

## PC Measurement Software

**DAQSoft** is the data acquisition and visualisation software for the computer-controlled measurement systems DASIM and SIQUAD.

DASIM (universal amplifier for more than 14 sensors) and SIQUAD (modular amplifiers with excellent cost/performance ratio) have 2- respectively 4-channel amplifiers for use with most different sensors in test benches for automotive, mechanical engineering, and R&D applications. They offer sensor excitation, galvanic insulation, signal conditioning, analog and/or digital measurement data output with high precision.

Parameter setting for all amplifiers is first done with **DaSoft**. Sensor data can be stored in a sensor database for automatic system configuration. Integration into a customer-specific parameter setting software is possible via a communication DLL.

The following settings are done with DaSoft:

- Type of sensor, measurement ranges, sensor excitation and further options for the functionality of the amplifiers
- Sample rate 1 Hz to 40 kHz, block size, sensor range (nominal value) and unit for collection by the central unit ZE, and as base for the data acquisition software

There is a defined master/slave architecture: DaSoft provides the system settings and generates an interface file "DDL.int" with the necessary specifications for data acquisition. DAQSoft takes these information of the "DDL.int" automatically. The file is always updated with actual data after each communication of DaSoft with the measurement system. If changes were done in the system with DaSoft, it will be automatically recognised by DAQSoft and notified. Therefore it is not possible to measure with wrong parameters.

DAQSoft offers essentially the following features:

Measurement:

- Measurement over time, X/Y measurement
- Measurement with several systems and different IP addresses
- Acquisition of GPS data and route tracing synchronous with measurement data
- Acquisition of Video data from a DigiCam synchronous with measurement data
- Signal acquisition of various data formats from a CAN Interface
- Different settings for triggers, combined with level monitoring
- Recurring measurement (serial measurement)
- Measurement with online view and pre-monitoring

Visualisation and processing:

- Visualisation of data in a graph, as instantaneous value (analog, numerical) and in tabular form
- Analysis of saved measurements with zoom and cursor modes
- Comparison of measurements
- Combination of measurements
- Mathematical post-processing of selected measurement channels
- Post-filtering of selected measurement channels
- Analysis with FFT and power spectrum

Exports, reports, miscellaneous:

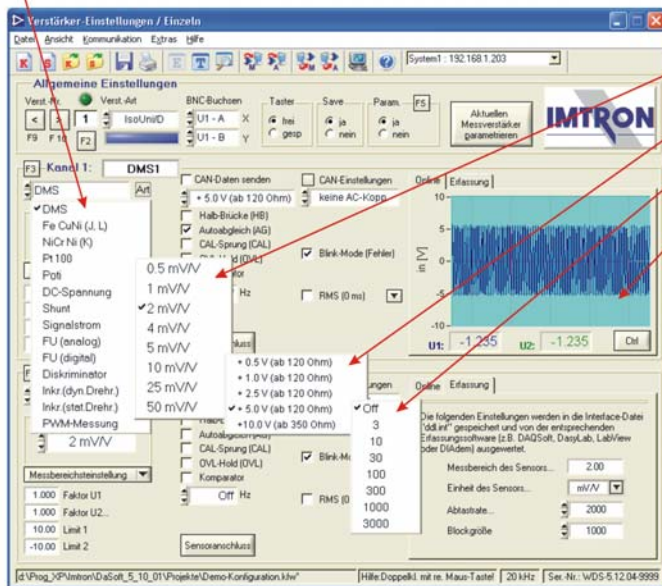
- Export function into other data formats like Famos, Diadem, ASCII, MATLAB
- Generating different reports in Internet Explorer, MS Word, MS Excel
- Event logging with log file
- Project based directory structure

Drivers for other acquisition software like DASyLab, DIAdem, and LabVIEW are optional available.

