CANedge1: 2x CAN Bus Data Logger (SD + RTC)

General Features

- Functionality: Operates as a standalone CAN bus data logger with SD card storage and dual CAN/LIN channels, including CAN FD support.
- Firmware: Free firmware updates available to add features.
- Configuration: Utilizes configuration files following the widely adopted open-source JSON schema format.
- Software:
- Open source editor tools for device configuration (available both online and offline).
- asammdf software and API for editing, DBC conversion, and MDF4 data plotting.
- MF4 converters for easy drag-and-drop log file conversion (e.g., CSV, ASC, TRC formats).
- Python API for automated data processing, reporting, and integration.
- Telematics dashboards for browser-based visualization of DBC-decoded data.

Safety and Compliance: Certified to CE, FCC, IC, RoHS, ECE R10 (automotive EMC), and KC (Korea) standards.

Warranty & Support: Comes with a one-year warranty and free, high-quality support.

Origin: Manufactured in Denmark.

CAN Bus Capabilities

- Channels: Two CAN channels with CAN FD support.
- Standards: Compliant with ISO 11898, supporting both standard CAN (up to 1 Mbit/s) and CAN FD (up to 5 Mbit/s payload rate).
- Protocols: Able to log raw data from protocols such as J1939/FMS, CANopen, NMEA 2000, OBD2, CAN FD, and UDS.
- Identifiers: Supports CAN specifications 2.0A (11-Bit ID) and 2.0B (29-Bit ID).
- Bit-Rate: Can be auto-detected or set manually.
- Retransmission: Configurable retransmission for frames lost in arbitration or due to errors.
- Transceiver Protection:
- ±16 kV HBM ESD and ±15 kV IEC ESD protection
- ±70 V bus fault tolerance, short circuit, and ±30 V common mode input voltage
- TXD dominant timeout prevents network blocking in case of failure

LIN Bus Capabilities

- Channels: Two LIN channels, each configurable as a subscriber or publisher with support for data transmission.
- Custom Frame Lengths: Supported.
- Standards: Compliant with LIN 2.0, up to 20 Kbit/s, supporting both classic and enhanced checksum formats.
- Transceiver Protection:
- ±8 kV HBM ESD and ±1.5 kV CDM
- ±58 V bus fault tolerance
- TXD dominant timeout feature for preventing network blocks

Data Logging Features

- SD Card: Includes an extractable 8 GB Class 10 industrial micro SD card (SDHC), with an optional 32 GB upgrade. Read speed up to 80 MB/s.
- Parallel Logging: Simultaneous recording from up to two CAN and two LIN channels.
- Real-Time Clock (RTC):
- Provides date and timestamping of CAN frames with 50 microsecond resolution; battery backup included.
- RTC can be configured for local time zones (default is UTC) and auto-synced via CAN messages (e.g., using precise GNSS timestamp).

Log File Format & Conversion: Stores data in industry-standard binary MF4, with easy conversion to formats such as CSV, ASC, pandas, or MATLAB.

Data Compression: Embedded log file zipping for 50–80% size reduction.

Silent Mode: Can be set to restricted (acknowledge only) or monitoring (zero transmission) modes.

Filtering & Prescaling:

128/64 regular/extended ID filters per channel (range, mask, acceptance, rejection, prescaling).

Prescale CAN frames by time or by data changes.

Transmit Function: Transmit lists of CAN frames per channel, supporting single-shot and periodic transmissions.

Gateway Routing: Data can be routed between CAN and LIN channels, with optional ID remapping.

Error Logging: Logs CAN and LIN error frames, including bit-stuffing, form, CRC, bit, acknowledgement (CAN), and checksum, receive, synchronization, transmission errors (LIN).

Remote Frame and Cyclic Logging Support: Supports logging and transmission of remote CAN frames, and optional cyclic logging (deletes oldest file when SD card is full).

Advanced Triggers & Heartbeat: Custom triggers for start/stop logging, heartbeat CAN frame with device status, storage, and RTC time.

File Management: Configurable log file split by size (1–512 MB) or time period (0–86,400 seconds).

Power-Safe Logging: 100% power-safe; no file corruption on power loss.

Unique Device ID: Each device carries a globally unique ID for unique log file naming.

Data Encryption: Option to encrypt log files at rest to meet security, GDPR, and CCPA requirements.

Electrical Specifications

- Input Supply: Accepts +7V to +32V DC via Channel 1 DB9 connector.
- Power Consumption: Very low (~1 W), preventing battery drainage risks.
- Protection:
- Reverse voltage protection on CAN bus supply.
- Transient voltage event protection on supply lines.

Mechanical and Physical Characteristics

- Enclosure and Weight: Compact aluminum enclosure, 75 x 47 x 20 mm (excluding flanges), weighing 100 grams.
- Flanges: Equipped with flanges featuring four M3 screw holes (head diameter < 6 mm). Compatible with the CANedge mounting kit.
- Connectors: Two standard D-sub 9 (DB9) connectors; optional adapters (OBD2, J1939, etc.) available.
- Pin-Out: Refer to the product manual for DB9 pin-out details.
- Configurable Power Out: Channel 2 can provide 5V to external modules (e.g., CANmod sensor-to-CAN modules).
- Status LEDs: Four external LEDs indicate power, CH1, CH2, and memory status.
- Operating Temperature: Parts rated from -25°C to +70°C.
- IP Rating: Rated IP40.