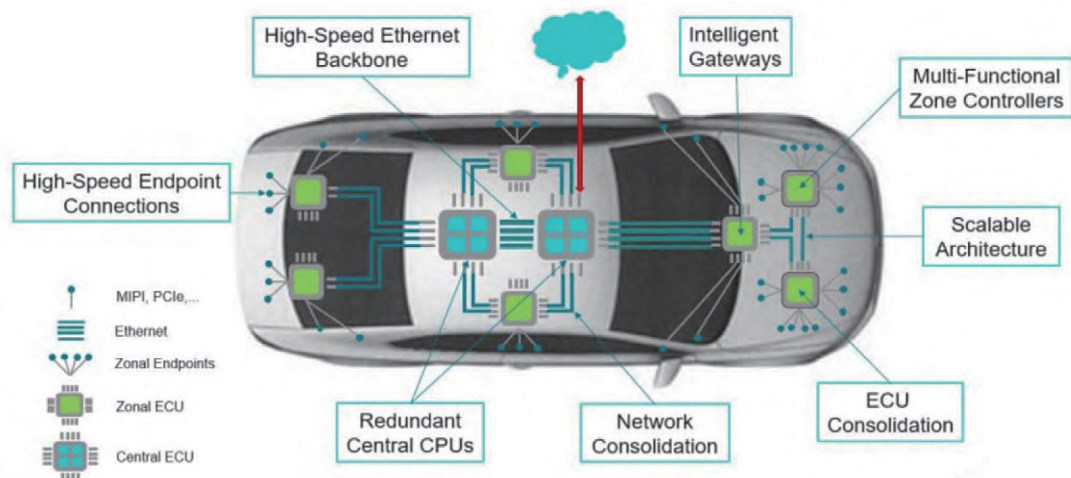


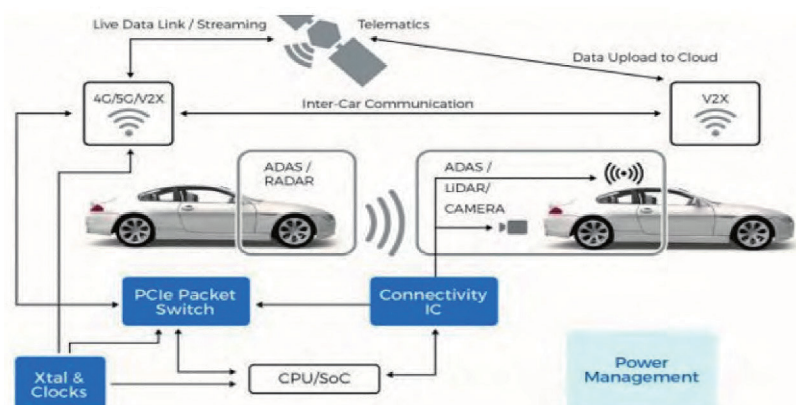
Testing PCIe® for Next Generation Automotive Communications

PCIe® Use Case for Next Generation Automotive Communications

The Connected Car will have more electronics inside with multiple sensors required to monitor various vehicle status/ performance parameters for improved customer experience and safety. Advanced Driver Assistance Systems (ADAS) is an integrated part of connected cars and autonomous driving functional performance and enhance safety by simplifying the driving process. Sensors and Telematics Connectivity Units (TCUs) will distribute large amounts of data that will be processed over PCIe interconnected buses from a chip in one component to the chip in another subcomponent, for faster results.



With the large amount of data collected by sensors and navigational aid systems, connected cars need modern technology interfaces to communicate with all the other systems in the car. Faster connection of various modules will ensure faster data processing for real time decision making to ensure driver and passenger safety. Optimized data processing is possible when the on-board system has the computing power like a data center, with an exceptionally reliable interconnect to communicate and align functional execution with other vehicle sub-systems. PCIe is the proven and tested technology to be an effective fit for current and future use cases.



Product Overview

Anritsu's Signal Quality Analyzer-R MP1900A is a modular high-performance Bit Error Rate Tester (BERT) that supports PCIe, 400 GbE, USB, InfiniBand, and Fibre Channel. It also features a pulse pattern generator (PPG) for outputting high-quality multi-channel NRZ/PAM4 signals over wide bandwidth, as well as a high sensitivity input error detector (ED). The MP1900A is a powerful tool for verifying and analyzing Signal Integrity of high-speed designs, including PCIe interfaces. The MP1900A meets current and future needs for automotive communications with high bandwidth, high scalability, and low latency.



Signal Quality Analyzer-R MP1900A

Benefits

- Scalable bandwidth from 2.5 GT/s to 32 GT/s to meet current and future data handling demand for next-generation mobility solutions
- Low latency (<100 ns) for real-time applications
- Connect multiple CPUs or boards for performance, scalability, efficiency, and reliability tests
- PCIe architecture is ideal for mission critical automotive System on Chip (SoC) and systems

Solution Attributes & Features

- High bandwidth
- Scalable Multi-Gig throughput
- Data reliability and integrity
- Simplified integrated architecture
- Higher speed connectivity interfaces
- Backward compatible with previous PCIe generations

Additional Measurements

- PCIe 5.0 with Tektronix and Anritsu solution
- High speed PAM4 BER measurements
- PCIe, USB, Thunderbolt receiver test solution
- PCIe and Type-C interface test with Teledyne LeCroy and Anritsu solution