Automotive Solutions

CATALOG

KEYSIGHT

Table of Contents

Innovating for Next-Generation Automobiles

Innovations in current and next-generation automobiles are expanding capabilities and performance to serve three new key areas: autonomous driving, connected cars, and electromobility.

Automotive electronics is the underlying platform for all operations and diagnostics, convenience and comfort, safety and security, and primary support for those three areas of innovation.

Keysight Technologies' leadership in high-speed digital, radio frequency (RF), and power electronics design and test solutions can help bring your next innovative automotive idea to reality faster.
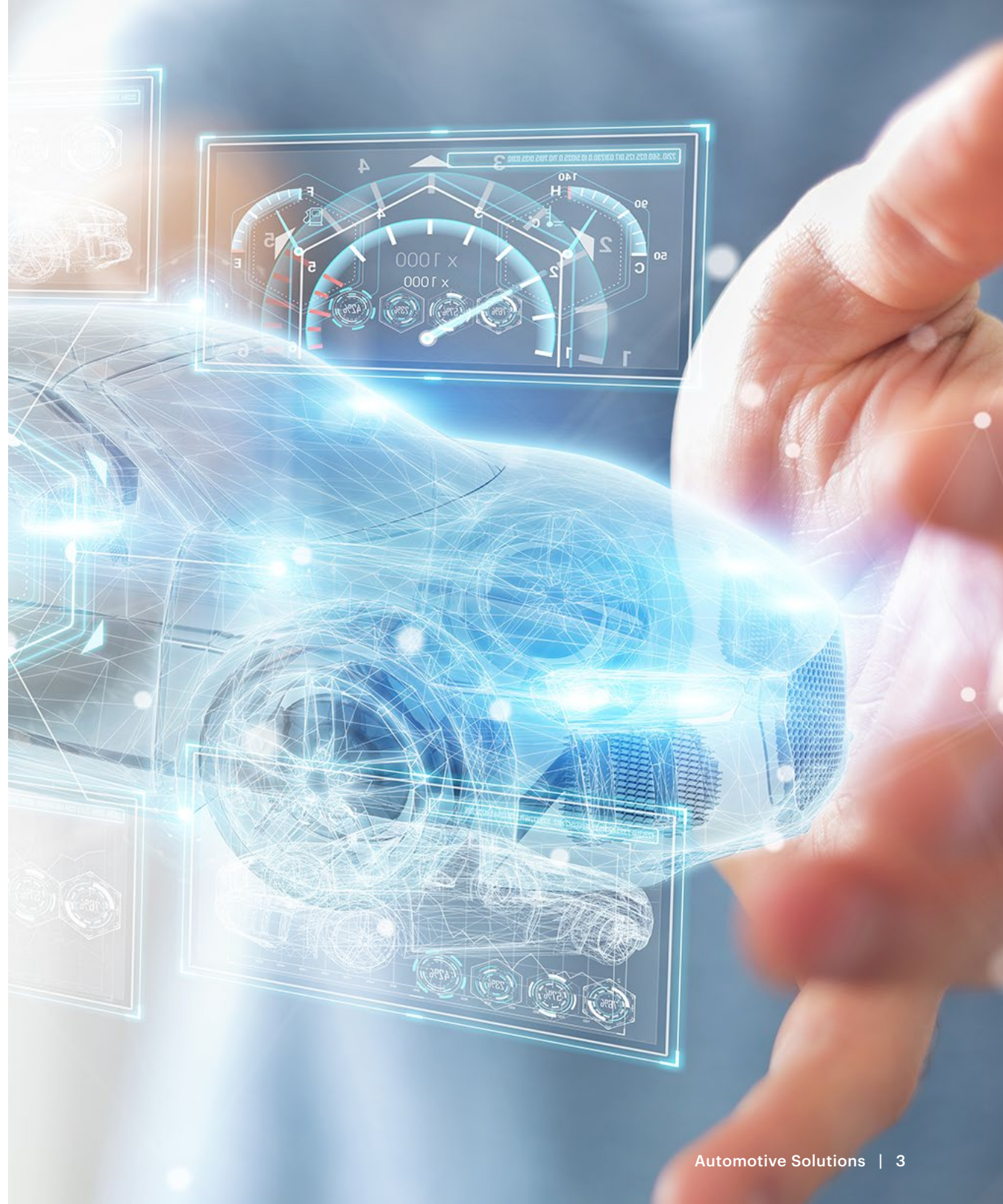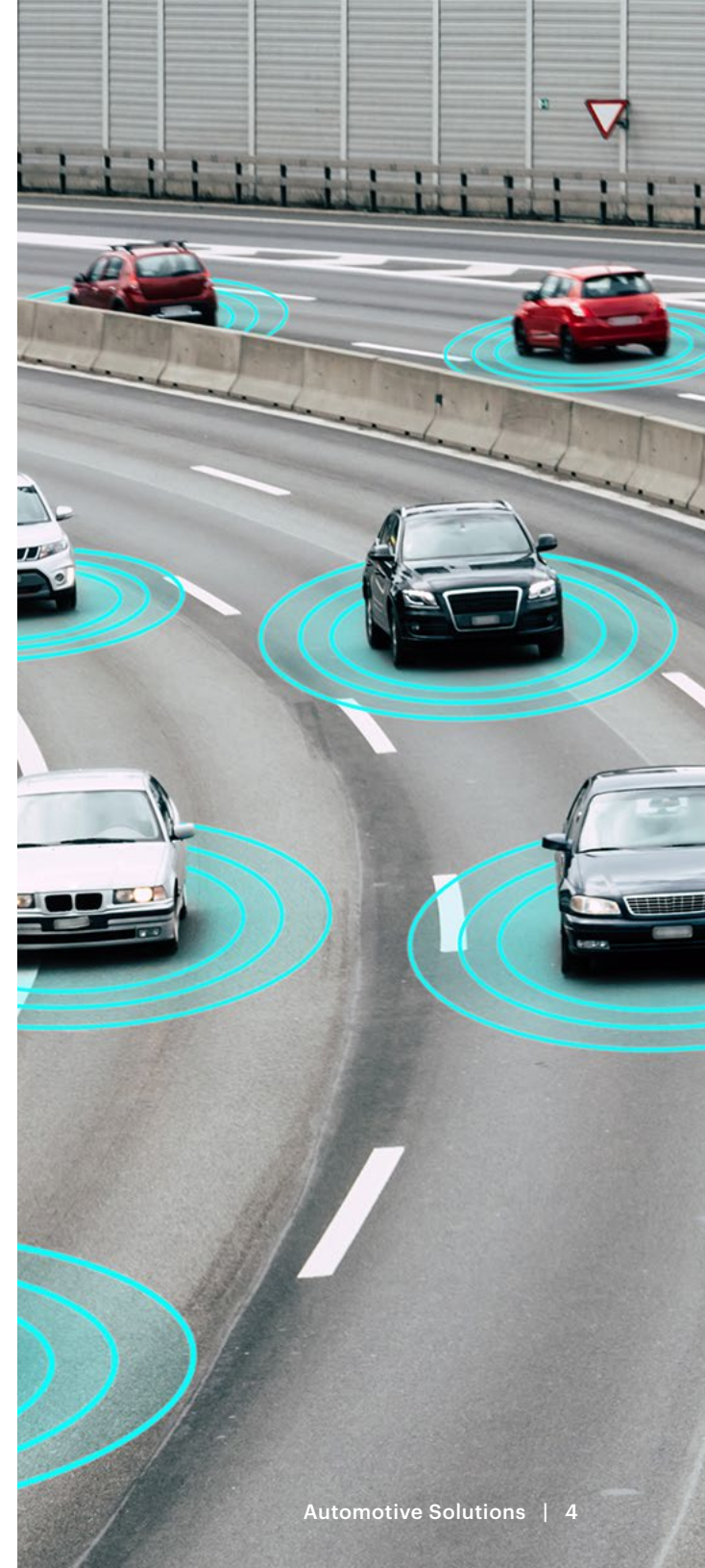
Automotive Radar