A **Measurement** needs only 4 steps:

1. Parameter Setting of a System with DaSoft

Clear selection of all types of sensors



For each sensor:

- Matching ranges
- Matching excitation supply
- Filter settings
- Online display

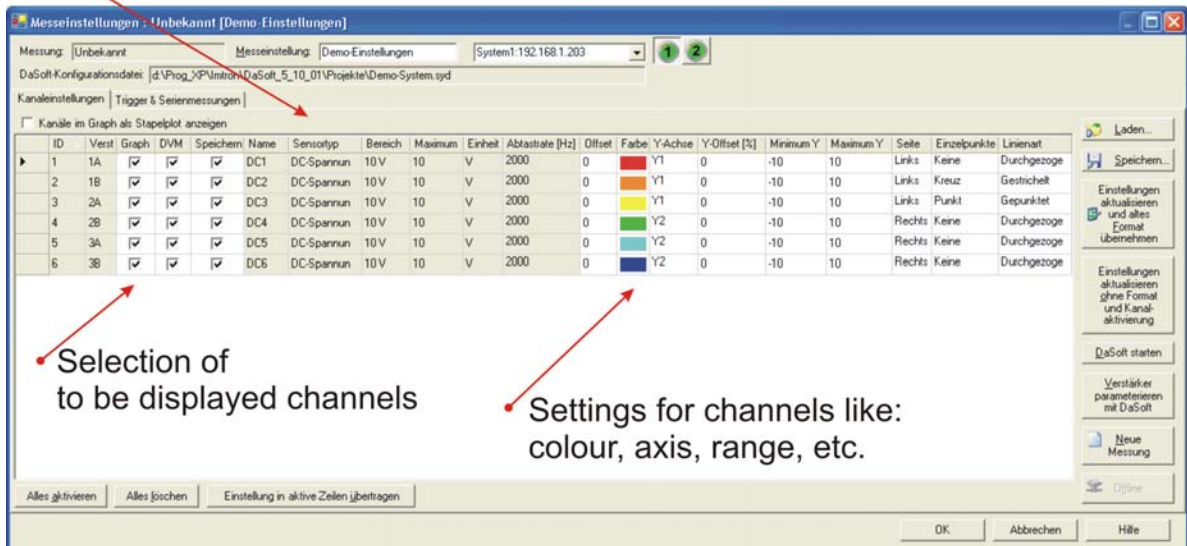
Additional features:

- Level monitoring
- AC coupling
- RMS
- CAN output

Parameter setting is done by channel or table-driven in DaSoft. After selecting the type of sensor, the corresponding measurement range is set, and if necessary excitation voltage as well as cut-off frequency. Checking of the signal is done using the online display.

2. Set-up of Channels in DAQSoft

Transferring device settings

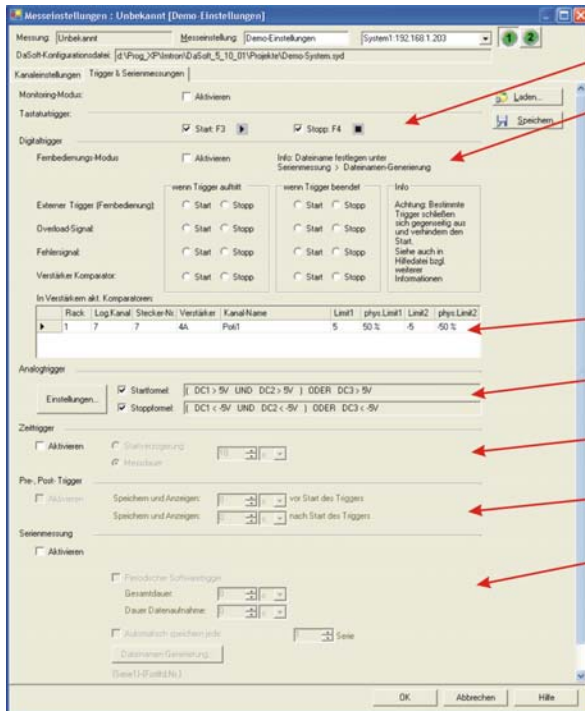


Selection of to be displayed channels

Settings for channels like: colour, axis, range, etc.

