

CANoe.LIN 7.2

The Universal Development, Analysis, Stress and Test Tool for LIN and J2602

Highlights

- > LIN support of new CANoe Option SCOPE (separate product)
- > New interactive stress and disturbance features for LIN
- > Slave conformance tests for LIN2.1 and J2602

LIN (Local Interconnect Network) is a cost-effective and deterministic communication system for connecting ECUs with smart sensors, actuators and controls. Vector's software tool CANoe.LIN provides you with unrivaled features for developing, analyzing and testing LIN networks according to the specifications **LIN1.x**, **LIN2.0**, **LIN 2.1**, **SAE-J2602** (US-LIN) and **Cooling-Bus**.

Applications

CANoe.LIN is capable of fully simulating up to 32 LIN networks and any number of nodes. Together with its integrated CAN features, this is the ideal tool for developing and testing LIN nodes (Master and Slave), CAN-LIN gateways and CAN-LIN diagnostics.

Development Features

- CANoe.LIN offers you sophisticated LIN development features:
- > Easy simulation of LIN nodes/networks according to LDF (including multi-channel LIN Masters and gateways)
 - > Full support of LIN2.0/LIN2.1 Slave reconfiguration
 - > Network management for LIN2.0/LIN2.1 and J2602

- > Script functions for modeling LIN nodes (including diagnostics)
- > User-configurable and integrated panels for interactively manipulating signals, frames and scheduling

Analysis Features

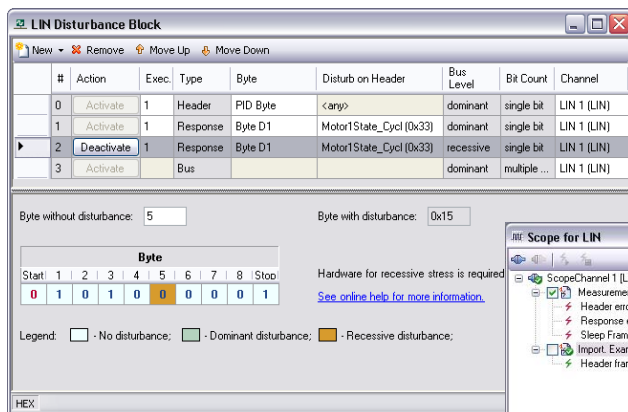
CANoe.LIN provides you with the professional analysis features of CANalyzer.LIN (see also separate data sheet):

- > Network analysis according to LDF
- > Interpretation of LIN2.0/LIN2.1 configuration commands
- > Interpretation of diagnostics according to ODX/CANdela files
- > Detailed error and event detection
- > Numerical and graphical visualization of signals
- > Network Management window
- > Network and node statistics with LIN Statistics Monitor
- > Logging, replay, filter and trigger blocks

Timing Analysis

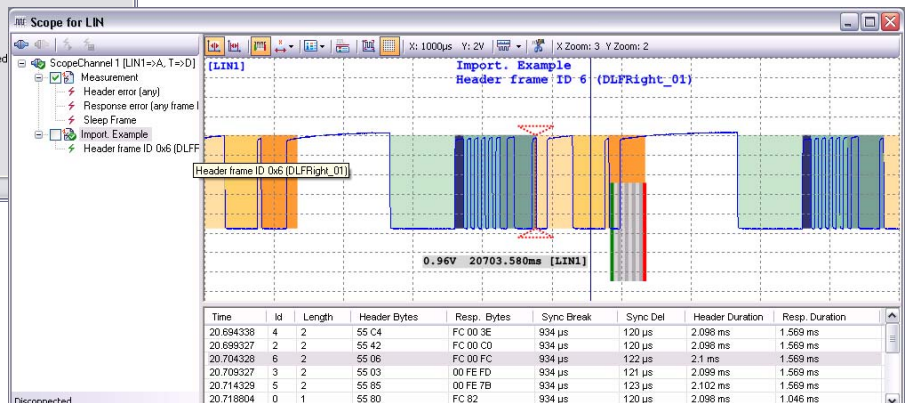
The LIN Analysis Feature Set gives you easy access to LIN timing information either via Trace Columns or script functions, e.g.:

