

CSS Electronics

Danish developer & manufacturer of CAN hardware

DK DANISH DESIGN: Devices are designed from scratch by our Danish engineers

ISO US PRODUCTION: PCBs are assembled by our ISO 9001 US partner. EOL finalized in DK

100+ GLOBAL: We ship globally and our products are used across 100+ countries

<24H SUPPORT: We are known for extremely fast, high quality technical support

5K+ REACH: Devices are used by 5,000+ companies and trusted by top tier OEM engineers

CO2 CO2 NEUTRAL: We offset 100% of our CO2 emissions incl. production & shipping

CAN bus data loggers - simple-to-use. pro specs. interoperable.

Your data, your way. Easily log CAN data from your vehicle / machine - and extract it via SD, WiFi or 3G/4G. Process the interoperable data in your favorite tools - or via 100% free open source software/APIs.

Perfect for vehicle telematics, OEM development, diagnostics and more.

We offer two series of CAN bus data loggers: The CLX000 and CANedge. Further, we offer the CANmod sensor-to-CAN modules.



CLX000 - low cost CAN logger & interface

The CLX000 lets you log CAN data to an SD card in CSV format and process it via the free software tools. Further, you can stream data in real-time via USB on your PC for e.g. reverse engineering and diagnostics purposes.

The CLX000 is ideal if you need a basic CAN logger, while also being able to stream data in real-time via USB.



The CANedge is our 2nd gen data logger. It combines ease-of-use with cutting-edge specs and powerful configurability. The time stamped data can be processed in your favorite tools - or via 100% free open source software/APIs.

The CANedge1 is recommended for pure data logging use cases.

The CANedge2/CANedge3 is ideal if you need to collect data via WiFi/LTE - e.g. pushing data to your server from a fleet of assets.





CANmod - sensor-to-CAN modules

The CANmod is a series of 'sensor-to-CAN' modules that output e.g. GNSS/IMU or thermocouple data. The modules integrate with any CAN bus system - meaning you can use them standalone to inject CAN data into e.g. a vehicle/machine CAN bus.

You can also use them as add-on modules for any CAN logger/interface - incl. In particular as add-ons for the CANedge.













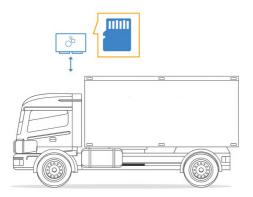








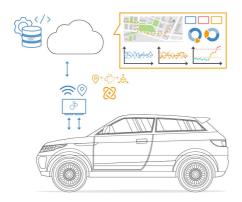




Rare issue identification

Need to identify a rare, but critical issue?

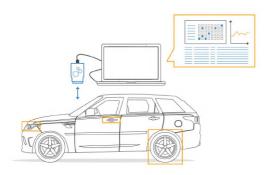
If you have e.g. production equipment that periodically exhibts an issue the CANedge1 is a great diagnostics tool. Simply connect it and leave it in. If the issue occurs, you can extract the raw data, DBC convert it and plot it for quick diagnostics.



Warehouse fleet management

Need to monitor a fleet of AGVs/forklifts in a warehouse?

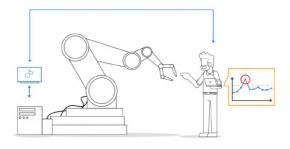
For site managers/OEMs, the CANedge2 can collect data from AGV/forklift fleets e.g. for optimizing battery management. The device has strong WiFi range, can upload via multiple WiFi access points - and can store data on your local/dedicated/cloud server.



Vehicle 'black box'

Need to monitor data from your vehicle fleet?

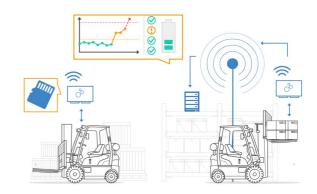
The CANedge1 is ideal for recording data over long periods from fleets - incl. cars (via OBD2) and heavy-duty vehicles (via J1939). With filters, compression & cyclic logging you can log years of data. Ideal for e.g. warranty/legal data storage or optimization.



Vehicle telematics

Need to monitor & optimize a vehicle fleet in near real-time?

For 'on-road' upload of data, the CANedge3 can upload data via 3G/4G to e.g. your own AWS S3 cloud server. Alternatively, the CANedge2 can upload data when the vehicle periodically returns to e.g. a garage WiFi network. Ideal for OBD2 logging, truck fleet management, predictive maintenance and more.



Reverse engineering proprietary data

Want to reverse engineer proprietary data parameters?

You may need to reverse engineer proprietary CAN data as part of e,g, creating dashboards or custom applications. The CLX000 lets you use both data logging and USB streaming as part of decoding exercises. Further, our free Wireshark plugin provides useful tools for reverse engineering CAN data.





















CLX000

Low cost CAN logger & interface



PLUG & PLAY: Log data out-the-box. Standalone. Power via CAN connector



STREAM: Send/receive CAN data in real-time to PC via USB in SavvyCAN (DBC support)



STANDALONE: Log CAN data to 8-32 GB SD card (no PC needed). RTC (CL2000)



FREE SOFTWARE: All software is 100% free. DBC convert data via simple Windows GUI tool



COMPACT: Only 7 x 4 x 2 CM. 50G. 3 LEDs. Mini USB port for SD extraction + streaming



LOW COST: Lowest cost CAN logger & interface on the market

The plug & play CLX000 is a simple-to-use CAN logger. The device logs CAN data to an 8-32 GB SD card or streams it via USB to a PC.

