Aukua MGA2510

Automotive Ethernet

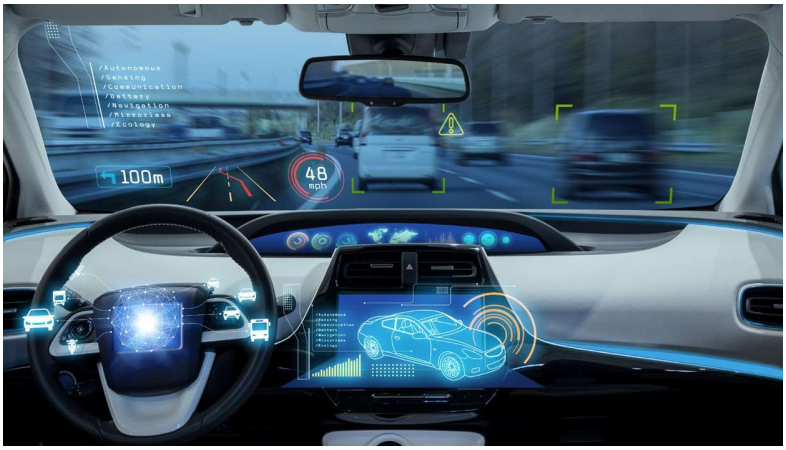
The Connected Car: Testing, Validating and Troubleshooting

The Aukua MGA2510 is a powerful Ethernet test system now supporting IEEE standards-based automotive Ethernet.

Consumers are increasingly demanding in-vehicle connectivity, advanced driver assistance (ADAS), infotainment services and other innovative features. To meet this challenge, the automotive industry is moving rapidly to adopt automotive Ethernet's scalable and flexible networking technology.

Ethernet's shared medium technology however presents performance, security and reliability challenges that must be met with better testing and troubleshooting solutions. The Aukua MGA2510, with it's programmable hardware-based architecture delivers on these requirements.

In the fast paced and dynamic automotive industry, Aukua helps our customers get to market faster, while reducing risk by proving performance, verifying functionality and quickly reproducing and troubleshooting problems.



"Aukua's MGA2510 is absolutely necessary for our product development requirements. It has impressive flexibility to be a traffic source, as well as working inline to capture packets or insert delay and impairments for realistic performance verification."

- principal hardware engineer at leading automotive semiconductor company

APPLICATION HIGHLIGHTS

TRAFFIC GENERATION

- Bit error rate testing (BERT) for integrity validation
- Latency characterization of automotive devices, components, and applications
- Throughput performance testing
- Functional testing
- Media conversion: BASE-T <--> BASE-T1

PACKET CAPTURE / PROTOCOL ANALYSIS

- Layer 1 and Layer 2 visibility with PCS and MAC layer capture (at line rate)
- Layer 1 - Layer 7 protocol filters and triggers
- Latency monitoring of automotive application traffic flows
- Event timing correlation and analysis
- Real-time stats and graphical analysis
- Media conversion: BASE-T <--> BASE-T1

DELAY / IMPAIRMENT EMULATION

- Inject delay and impairments inline
- Real-world performance validation
- Negative and functional testing
- Reproduce production environments for more effective troubleshooting
- Media conversion: BASE-T <--> BASE-T1

OPEN ALLIANCE

Aukua is an active member of the OPEN Alliance SIG

Aukua Systems +1 44 1628 559980 www.gch-services.com sales@gch-services.com

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FEATURE HIGHLIGHTS

AUKUA MGA2510

- 3 in 1 test system: Traffic Generator, Inline Analyzer and Network Impairment Emulator
- Intuitive GUI with no thick-client installation
- Supports new IEEE one pair Ethernet: 100BASE-T1 (802.3bw) and 1000BASE-T1 (802.3bp)
- Media converstion between BASE-T and BASE-T1 Ethernet

TRAFFIC GENERATOR

- L1-L3 line rate traffic generation
- Bit Error Rate Testing (L1-L4)
- Realtime latency measurement and analysis (1ns precision)
- PCAP Player - playback pcap files (L2-L7 protocol support)
- Generate runts, short IPGs, control transmit clock and more…

INLINE PACKET CAPTURE and ANALYZER

- Comprehensive and customizable L2-L7 capture filters and triggers (based on packet contents, error conditions, packet size or other metadata)
- Real-time traffic statistics and analysis (user defined: based on port, device, application, protocol, CoS or other information)
- Precise hardware-based timestamping (+/-1ns)
- Layer 2 packet capture at true line rate (pcap, pcapng)
- Layer 1 PCS bit capture
- Latency monitoring with graphical histogram view

NETWORK DELAY and IMPAIRMENT EMULATOR

- Dynamic real-time delay and impairment control
- Connect inline to insert fixed and variable delay
- Create link flaps, bit errors, FCS errors
- Generate packet loss, corruption, reorder and more…

Easy to use HTML5 based GUI with RESTful API for complete automation

BENEFITS

- Proves Performance

- Verifies Functionality and Robustness

- Precisely Characterizes Latency

- Interoperability Testing

- Enables Effective Troubleshooting

- Reproduces real-world conditions

IEEE 100BASE-T1 and 1000BASE-T1

Network Impairment Emulator

Inline Packet Capture and Protocol Analyzer

Aukua MGA2510
All-In-One Automotive Ethernet Test System

Traffic Generator and Analyzer