Parameters set with DaSoft are automatically taken over by DAQSoft. Now the to be displayed and saved channels can be selected, and their settings like colour, axis, range be fixed.

### 3. Setting Triggers in DAQSoft



Start/Stop with keyboard,  
digital triggers and remote control

Level monitoring by amplifier

Analog trigger

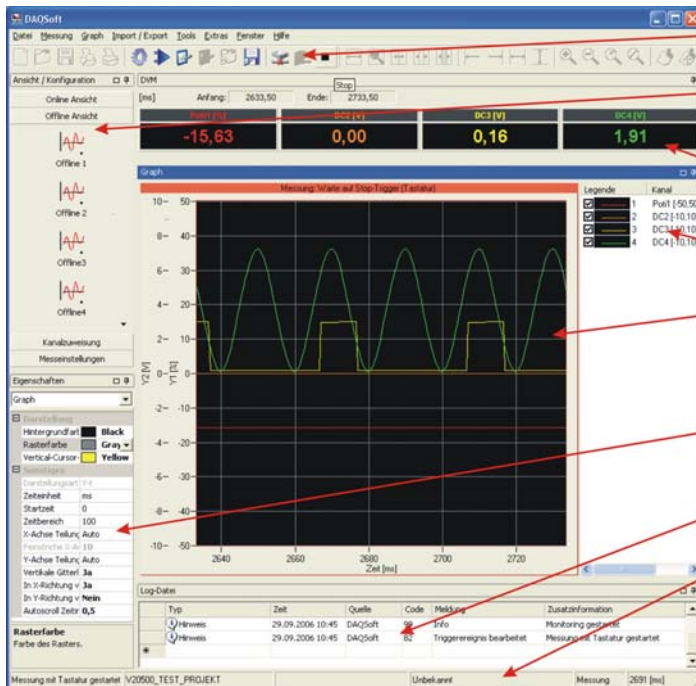
Time trigger

Pre-, post-trigger

Recurring measurement with  
automatic generation of file name

Besides the amplifier-selectable levels, further trigger conditions and combinations of digital and analog values can be set in DAQSoft, as well as time-trigger points and parameters for periodical respectively recurring measurements.

