CANscope

The Ideal Tool to Analyze the CAN Bus

CANscope is the measuring device for recording and evaluating the voltage levels on the CAN bus. CANscope offers a robust recording module and an easy-to-use evaluation software program. The recording module is connected to the PC via an RS232 or USB interface.

Features and Advantages

CANscope enables you to analyze the effects of

> Various cable types
> Various cable lengths
> Bus drivers
> Bus terminations
> Failures
> EMC influences
> Errors in the ECU software or in CAN controllers

For targeted debugging, there are many trigger conditions available. For example, upon occurrence of a particular CAN message or error frame, or if a level is exceeded or under-run, the trigger is activated and the trigger environment is completely recorded.

Functions

Following software functions facilitate your work with the CAN bus:

> Oscilloscope window for displaying the bus level
> Eye diagram for evaluating the signal quality
> Difference view for comparing voltage curves

Application Areas

Typical application areas for CANscope are:

> Analysis of the bus physics for analyzing specific features of a constructed network
> Direct measuring mode for online evaluation of the data collected
> Standalone operation for later analysis on a PC
> Integration into automated test environments via the COM automation interface.

Hardware Interfaces

CANscope offers the following connection options: CAN pass through (high-speed or low-speed), RS232 interface, and trigger input/output

Direct Measuring Mode

After triggering a measurement, CANscope records the bus level with a configurable sampling frequency of up to 32 MHz and a maximum resolution of 20 mV. The module then transmits the data independently to the connected computer, where it can be interpreted and evaluated immediately by the evaluation software.

Standalone Mode

In addition to the direct measurement mode, CANscope can be operated in a standalone mode without a PC, e.g. during test runs in a vehicle or in an industrial facility. Evaluation occurs later on the PC.

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Integrated database CANdb++

As with other CAN tools from Vector, the database CANdb++ is completely integrated. Message and signal designations can be represented symbolically in all windows and dialog boxes.

Detailed Evaluation

The evaluation software displays the bus levels of CAN-high and CAN-low as well as their difference voltage graphically in an Oscilloscope window on a time axis (see picture below). Via an additionally generated graph the stuff bits in the signal process are displayed.

Oscilloscope Window/Trace Window

The Oscilloscope window offers many functions, including those in the following areas:

> Configuration of the display detail
> Comfortable measurement cursor
> Configuration of the signal channels

The levels sampled are interpreted by the evaluation software and listed in a trace window, as CAN messages, message fragments, and error frames complete with time stamps. The bit fields of the message can be expanded (identifier, DLC, signal values, etc.). Selecting a bit field means that it will be marked on the oscillogram.

The direct analysis of the oscillogram is also supported. If the measurement cursor is placed on a bit to be interpreted, the corresponding message and the bit field will be displayed textually.

Difference View and Eye Diagram

The difference view in CANscope compares the voltage curves of the signals of two recordings loaded into CANscope (e.g. for a reference measurement) and displays them as difference signals in the Graphic window.

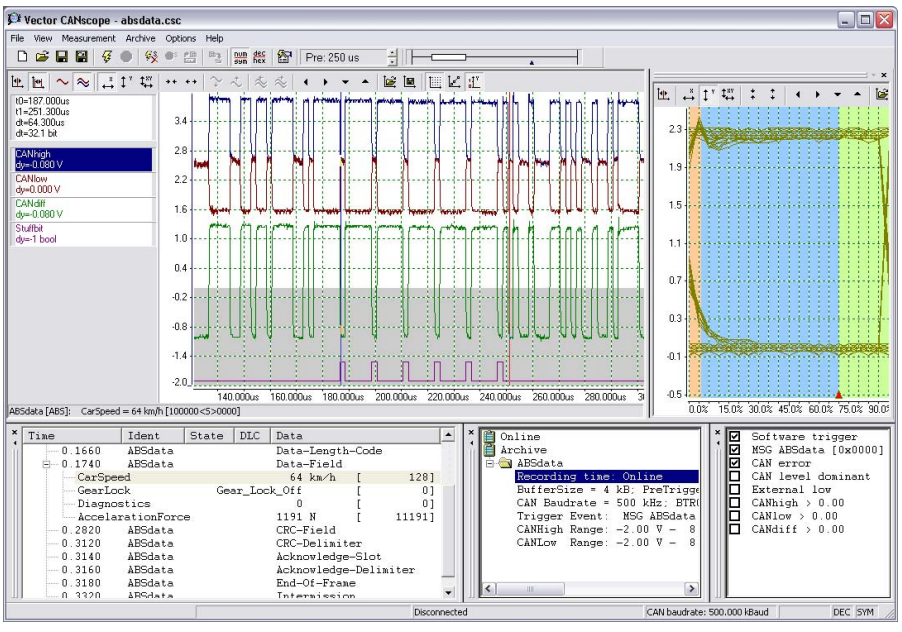
With the eye diagram the signal quality can be rated fast and easily.

Technical Data

> Sampling frequency: 160 kHz...32 MHz
> Resolution: 20 mV (0 V...5 V)/ 40 mV (–2 V...+8 V)/ 80 mV (–4 V...+16 V)
> Buffer size: 1,000...32,000 sample points (2 kB...64 kB)
> Connections: RS232, USB 1.1 via included adapter, standard CAN interface (9-pin Sub-D connector), trigger input/output (BNC sockets)
> Triggering: various trigger types (external, CAN messages, voltage change, etc.), configurable pre-trigger
> CAN interface: 82C251 (high-speed) or TJA1053 (low-speed)
> Voltage supply: 9 V...18 V DC voltage
> Housing dimensions: 215 x 85 x 35 mm
> Weight: approximately 500 g

Included with Delivery

> CANscope recording module
> CANscope evaluation software for Windows 2000/XP/Vista/7
> Cable set, power supply, USB-to-RS232 adapter



CANscope Evaluation Software – Display of the signal levels on the CAN bus in an Oscilloscope window and in the eye diagram