neoVI FIRE 3

The Most Advanced Multi-Protocol Vehicle Interface, Gateway and Data Logger

Vehicle Network Interface plus Data Logging System with CAN FD and Ethernet

16x CAN FD, 8x LIN, 3x Ethernet Interfaces

The neoVI FIRE 3 is the most advanced multi protocol vehicle network interface and data logger available. The neoVI FIRE 3 has 16x CAN FD networks, up to 8x LIN networks, 2x 1 Gb 10/100/1000BASE-T, 1x 10/100BASE-Tx.

All networks run simultaneously and are hardware time-stamped. A fully-isolated high-speed ethernet interface allows messages to be sent and received without risk of damage to the networks or your computer.

Features

- 16x DW CAN / CAN FD channels
- 8x software enabled CAN termination
- 8x LIN channels
- 2x SW CAN*
- 2x LSFT CAN*
- 2x DoIP activation line
- 2x 1 Gb 10/100/1000BASE-T, 1x 10/100BASE-Tx for use with DoIP, XCPoE and more
- 2x Full-size SD card slots. SD 3.0 compatible and supporting up to 2 terabytes of total storage. Up to 800 Mbps logging performance. (1x 32 GB SD card included standard)
- Real Time Clock for hardware timestamping of all messages and backup at 25ns
- Internal dual-band 802.11a/b/g/n WiFi, Secure Bluetooth SPP, and Bluetooth BLE with software selectable internal or external antenna
- 10x Programmable tri-color LEDs show link, error, and activity status
- Membrane buttons built into device case can be programmed to trigger data logs or other events
- 9 DOF IMU (accelerometer, gyroscope and magnetometer)
- Internal extended temperature battery facilitates safe shutdowns
- High precision GPS with external GPS antenna
- Buzzer

Features Available in Future

- 1x USB Type-A connector for accessories such as RAD-IO2 or neoVI MIC2 manual trigger
- 4x General Purpose MISC IO
- Instant wake on 2 CAN FD channels
- Intrepid Security Module provides hardware cybersecurity and embedded C Code capability
- Generalized Precision Timing Protocol (gPTP)
- HD video recording via IP Cameras
  - Supports AXIS P-Series and F-Series cameras
  - Supports HD cameras @ 720p and up to 30 FPS
- Up to 4 terabytes of storage with 2x 2 TB SD Cards
- External modem support (RAD-4G)

*Two configurable channels can be configured to support a choice of SW CAN, LSFT CAN, LIN, or DoIP activation

INTREPID CONTROL SYSTEMS
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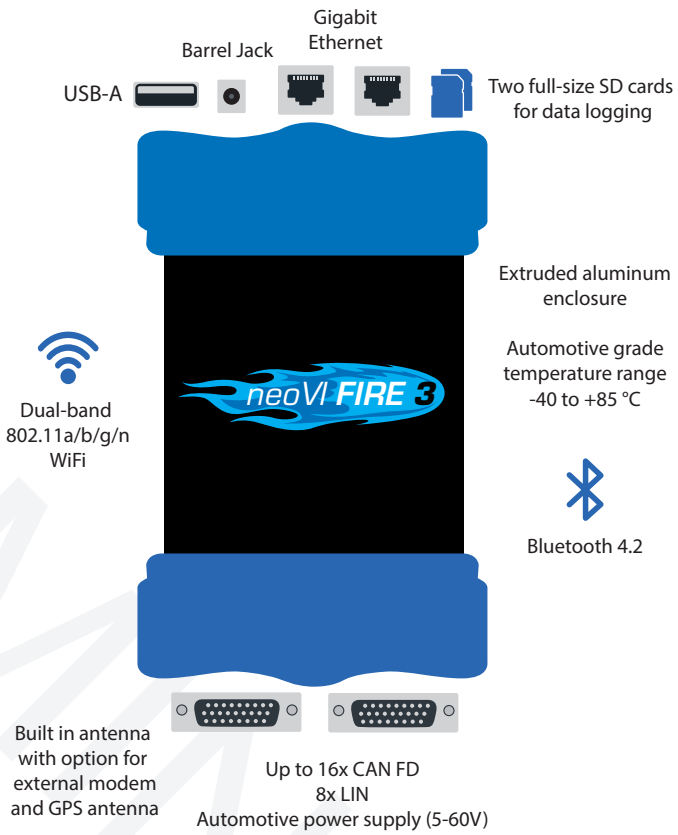
Applications

- Vehicle network tool
- Standalone data logger
- Wireless data logger with auto-download via WiFi or Ethernet
- Standalone ECU or vehicle simulator
- In-Vehicle data acquisition system
- Captive test fleet data collection
- Fleet management
- Vehicle pass-through interface support with J2534 and RP1210 (GM DPS, GM SPS, Ford DET, DiagRA, Chrysler CDA, etc.)



