vMeasure exp
Reliably Solving Complex Measurement Tasks

What is vMeasure exp?

vMeasure exp is a flexible measurement software solution that provides you with efficient support in the laboratory, at the test stand, during test drives and endurance tests. With vMeasure exp, you can conveniently record physical values, internal ECU signals as well as signals sent via the vehicle bus. To provide an informative interpretation of the recorded data, the position data (GPS) and video data of the route traveled are also required. Typical tasks of the measurement engineer include measuring OBD signals to ascertain the status of the control unit.

With vMeasure exp, you can record all of this data simultaneously and efficiently. In just a few clicks, you create the measurement configuration, set up the measurement windows and get started with the actual measurement tasks. To make it easy to set up the measurement, configuration tools for the hardware of third-party manufacturers, such as CSMconfig by CSM, are integrated in vMeasure exp. For flexible data recording, use the multi-recorder concept with comprehensive trigger options as well as pre-trigger and post-trigger times.

Overview of Advantages

> Time-synchronous acquisition of physical values, ECU-internal data, video, GPS as well as bus data
> Practically no limitations in executing a measurement task, due to the high measurement data throughput.
> Complex calculations can even be performed during the measurement, regardless of the sampling rates of the input signals. This simplifies the analysis of measurement results significantly – both during and after the measurement.
> Extensive function library: the “eMobilityAnalyzer function package” enables, for example, the use of predefined formulas without requiring programming or scripting skills
> MDF files are indexed on the local workstation for fast, convenient retrieval of measurement data
> Flexible, individual storage of recorded channels by multi-recorder concept enables efficient measurements and allows you to focus on relevant signals
> Diagnostics support by measurement of OBD-II
Highlights of Version 4.0

> Configuration of vMeasure log based loggers
> Trim function for compensation of sensor offsets when acquiring analog measurement signals
> New functions in the eMobilityAnalyzer library: Charger Efficiency & e-Motor Y-Delta

vMeasure log

In combination with the Vector logger hardware, vMeasure log offers a high-performance and easy-to-use solution for recording measurement data. With the extension included in vMeasure exp, you can easily create new logging projects or transfer existing projects to powerful hardware.

Configuring the Measurement

> Intuitive configuration of signal sources to be recorded and of the bus systems to be connected
> Easy sharing of measurement configurations with co-workers
> Simple creation of formulas for virtual signals via a graphic interface, with functions from the function library, with MATLAB/Simulink, C-DLL or custom functions

Measuring

> Simultaneously measure the analog physical values, the ECU, the bus systems and record the environment using a camera and position data
> Store measurement data in the standardized ASAM-MDF4 format, even with files in excess of 4 GB
> Live view of measurement values even if there are no current measurements makes it easy to check the wiring and sensors as part of the measurement configuration

eMobilityAnalyzer Function Library

The new eMobilityAnalyzer function library is the centerpiece of scalable measurement solutions in the high-voltage area. The voltage and current signals acquired decen-trally by CSM measurement modules at sampling rates of up to 1 MHz can be used to calculate relevant characteristics of the powertrain, HV components and the electrical system online.

> Charger Efficiency: Measures the efficiency of on-board chargers supplied directly by the power grid
> DC Analysis: Determines RMS power and energy and ripple on voltage and current in the DC area
> DC Efficiency: Calculates efficiency from the input parameters voltage and current at the input or output of the component under test
> e-Motor Power Analysis: Determines the effective power, apparent power and reactive power, power factor, electric speed and total energy of a 3-phase electric motor with a star or delta circuit
> e-Motor Y-Delta: Conducts the Y-delta and delta-Y transformation

> Ripple: Returns parameters on fluctuations of any input signal as well as their DC and effective values
> Shaft/Axle Power: Calculates mechanical energy or power from the input parameters speed and torque for one or two external sensors

Measurement Data Analysis and Documentation

> Signal display over time in various windows, user-definable panels or in XY display
> Manual investigation of signal processes by means of zoom, search functions and measurement cursor
> Insertion of comments for off-line analysis
> Exporting of signals from measurement data along with synchronized video
> Data export to ASCII, Excel and MATLAB
> Convenient insertion of window content or entire display pages in Word and PowerPoint by means of drag & drop accelerates the documentation

Supported Interfaces

> All Vector network interfaces for CAN (up to 2 Mbit/s baud rate), CAN FD, Ethernet, FlexRay and LIN
> Ethernet PC interface
> DAIO interface for connecting any measurement hardware
> Connection of the ECU via XCP on CAN, Ethernet, LIN, FlexRay

Supported Measurement Hardware

> Analog and digital I/O of the Vector network interfaces
> CAN- and EtherCAT-based measurement modules by CSM
> Measurement hardware by CAETEC, ETAS, IMC, IPETRONIK, NI
> USB-based GPS devices
> Video cameras with DirectShow interface

vMeasure Option

> Thermodynamic State Charts option for displaying thermodynamic data and informative state charts

More information: www.vector.com/vmeasure_exp