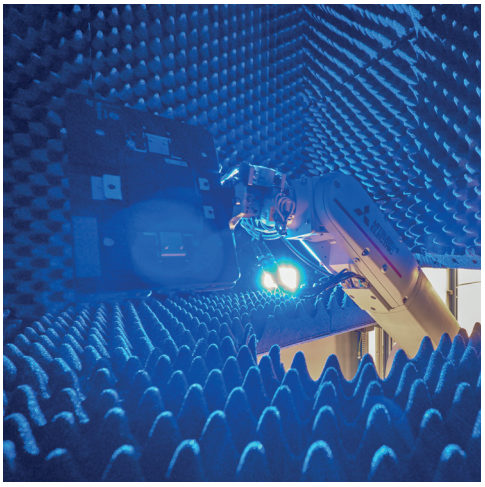
Customer Benefit

The customer benefited from:

- High performance radar functional testing in a far field test case environment.
- Flexibility to adapt the solution to different types of radar DUTs.
- As soon as the DUT is loaded, it is powered up, resulting in an improvement in cycle time compared to previous solutions.
- Additionally a second DUT can be loaded while one device is in the test chamber, further improving cycle time

Our Know-how

- Konrad Technologies boosts experience in ADAS testing of more than 10 years resulting in providing cost efficient and high quality radar test chambers which can be adapted to a wide range of use cases.
- This project was executed in a global setting, having been designed in Germany, Software developed in India and mechanically assembled and tested in Asia.
- Even though the setup seems complex, it led to a deeper understanding of how to execute projects acreoss multiple continents and provided best practice communication guidelines for international team management, enabling us to work more efficiently with international clients.



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