CANgraph 7.0

Graphically supported signal-based offline evaluation of measurement data

CANgraph is a convenient tool for efficiently evaluating measurement files of all types offline. Measurement data acquired in network development, analysis and ECU calibration may be read-in from various formats and further processed. These include the widely used MDF format, CSV and ATF formats and all formats generated by CANalyzer/CANoe. Furthermore, it is possible to import measurement data from files with table structures. CANgraph offers the same offline analysis capabilities as CANape.

Features and Advantages

The CANgraph evaluation program displays the recorded measurement data as physical process data in time diagrams. User-friendly display elements and extensive zoom and measurement functions simplify data evaluation for the developer. The extensive CANape function library or external DLLs may be used for automated analysis.

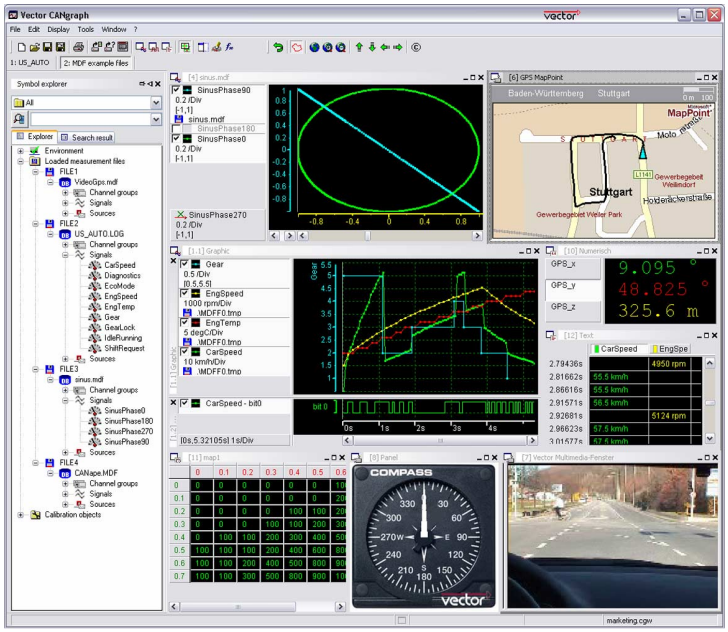
Functions

CANgraph offers a large number of evaluation features for processing and comparing measurement data:

- Zoom functions and measurement cursor enable examination of the signal responses at any level of detail. They may be searched according to definable criteria.
- For automated measurement data analysis, besides internal script language, it is also possible to utilize models created in MATLAB/Simulink.
- The Measurement Data Manager makes it easy to manage loaded measurement files by showing signal names and statistical information.
- The Signal Explorer offers a detailed view of a measurement file's contents.
- Definable templates are available for uniform printout of measurement data.
- Any desired time ranges for selected signals can be saved in separate measurement files.
- Users can add comments to signal points and ranges. The comments appear in the Graphic Window, on the printout and are saved in the MDF file.
- User-definable panels that may include ActiveX elements simplify visualization of measurement data.
- Multimedia signals acquired with CANape are shown in the Multimedia Window synchronous to the measured data.
- Convenient drag & drop functionality from the Symbol Explorer to the various display windows

Application Areas

The CANgraph offline evaluation program graphically displays any desired measurement data and processes them further. This makes CANgraph the ideal tool for manual and automated evaluation of measurement data in network development, analysis and ECU calibration.



Convenient evaluation of measurement data with CANgraph

V2.0 2008-9

System Requirements

> Windows 2000 or XP (32-bit editions): PC with minimum 1 GHz and 512 MB RAM for simple measurement tasks
> Windows Vista (32-bit editions): PC with minimum of 2.8 GHz, 2 GByte RAM and graphics card with at least 128 MByte RAM

Project Database

Signals are maintained with their symbolic names, conversion formulas, and physical units in the CAN/LIN database. The database is edited using the supplied CANdb++ program.

Virtual Signals and Functions

CANgraph calculates virtual signals from measured real signal values. Additionally, values of different signals may be interrelated. Filter functions are implemented by indexed access to signal values of different sampling time points, e.g. smoothed averages. Virtual signals can be displayed and analyzed exactly like measurement signals. Output of intermediate results or status information in the Write Window makes it considerably easier to develop computational functions for the virtual signals.

Representation Types

Signals with different scaling and physical meaning can be displayed in the windows. Mixed display of analog and digital signals on different panes of the Graphic Window, for example, facilitates direct comparison of switch states and resulting system reactions. A zoom operation above the time axis results in the same resolution for all sub-axes. CANgraph can represent signals either over a time axis or in an XY display above another signal.
The global cursor may be used to have the measurement cursors in all display windows move synchronous to one another. In parallel, text windows display values corresponding to the positions of the measurement cursors. If applicable, the associated image is displayed in the Multimedia Window. For comparison purposes signals from several different measurement value files may be displayed simultaneously. Of course, statistical data measured using CANalyzer/CANoe, such as bus loading, message rates, and error rates, can also be evaluated.

Quick Operation

The signals to be displayed are selected from the Symbol Explorer by drag-and-drop. The user-configurable toolbar and hotkeys make it easy for the user to call up frequently needed functions. All important functions can be executed quickly and in a user-friendly way.

Export of Measured Data

A number of converters enable export of measurement data to commonly used file formats such as MATLAB, ATF, DIAdem or an adjustable ASCII format (e.g. Excel).

Functional Expansion by Supplemental Options

> Option GPS for displaying the acquired vehicle location on a map (GPS supported)
> Option Advanced Multimedia for verification of object recognition algorithms in developing driver assistance systems

New functions of Version 7.0:

> Evaluation of FlexRay measurements
> Heightened flexibility of display windows: The same window can be shown on multiple display pages and at different positions. In addition, windows may be displayed outside the CANgraph main window, making their display independent of the active display page.
> MDF metadata such as Project, User Name, etc. is displayed in the Symbol Explorer, making it easier to select the proper measurement file
> Conveniently create panels using the new Panel Designer
> Color response curves with value-dependent colors simplifies data evaluation in display windows
> Operating point is shown for characteristic maps
> Script functions extended for non-ASAM-conformant signal names in MDF files, writing XML files, creating directories, etc.
> Measurement and difference cursors move synchronously
> Display of structured signals from measurement files
> Data windows for display of all signal properties
> Display of signal properties in the Symbol Explorer
> Processing of MDF files up to 4 GB in size
> Display of Condalo log files