

neoOBD 2 PRO

Open Platform OBD Interface for Automotive Enterprise IoT

*You know IOT, and Intrepid knows how to get automotive data.
The neoOBD 2 Pro is the key to combining these knowledge areas.
Getting automotive data in a form ready for IoT has never been easier.*

Open Wireless MCUs with Full Access to Vehicle Networks

The neoOBD 2 PRO is designed to be an open platform wireless OBD adapter. It is equipped with programmable Wi-Fi and Bluetooth BLE modules, and also has a Bluetooth Classic SPP module. You have complete access to raw vehicle network data within these modules, via secure APIs that interface to Intrepid's proven CAN, LIN and Ethernet drivers. You have the ability to provide the vehicle network data over Wi-Fi, Bluetooth BLE and Bluetooth Classic SPP to other wireless and mobile devices.



Features

- 4x CAN FD
- 1x SW CAN
- 2x LIN / K-Line
- 1x Ethernet: DoIP/XCP
- Open Wi-Fi and BLE MCUs to host your automotive IoT applications
- Intrepid's secure API provides complete access to all vehicle network data from Wireless MCUs
- Wi-Fi MCU examples available for Amazon IoT, DropBox, Microsoft Azure IoT and IBM Watson IoT
- General purpose engineering tool for OBD, enabling a wide array of applications such as data logging, simulation and gatewaying
- Prototype new cybersecurity solutions for vehicle networks
- Unique dual-OBD connector architecture
- Supports ELM327 protocol emulation

Applications

- OBD 2 interface to Wi-Fi, BLE, and SPP mobile devices
- OBD 2 interface to automotive IoT platforms and custom servers
- Wireless data logger
- Secure OBD gateway for OEMs
- General purpose engineering tool for OBD



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neoOBD 2 PRO

The Freedom to Create your own Automotive IoT Solution

The SimpleLink™ Wi-Fi CC3200 Wi-Fi module inside the neoOBD 2 PRO is compatible with popular IoT platforms such as Amazon AWS, Microsoft Azure IoT, IBM Watson IoT and any other platforms and servers based on secure protocols such as HTTPS, SSL/TLS and MQTT. Examples and tutorials are available to help you start your next automotive IoT project.

Vehicle Spy Application Software

Intrepid's Vehicle Spy software fully supports the neoOBD 2 PRO. With Vehicle Spy, users can monitor and transmit on all neoOBD 2 PRO 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.

Standalone Logging, Scripting, Gateways and Simulation

In addition to working as a PC interface, the neoOBD 2 PRO can operate in standalone mode. It can run real-time scripts, log data to internal flash memory, and simulate ECUs and gateways. These features also make it possible to run a script to reflash ECUs using data from flash memory.

Device Specifications

- Low power consumption
- Power supply: 4.5-40V operation
- Four full-color status LEDs
- Temperature range: -40°C to +85°C
- Vehicle connectors: 16-pin OBD 2 male and 16-pin OBD 2 female
- One-year limited warranty
- Field-upgradeable flash firmware
- Microsoft-certified USB drivers
- USB Type-C Host for neoVI MIC GPS or powering accessories like a Raspberry PI drawing up to 3A at 5V
- High speed (480 Mb/s) USB interface
- Standalone mode support, 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)
- On-board 64 MB flash storage
- Battery-backed real time clock (RTC)
- Dimensions: 1.10" × 2.36" × 4.19" (2.80 × 6.00 × 10.65 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
NEO-OBD2PRO	neoOBD 2 PRO device

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

Network Specifications – CAN

- 4x ISO CAN FD channels implemented using the industry standard Bosch MCAN CAN FD core
- CAN 2.0B compatible for all CAN networks
- 4 dedicated ISO11898 Dual Wire CAN FD physical layers (MCP2562FD)
- 1 dedicated Single Wire CAN physical layer GMW3089 / SAEJ2411 (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

Network Specifications – LIN, ISO9141, Keyword 2000 or K and L Line

- 2x 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 rate

Network Specifications – DoIP / XCP / Automotive Ethernet

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

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