

Network Designer LIN

The Powerful Design Environment for LIN

Overview of Advantages

- > Design functions customized for the design of LIN systems
- > Design of complex system architectures as well as individual LIN sub-systems
- > Definition of LIN hardware topologies with one master node and multiple slave nodes
- > Interactive and semi-automated creation of the LIN schedule
- > Support of all LIN standards from 1.0 to 2.1 as well as J2602
- > Exchange of LIN data in LDF, NCF and FIBEX formats

The development of LIN systems and LIN sub-systems requires a mature design tool. Network Designer LIN offers functions for creating the network architecture and data communication for LIN buses. This network design is the base for all further development steps such as system simulation, configuration of ECU-specific software and ECU or integration tests.

Interfaces to CAN and FlexRay systems can be described using this tool together with the other tools of the Network Designer product family.

Application Areas

Network Designer LIN supports the developer of entire network architectures with multiple LIN buses, as well as the developer of single LIN sub-systems. This makes the tool suitable for use at both automotive OEMs and system suppliers.

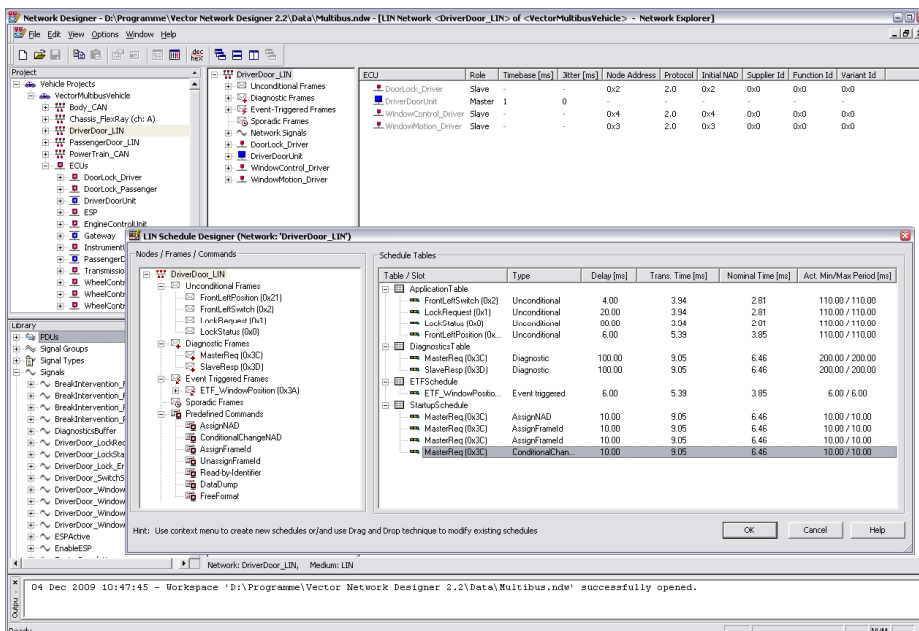
The Network Designer LIN is successfully used in series projects at car OEMs.

Functions

- > Create vehicle projects and their hardware topologies with one or more LIN sub-buses
- > Define LIN architectures with multi-master ECUs
- > Create slave nodes based on NCF files, and export the slave configuration in NCF files for transfer to development partners
- > Specify communication relationships of the LIN networks in the LIN-specific Network Explorer
- > Visualize gateway relationships between networks of different types, e.g. between a CAN bus and one or more LIN sub-buses
- > Create and interactively edit schedule tables in the graphic-based LIN Schedule Editor
- > LIN-specific consistency checks
- > Integration in the Vector tool chain for LIN

Parameterization of LIN Nodes

The LIN slave nodes are configured by all parameters specified in the LIN standard such as the product ID, node address and diagnostic settings. It is possible to configure a LIN node as a multi-channel master with connections to multiple LIN buses.



Designing the LIN schedule with Network Designer LIN

LIN Schedule Design

The graphic LIN Schedule Designer is used to create schedule tables either interactively by drag & drop or with the help of the integrated schedule table generator. In existing schedule tables, additional frames can be added, and existing frames can be rearranged.

Communication of the LIN Master

The signals routed between LIN buses or between a LIN sub-bus and a CAN backbone bus are automatically detected and presented visually in a special gateway view. Signal routing is based on the use of identical signals on multiple buses and definition of the LIN master's send and receive relationships.

Seamless Design Process

Network Designer LIN supports:

- > Design of any number of LIN networks, build upon signals and explicitly defined frames.
- > The iterative development process, in which the architecture and communication design of a new vehicle project are based on an already tested and released predecessor project.

Data Exchange

Network Designer LIN supports the following standardized exchange formats:

- > LDF and NCF for LIN Standards 1.0, 1.3, 2.0, 2.1 and J2602
- > FIBEX 1.1, 1.2 and 2.0

When exporting communication data in these formats, detailed consistency checks are performed to assure the validity of data.

Network Designer LIN forms the basis of the Vector tool chain for LIN and has interfaces to all relevant LIN development tools:

- > CANoe.LIN
- > CANalyzer.LIN
- > CANape

as well as to the LIN software components.

The Network Designer Product Family

Together with other tools of the Network Designer product family (Network Designer CAN and Network Designer FlexRay), you can design and manage communication structures across bus systems.

Properties and advantages:

- > Manage multiple networks of different types in one database
- > Design entire network architectures in which the LIN master nodes serve as gateways to the CAN or FlexRay buses
- > Use a common signal pool for CAN, LIN and FlexRay bus systems
- > Display routing relationships of the gateways based on common signals