

Automotive Ethernet Solutions

- AE6900T Automotive Ethernet Tx Compliance Solution
 - AT6910T Automotive Ethernet compliance software
 - D9020AUTP 100BASE-T1 Protocol Trigger & Decode
- E6962A Automotive Ethernet Rx Compliance Solution
- E6963A Automotive Ethernet Link Segment Compliance Solution



Compliance and protocol application are compliant to BroadR-Reach V3.2 and 100BASE-T1 (IEEE 802.3bw), OPEN Alliance TC8 ECU, or 1000BASE-T1 (IEEE 802.3bp) specifications respectively.

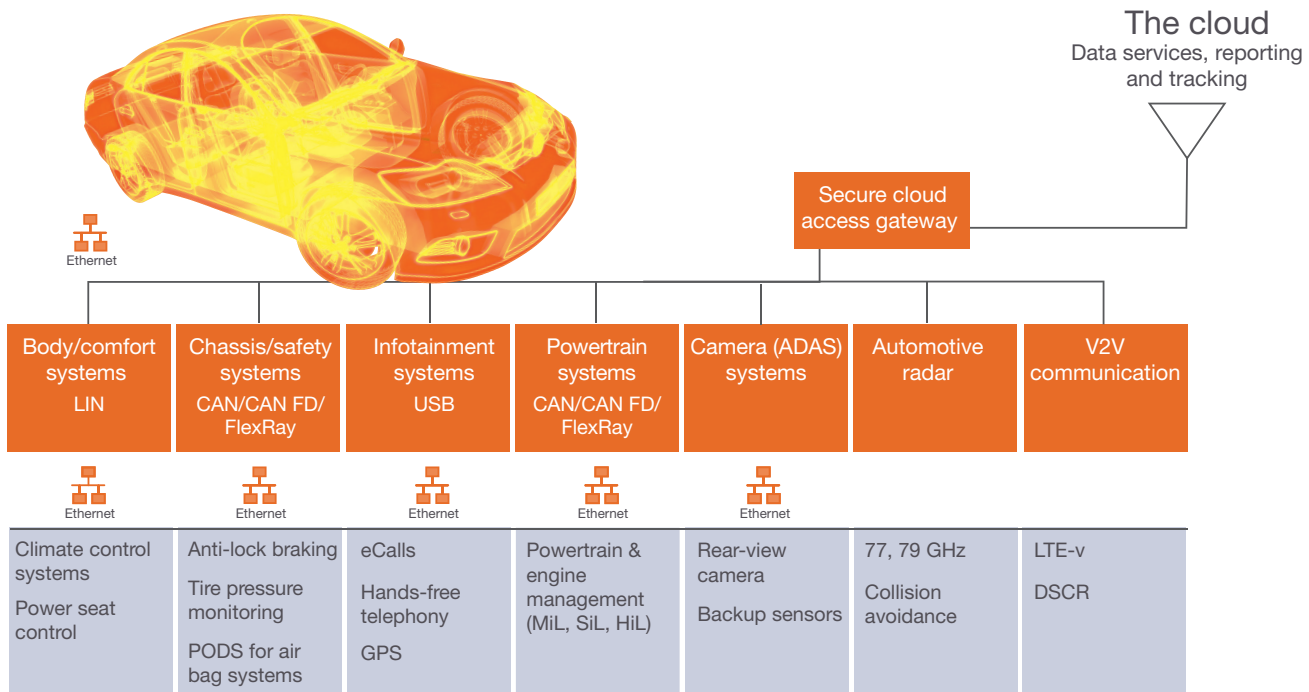
Automotive Ethernet-Driving the Future

Autonomous vehicles promise to change the nature of commercial and passenger transportation over the roadways. Within new vehicles, data speed and bandwidth requirements are increasing. With the development of automotive Ethernet, faster data communications are now possible and the increasing demands for today's vehicles and future connected vehicles can be met. Unlike the slower speed backplanes of CAN and LIN 100BASE-T1 Automotive Ethernet requires rigorous compliance testing. Keysight's full suite of automotive Ethernet solutions automate testing and validation across Tx, Rx and link segment for 100 Mb/s and 1000 Mb/s automotive Ethernet providing increased test accuracy and saving time.

Connected Car

Automotive electronics are increasingly complex with more sensors, controls, and interfaces using higher bandwidth, which requires faster data throughput and more reliable networks.

Ethernet has proven itself as a secure transfer medium that can move large amounts of data as well as reduce connectivity costs and cabling weight.



The Connected Car

The Challenge

The standards for automotive Ethernet demand rigorous testing: IEEE 802.3bw, IEEE 802.3bp, OABR 3.2 and the OPEN Alliance TC8 ECU. System tests required to meet these standards covers transmitters, receivers, and harness/connector assemblies. Test instruments needed for the required measurements include vector network analysis (S-parameters), bit error ratio (BER) testing, and protocol analysis of high-speed digital signals.

