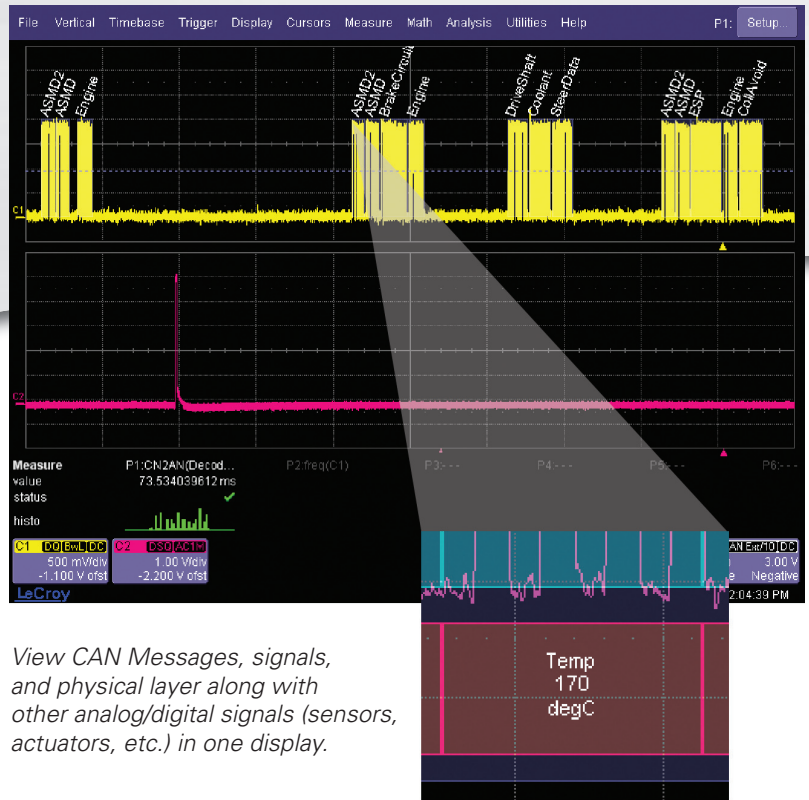


# Vehicle Bus Analyzer

## Features

- CAN symbolic (Application Layer) decode of up to 4 CAN buses
- CAN triggering with setup in symbolic format
- CAN digital data extraction with symbolic format setup and plot data as an analog signal
- CAN automated timing measurements
- Compatible with CAN DBC database format
- Includes CANbus TDM, FlexRay™ TDP, and LINbus TD solutions
- FlexRay, Trigger, Decode, and Physical Layer testing (version 2.1)
- LIN Trigger and Decode supported for 1.3, 2.x, J2602 versions
- FlexRay eye diagram mask testing with error location
- FlexRay physical layer measurement parameters for propagation delay, asymmetric delay, truncation and jitter
- Capture thousands (seconds) of CAN, FlexRay and LINbus messages with up to 25 Mpts of memory



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

## The Vehicle Bus Analyzer Speaks Your Language

The Vehicle Bus Analyzer decodes CAN serial data into Symbolic (application layer) text directly on the oscilloscope display. 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.

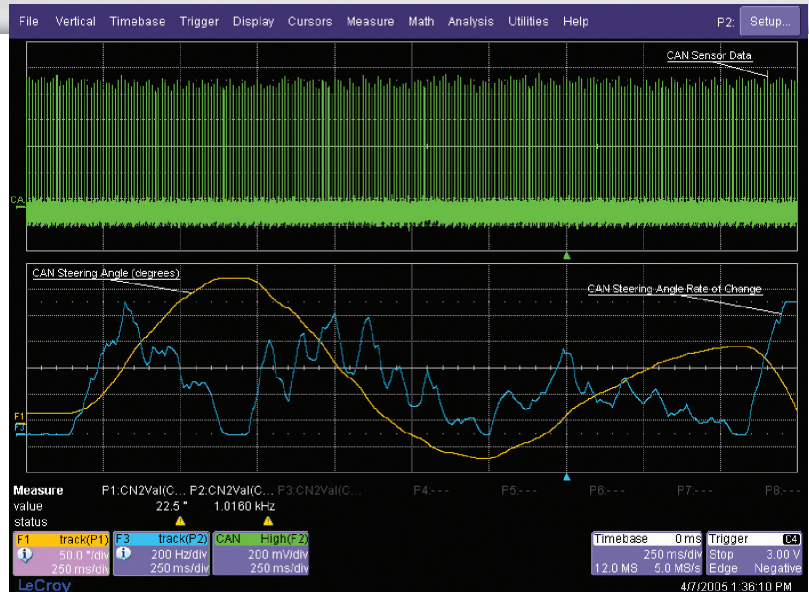
## The Single Tool Enhances Productivity

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.

# SPECIFICATIONS AND 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 digital data from a CAN message stream, graphically plot that data as an analog signal 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.



## Ordering Information

### Product Description

#### Vehicle Bus Analyzers

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

All Vehicle Bus Analyzers are complete with a powerful LeCroy WaveRunner Xi-A Series oscilloscope CANbus TDM, FlexRay TDP, and LINbus TD software. Reference the WaveRunner Xi-A Series brochure for complete information on WaveRunner Xi-A oscilloscopes. (Brochures available at [www.lecroy.com](http://www.lecroy.com))

#### Vehicle Bus Analyzer Software Capabilities

- Symbolic (application layer) decode of up to 4 separate CAN bus
- Symbolic CAN trigger setup
- Hexadecimal decode and trigger setup for CAN, FlexRay and LINbus.
- 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 digital data extraction and display in analog form 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

### Product Description

#### Vehicle Bus Analyzer Software Capabilities (cont'd)

- Complete set of Jitter and Timing (@level) parameters
- Supports for 2.5, 5, and 10 Mb/s FlexRay signals
- Physical layer measurement parameters for propagation delay, asymmetric delay, truncation and jitter for FlexRay

#### Options and Accessories

500 MHz, 18 Ch, 2 GS/s, 50 Mpts/Ch Mixed Signal Oscilloscope Option	MS-500
250 MHz, 36 Ch, 1 GS/s, 25 Mpts/Ch (500 MHz, 18 Ch, 2 GS/s, 50 Mpts/Ch Interleaved) Mixed Signal Oscilloscope Option	MS-500-36
250 MHz, 18 Ch, 1 GS/s, 10 Mpts/Ch Mixed Signal Oscilloscope Option	MS-250
1 GHz Active Differential Probe ( $\pm 1$ , $\pm 10$ , $\pm 20$ )	AP034
500 MHz Active Differential Probe ( $\times 10$ , $\pm 1$ , $\pm 10$ , $\pm 100$ )	AP033
1,400 V, 100 MHz High-Voltage Differential Probe	ADP305
1,400 V, 20 MHz High-Voltage Differential Probe	ADP300
Set of 4 ZS1500, 1.5 GHz, 0.9 pF, 1 M $\Omega$ High Impedance Active Probe	ZS1500-QUADPAK
Set of 4 ZS1000, 1 GHz, 0.9 pF, 1 M $\Omega$ 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



1-800-5-LeCroy  
[www.lecroy.com](http://www.lecroy.com)

Local sales offices are located throughout the world.  
Visit our website to find the most convenient location.