- > Header, response and total frame transmission time
- > Schedule slot delay time, interframe space and bus idle time
- > Sync break, sync delimiter, and inter-byte space
- > Header and response tolerance
- > Wake-up signal length
- > Baud rate of header and response



New LIN Disturbance Block

LIN Support of new CANoe Option SCOPE (separate product)



Hardware Interfaces for CAN and LIN

CANoe.LIN supports Vector's XL Interface Family of high performance and flexible PC interfaces for CAN and LIN. For detailed information, please see the data sheet 'Hardware Interfaces for CAN and LIN'.

Design Tool for LIN

DaVinci Network Designer LIN is a dedicated tool for the design of LIN1.x, LIN2.0, LIN2.1 and J2602 networks. Together with the DaVinci Network Designer CAN and FlexRay, you can also define gateways. For detailed information please see this product's data sheet.

For more information about Vector's LIN solutions please visit:

www.lin-solutions.com

Test Features

Using the Test Feature Set (TFS) for LIN, you can easily define, control and report your own LIN tests. With the Slave Conformance Test Module you can directly integrate conformance tests into your own test configurations. This special test module supports the official Slave conformance tests (OSI-layers 2 and 3) for **LIN1.3**, **LIN2.0**, **LIN2.1** and **J2602**.

You can also test Master nodes or complete LIN networks without stimulation using the sophisticated checks provided by the Test Service Library for LIN, e.g.:

- > Schedule table transmission according to LDF
- > Diagnostic delay times according to LDF
- > Header and response tolerance
- > Sync break and delimiter times
- > Baud rate accuracy of Master node
- > Format of reconfiguration commands
- > Master initialization time
- > Wake-up signal and wake-up sequences
- > Event-triggered frame

Typical application tests and gateway tests can be easily defined using XML checks. With the script language CAPL even the most complicated test cases can be realized.

Stress Features

To stress your LIN network with CANoe.LIN, no special hardware is required. Using the LIN Stress Interactive Generator IG or script functions you can create almost every type of LIN error, e.g.:

- > Invalid parity ID/sync byte/checksum
- > Invalid sync break/delimiter
- > Short message error/no response/collision
- > Transmission of arbitrary bit streams (also as a response)

With the new LIN Disturbance Block, you can interactively configure and execute recessive and dominant disturbances, e.g.:

- > Bit disturbance(s) in any header or response byte
- > Bus disturbance of a configurable length

Database Utilities

The following LIN database utilities are delivered with CANoe.LIN:

- > The LIN File Editor is a text-based editor for LDFs/NCFs with an integrated consistency checker
- > The LIN Network Viewer provides a graphical view of your LDF
- > With the LIN Schedule Designer, you can edit the schedule table section of your LDF

New Functions in Version 7.2

LIN Support of new CANoe Option SCOPE

- > Oscilloscope solution based on a USB scope hardware
 - > Analysis of LIN protocol errors at physical and logical levels
- For more details please see separate product data sheet.

Improved LIN Slave Conformance Test Module

- > Full support of LIN2.1 conformance tests (OSI-layers 2 and 3) according to the official specification from LIN consortium
- > Automated execution using test hardware VH1100, e.g. for hardware reset and sleep mode detection
- > Automatic configuration of tests according to LDF or NCF communication description
- > Support for LIN1.x and LIN2.0 Slaves without reconfiguration
- > Synchronization with Trace window, e.g. jump to first trace event of a test case

New LIN Disturbance Block

- > Interactive configuration and execution of LIN disturbances
- > Bit disturbances in any LIN header or response byte
- > Bus disturbances of configurable length

Easier Signal Access

- > New symbol panels for easy modification of signals/variables
- > New signal generator type 'user defined'
- > Signal generators as panel controls

Enhanced Diagnostic Support

- > Greatly improved Diagnostics Console with many new features, e.g. log to file, search function, easier handling of raw services
- > Color highlighting of diagnostic events in Trace window