### 4. Measuring with DAQSoft



Connecting and starting

Fast switching of  
various views

Numerical values  
or other formats

Channel keys

Graph

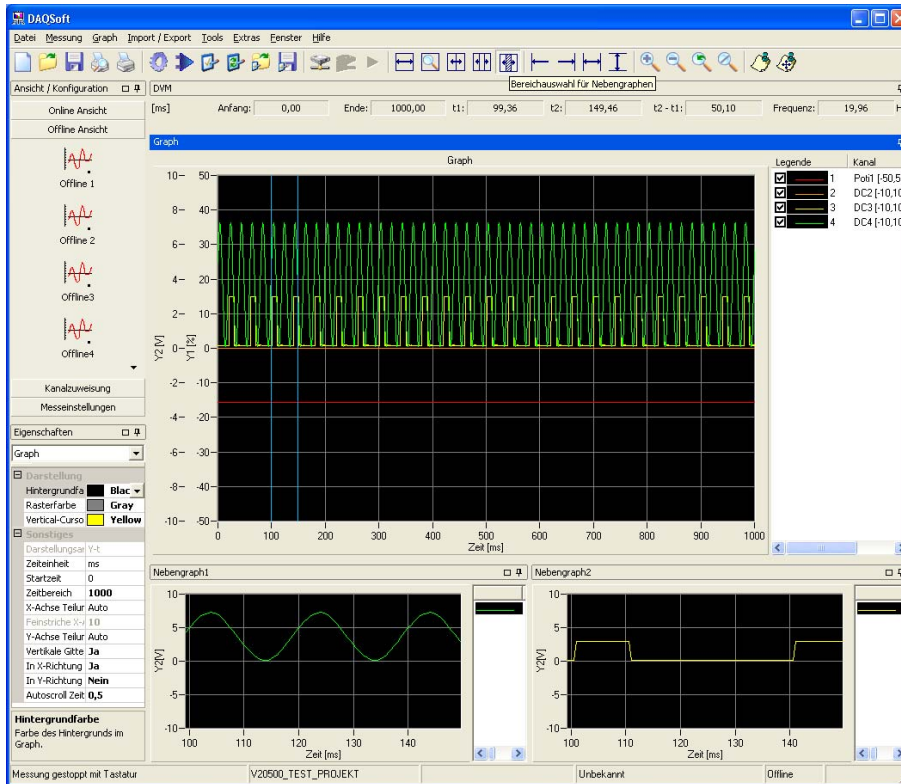
Features window  
for all objects

Log file

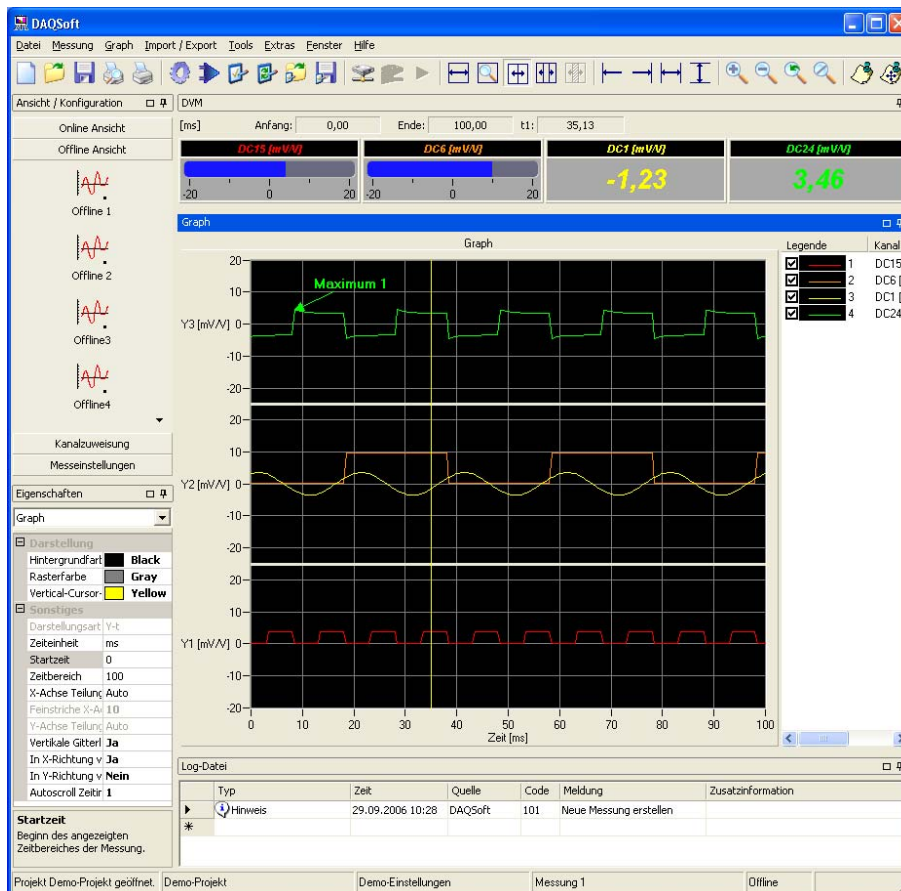
Status line

Activating the TCP/IP connection and pressing the start button will start the measurement. Selected channels will be automatically displayed. The dockable windows for views, values, graph, features, log file, etc., can be arranged any way or faded in and out.

