



Industries



Highlights

- ✓ High-quality and very cost-efficient solutions for your J1939 development
- ✓ Reduced development risks, lowered development costs and shorter time to market
- ✓ Comprehensive product portfolio for all phases of development:
 - Highly modular protocol stacks
 - Powerful tool-set enables cross product configuration and code generation
 - PC/CAN interfaces and Windows driver APIs

For further information visit:
www.ixxat.com/j1939

IXXAT offers a comprehensive, cost-effective tool chain for SAE J1939 applications. This ranges from protocol software, analysis and configuration tools to Windows API-based testing devices.

Thanks to the definition of all relevant parameters for the complete tool chain by the SAE J1939 designer, J1939 solutions from HMS enable you to significantly increase the development speed by avoiding errors caused by inconsistent data sets. In addition to ready-to-use products, HMS offers global support as well as engineering services with its team of experienced engineers. Our services are ranging from technology introductions and software adaptations up to complete turn-key developments of SAE J1939 devices, including the delivery of OEM hardware.

SAE J1939 Protocol Software

With the cross-platform SAE J1939 Protocol Software J1939 devices can quickly and easily be developed. All communication mechanisms defined in the SAE J1939 specification (except for the bridge functionality) are available, which means that developers can fully concentrate on their application.

The software is available for various CPUs and in three variants:

- **Micro** for 8-bit systems with limited resources
- **Single Channel** for solutions with one CAN channel

- **Multi Channel** for solutions using more than one J1939 network

In addition, extension packages for diagnostic, NMEA 2000 and ISO 15765-2 are offered.

The J1939 protocol software is implemented in ANSI-C and is independent of the CAN controller, CPU and operating system (where available).

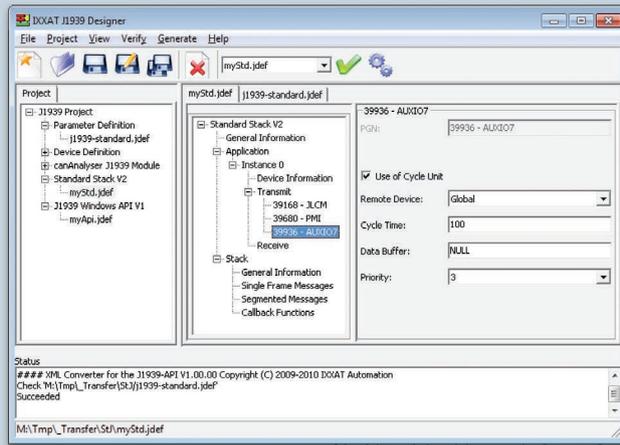
The adaption to the hardware is made via the CAN driver package, which serves as the basis for the J1939 protocol software (single/multi channel) and also contains the abstraction modules for the CPU and operating system. The driver is available for various CAN controllers.

SAE J1939 Designer

With the SAE J1939 Designer, IXXAT offers an editor and code generator for J1939 projects. It is used to produce J1939 network descriptions and to generate code and configuration files for the various IXXAT J1939 products.

The SAE J1939 Designer is the tool for central configuration of all relevant parameters via XML files, C header files and application templates for the J1939 protocol software as well as configuration files for the J1939 API and J1939 canAnalyser.

The Designer includes a database of all standard J1939 messages (PGNs). User defined messages can be easily added to this database.



SAE J1939 Designer

SAE J1939 API

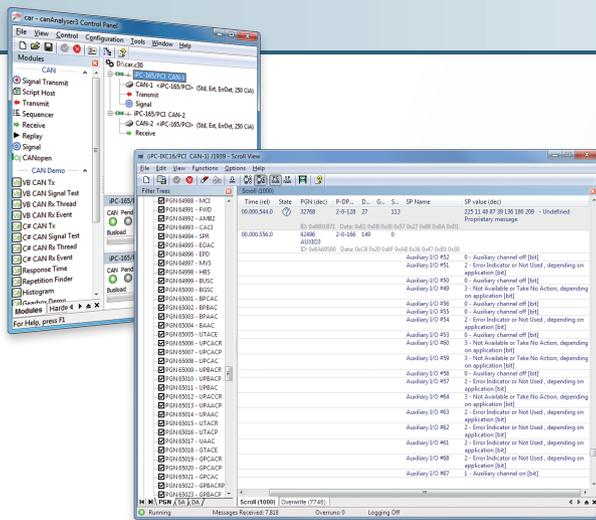
The SAE J1939 API is a Windows DLL which is based on the IXXAT J1939 protocol software. It can be used for the development of PC-based SAE J1939 service and test applications.

The programming interface uses the IXXAT VCI driver (Virtual Communication Interface) and is therefore available for all IXXAT

PC/CAN interfaces. Via various programming interfaces, the languages C/C++ and Python are available to users for programming a J1939 application (e.g. automated test routines for EOL or endurance tests). Examples of C, C++ and Python are included in the scope of supply of the software.

Product	SAE J1939 Protocol Software	SAE J1939 API for Windows	SAE J1939 Designer
Description	Software package for the development of J1939 devices	DLL for the development of J1939 service and test applications	Editor and code generator for J1939 projects
Included functions	Transmission and reception of application specific messages (confirmed and unconfirmed) Processing of the J1939 transport protocols for large data blocks (message/node oriented) Simultaneous communication with multiple nodes Support of the "address claiming" procedure Cyclical transmission and reception of messages with timeout monitoring Optional: <ul style="list-style-type: none"> ■ ISO 15765-2 extension ■ NMEA2000 extension ■ J1939 CAN driver ■ Diagnostics Extension 	Supports all the features of the protocol software Automatic conversion of received messages into signals and vice versa Use of the J1939 designer data base for signal interpretation Supports multiple CAN channels and therefore also J1939 networks	Definition of parameters (SPNs), messages (PGNs) and devices Configuration of the J1939 protocol software (generation of H- and C-files) Configuration of the J1939 API for Windows Configuration of the J1939 canAnalyser module Storage of the configuration as XML file
Order number	Single Channel Version: 1.02.0351.00000 Multi Channel Version: 1.02.0351.00001 Micro Version: 1.02.0286.TTDDC J1939 CAN Driver: 1.02.0350.00TTT ISO 15765-2 Extension: 1.02.0352.00000 (requires Multi Channel) NMEA2000 Extension: 1.02.0353.00000 (requires Multi Channel) Diagnostics Extension (J1939-73): 1.02.0354.00000 (requires Multi Channel)	1.02.0287.00000	1.02.0360.00000





canAnalyser for SAE J1939

The canAnalyser from HMS enables simple analysis of SAE J1939 and CAN networks as well as stimulation of equipment and entire systems. At this, the optional SAE J1939 module for the canAnalyser supports all definitions specified in the SAE J1939 standards. It is also possible to add your own signal definitions. This enables comprehensive analysis of SAE J1939 networks and the standards built upon them.

➔ For detailed information please see our brochure “canAnalyser” or visit our webpage.

PC/CAN Interfaces

The IXXAT PC/CAN interfaces enable PC applications to access CAN and SAE J1939 networks – both, for IXXAT tools and for customer specific applications based on the SAE J1939 API, VCI or ECI.

Beside a wide range of supported PC interface standards, from plug-in cards (e.g. PCI, PCIe, PCIe Mini, PMC, PCIe 104) to USB, Bluetooth and Ethernet, there are also PC interfaces in low-cost passive or active variants with powerful on-board controllers. All interfaces are offered with an optional galvanic isolation and are designed for 24/7 operation in rugged environments.

➔ For detailed information please see our brochure “PC/CAN interfaces” or visit our webpage.



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