neoVI FIRE 3

The Most Advanced Multi-Protocol Vehicle Interface 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
- 16x 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 64 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

- 6 DOF IMU (accelerometer, gyroscope)
- 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
www.intrepidcs.com

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

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www.aeta-rice.com

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Applications

- Vehicle Network Tool
- Standalone data logger
- Wireless Data logger with auto-download via Wi-Fi 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 system offers a scripting environment for you to expand the base functionality to fit your unique needs. This makes the entire system very flexible and adaptable.

Remote Connectivity GPS Location

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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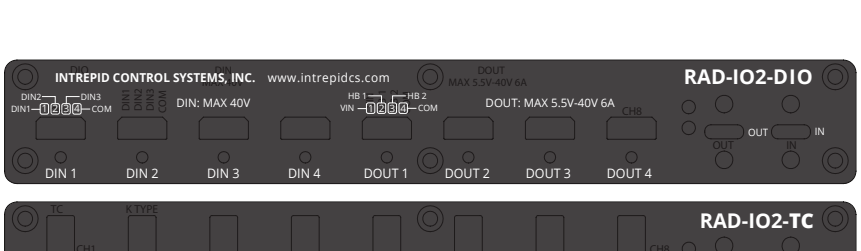
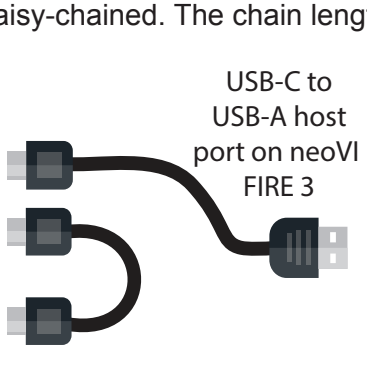
RAD-IO 2 Device Support

The neoVI Fire 3 can also be paired with the ruggedized RAD-IO2 products to provide an isolated GPIO and thermocouple interface. This can be connected directly to the neoVI Fire 3 to 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 devices can be daisy-chained. The chain length is limited by the current supplied to the chain through USB or the CANHUB.





HD26 Pinout

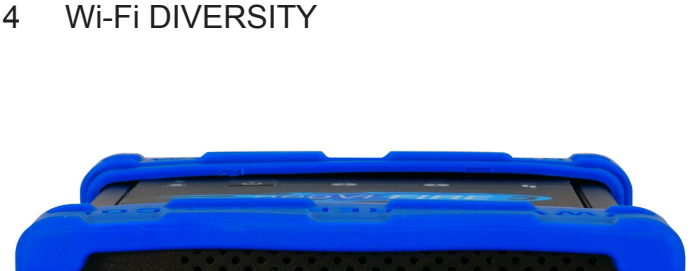
1	MISC 1
2	DW CAN 4 L
3	DW CAN 5 L
4	DW CAN 1 L
5	DW CAN 8 L
6	DW CAN 2 L
7	DW CAN 3 L
8	DW CAN 6 L
9	MISC 2
10	GND
11	MISC 3
12	DW CAN 4 H
13	DW CAN 5 H
14	DW CAN 1 H
15	DW CAN 8 H
16	DW CAN 2 H
17	DW CAN 3 H
18	DW CAN 6 H
19	VBAT
20	MISC 4
21	DW CAN 7 L
22	LIN 01 / ISO K 01
23	LIN 02
24	EXT WAKE
25	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 02 ACTIVATE/ LIN 06
26	DW CAN 15 H/ LSFT CAN 02 H/ SW CAN 01/ LIN 07

Antenna

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



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Protocol SupportSupport

- 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 ISO11898 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-FIRE 3	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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