

CANalyzer.LIN 7.2

The Professional Development, Measurement and Analysis Tool for LIN and J2602

Highlights

- > LIN support of new CANalyzer Option SCOPE
- > LIN Statistics Monitor with useful network and node statistics
- > LIN diagnostics interpretation according to ODX or CANdela files

LIN (Local Interconnect Network) is a cost-effective and deterministic communication system for connecting ECUs with smart sensors, actuators and controls. The popular Vector software tool CANalyzer.LIN provides you with professional measurement and analysis features for the specifications **LIN1.x**, **LIN2.0**, **LIN2.1**, **SAE-J2602 (US-LIN)** and **Cooling-Bus**.

Applications

CANalyzer.LIN is capable of analyzing up to 32 LIN networks in parallel. Together with its integrated CAN features, it is the ideal tool for developing LIN Slave nodes and for analyzing LIN networks, CAN-LIN gateways and CAN-LIN diagnostics.

Analysis Features

CANalyzer.LIN offers you professional LIN analysis features:

- > 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
- > Configurable display panels

- > Network Management window
- > Network and node statistics with LIN Statistics Monitor
- > Logging, replay, filter and trigger blocks

Node Simulation

A Master (or Slave node) can be easily simulated according to LDF. You can control a Master's scheduler either interactively using the LIN Interactive Master block or by programming a CAPL script.

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 interbyte space
- > Header and response tolerance
- > Wakeup signal length
- > Baud rate of header and response

Database Utilities

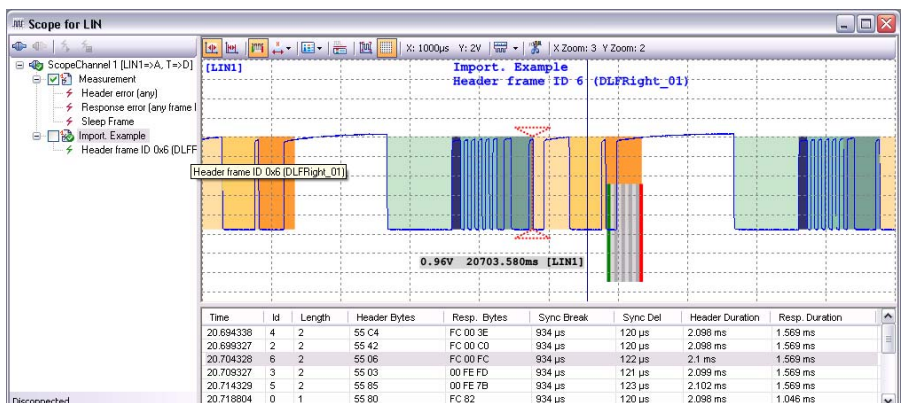
The following LIN database utilities are delivered with CANalyzer.LIN:

- > 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

Statistic	Current / Last	Min	Max	Avg
Errors Bus [total]	2	-	-	-
Errors Resp [total]	1	-	-	-
SealECU	0	-	-	-
Motor1	1	-	-	-
Motor2	0	-	-	-
Errors Resp Detected [total]	4	-	-	-
SealECU	-	-	-	-
Motor1	4	-	-	-
Motor2	0	-	-	-
Diag No Resps [total]	0	-	-	-
Busload [%]	12.25	0.00	12.82	12.01
SealECU	4.76	0.00	5.46	4.47
Motor1	3.45	0.00	4.03	3.77
Motor2	4.03	0.00	4.03	3.77
Frames [tr/s]	20	0	21	20
Frames [total]	5079	-	-	-
Frames Cycle [ms]	150.00	150.00	2046.86	152.63
Baud Rate Master [bit/s]	19230	19230	19230	19230
Baud Rate Dev. Master [%]	0.16	0.16	0.16	0.16
Tolerance Header [%]	18.61	17.66	18.64	18.56
Tolerance Resp [%]	0.57	0.38	1.79	0.57
SealECU	0.57	0.57	0.57	0.57
Motor1	0.57	0.38	0.57	0.57
Motor2	0.57	0.57	0.57	0.57
Duration Header [ms]	2.097	2.080	2.098	2.096
Duration Resp [ms]	3.661	1.588	4.707	4.010
Resp Space [µs]	3.0	3.0	28.0	3.0
Sleep Commands [total]	3	-	-	-
Wakeup [total]	3	-	-	-
Wakeup Duration [µs]	1000.4	1000.4	1000.4	1000.4
Init Time Master [ms]	101.064	101.064	101.065	101.064

LIN Statistics Monitor

LIN Support of new CANalyzer Option SCOPE (separate product)



Hardware Interfaces for CAN and LIN

CANalyzer.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, LIN and J1708'.

Development and Test Tool for LIN

CANoe.LIN is a separate product offering well known analysis features of CANalyzer.LIN as well as development, stress and test features for LIN and J2602. For detailed information please see this product's data sheet.

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

www.lin-solutions.com

Trace Window for LIN

The Trace window for LIN not only displays LIN frames, errors and events, but also shows all relevant LIN timings. The following information can be displayed for LIN:

- > Unconditional frames and their raw/encoded signals values
- > Event-triggered frames, i.e. no response, single response, collision and collision resolution
- > LIN2.0/2.1 configuration commands and their interpretation
- > All types of errors, e.g. no response, illegal header/response, checksum error, synch error, long dominant signal, spike event
- > Network management commands i.e. Go-to-Sleep, wake-up request
- > Special events for network management, schedule table change, baud rate change, frame length detection, checksum model detection, etc.
- > LIN diagnostic frames interpreted at TP level, i.e. Single Frame, First Frame, Consecutive Frame
- > LIN timing information such as: start of frame, slot delay, interframe space, bus idle time, sync break/delimiter length, response/interbyte space, wake-up signal length, etc.

LIN Network Management Window

This window displays the network management state for all configured LIN networks and allows you to modify the state of each network either before or after measurement start.

LIN Statistics Monitor

This feature displays useful network/node statistics, e.g.:

- > Detailed error statistics with color highlighting
- > Relevant node timings, e.g. response space, response tolerance
- > Statistics for event-triggered and diagnostic frames
- > Statistics for network management

LIN Replay Block

The following LIN events can be replayed from a logging file:

- > Unconditional frames and no responses
- > Event-triggered frames: no response, single response
- > Configuration requests and responses
- > Diagnostic requests and responses
- > Sleep commands and wakeup requests

You can also configure which responses shall be sent:

- > All responses
- > Only responses published by the Master
- > No responses

New Features in Version 7.2

LIN Support of new CANalyzer Option SCOPE

- > Oscilloscope solution for CANalyzer based on a USB scope
- > Easy analysis of LIN protocol errors at physical and logical levels
- > For more details please see separate product data sheet

Enhanced LIN Diagnostic Support

- > Interpretation of LIN diagnostics according to ODX/CANdela files

CANoe Compatibility

- > CANalyzer configurations are now compatible with CANoe
- > You can also load the measurement setup of a CANoe configuration

New Database Management Window

- > Overview of configured channels and assigned databases
- > Easy assignment of new databases, e.g. LDF, DBC
- > Drag & drop supported

Other Improvements

- > Load demo configurations directly from online help
- > Errors/warnings in Write window with hyperlink to online help
- > Enhanced event filtered function for Trace window