J1939 Protocol Stack

Overview

The J1939 Protocol Stack (in ANSI-C) is a complete implementation of the SAE J1939 protocol. By providing all communication mechanisms defined in the SAE J1939 specification the stack allows the developer to focus solely on the implementation of the application.

Beside the proven **can4linux** driver, the following microcontroller drivers are available:

- Atmel 89c51cc01/02/03
- Atmel AT90CAN32/64/128
- Beck IPC SC1x3
- Freescale MC56F8323
- Freescale MC9S12DG128
- Infineon C166/C167
- Infineon Tricore
- Janz CB-USB
- NXP LPC2129
- Silabs C8051F040
- ST Microelectronics ST10F269
- ST Microelectronics STR7

as well as for the stand-alone CAN-controller:

- Philips SJA1000
- Microchip MCP2510.

An adaption to other target systems can be performed easily within a few days due to the modular structure of the J1939 Protocol Stack based on the OSI layer model.

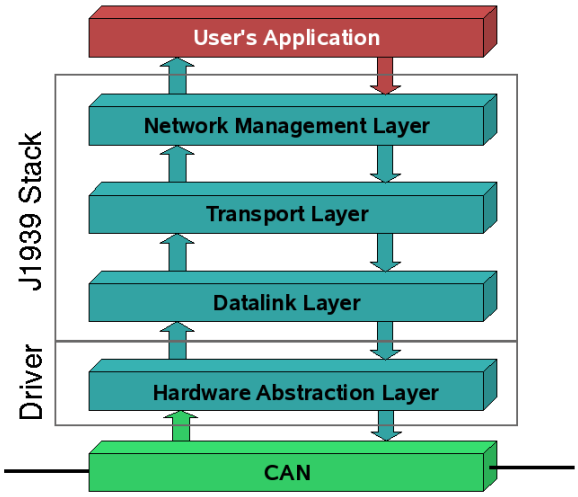
Application

The ANSI-C compliant J1939 Protocol Stack provides the following features:

- Transmission and reception of application-specific messages
- Pre-filtering of messages according to PGN and source address
- Support for the transport protocols TP-BAM and TP-CM to transmit larger blocks of data
- parallel communication with several consumers
- Support of "Address Claiming" for dynamic address assignment

The complete and detailed reference manual and the ready-to-run examples allow a fast access to the J1939 Protocol Stack with a minimum of time.

To integrate the J1939 Protocol Stack into an existing project its files have to be added to the application. The stack can be adopted to the requirements of the application by simple configuration files, which are included in the project. Thereby the required amount of memory can be optimally adjusted to the application. Further required hardware resources for the stack are a CAN interrupt and a cyclic timer interrupt.



Scope of delivery

- J1939 Protocol Stack with separate driver interface
- CPU/CAN driver
- numerous, immediately compilable examples
- reference manual containing descriptions of all API functions, including parameters and return values
- support by E-Mail and update service free of charge within the support period

Development Tools

The CAN-Analyzer CAN-RE***port*** is an efficient and versatile tool for analysis and starting of CAN-based networks like J1939. The J1939-specific interpretation of CAN messages is provided by a supplementary software module.

This extension interprets and visualizes J1939 messages. Furthermore it provides functions to send J1939 messages by the CAN-RE***port***.

To connect the CAN-RE***port*** to the CAN network various PC-CAN interfaces are available for e.g. USB, RS232, PC-Card, PCI and PCI-Express interfaces.

Licensing conditions (excerpt)

For the J1939 Protocol Stack a one-off license fee is charged in form of the purchase price. Further license fees do not arise from the deployment of the software within the same company (no runtime licenses).
Handing over the software and the implementation, respectively, towards a third party is not allowed.

Ordering Information

3000/10	J1939 Developers Kit (Single CAN) in C sourcecode
3000/20	J1939 Developers Kit (Multi CAN) in C sourcecode
3010/01	Driver package for Philips SJA1000
3010/03	Driver package for Infineon C166/C167
3010/04	Driver package for Janz CB-USB
3010/07	Driver package for Freescale MC9S12DG128
3010/10	Driver package for Atmel 89x51cc0x
3010/20	Driver package for Microchip MCP2510
3010/25	Driver package for STMicroelectronics STR7
3010/33	Driver package for Silabs C8051F040
3010/35	Driver package for Atmel AT90CANxx
3010/39	Driver package for NXP LPC2129
3010/46	Driver package for BECK IPC SC1x3
3010/48	Driver package for Freescale MC56F823
3010/50	Driver package for can4linux
0570/12	J1939 Stack Integration Support
0580/10	CAN-RE*port*-W (Windows™)
0580/20	CAN-RE*port*-L (LINUX™)
0580/12	CAN-RE*port* J1939 Extension

Functional demo versions of the CAN-analyzer CAN-RE*port* with J1939 extension are available for download on http://www.canopen-tools.com

Engineering Services

port is providing engineering services and trainings for our business activities:

- CAN and CAN-based protocols: CANopen, J1939, DeviceNet
- Industrial Ethernet Protocols: POWERLINK, EtherNet/IP, EtherCAT
- Implementation of devices according to CANopen device profiles
- VHDL based solutions for industrial applications
- application specific implementations or enhancements
- embedded LINUX projects

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