Standalone Logging, Scripting, and Simulation

In addition to working as a vehicle network adapter, the neoVI FIRE 3 can also operate in standalone mode. It can run real-time scripts, log data to two removable full-size SD cards, and simulate ECUs and gateways -- all simultaneously! It is also possible to run a script to reflash ECUs standalone, without a computer, using data from the SD card.

The neoVI FIRE 3 is capable of logging to two full-size SD cards, using real-time, fail-safe FAT32 storage for reliability and PC compatibility.

The neoVI FIRE 3 also has a real-time clock for hardware timestamping of all messages. A robust power management system automatically powers down the neoVI FIRE 3 and it wakes up again based on network activity or the connection of a PC.

The Power of Scripting – CoreMini

If you need to support a proprietary protocol, set up a simulation to run in parallel with the data logger, or any other custom action, the CoreMini scripting environment allows for you to expand the base functionality to fit your unique needs. This makes the entire system very flexible and adaptable.

Remote Connectivity and Location Services

The neoVI FIRE 3 has an onboard dual-band 802.11a/b/g/n WiFi, Secure Bluetooth SPP, and Bluetooth BLE. In addition, the neoVI FIRE 3 has a 10 Hz GPS accurate to within 2.5 meters. GPS is provided both as a fleet management tool and within the data logging session for correlating location to your test data.

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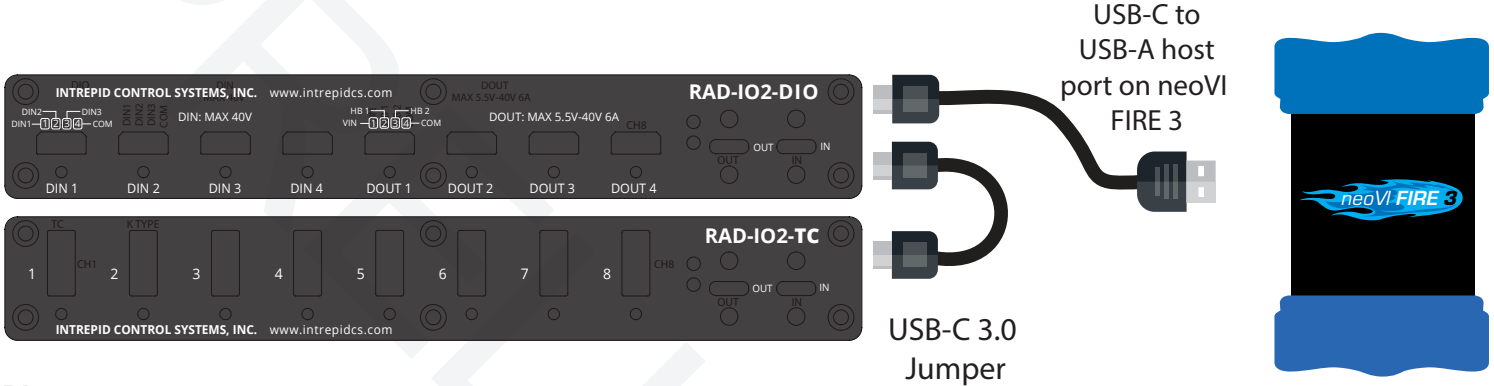
RAD-IO 2 Device Support

The neoVI FIRE 3 can also be paired with the ruggedized RAD-IO2 products to provide an isolated GPIO and thermocouple interface. A direct connection to the neoVI FIRE 3 via USB can gather GPIO and vehicle network data simultaneously. The RAD-IO2 Series can also be connected to the neoVI Fire 3's unused CAN/FD network directly using the RAD-IO2 CAN-Hub. Up to four RAD-IO2 devices can be daisy-chained. The chain length is limited by the current supplied to the chain through USB or the CANHUB.



