

OSCILLOSCOPE

## **ISO CAN FD triggering and decoding**

**Keysight has announced that it now supports ISO CAN FD triggering and decoding on its Vision 4000 and 3000T X-Series oscilloscopes. Until now, the oscilloscopes only supported non-ISO CAN FD.**

*The company's Infinii Vision 4000 X-Series (Photo: Keysight)*

THE ADDED CAPABILITIES IMPROVE engineers' efficiency in debugging the ISO 11898-1 standard CAN FD, as well as the original non-ISO CAN FD protocol. CAN FD is the

next-generation, higher performance serial bus protocol for automotive control and diagnostic applications. It allows engineers to reduce bus loads and increase throughput for today's demanding automotive applications. With Classical CAN, transmission rates are limited to 1 Mbit/s because of the event-driven nature of this serial bus. With CAN FD, transmission rates increase during the data phase of each frame and maximum specified payload sizes are increased from 8 bits up to 64 bits. Moving from CAN to CAN FD technology offers a more seamless migration path compared with adopting other time-triggered serial bus protocols such as Flexray.

With the higher data rates of CAN FD, using an oscilloscope to test and debug the signal integrity (physical layer) of these higher-speed signals is critical. Keysight's added CAN FD triggering and decode capabilities in the Infinii Vision 4000 and 3000T X-Series oscilloscopes rely on hardware-based decoding to enable fast decode update rates. Faster waveform and decode update rates increase the scope's probability of capturing random and infrequent errors. Detection and elimination of bus errors during the design phase is crucial for automotive safety.

In addition to the ability to capture infrequent bus errors with hardware-based decoding, the oscilloscopes provide CAN FD error triggering and analysis. This includes the ability to decode, totalize, and trigger on specific errors (optionally filtered by frame ID) such as stuff-bit errors, form errors, CRC errors, acknowledge errors, and error frames. The company's complete oscilloscope portfolio includes instruments with a variety of form factors with bandwidths from 20 MHz to 90 GHz.

The DSOX4AUTO option for CAN, CAN-dbc, CAN FD, and LIN triggering and decoding is priced at US\$1530. DSOXT3AUTO is priced at US\$1100. Customers who already own a 4000 or 3000T X-Series oscilloscope with the DSOX4AUTO or DSOXT3AUTO option can upgrade their oscilloscopes at no charge with the latest firmware to enable ISO CAN FD support. The entry-level price of an Infinii Vision 3000T or 4000 X-Series oscilloscope licensed with either of these options is US\$4450 and US\$7150 respectively.

Keysight follows the [CAN FD TDM](#) oscilloscopes from Teledyne LeCroy and the [RTE and RTO](#) oscilloscopes from Rohde & Schwarz with its ISO and non-ISO CAN FD oscilloscopes.