

# neoVI FIRE

## Multi-Protocol Vehicle Network Interface

### neoVI FIRE: 6x CAN, 4x LIN

Today's vehicles are pushing the limits in the number of CAN and LIN networks they use. The neoVI FIRE addresses the issue by providing six channels of CAN and four channels of LIN in one tool. All channels run simultaneously and are timestamped in hardware. A fully isolated USB interface allows a PC to send and receive messages without worry of damage.

### Standalone Logging, Scripting, and Simulation

In addition to working as a PC interface, the neoVI FIRE supports standalone operation. In this mode, the neoVI FIRE can run real-time scripts, log data to a removable microSD card, and simulate ECUs and gateways. Using these features, it is possible to run a script to reflash ECUs using the data from the microSD card.



### neoVI DLL, J2534, Linux, and RP1210 Support

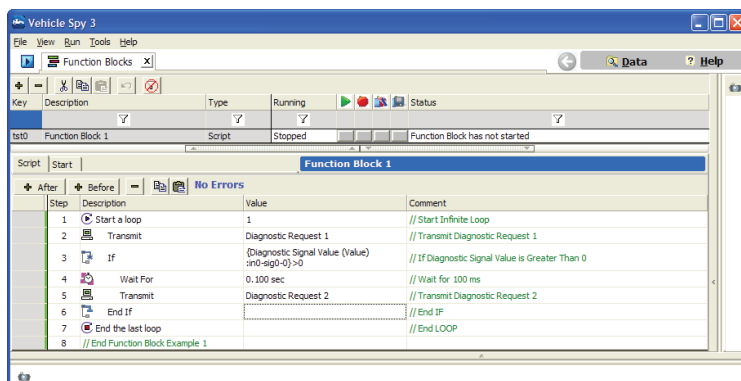
Some users prefer to write their own software. In response to this need, the neoVI FIRE supports three open APIs: neoVI DLL, SAE J2534, and TMC RP1210 A/B. The neoVI DLL API includes examples for all popular development environments, including C#, VB .NET, VB6, Delphi, C++ Builder, Visual C++, LabVIEW, and LabWindows. Examples and drivers for Linux are also available.

### Vehicle Spy Application Software

Vehicle Spy software fully supports the neoVI FIRE. With Vehicle Spy, users can monitor and transmit on all neoVI FIRE networks simultaneously. Vehicle Spy is used (and required) to configure standalone mode; users can take advantage of the powerful interface to load databases and to write and debug scripts before downloading them to the device.

### Hardware-in-the-Loop Real-Time Performance

The neoVI FIRE includes a real-time scripting engine that can be used to perform real-time messaging. For example, someone creating an application can load a script into the hardware and interface with the script variables, allowing microsecond-level measurement and control. Through a new feature called hardware acceleration, Vehicle Spy can also be configured to send real-time functions to the device such as periodic messaging, replaying, or scripting.



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## Logging Features

The neoVI FIRE is capable of logging to a removable microSD card, using real-time, fail-safe FAT32 storage for reliability and PC compatibility. The neoVI FIRE also has a real-time clock for hardware timestamping of all messages. Finally, a robust power management system automatically powers down the neoVI FIRE and can wake it again based on network activity or the connection of a PC.

## General Purpose I/O and Expansion

The neoVI FIRE has six general purpose I/O lines. Each line can be programmed to a digital input or output, and four can be analog inputs. All of these I/O lines can be measured or controlled by both the PC host application and the embedded real-time scripting engine. For example, very precise timing measurements can be made using a script for I/O to network message timing applications.

### Device Specifications

- neoVI 3G architecture: over 10x the performance of previous devices
- 3 DSPs and 1 RISC processor for 125 MIPS of processing power
- Power consumption (typical): 150 mA @ 14.4V DC
- Sleep power consumption (typical): 12 mA @ 12.0V DC
- Power supply: 6.5-27V operation (physical layers non-functional under 6.5 V)
- Dual user notification LED (red and green)
- Temperature Range: -40°C to +85°C
- Vehicle Connectors: 25-pin male D-sub and 9-pin Male D-sub
- One-year limited warranty
- Field-upgradeable flash firmware
- General Purpose I/O: 6 MISC I/O (0-3.3V), 4 configurable as analog
- General Purpose I/O rate report interval: 10 Hz to 1 kHz or based on digital change
- Microsoft-certified USB drivers
- Isolated USB
- Standalone mode, including scripting, receive messages, transmit messages, expressions, I/O, and transport layers
- J2534 and RP1210 A/B compatible for CAN/ISO15765, Keyword, and ISO9141.
- microSD card slot support for up to 32 GB of storage (or up to the limit of newer SDHC cards); removable card is formatted using FAT32 for direct use in a PC
- Battery-backed real-time clock (RTC).

### Timing Specifications

- 64-bit timestamping to an accuracy of 10 microseconds on CAN and LIN networks with no overflow
- Accuracy of 0.5 microseconds possible if using only one network
- Simultaneous operation on all CAN/LIN networks.
- Transmit message double-buffering on all networks, allowing back-to-back message transmission

## Ordering Information

Part Number	Description
NEOVI-FIRE	neoVI FIRE with Vehicle Spy Trial

Specifications subject to change; please contact Intrepid for the latest information. All trademarks are the property of their respective owners.

### Network Specifications – CAN

- 6x CAN Channels
- 4 dedicated ISO11898 Dual Wire CAN physical layer (TJA1040)
- 1 dedicated ISO11519 Low Speed Fault Tolerant CAN physical layer (TJA1054A)
- 1 dedicated Single Wire CAN physical layer GMW3089 / SAE J2411 (MC33897)
- CAN 2.0B Active
- Up to 1 Mb/s software-selectable baud rate (auto baud capable)
- Graphical bit time / baud rate calculator
- Listen-only mode support
- High Speed Mode, Test Tool Resistor, and High Voltage Wakeup support

### Network Specifications – LIN

- 4x LIN (Local Interconnect), ISO9141, Keyword 2000, or K and L Line
- Full support for LIN 1.X, 2.X and J2602
- LIN J2602 / 2.X compatible physical layer
- Software enabled 1K LIN Master Resistor per channel
- LIN Bus Monitor Mode identifies errors: Sync Break Error State and Length, Sync Wave Error, Message ID parity, TFrameMax/Slave Not Responding, Checksum Error and Transmit Bit Errors.
- LIN Bus Master Mode operates at same time as LIN Bus Monitor
- LIN Bus Slave simulation – with or without an LDF file
- LIN Bus hardware schedule table with support for LIN diagnostics
- UART-based state machine
- Only first channel supports L
- Programmable timing parameters, including Inter-Byte, TX Inter-Frame, RX Inter-Frame and Initialization Waveforms (0.5 ms Resolution)
- Initialization waveforms including Fast Init, Five Baud, and Custom
- Software-selectable baud rate
- Software enabled 512 K resistor (channel one only)

### Network Specifications – CGI

- 1x GM CGI
- Software-enabled (disables LIN channel 2)
- Programmable bit rate (625 K, 115.2 K and others)
- Full block mode message reception only
- Transmission option available in CGI Simulation Toolkit

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