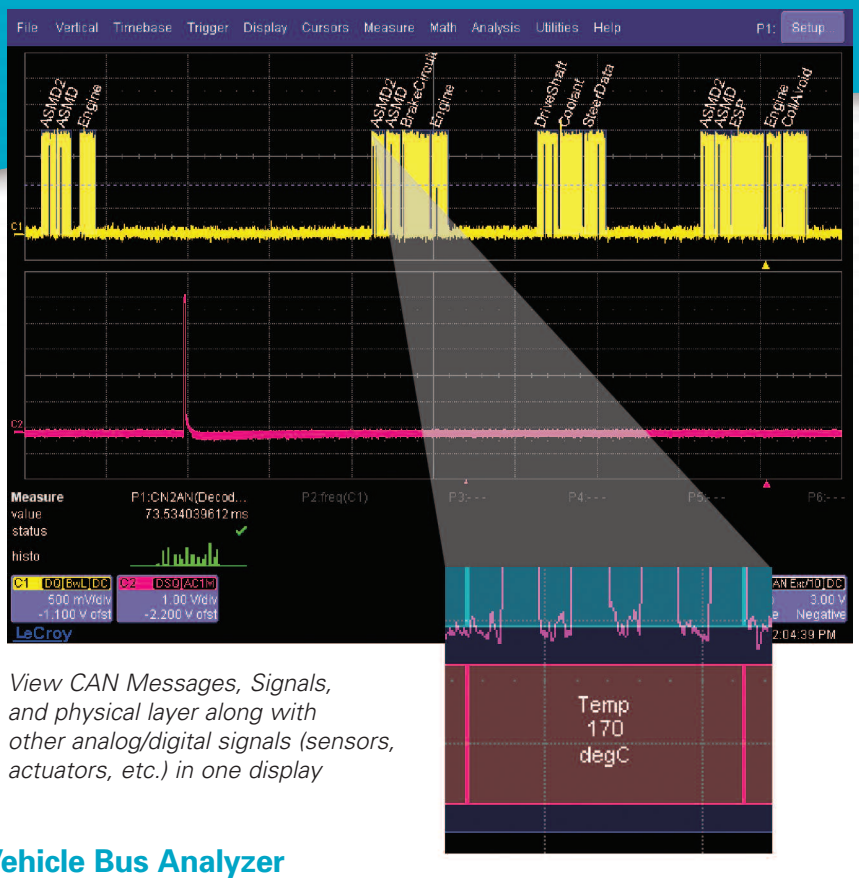
LeCroy

Vehicle Bus Analyzer



View CAN Messages, Signals, and physical layer along with other analog/digital signals (sensors, actuators, etc.) in one display

Features:

- **Symbolic (Application Layer) decode of up to 4 CAN buses**
- **Compatible with DBC database format**
- **Display decoded results above waveform on oscilloscope screen**
- **CAN triggering with setup in symbolic format**
- **Gateway timing measurements (CAN message to CAN message across a gateway)**
- **Capture thousands (seconds) of CAN messages with 10 Mpts of memory (up to 25 Mpts optional)**
- **All CANbus TDM functionality, including:**
  - **Timing measurements**
  - **Bus Load measurements**
  - **CAN message data extraction**
  - **CAN message Bit Rate calculation**
  - **Statistical calculation of timing information for many events, and graphical display**
  - **Graphs/Plots of CAN message data**

The Vehicle Bus Analyzer Speaks Your Language

The Vehicle Bus Analyzer is the first conventional oscilloscope to decode CAN serial data into Symbolic (application layer) text. Now, for the first time, an engineer has both the full range of CAN protocol stack information—symbolic, hex, and electrical signal—and the ability to view additional in-circuit electrical signals (sensors and actuators, voltage levels, transients, etc.) that influence the CAN bus. In addition, up to four different CAN buses can be decoded at one time. Standard and specialized oscilloscope tools can be used to validate and debug designs.

