

## **New Automated Test and Validation Oscilloscope Software from Tektronix for Automotive and Process Control Industries**

### **TDSVNM Application for Low Speed Serial CAN and LIN Test and Validation**

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Tektronix, Inc. , a leading worldwide provider of test, measurement and monitoring instrumentation, announced the addition of the TDSVNM application for efficient testing and debugging of low speed serial buses including CAN (Controller Area of Network) and LIN (Local Interconnect Network) networks. Tektronix' TDSVNM is available on the TDS5000B and the TDS7000B Series Digital Phosphor Oscilloscopes (DPO), both featuring the MyScope® customizable user interface.

Use of low speed serial buses is increasing, especially with in-vehicle networks connecting doors, seats, dashboard, airbag, engine parts, steering, and gearbox. To effectively design and integrate network nodes, engineers need to measure node performance including oscillator tolerance, propagation delay, CAN Eye diagram, and to analyze protocol activities to ensure reliable performance of the vehicle network. TDSVNM is the only software application that performs CAN and LIN timing and protocol analysis, measures oscillator tolerance and propagation delay, guides the user in setting the optimum sample point, and simultaneously decodes time-correlated CAN and LIN messages. Advanced if-then-else trigger capabilities helps the designer to ensure reliable and seamless operation of the CAN/LIN network.

"Adding application specific intelligence to general purpose test instruments is an additional value that Tektronix brings to customers," said Colin Shepard, Vice President, Performance Oscilloscopes, Tektronix. "The Tektronix TDSVNM package enables the efficient testing and debugging of CAN and LIN networks, which will be particularly useful to engineers in the automotive and process control electronics industries who make extensive use of the serial data technologies. They will find TDSVNM software to be a superior package."

Through integrated timing analysis with protocol information, designers can use TDS5000B and TDS7000B series oscilloscopes to quickly isolate the problems to either physical layer or data link layer. Oscillator tolerance and propagation delay measurements quickly brings-out synchronization problems whenever a new CAN/LIN node is added to the network. An ability to simultaneously decode CAN and LIN messages using two channels enables designers to monitor different segments of the network for locating communication problems across gateways. Measuring a CAN Eye diagram enables the designer to observe the noise content in the CAN message.

TDSVNM software enables customers to set trigger conditions based on the content of a CAN message. Trigger conditions are then downloaded at run-time to an ATM1 Automotive trigger module developed by Crescent Heart Software (CHS) that provides advanced CAN bus trigger capabilities to the TDS5000B and TDS7000B oscilloscope. The ATM1 module triggers on conditions in real time. TDSVNM along with ATM1 helps to pinpoint the cause of a problem through a unique ability to trigger with if-then-else conditions for CAN and LIN network problems, enabling customers to solve electrical problems at the physical layer, and software issues at OSI layers.

The TDSVNM software is currently available for purchase from Tektronix and the trigger module is available for purchase from Crescent Heart Software or Tektronix distributors.

About CAN Bus

CAN (Controller Area Network) is a serial bus system, which was originally developed for automotive applications in the early 1980's. The CAN protocol was internationally standardized in 1993 as ISO 11898-1 and comprises the data link layer of the seven layer ISO/OSI reference model. CAN, which is by now available from around 40 semiconductor manufacturers in hardware, provides two communication services: the sending of a message (data frame transmission) and the requesting of a message (remote transmission request, RTR). All other services such as error signaling, automatic re-transmission of erroneous frames are user-transparent, which means the CAN chip automatically performs these services.

#### About LIN Bus

Developed by the LIN Consortium and a de-facto standard, LIN (Local Interconnect Network) is developed to achieve cost-effective communication for intelligent sensors and actuators in motor vehicles, and it is used wherever the bandwidth and versatility of CAN are not needed. The LIN specification includes the LIN protocol, a uniform format for the description of an entire LIN network and the interface between a LIN network and the application.

#### About Crescent Heart Software

Crescent Heart Software designs, manufactures and sells hardware and software products for use with Tektronix logic analyzers and oscilloscopes. Established in 1981, CHS offers logic analyzer products supporting high-speed serial bus protocol analysis, as well as probing of processors and ASIC cores. CHS also offers a range of high-speed communication protocol physical layer compliance test fixture oscilloscope products. CHS is located in Portland, Oregon, and can be reached at [www.c-h-s.com](http://www.c-h-s.com).

#### About Tektronix

Tektronix, Inc. is a test, measurement, and monitoring company providing measurement solutions to the communications, computer, and semiconductor industries worldwide. With more than 55 years of experience, Tektronix enables its customers to design, build, deploy, and manage next-generation global communications networks and advanced technologies. Headquartered in Beaverton, Oregon, Tektronix has operations in 19 countries worldwide. Tektronix' Web address is [www.tektronix.com](http://www.tektronix.com).

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CONTACT: Amy Higgins of Tektronix, Inc., +1-503-627-6497 or [amy.l.higgins@tektronix.com](mailto:amy.l.higgins@tektronix.com)

Web site: <http://www.tektronix.com/>

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