CANedge2: 2x CAN Bus Data Logger (SD + WiFi + GPS/IMU)

Functionality

The device functions as a standalone CAN bus data logger, equipped with an SD card for storage, two CAN/LIN channels, WiFi connectivity, and integrated GNSS/IMU for high-precision data acquisition.

Firmware and Support

Users can access free firmware updates, ensuring ongoing enhancement of features and performance. The product is backed by a one-year warranty and high-quality, responsive support.

Configuration

Configuration is managed through files based on a widely adopted, open source JSON schema, offering flexibility and compatibility.

Software Ecosystem

- A free, open source editor tool supports both offline and online configuration of the device.
- The open source CANcloud telematics platform allows users to manage devices and data via a web browser.
- Multiple tools are available for mounting an S3 server as a local drive, simplifying access to stored data.
- asammdf software and API (open source and free) enable editing, DBC file conversion, and plotting of MF4 data files.
- MF4 log file converters allow simple drag-and-drop conversion to formats like CSV, ASC, or TRC.
- An open source Python API is provided for automated data processing, reporting, and integration with other systems.
- Open source telematics dashboards enable visualization of DBC-decoded data in a browser.

Safety and Compliance

The device meets various safety and compliance standards, including CE-RED, FCC, IC, RoHS, ECE R10 (automotive EMC), WPC ETA (India), RCM (Australia), and ICASA (South Africa). For Korea and Japan, a certified 'PB' variant with an internal WiFi antenna is available (KC, GITEKI).

Origin

The device is manufactured in Denmark.

CAN Bus Specifications

- Two CAN channels, including CAN FD support
- ISO 11898 compliant, with speeds up to 1 Mbit/s (CAN) and 5 Mbit/s (CAN FD)
- Supports numerous protocols: J1939/FMS, CANopen, NMEA 2000, OBD2, CAN FD, UDS, and more
- Compatible with CAN specifications 2.0A (11-bit ID) and 2.0B (29-bit ID)
- Bit rate can be set manually or auto-detected
- Frame retransmission is configurable
- Transceiver protection: ±16 kV HBM ESD, ±15 kV IEC ESD, ±70 V bus fault, short circuit, ±30 V common mode input, TXD dominant timeout

LIN Bus Specifications

- Two LIN channels, each configurable as a subscriber or publisher
- Support for custom frame lengths and LIN data transmission
- Compliant with LIN 2.0 up to 20 Kbit/s, classic and enhanced checksums
- Transceiver protection: ±8 kV HBM ESD, ±1.5 kV CDM, ±58 V bus fault, TXD dominant timeout

Data Logging

- Includes an 8 GB extractable Class 10 industrial micro SD card (optional 32 GB)
- Records data from up to 2 CAN channels and 2 LIN channels simultaneously
- Real-time clock with 50 microsecond resolution and battery backup, configurable to local time zones or auto-synced via WiFi or CAN message
- Data logged in binary MF4 format, with options for file compression and encryption
- Supports advanced triggers, cyclic logging, silent modes, and multiple ID filters
- Enables logging of error frames, remote frames, and custom prescaling
- Unique device ID ensures distinct log file naming
- Log file split size and cyclic logging are configurable for storage management

WiFi Connectivity

- Supports station mode for connecting to WiFi access points
- Data transfers via HTTP/HTTPS for secure, stable telematics uploads
- Up to four prioritized WiFi access points can be configured
- Over-the-air configuration and firmware updates supported
- External SMA antenna included for robust signal range
- Compatible with IEEE 802.11 b/g/n (2.412–2.472 GHz)
- Data upload can be enabled or disabled via configuration
- Supports integration with S3-compatible cloud servers and web server interface for browser-based SD card access

WiFi Security

- Supports HTTPS (TLS 1.2) for secure data and firmware transfers
- WPA/WPA2 security protocols
- WiFi and S3 credentials can be encrypted on the device SD card
- Digitally signed firmware updates
- User and device access rights can be customized through S3 policies

GNSS & 3D IMU

- Professional-grade u-blox NEO-M9V module with gyroscope and accelerometer
- Supports GPS (USA), Galileo (Europe), BeiDou (China), and GLONASS (Russia)
- Sensor fusion (UDR) for enhanced positioning—up to 3x accuracy compared to GNSS-only receivers
- Improved GNSS performance in challenging environments
- GNSS antenna required for operation
- High-precision measurements: position (2.0 m CEP), heading (0.3°), pitch (0.4°), roll (0.6°), velocity (0.08 m/s)
- Frequent signal updates, configurable parameters, and comprehensive signal set (position, time, speed, altitude, attitude, odometer, acceleration, geofence status)

Data Parameters

- GNSS/IMU data is encoded as CAN messages within log files
- Message content and frequency can be customized, with options for conditional recording

Electrical Specifications

- Input supply: +7V to +32V DC via Channel 1 DB9 connector
- Low power consumption (~1 W)
- Includes reverse voltage and transient event protection

Mechanical Specifications

- Compact aluminum enclosure: 75 x 47 x 20 mm, 100 grams
- WiFi and GPS antennas included
- Mounting flanges with four M3 screw holes
- Two standard D-sub 9 (DB9) connectors; optional OBD2/J1939 adapters available
- Channel 2 can supply 5V power to external modules
- Six external LEDs indicate logger status: Power, CH1, CH2, Memory, WiFi, GNSS
- Operating temperature: –25°C to +70°C
- IP Rating: 40