Low noise, accuracy, and speed

Testing is critical for adoption of the autonomous vehicle, which relies on a complex integration of advanced driver-assistance systems (ADAS) and communication systems. This complexity requires rigorous testing to ensure vehicle safety across all types of traffic, road, and weather conditions.

Millimeter-wave (mmWave) automotive radar is a key technology that enables many ADAS applications needed for autonomous driving. Keysight provides automotive radar design and test solutions to help you generate and characterize accurate wide bandwidth mmWave signals.

Our test instruments minimize propagation loss, phase noise, IQ / frequency response errors, and noise on evaluation modules. They let you focus on creating products with the best resolution and performance to ensure safe and smooth journeys on the road.

- radar target simulation for 76–81 GHz
- radar conformance test for spurious emissions 0–330 GHz
- SystemVue automotive radar simulation library
- lidar target simulation solution

E8740A-080 interference and receiver test for automotive radar

- generates interfering signals from 60–90 GHz

- includes a mmWave automatic power control loop

- offers signal generation capabilities; FMCW up / down / tri, custom chirp signal, and MFSK

| Software	Feature	
KS83200A	Run standards-compliant test and validation for transmitters and receivers	Request Free Trial >
KS83RX0A	Run receiver and interference test cases	Get a Quote >
KS83ST0A	Run signal analysis and signal generation test cases for ETSI standards	Request Free Trial >

E8740A-080 Interference and Receiver Test Solution

Cellular Vehicle-to-Everything (C-V2X)

The connected car combines the vehicle, communications, and the Internet of Things. With the arrival of 5G, C-V2X is gaining popularity with its ability to capitalize on the greater bandwidth, low latency, and high reliability of next-generation 5G networks.