Eliminate the Barriers to Fast Debug

Direct symbolic decoding and triggering allows fast and intuitive understanding of events. Simply load your existing DBC database file into the oscilloscope (no re-entry of data is required); capture CAN message traffic; and all electrical (signal), protocol (hex), and symbolic (application) layer information is quickly displayed on the oscilloscope screen. Use standard oscilloscope and specialized Vehicle Bus Analyzer tools to find rare events, automatically measure and statistically analyze event timing, and graph/plot information, including extracted CAN message data.

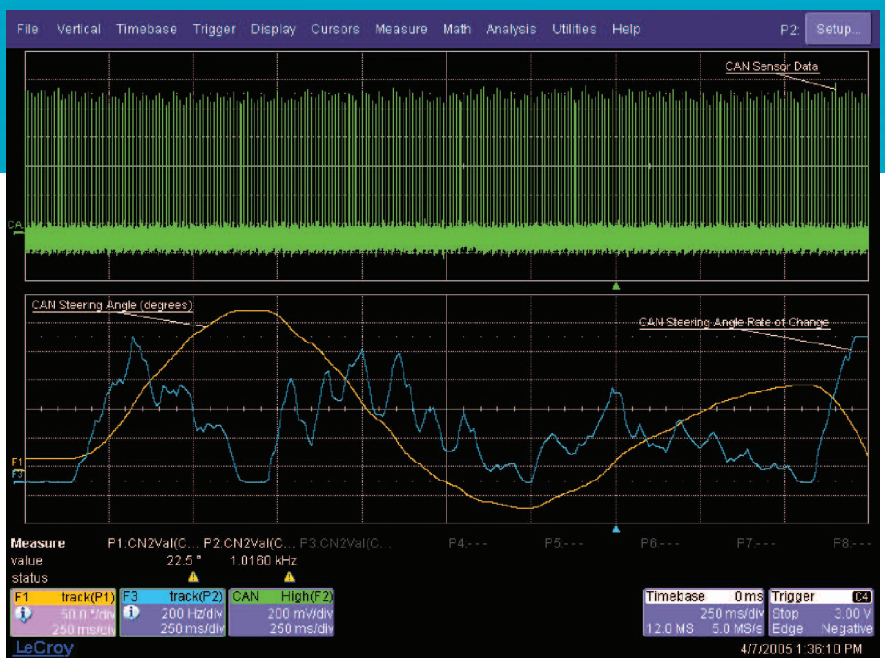
The Single Tool Enhances Productivity

The VBA concentrates all your information in one place. Timing measurements across gateways are now possible. Understanding is fast, intuitive, and in a familiar format. Complete, time-correlated understanding of all ECU or circuit behaviors is simple. Time-consuming workarounds are a thing of the past.

Ordering Information

Unique Measurement Tools

The VBA can make many measurements not possible with other instruments. Aside from timing measurements, the VBA can also extract CAN data from a CAN message stream, graphically plot that data on the oscilloscope display, and compare it to other electrical signals. Here, information on the steering angle and steering angle rate of change is extracted from the CAN message acquisition, rescaled to decimal values, and plotted as a time-correlated "Track" on the VBA display.



Product Description	Product Code
2 GHz, 4 Ch, Vehicle Bus Analyzer	VBA204Xi
1 GHz, 4 Ch, Vehicle Bus Analyzer	VBA104Xi
600 MHz, 4 Ch, Vehicle Bus Analyzer	VBA64Xi
400 MHz, 4 Ch, Vehicle Bus Analyzer	VBA44Xi

All Vehicle Bus Analyzers are complete with a powerful LeCroy WaveRunner Xi Series oscilloscope, CANbus TDM software, and CANbus TD hardware (CAN bus triggering hardware kit). Reference the WaveRunner Xi Series brochure for complete information on WaveRunner Xi oscilloscopes.
(Brochures available at www.lecroy.com)

