Tektronix Simplifies Automotive Ethernet Testing with New Software
Automotive Ethernet Solution for 5 and 6 Series Mixed Signal Oscilloscopes Solve Critical Signal Analysis and Debug Testing Challenges, Saving Time and Reducing Test Costs

FTV

BEAVERTON, Ore., July 23, 2019 /[PRNewswire](#)/ -- Tektronix, Inc. today released two new software packages that greatly simplify Automotive Ethernet testing, debug and Protocol Decode for use with its 5 and 6 Series mixed signal oscilloscopes (MSO). Using the new Signal Separation software, automotive engineers can now perform Automotive Ethernet testing without disrupting the ECU system or cutting the Ethernet cable to install a directional coupler, while the PAM3 analysis package provides in-depth insight into signal characteristics at the system level.

As the move toward Automotive Ethernet or IEEE 802.3bw (formerly BroadR-Reach) technology in vehicles accelerates, comprehensive design validation is vital to ensure interoperability and reliable operation across multiple ECUs. Current Automotive Ethernet testing solutions require engineers install a directional coupler to separate the full duplex signal. This adds insertion and return loss and makes it difficult to determine if an error is a result of the system or the additional hardware.

To eliminate these problems, Tektronix' unique Signal Separation software separates the full duplex signal by looking at voltage and current waveforms from both master and slave test points and provides separated signals using a proprietary algorithm. This method displays true ECU signals without the need for a directional coupler and provides full protocol debug of master and slave ECUs simultaneously. Tektronix Signal Separation software is easy to use, reduces testing costs and improves measurement accuracy. Signal Separation supports full life-cycle Automotive Ethernet testing from design through service. Users can use solution for in-car testing, as well as Signal integrity testing during cranking or other scenarios.

"Vehicles are quickly becoming data centers on wheels, with proven IT technologies finding their way into automotive networks," said Sudipto Bose, general manager, Automotive and Time Domain Solutions at Tektronix. "Because safety and reliability are so critical, testing has become more complicated and time consuming. As these new software offerings demonstrate, we are aggressively developing innovative full life-cycle solutions to simplify and accelerate system testing and product development for automotive engineers - while reducing test times and costs."

"We believe Automotive Ethernet will play a significant role in tomorrow's automobiles," said Yutaka Uematsu, Ph. D., Hitachi, Ltd. "We have enjoyed working with Tektronix to deliver this new solution for Automotive Ethernet testing."

Advanced PAM3 analysis

The three levels of PAM3 in Automotive Ethernet introduce additional complexity in signaling and place new demands on test methodology, in part because the three amplitudes produce two eyes diagrams. The Tektronix PAM3 analysis package provides a comprehensive set of measurements with software clock recovery that offer greater insight into signal characteristics, speeding up validation and characterization of PAM3 designs with different cable lengths, noise conditions or ECU configurations. The solution also enables eye opening measurements, eye mask testing, jitter separation and Bit Error Rate (BER) plotting in a real ECU environment.

The PAM3 Analysis along with Signal Separation solutions have been tested and validated by leading

automotive OEMs and T1 companies.

In addition to signal and protocol analysis, the Tektronix solution also includes Automotive Ethernet Physical layer compliance testing as per Open Alliance TC8 specification with full test automation and detailed pass/fail reporting.

Tektronix 5 Series MSO and 6 Series MSO oscilloscopes offer up to 8 GHz analog bandwidth, 25 GS/s sample rates and a 12-bit analog to digital converter (ADC), delivering the performance needed to capture waveforms with the high signal fidelity and resolution needed to view small waveform details in Automotive Ethernet signals.

Availability and Pricing

Signal Separation (Option 5/6-AUTOEN-SS) and PAM-3 Automotive Ethernet Signal is available now worldwide for the 5 and 6 Series mixed signal oscilloscopes. For more information go to www.tek.com/automotive/automotive-ethernet.

About Tektronix

Tektronix, Inc., headquartered in Beaverton, Oregon, delivers innovative, precise and easy-to-operate test, measurement and monitoring solutions that solve problems, unlock insights and drive discovery globally. Tektronix has been at the forefront of the digital age for over 70 years. More information on our products and solutions is available at Tek.com.

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