As C-V2X follows the evolving 5G standard, its test requirements are a moving target. The Keysight SA8700A C-V2X test solution is the only solution in the industry that tracks evolving C-V2X requirements. Keysight also offers test-as-a-service to help you quickly deploy technologies that enable advanced audiovisual capabilities.
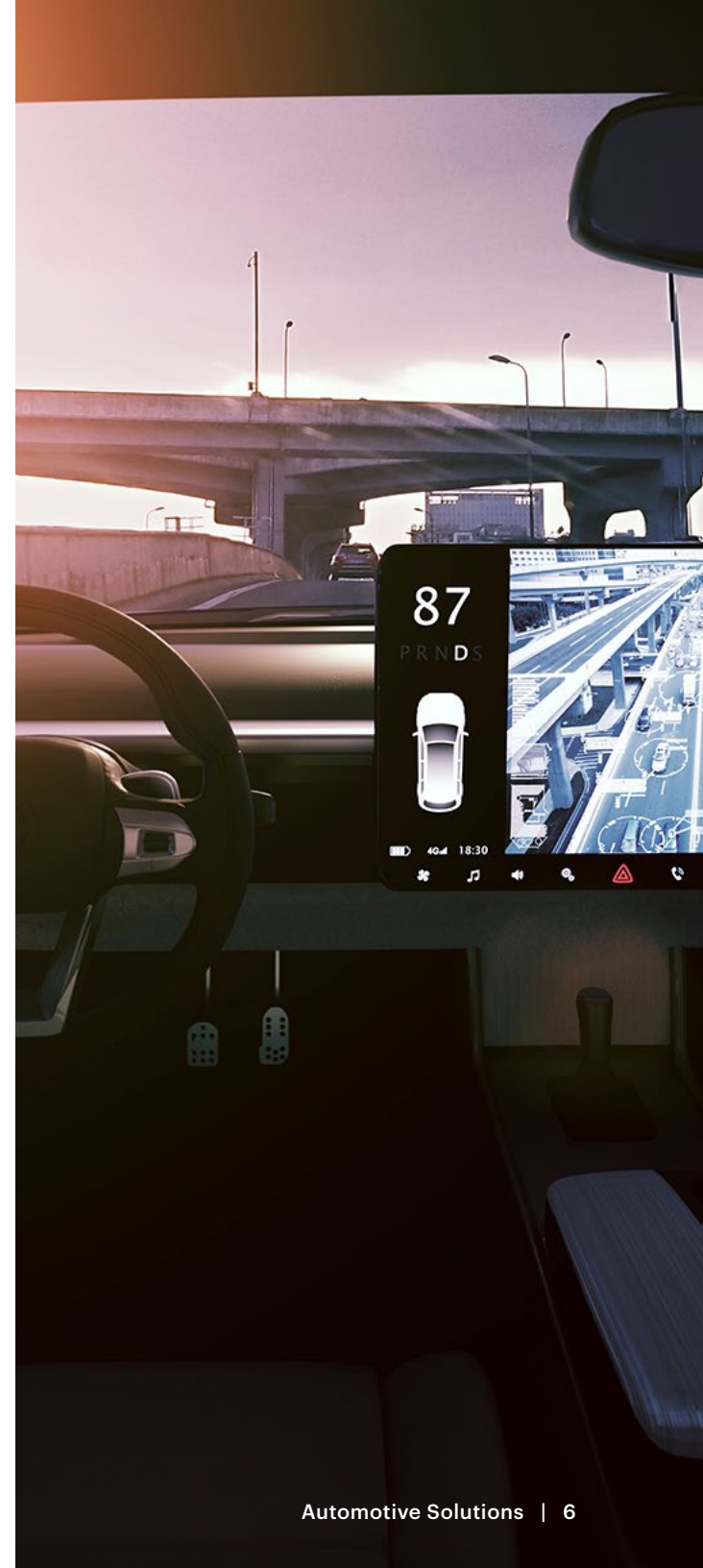
C-V2X application layer testing

Access test setups, PathWave software, and expertise for complex scenario testing of the C-V2X application layer and Intelligent Transportation Services stack.

Standards-based testing

Collaborate with 5G experts to validate your product's performance against standards-based specifications for pre-compliance and conformance tests.

Parametric testing

Access state-of-the-art instruments, PathWave software, and experts to help you characterize the performance of your design.

Custom testing

Partner with Keysight application consultants to design and develop test plans for your leading-edge product designs.

SA8700A C-V2X
Test Solution

Meet stringent goals for quality, performance, and safety with the
Keysight SA8700A C V2X test solution.

- Simplify C-V2X protocol.
- Emulate GNSS signals.
- Be future-ready for 5G New Radio V2X.

SA8700A C-V2X Test Solution

Automotive Ethernet

Unlike CAN, LIN, or MOST, the IEEE standard for automotive Ethernet demands rigorous compliance verification using test cases that cover transmitters, receivers, and harness / connector assemblies. The requirements include complex measurements that, until recently, have been uncommon in the auto industry: vector network analysis measuring and monitoring cross talk, insertion loss, and mode conversion between cables bundled together in an automotive Ethernet network.

To help you save time and effort, Keysight offers solutions that automate the testing and validation of automotive Ethernet designs. These proven applications help ensure proper test configuration and valid, repeatable measurement results. The result: greater confidence that your device complies with the IEEE standard, faster development cycle, repeatability of testing, and less human error.

Keysight provides a complete solution
for your automotive Ethernet conformance
test requirements.