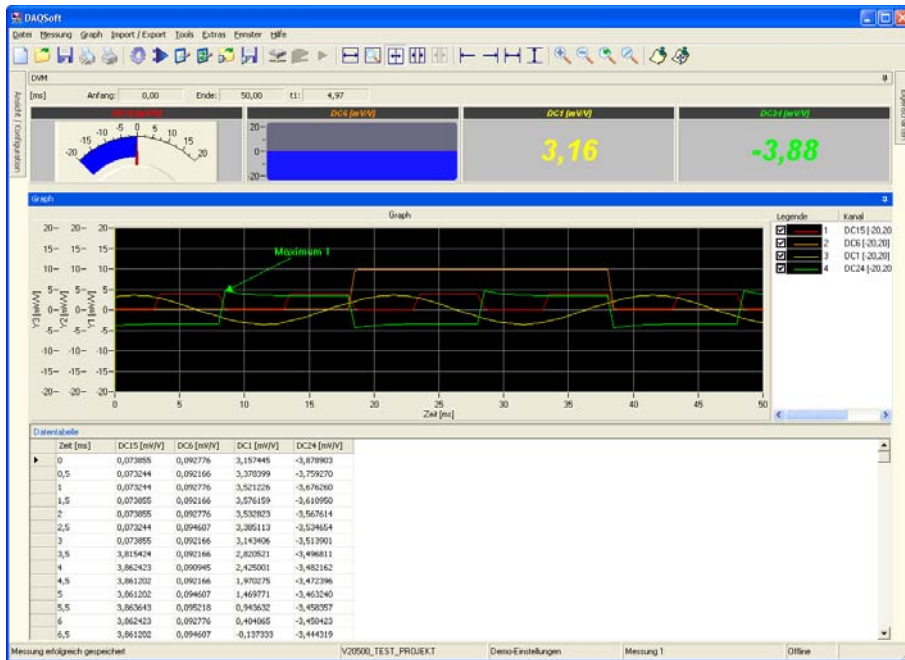
DAQSoft has manifold ways of **visualising** measurement values:



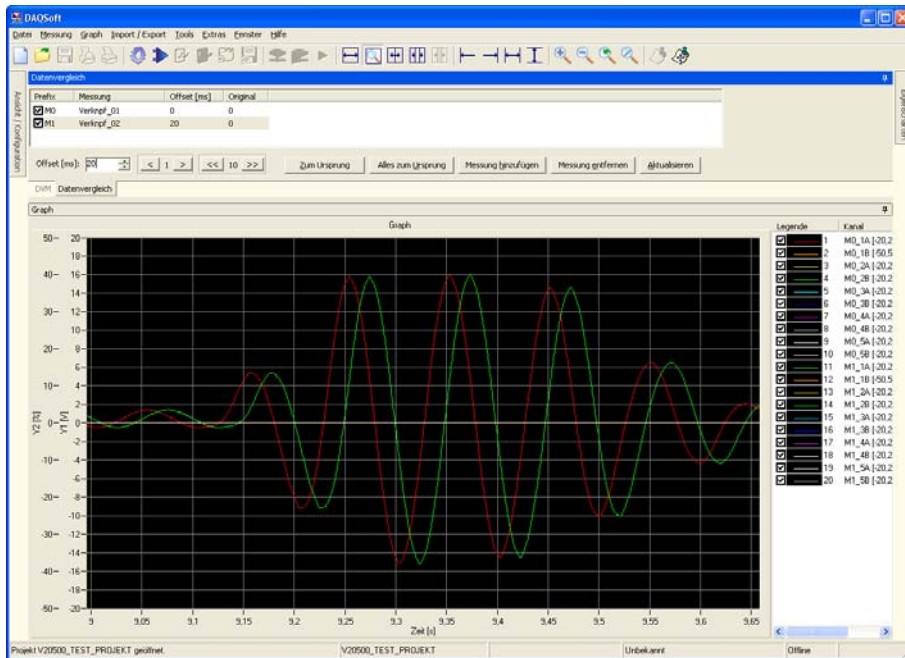
All channels can be displayed in the main graph, but also single or grouped in side graphs. For a higher resolution a different time base compared to the main graph can be chosen; the Y axis however has the same scale. This presentation works in online and offline mode.



