



J1939 Protocol Stack

SAE J1939 Support for esd CAN Boards and SoC with CAN Support

Features

- All SAE J1939 communication mechanisms supported (except bridge function)
- Full support for the transport protocols ('TP-BAM'/'TP-CM') to transmit larger blocks of data
- Quick software development due to convenient functions: e.g. sending PGN data automatically done by transport protocol when necessary, callback functions for incoming requests
- Automatic handling of address claiming procedures by callback functions: all four address configuration types possible.
- Pre-filtering of messages according to PGN and source address
- Parallel communication with several ECUs
- Support of cyclic transmission of PGN data
- Support for multiple physical CAN ports
- Support for multiple logical devices on the same physical CAN port
- Source code license also available:
 - Easy adaptation to other target systems due to modular structure of the J1939 protocol with well defined abstraction layers
 - Written in ANSI-C
 - For big/little endian systems, CPU independent
 - Many settings can be adapted to the requirements of the application and the available hardware resources by simple configuration files at compile time

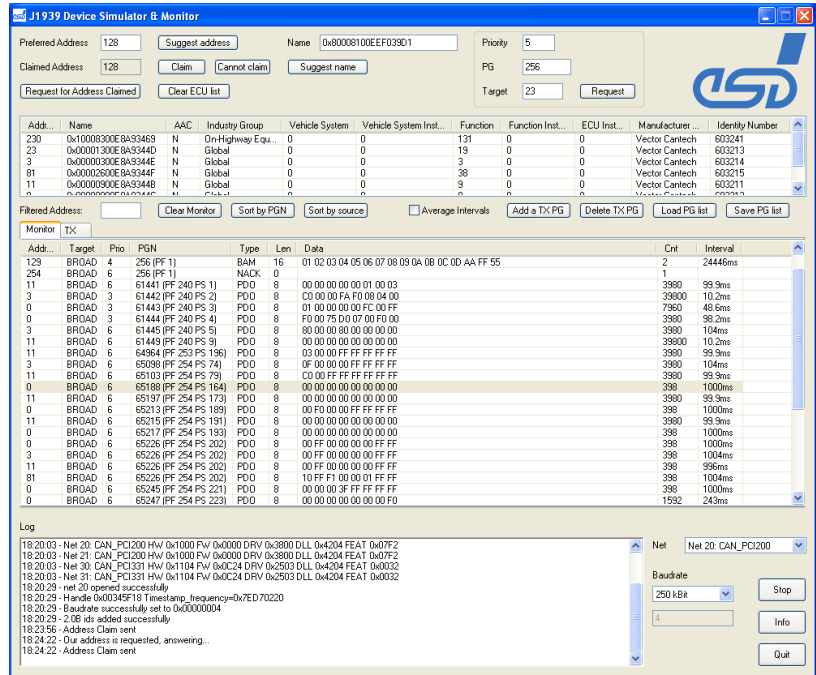


Figure: Screenshot of J1939 DSM (Device Simulation and Monitor) program

Requirements:

Object Licence

- Hardware:
 - esd CAN module supporting 29-bit CAN-ID (NTCAN-API compatible), e.g.
 - CAN-USB/2
 - CAN-PCIe/200
 - CAN-PCI/405
 - CPCI-405
 - CAN-PCI/400
 - CAN-PCIe/400
 - PMC-CAN/400
 - CPCI-CAN/400
- Operating system:
 - Windows, Linux, other OS like QNX or VxWorks on request

Source Code Licence

- Hardware:
 - Embedded CPU with CAN controller and timer
- CAN implementation:
 - own, or as additional service by esd for 16 bit and 32 bit controllers (e.g. NXP LPC2292 or Fujitsu MB90543)

J1939 Starter Kit:

- USB CAN-Controller (esd CAN USB/2) with driver license
- J1939 Stack object license (library) with examples
- CANreal monitor and simulation tool incl. J1939 plug in
- J1939 DSM (Device Simulation and Monitor) program
- Example source code

Tools:

CANreal Monitor and Simulation Tool

(for Windows and esd CAN Hardware only)

- Display and recording of CAN message frames with high resolution time stamps
- Protocol interpreter e.g. for J1939
- Supports message ID filtering
- Multiple instances of the software on the same or different channels can run at the same time
- Supports transmission of user defined CAN message frames

Tools (continued):

J1939 DSM (Device Simulation and Monitor) Program

- Simulates a J1939 ECU
- Multiple instances of the software on the same or different channels can run at the same time
- Monitors complete PGN traffic on the bus
- Tx messages can be set up for cyclic transmission or for transmission on request only
- Transmission of PGN can be triggered manually
- Manually sending of requests
- Log shows all user interaction and anomalies in the J1939 protocol parsing
- Supported operating system:
 - Windows, Linux (as GTK+ application)

Order information:

Designation	order no.
J1939 Stack for Windows (object code, runtime licence) for esd CAN hardware as Win32 library, incl. CANreal, J1939 plug in, J1939 DSM, esd CAN Windows driver licence, example source code	C.1130.10
J1939 Stack for Linux (object code, runtime licence) for esd CAN hardware as shared library (32/64 bit), incl. J1939 DSM (32/64 bit), esd CAN Linux driver licence, example source code	C.1130.11
J1939 Stack (source code, project licence) for microcontrollers (SoC with CAN support)	C.1130.15
J1939 Starter Kit CAN-USB/2 interface module, complete wiring for two CAN nodes, incl. J1939 Stack for Windows (order no. C.1130.10)	C.1130.09