When you move to an evolving technology, like automotive Ethernet, with complex test requirements, your team is in unfamiliar territory, expertise with low-speed buses like CAN/LIN is less relevant than you or they may want to believe. It takes a tremendous amount of time to review and understand the details of each new standard. Additional time is needed to fully understand the test cases, required equipment, and test procedures. Interoperability can be a very time consuming issue, testing to the standards prevents some of those issues surfacing after a product ships. Keysight provides a solution that has thousands of hours invested in understanding the standards and creating automated, repeatable compliance tests. Ready to help you understand, integrate and deploy this technology.

Achieve Reliable, High-Performance Automotive Ethernet

Keysight has removed the complexity and headache involved in setting up and executing the tests necessary for compliance with automotive Ethernet standards for transmission, the harness and connector, and receiving connectivity. Keysight automotive Ethernet solutions provide software, instruments, fixtures and cables so you have everything you need for complete testing of 100BASE-T1 and 1000BASE-T1 standards. Whether you're focused on design or validation, our automotive Ethernet solutions will accelerate your innovations from debug to characterization, to compliance, to completion.

Keysight 100BASE-T1 and 1000BASE-T1 test solutions perform end-to-end functional and standards-compliance conformance testing of automotive Ethernet devices, with optional protocol decoding. Our Automotive Ethernet solutions suite not only give you all of the hardware, software, cables and accessories you need to enable compliance tests, they also provide:

- A setup wizard for quick and easy setup, configuration and test
- A wide range of tests enabling faster and easier standards conformance
- Accurate and repeatable results from Keysight precision instrumentation
- Automated reporting with margin analysis



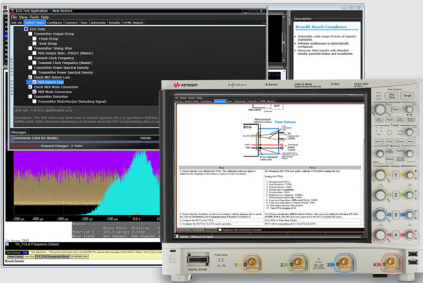
Keysight is fully invested in the creation of complete solutions for compliance testing, and we've built these solutions on upgradeable platforms. Our worldwide team of application and field engineers are trained and ready to respond when you and your teams need assistance.

Faster, More Efficient Automotive Ethernet Testing

Keysight's automotive Ethernet compliance solutions perform a complete set of conformance tests to meet the 100BASE-T1, 1000BASE-T1, and TC8 ECU specifications.

Automotive Ethernet Compliance Solutions

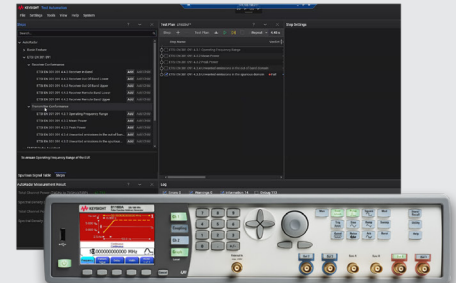
Transmitter



Link Segment



Receiver



Solution component overview



Key Features

- Test software applications including:
 - Protocol trigger and decode 100BASE-T1 (IEEE 802.3bw) standards
 - All required 100BASE-T1 (IEEE 802.3bw), OPEN Alliance TC8 ECU, and 1000BASE-T1 Tx (IEEE 802.3bp) tests
- Highly automated and easy-to-use
- Report generation with pass/fail test results

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- E6962A 100BASE-T1 Receiver Solution
- E6963A 100BASE-T1 Link Segment Application

Automotive Ethernet Solution Bundles

Bundles give you the licensed application software and the option to purchase connectors, cables, and hardware for each solution. Choose from the application bundle model number listed in Table 1.

	AE6900T 100BASE-T1 Tx	E6962A 100BASE-T1 Rx	E6963A 100BASE-T1 Harness & Connector
Software	AT6910T compliance software	E6962A receiver application	E6963A link segment application
	D9020AUTP protocol trigger/decode		
Accessories	SMA cable and adapters	SMA cable	SMA cable and adapters
	AE6950A frequency divider board	11636B power splitters	
	AE6941A Automotive Ethernet compliance test fixture		
	AE6942A or AE6943A SMA to Molex/Mini-50 or SMA to MATenet adapter boards		
Hardware	DSOS254A S-Series Oscilloscope 2.5 GHz, 4 analog channels	M9010A PXIe Chassis	E5071C Network Analyzer with option TDR and N4431B Ecal 4 ports and connectors
	33622A Function Arbitrary Noise Generator, 2 channel	M9037A PXIe Embedded Controller	M3302A PXIe PXIe AWG and Digitizer Combination
	E5080B ENA Vector Network Analyzer, options 440,181, 182 and N4431B Ecal 4 ports and connectors	M3302A PXIe AWG	

Table 1.

For further information go to: www.keysight.com/find/automotive-ethernet

Learn more at: www.keysight.com

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus