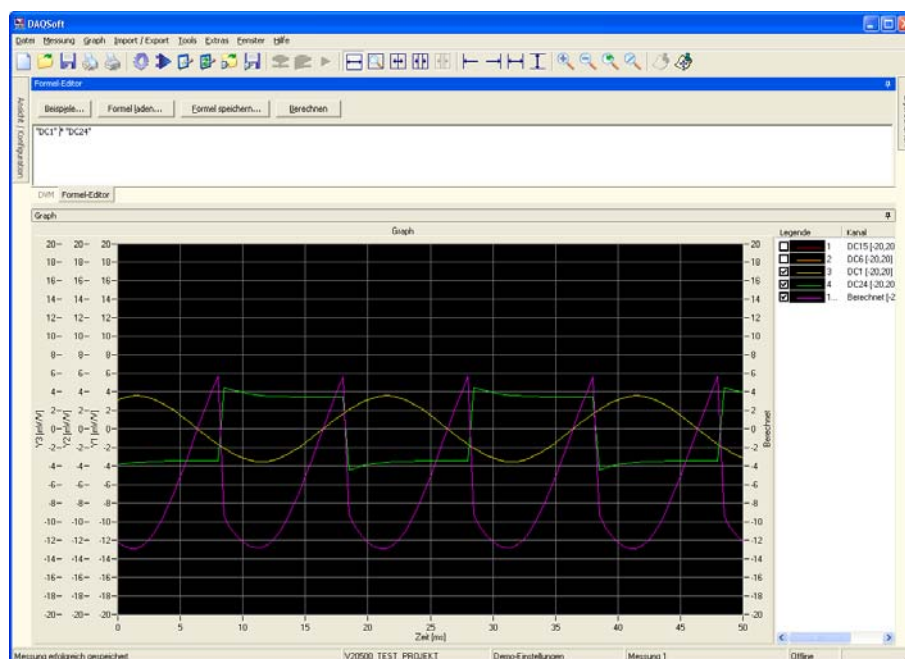
Alternatively the signals can be displayed in stacked plots. All stacked plots have a common time axis; the Y axes can have individual graduations. The measurement values can be displayed numerically, or in bar respectively round reading instruments.



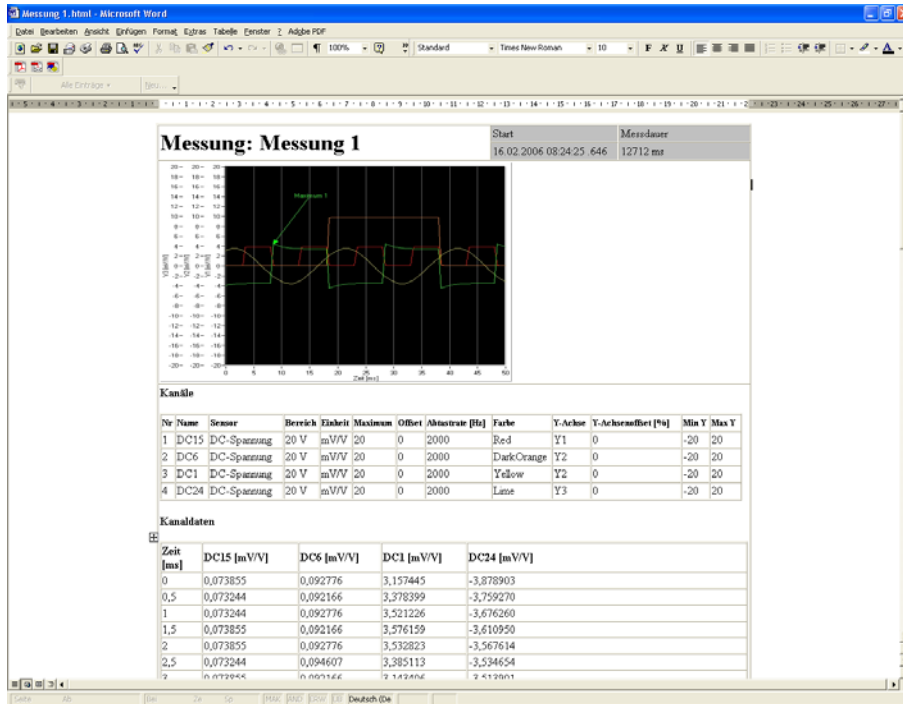
Minimum and maximum values can be analysed in offline mode and documented with an annotation. Parallel to the numerical and graphical presentation of the values, a visualisation in tabular form is possible.



