

XL-Driver-Library

Driver Library for Vector Hardware Interfaces

The XL-Driver-Library is a universal programming interface you can use to create your own CAN, LIN, FlexRay and MOST applications while accessing Vector's powerful interfaces:

- > XL-Interface-Family (PCMCIA, PCI, PCIe, PXI, USB)
- > FlexRay interfaces VN3300 (PCI), VN3600 (USB), VN7600 (USB)
- > MOST interface VN2610 (USB)
- > IOcab 8444opto on a CANcardXL (PCMCIA)

Features and Advantages

The XL-Driver-Library provides you with general and bus-specific methods that make it easy to operate the CAN, LIN, FlexRay and MOST interfaces from Vector.

Channels and ports are managed with the general methods. Bus-specific methods are used to configure network nodes and to send or receive messages.

It is easy to assign logical application channels to physical device channels via the XL-Driver-Library or with the user-friendly Vector hardware configuration program.

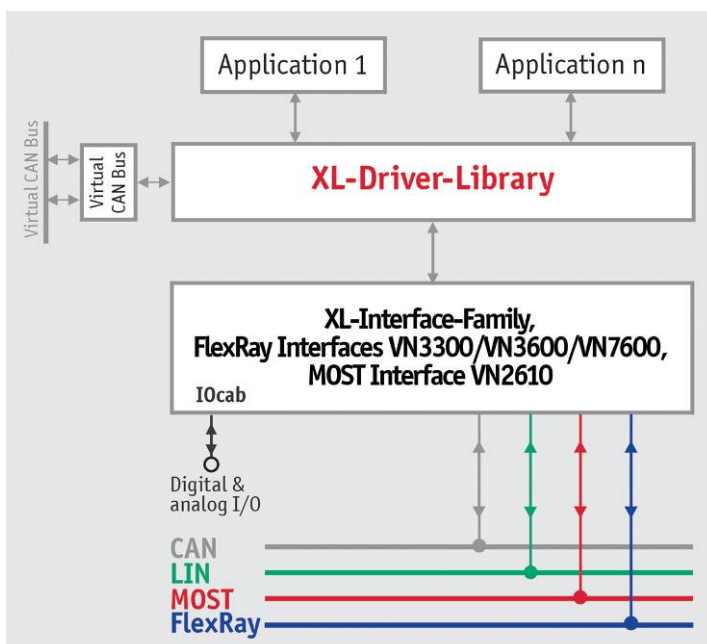
Furthermore, all Vector interfaces for CAN, LIN, FlexRay MOST and digital and analog I/O can be driven in parallel via the library, e.g. for gateway functions. Simultaneous support of more than one channel for each bus system (multi-channel) makes it possible to implement any desired variation of interface capabilities.

Application Areas

The XL-Driver-Library lets you utilize Vector CAN, LIN, FlexRay and MOST interfaces effectively and powerfully in your custom applications. It is especially useful in developing specialized tools that are uniquely adapted to a workstation and its local environment, with the goal of maximizing productivity.

Potential applications include:

- > Creating test tools for test benches
- > Integrating Vector interfaces in existing analysis and test programs
- > Integrating Vector interfaces in the process control of production facilities
- > Programming and configuring ECUs in production and service



Access to the Vector interfaces
via the XL-Driver-Library

Functions

> CAN

Using the methods of the XL-Driver-Library for CAN it is not only possible to send and receive messages. It is also possible to set the baud rate, sampling points as well as powerful acceptance filter of the CAN controller being used. Additionally, transceiver errors are returned to the application for evaluation and monitoring purposes.

Simultaneous access to one or more CAN interfaces by multiple applications is possible (multi-application). For example, this is how you can use CANalyzer or CANoe in parallel to your own application for the analysis of bus traffic or for debugging.

> LIN

The XL-Driver-Library supports LIN (Specification 1.3 and 2.0) with Master and Slave network nodes. To implement a LIN Master the schedule including the timing has to be realised in the application. Consequently, besides the Classic mode, the enhanced CRC mode, Wake-Up and Sleep functions are also available. This results in an interface that is as realistic as an ECU and compliant to the specification.

> MOST

The XL-Driver-Library supports both the MOST node and the Spy functions of the VN2610. The node functions allow the hardware to be operated as a complete node on the ring. It can receive messages and packets addressed to it, as well as send out its own messages to other nodes on the ring.

Access to OS8104 registers is also possible.

The XL-Driver-Library's MOST Spy functions are needed to record all messages and packets on the ring. These functions must be enabled by a separately purchased "MOST Analysis Library" license or the .MOST Option for DENoe or DENalyzer. The node functions, however, are provided free of charge.

> Digital and Analog Input and Output (DAIO)

The XL-Driver-Library also supports the IOcab 8444opto that is connected to the CANcardXL. This allows you to acquire and generate analog and digital signals in addition to CAN, LIN and MOST messages. The data automatically get time stamps and can thus be correlated with CAN and LIN data.

> FlexRay

The new XL-Driver-Library for FlexRay is based on proven concepts of the XL-Driver-Library for CAN.

FlexRay communication parameters are manually copied from the FIBEX database description to the application program.

The standard functions of the XL-Driver-Library for FlexRay are supplied with the VN3300/VN3600/VN7600 FlexRay interfaces.

Use of the extended functions requires a license for the "Advanced FlexRay-Driver-Library" or the enabling of the CANoe.FlexRay or CANalyzer.FlexRay option.

Standard Send Functions:

- > Sending of up to 128 independent frames
- > Sending in Single Shot or Periodic mode
- > Send acknowledgments

Standard Receive Functions:

- > Receives Data and Null frames
- > Option of receiving corrupted frames
- > Receiving of communication controller errors

Extended Functions ("Advanced FlexRay-Driver-Library"):

- > Use of a second communication controller for cold start of the FlexRay cluster without additional network nodes
- > 2 MB memory for send messages; this makes it possible to simultaneously configure more than 1000 independent send messages
- > Hardware-based incrementing of a payload area

Scope of Delivery of the XL-Driver-Library for CAN, LIN, FlexRay, and MOST

The XL-Driver-Library is a component supplied with the Vector XL-Interfaces, the VN3300/VN3600/VN7600 FlexRay interfaces and the VN2610 MOST interface.

It is included on the driver CD and contains:

- > DLL with header for Borland C++, Microsoft Visual C++
- > .NET component for Microsoft Visual Studio and Borland Delphi (only for CAN, LIN and IOcab)
- > Manual (PDF)
- > Sample applications with source code
- > Migration Guide for conversion from the CAN-Driver-Library to the XL-Driver-Library as an appendix to the manual