

neoVI FIRE 2

Multi-Protocol Vehicle Network Interface

neoVI FIRE 2 Features

- 8x CAN FD
- 4x LIN
- Ethernet: DoIP/XCP
- All channels run simultaneously and are timestamped in hardware
- Fully isolated high-speed USB interface allows PC to safely send and receive messages



Stand-Alone Logging, Scripting, Gateways, and Simulation

In addition to working as a PC interface, the neoVI FIRE 2 can operate in standalone mode. It can run real-time scripts, log data to a removable microSD card, and simulate ECUs and gateways. With these features, it is possible to run a script to reflash ECUs using data from the microSD card.

neoVI DLL, J2534, Linux, and RP1210 Support

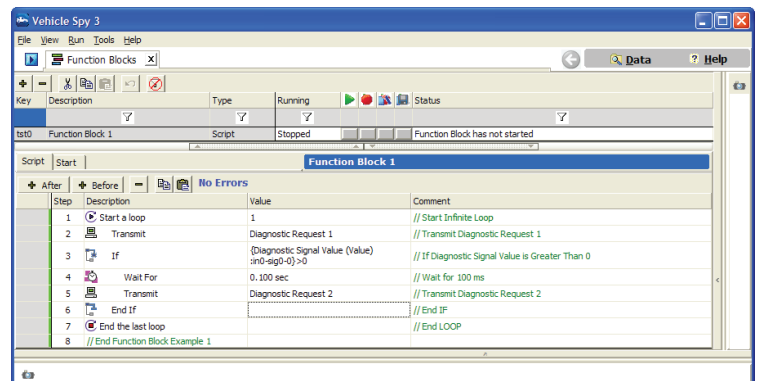
Since some users prefer to write their own software, neoVI FIRE 2 supports three open APIs: neoVI DLL API, SAE J2534 API, and the TMC RP1210 A/B API. The neoVI DLL API includes examples for all popular development environments, including C#, VB .NET, VB6, Delphi, C++ Builder, Visual C++, LabVIEW, and LabWindows. Examples and drivers for both Windows and Linux are also available.

Vehicle Spy Application Software

Intrepid's Vehicle Spy software fully supports the neoVI FIRE 2. With Vehicle Spy, users can monitor and transmit on all neoVI FIRE 2 networks simultaneously. Vehicle Spy is 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 2 includes a real-time scripting engine that can be used to perform real-time messaging. For example, an engineer 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.



INTREPID
CONTROL SYSTEMS
www.intrepidcs.com

1850 Research Drive
Troy, MI 48083 USA
Phone: +1 (586) 731-7950
Fax: +1 (586) 731-2274



www.aeta-rice.com

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Logging Features

The neoVI FIRE 2 is capable of logging to a removable microSD card, using real-time, fail-safe FAT32 storage for reliability and PC compatibility. The neoVI FIRE 2 also has a real-time clock for hardware timestamping of all messages. Finally, a robust power management system automatically powers down the neoVI FIRE 2 and can wake it again based on network activity or the connection of a PC.

The Evolution of the Original neoVI FIRE

While the neoVI FIRE 2 was developed primarily to provide new vehicle networks and features, it also provides significant improvements over its successful predecessor, the original neoVI FIRE. These include a more robust case and connectors, much larger script space, SD card data offload over USB, the ability to power the device from USB during configuration, support for a larger voltage range, and an expanded voltage range on MISC I/O channels.

Device Specifications

- Fourth-generation neoVI architecture: over 10x the performance of earlier devices
- Low power consumption
- Power supply: 4.5-40V operation
- LED membrane keypad: 10 full-color LEDs indicate network status; 2 LEDs for legacy status; 2 user buttons
- Temperature range: -40°C to +85°C
- On-board UPS power supply for safe shutdown of data logger
- Vehicle connectors: 26-pin male HD D-sub and 9-pin micro D-sub
- One-year limited warranty
- Field-upgradeable flash firmware
- General purpose I/O: 2 MISC IO (0-40V); can be configured as analog/PWMIO
- General purpose I/O rate report interval: 10 Hz to 1 kHz, or based on digital change
- Microsoft-certified USB drivers
- USB host for neoVI MIC GPS or powering RAD-Moon accessory
- Isolated high-speed (480 Mb/s) USB
- Standalone mode, including scripting, receive messages, transmit messages, expressions, I/O and transport layers
- J2534 and RP1210 A/B compatible for CAN / ISO15765-2:2016 (CAN FD)
- microSD card slot support for up to 128 GB of storage (or the limit of newer SDHC cards); card formatted using FAT32 for PC compatibility
- Battery-backed real-time clock (RTC)
- Dimensions: 1.38" × 3.44" × 5.44" (3.51 × 8.74 × 13.82 cm)

Timing Specifications

- 64-bit timestamping to an accuracy of 25 nanoseconds on CAN FD networks and 10 microseconds on 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-FIRE2	neoVI FIRE 2 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

- 8x ISO CAN FD channels implemented using the industry standard Bosch MCAN CAN FD core
- CAN 2.0B compatible for all CAN Networks
- Software selectable between ISO CAN FD and non-ISO CAN FD (BOSCH CAN FD)
- 6 Dedicated ISO11898 Dual Wire CAN FD physical layers (MCP2561FD)
- 2 CAN with CAN mode and 3 software-selectable PHY options
- DW CAN mode: 2 dedicated ISO 11898 Dual Wire CAN FD physical layers (MCP2561FD)
- LSFT CAN mode: 2 Low Speed Fault Tolerant CAN physical layers (TJA1055)
- SW CAN mode: 2 Single Wire CAN physical layers GMW3089 / SAE J2411(MC33897)
- Up to 1 Mb/s software-selectable baud rate for arbitration phase (auto baud capable)
- Up to 8 Mb/s software-selectable baud rate for data phase (auto baud capable)
- Listen-only mode support
- Single Wire High Speed Mode, Test Tool Resistor, and High Voltage Wakeup support
- Four software programmable DW CAN termination circuits

Network Specifications – LIN

- 4x LIN (Local Interconnect)
- 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
- Software-selectable baud rate

Network Specifications – DoIP / XCP / Automotive Ethernet

- 10/100 Ethernet PHY with low power mode
- Compatible with 100BASE-T1 / BroadR-Reach® via RAD-Moon Ethernet media converter accessory
- Software-controlled DoIP activation line

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Fax: +1 (586) 731-2274



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