Products	Hardware	Software	
AE6900T	Transceiver conformance test (100BASE-T1, 1000BASE-T1, TC8)	—	**Get a Quote >**
AE6910T	—	Automotive Ethernet Tx compliance software	**Get a Quote >**
AE6900R	AE6900R receiver validation and conformance test for 1000BASE-T1	—	**Get a Quote >**
AE6910R	—	Automotive Ethernet 100/1000 Mb Rx compliance software	**Get a Quote >**

Set up your Keysight Infiniium oscilloscope to show
automotive Ethernet protocol decode in less than
30 seconds. Find out how.

Infiniium MXR-Series
Oscilloscope

E-Mobility

Get ready for all e-mobility norms and standards worldwide

With the SL1040A Scienlab Charging Discovery System (CDS) Series from Keysight, securing your charging technology products for the global market is simple

- automated functional, conformance, interoperability, and quality testing for R&D, end-of-line (EOL), and electromagnetic compatibility (EMC) applications

- support for all available communication methods, particularly basic communication (PWM) according to IEC 61851-1 and IEC 61851-23 and high-level communication according to DIN SPEC 70121, ISO 15118 (PLC), CHAdeMO, and GB/T (CAN)

- powerful and intuitive software for test analysis and system operation

- extensive test cases library for automated compliance testing of all standards

Products	Hardware	Software	
SL1040A	**CDS Portable Series** Thanks to its modular and innovative design, you can configure the CDS to customers' specific needs to ensure an optimal price-performance ratio	—	Get a Quote >
SL1040A	**CDS EMC Series** This version is meant for use inside an anechoic chamber for immunity and emission tests (conducted or radiated) of electric vehicles and charging infrastructure	—	Get a Quote >
SL1047A	**CDS High-Power Series** This solution, which features the separate SL1048A Scienlab Cooling Unit with interchangeable liquid-cooled charging adapters, enables you to test charging interfaces of electric vehicles and EV supply equipment during high-power charging up to 1,500 V DC and ±600 A DC	—	Get a Quote >
SL1093A	—	Charging Discover This software lets you operate the system, visualize measured values, record test sequences, and generate reports	Get a Quote >

SL1040A Scienlab Charging Discovery System Series

Supporting the e-mobility ecosystem

Better battery performance, improved electric drivetrains, availability of efficient charging stations, and better power conversion across the e-mobility ecosystem have increased the range of hybrid and electric vehicles.

Keysight helps you design, test, and manufacture innovative electronics for renewable energy integration, advancement in battery technology, the rapid development of electric and hybrid electric vehicles, and charging systems compatibility.

Learn more about design and test solutions for the e-mobility ecosystem:

- Scienlab test solutions for electric and hybrid vehicles and the power grid
- Keysight PD1500A double pulse tester for wide-bandgap power devices
- Keysight BT2200 lithium-ion cell-formation solution
- Keysight lithium-ion battery self-discharge measurement solutions
- PV8900 Series photovoltaic array simulator, up to 2,000 V & 30 A with a single supply

Automotive Cybersecurity

As the connected car adds more ADAS, infotainment, and convenience applications, it is essential to protect data at all levels to ensure information security, as well as driver and passenger safety.

The Keysight SA8710A Automotive Cybersecurity Penetration Test Platform adds consistency and value to help you meet best practices for cybersecurity test and prepare for industry-wide standards. It combines hardware security validation, with software to stress-test the potential attack interfaces against a dynamic application and threat intelligence library.

Find out if there is a security risk before your new car model gets attacked or operates under dangerous conditions.

Protocol-specific connectivity gateways

- USB-based connectivity hub:Wi-Fi, Bluetooth, CAN, etc.
- Wireless test set: 2G, 3G, and 4G LTE cellular connectivity

Management servers

- Windows management server: penetration test platform
- Linux-based recon and fuzzing server: exploitation and service attacks

Automotive innovations never stop

Get up to speed with all the latest industry trends and solutions to help bring your next automotive innovation to reality faster.

KEYSIGHT