Vehicle Bus Analyzer Software Capabilities

- Symbolic (application layer) decode of up to 4 separate CAN buses
- Symbolic CAN trigger setup
- Hexadecimal decode and trigger setup
- Binary trigger setup
- Automated timing measurements, including capability to measure timing across gateways:
  - CAN message to Analog signal
  - Analog signal to CAN message
  - CAN message to CAN message
- Bus Load % measurements (up to 2 billion events)
- CAN message extraction and display in scaled decimal values
- CAN message bit rate calculation
- Statistical calculations of many measurements
- Histogram (graphical) display of statistical data, including timing measurements
- Trend and Track plots of extracted CAN data
- Persistence trace, mean, and sigma functionality
- Complete set of Jitter and Timing (@level) parameters

CAN Triggering Hardware Contents

- Trigger Module with TC251-OPTO optically isolated Trigger Coupler installed (and room for one additional Trigger Coupler). Trigger Couplers are interchangeable.
- Oscilloscope Interface Module with 1.0 meter connection cable. Connects Trigger Module to LeCroy oscilloscope ProBus interface.
- 1.0 meter USB 2.0 cable from LeCroy external CANbus TD Trigger Module to LeCroy oscilloscope
- Black fabric storage case (SAC-01) with foam insert and room for storage of all equipment and two additional Trigger Coupler accessories (not included)

Product Description	Product Code

CAN Triggering Hardware Contents (continued)

- Quantity 1 (one) 9-pin DSUB socket to 2-wire adapter cable (for ISO 11898-2 CAN)
- Quantity 1 (one) 9-pin DSUB socket to 4-wire adapter cable (dual-use, for ISO 11519 CAN and GM-LAN/J2411 single-wire CAN)
- Quantity 2 (two) 9-pin to 9-pin DSUB 120 ohm terminations
- Quick Reference Guide and Instruction Manual in English
- Quantity 1 (one) Phillips head screwdriver

Options and Accessories

25 Mpts max. (interleaved), 12.5 Mpts/Ch Memory Option	VBA-VL
32 Digital Channel Oscilloscope Mixed Signal Option	MS-32
CAN 1041 Opto-isolated High-speed Trigger Coupler	TC1041-OPTO
CAN 1050 Opto-isolated High-speed Trigger Coupler	TC1050-OPTO
CAN 1054 Opto-isolated Low-speed Trigger Coupler	TC1054-OPTO
CAN 251 Opto-isolated High-speed Trigger Coupler (one is included with CANbus TD)	TC251-OPTO
CAN 5790c Opto-isolated Single-wire Trigger Coupler	TC5790c-OPTO
CAN B10011S Opto-isolated Truck and Bus Trigger Coupler	TC10011-OPTO
CAN Cable Set (ISO 11898-2)	902329-00
CAN Cable Set (ISO 11519 and GM-LAN/J2411)	902330-00
CAN Bus Y Connection Cable, 2m with Terminating Resistor	902393-00
1 GHz Active Differential Probe (÷1, ÷10, ÷20)	AP034
500 MHz Active Differential Probe (x10, ÷1, ÷10, ÷100)	AP033
1,400 V, 100 MHz High-Voltage Differential Probe	ADP305
1,400 V, 20 MHz High-Voltage Differential Probe	ADP300
(Qty. 4) 1.5 GHz, 0.9 pF, 1 MΩ High Impedance Active Probe	ZS1500-QUADPAK
(Qty. 4) 1 GHz, 0.9 pF, 1 MΩ High Impedance Active Probe	ZS1000-QUADPAK

Customer Service

LeCroy oscilloscopes and probes are designed, built, and tested to ensure high reliability. In the unlikely event you experience difficulties, our digital oscilloscopes are fully warranted for three years and our probes are warranted for one year.

This warranty includes:

- No charge for return shipping
- Long-term 7-year support
- Upgrade to latest software at no charge

LeCroy
1-800-5-LeCroy
www.lecroy.com

Local sales offices are located throughout the world.
To find the most convenient one visit www.lecroy.com