Pinout

HD26-1

1	MISC 1
2	DW CAN 4 L
3	DW CAN 5 L
4	DW CAN 1 L
5	DW CAN 8 L
6	DW CAN 2 L
7	DW CAN 3 L
8	DW CAN 6 L
9	MISC 2
10	GND
11	MISC 3
12	DW CAN 4 H
13	DW CAN 5 H
14	DW CAN 1 H
15	DW CAN 8 H
16	DW CAN 2 H
17	DW CAN 3 H
18	DW CAN 6 H
19	VBAT
20	MISC 4
21	DW CAN 7 L
22	LIN 01 / ISO K 01
23	LIN 02
24	EXT WAKE
25	ETH 01 ACTIVATE
26	DW CAN 7 H

HD26-2

1	ETH 03 TX+
2	DW CAN 12 L
3	DW CAN 13 L
4	DW CAN 09 L
5	DW CAN 16 L
6	DW CAN 10 L
7	DW CAN 11 L
8	DW CAN 14 L/ LSFT CAN 10L
9	ETH 03 TX-
10	GND
11	ETH 03 RX+
12	DW CAN 12 H
13	DW CAN 13 H
14	DW CAN 09 H
15	DW CAN 16 H
16	DW CAN 10 H
17	DW CAN 11 H
18	DW CAN 14 H/ LSFT CAN 01H/ SW CAN 02/ LIN 08
19	VBAT
20	ETH 03 RX-
21	DW CAN 15 L/ LSFT CAN 02 L
22	LIN 03 / ISO K 02
23	LIN 04
24	LIN 05
25	ETH 01 ACTIVATE
26	DW CAN 7 H

Antenna

1	Wi-Fi
2	NC
3	GPS
4	Wi-Fi DIVERSITY

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Protocol Support

- OBD
- J1939: Includes J1939 DBC, BAM, RTS/CTS
- UDS (ISO 14229):
  - Services include $19, $22, $23, $2A, $2C
  - DBC, A2L (ASAP2 File), GDX, MDX, ODX support
- CCP: Includes A2L (ASAP2 file) and ROB support
- XCP: Includes A2L (ASAP2 file) and ROB support

Networks / Inputs

- 16 x Dual wire CAN (all baud rates supported)
  - 14x Dedicated Classical CAN / CAN FD
  - 2x switchable to SW CAN, LSFT CAN, or LIN
- 8x LIN / K Line / KW2K / ISO 9141
  - 6x Dedicated LIN
  - 2x switchable to SW CAN, LSFT CAN, or LIN
- 3x Ethernet Interfaces
  - 2x RJ-45s available directly on the neoVI FIRE 3 device
  - 1x RJ-45 port additionally available when utilizing provided adapter cable at 100 Mbps

Device Specifications

- Low power consumption
- Comatose: 500 microamps
- Fast wake: 70 milliamps
- Power supply: 5-60V operation
- LEDs: 10 programmable tri-color LEDs
- 2 LEDs for legacy status; 2 user buttons
- Temperature range: -40°C to +85°C
- On-board UPS for safe shutdown of data logger
- Dimensions: 13.60cm by 11.22cm by 3.97cm
- LEDs (user programmable): 10 programmable tri-color LEDs
- SD card: 2 card slot support for up to 2 TB of storage; card
- formatted using FAT32 for PC compatibility
- DAQ Ethernet
- Vehicle connectors: 26-pin male HD D-sub
- One-year limited warranty
- Field-upgradeable flash firmware
- General purpose I/O: 4 MISC IO (0-40V); can be configured as analog/PWM IO
- General purpose I/O rate report interval: 10 Hz to 1 kHz, or based on digital change
- USB host for RAD-IO2 or neoVI MIC2
- Standalone mode for use in scripting, receiving messages, transmitting messages, expressions, I/O and transport layers
- J2534 and RP1210 A/B compatible for CAN / ISO15765-2:2016 (CAN FD)
- Battery-backed real-time clock (RTC)

Timing Specifications

- 64-bit timestamping to an accuracy of 25 nanoseconds on all networks
- Simultaneous operation on all CAN/LIN networks
- Transmit message double-buffering on all networks, allowing back-to-back message transmission

Network Specifications – CAN

- 16 x ISO CAN FD channels
- CAN 2.0B compatible for all CAN networks
- 16 dedicated ISO 11898 Dual Wire CAN FD physical layers (TJA1043)
- 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

Network Specifications – LIN / K Line / KW2K / ISO 9141

Up to 8x LIN (Local Interconnect Network)

- 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
- Initialization Waveforms, including Fast Init, Five Baud, and Custom
- Software-selectable baud rateInitialization Waveforms, including Fast Init, Five Baud, and Custom
- Software-selectable baud rate

Ordering Information

Part Number	Description
NEOVI-FIRE3	neoVI FIRE 3 with Vehicle Spy Trial

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

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