DARTS-9030-M

dSPACE Automotive Radar Test System (DARTS) – modular and particular realistic

Highlights

- Scalable, expandable system for over-the-air simulation of radar echoes
- Echoes range from 6 to 1,000 meters with a step size of 6 cm
- Instantaneous bandwidth of 1,000 MHz

Application Areas

The dSPACE Automotive Radar Test System (DARTS) 9030-M is based on industry-proven radar echo technology for testing radar sensors used in civilian vehicles. It supports clearly definable, reproducible test scenarios in the laboratory. The radar test system is based on a modular and scalable approach: Multiple units can be combined to simulate the reflections of as many objects as required for road traffic tests. Simulations can be performed at different distances, speeds, and sizes in real-time. With this features, the DARTS 9030-M plays a crucial role in validating radar-based automotive applications. It covers all important radar sensor development steps: from chip design to sensor development to the testing of entire advanced driver assistance systems and autonomous vehicles. The tests can be performed during development, production, quality assurance, and approval.

Benefits

Thanks to its scalability, DARTS 9030-M can efficiently cover complex and demanding simulation scenarios. Its RF performance allows for a very short minimum distance, which can be reduced even further depending on the application. The product is conveniently operated from a host PC. Remote control interfaces ensure integration into test automation systems, making it the perfect choice for performing efficient, reproducible, and highly accurate over-the-air tests with radar sensors. Moreover, DARTS 9030-M is built with industry-proven technology that provides perfect signal resolution, precise range and speed simulation, and makes it possible to precisely define the size of objects. Accurate, simplified, and flexible testing of automotive radar applications has never been easier. The convenient over-the-air method leads to an unmatched test depth and test coverage – supporting all areas from chip design to end of line testing.

DARTS-9030-M is currently under development and all related information is subject to change without notice.

Advantages

- Particularly realistic tests of ADAS/AD applications
- Validation of the entire radar transmission channel
- Very fast and thorough tests
- Simple test setups
- Short commissioning
- Seamless integration into existing test environments
- Minimization of time to market

At a Glance

- Radio frequency test system for automotive radar sensors
- Modular, expandable, and scalable device
- Scalable simulation of objects
- Simulation of distance, speed, and size
- High accuracy of Doppler simulation
- Operation from a host PC
- Remote operation via control interface

Key Specification

- RF front end: 1x Rx, 1x Tx
- Concept: full MIMO
- Frequency range: 24 GHz or 75 GHz to 82 GHz
- Bandwidth: 1,000 MHz
- Min. range: 6 m
- Max. range: 1000
- Range steps: 6 cm
- Simulation echoes: 1
- Speed: ± 700 km/h
- Dynamic range: > 80 dB
- Range accuracy: < 1 mm

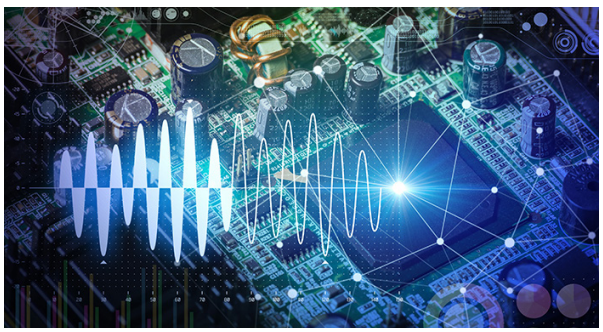
Technology Note

The dSPACE Automotive Radar Test System (DARTS) 9030-M is based on industry-proven technologies developed by miro•sys and ITS.

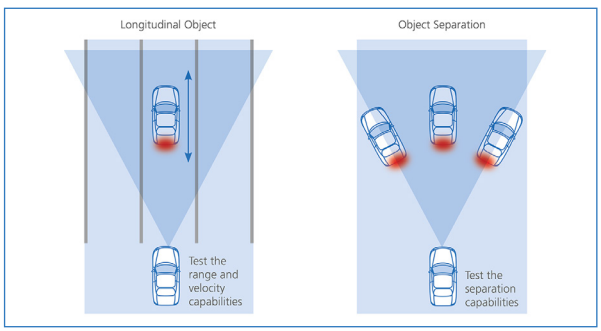
Use Cases

Radar sensor tests under the influence of surrounding components.

End-of-line testing of radar sensors.



Testing radar transceivers.



Performance and plausibility tests with radar sensors.

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