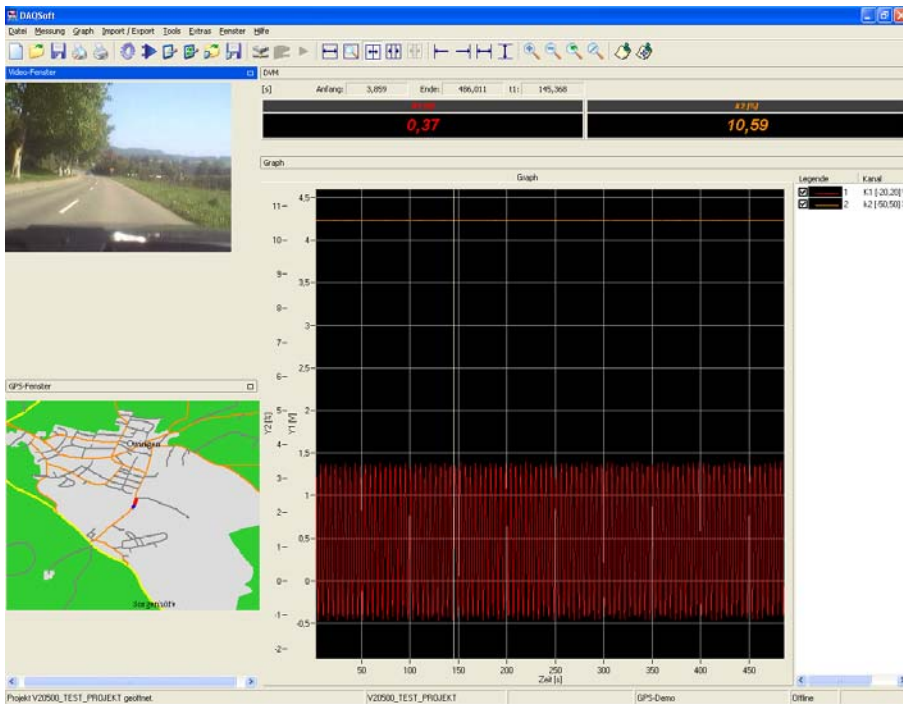
Direct comparison of signals is also easy in offline mode. By entering time offset values, signal curves can be shifted against each other any way.



Besides the comparison of signals, the combination and mathematical post-processing of channels is possible. Also post-filtering of channels as well as analysis with FFT or power spectrum can be realised.



DAQSoft also has an export function for its measurement data into other formats like Famos, DIAdem, MATLAB, and ASCII. Further on reports for reading in Internet Explorer, Word or Excel can be generated. These reports can be adapted individually for heading, graphical display and selected data.



An extended version of DAQSoft acquires GPS and video data via suitable hardware synchronous with other measurement data. This allows optical and spatial coordination of events.