For the CL2000, data is date & time stamped via a real-time clock with battery backup.

The CLX000 is used in blackbox logging, reverse engineering or simple telematics use cases. For logging or WiFi/LTE use cases, see also the '2nd generation' CANedge series.

Compact CAN logger + interface

The CLX000 lets you both log raw CAN data to an 8-32 GB SD card and/or stream it via USB in real-time:

- Power via DB9 connector (<1W power consumption)
- Auto-detect bit rate no configuration required
- Log raw CAN data in simple CSV format
- Easily extract data from the SD card via USB
- Configure device via simple CONFIG.INI file or editor
- Silent mode, filters, transmit lists, cyclic logging
- Timestamp data via real-time clock (CL2000)
- Stream data in real-time via USB in SavvyCAN
- Transmit custom data with real-time control
- DBC convert logged/streamed data via free software

Technical specs

GENERAL

CE, FCC, IC certified Safety Warranty 1-year warranty

Free, fast & high quality support Support

Denmark Origin Software 100% free

Online/PDF <u>documentation</u> Documentation

CAN BUS

Channels 1 x CAN (Classical)

Protocols J1939, OBD2, CANopen, NMEA2000, ...

DATA LOGGING

SD CARD 8-32 GB SD card (extract via USB)

Real-Time Clock 1 ms resolution (CL2000) File format CSV-style plain text format

Safety 100% power safe

Simple configuration options Configuration

USB STREAMING

Send/receive raw/decoded CAN data Stream

MECHANICAL/SUPPLY

1 x DB9 (adapter cables available) Connectors

+7V to +32V DC via DB9 Input supply

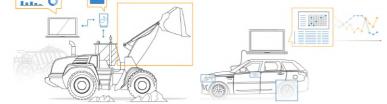
Consumption <1W

Dimensions 66.7 x 42.7 x 23.5 mm (L x W x H)

Weight

LEDs 3 LEDs (PWR, DATA, MEM) Temperature -20 degC to +65 degC

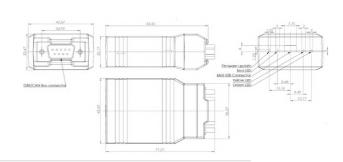
IP rating IP40



Send/receive data in real-time via USB

With the free SavvyCAN software, it's easy to send/receive CAN data via USB. View raw traces, DBC decoded signals or create visual plots. The software also adds powerful reverse engineering tools.

























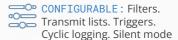


CANedge1

2xCAN/LIN Data Logger (SD + RTC)



PLUG & PLAY: Log data out-the-box. Standalone. Power via CAN connector





PRO SPECS: Extractable 8-32 GB SD. 2xCAN/LIN. CAN FD. Zero data loss. 50 µs RTC



FAST & SECURE: Industrial SD card. Data encryption for GDPR/CCPA. Compression



COMPACT: Only 8 x 5 x 2 CM. 100G. Alu enclosure. 4 LEDs. Configure CH2 5V power out



INTEROPERABLE: Convert MDF4 to e.g. CSV, ASC, TRC. Free open source GUI/API

The plug & play 2xCAN/LIN logger records timestamped CAN data (Classical/CAN FD) to the extractable 8 GB industrial SD card.

It's easy-to-use: Simply power the device via your CAN connector to start logging raw data. Extract the data and process it using 100% free open source MDF4 software/API tools - or convert it to your favorite log file format (Vector ASC, PEAK TRC, CSV, ...).

The CANedge1 is ideal for logging of CAN/LIN systems over long periods - e.g. for OEM R&D, diagnostics or legal purposes.

New: The CANedge1 is now available with optional GPS/IMU.

Pro specs CAN logger - at half the cost

The CANedge1 combines innovative design, cutting-edge components - and incredibly low costs:

- Dual high speed CAN/LIN (incl. CAN FD) channels
- Extractable 8-32 GB industrial SD card (months of data)
- Binary MDF4 log file format (extensive tool support)
- Advanced message filtering & transmit functionality
- Start/stop logging triggers based on CAN ID & databytes
- Silent mode, bit rate auto-detection, cyclic logging
- CAN/LIN error frame logging
- Data compression & encryption (e.g. for GDPR, CCPA)
- Fast boot time. Safely disconnect during use



Open source software/API - naturally

All software/APIs for the CANedge is 100% free and open source.

Data is stored in the popular MDF4 standard to enable interoperability across CAN tools and custom systems.

Convert: Simple MDF4 converters let you convert data to e.g. CSV, ASC (Vector), TRC (PEAK) - for use in your favorite tools.

Process: The asammdf GUI lets you process your data incl. DBC conversion (J1939, OBD2, ...) and graphical plots (Windows/Linux).

Automate: Easy-to-use Python APIs let you automate processing of large amounts of data (incl. quickstart library on github).

Visualize: Easily visualize data in customizable dashboards

Technical specs

GENERAL

CE, FCC, IC certified Safety

Transients ISO 7637-2:2011 by TÜV SÜD Voltage tests

Warrantv 1-vear warrantv

Free, fast & high quality support Support

Origin Denmark

100% free & open source Software Online/PDF documentation Documentation

CAN BUS/LIN BUS

Channels $2 \times CAN/CAN FD + 2 \times LIN (master/slave)$ J1939, OBD2, CANopen, NMEA2000, FD, ... Protocols Bit-rate Auto-detect/simple/advanced customization

DATA LOGGING

SD CARD 8-32 GB extractable industrial micro SDHC 50 us resolution (incl. battery backup) Real-Time Clock MDF4 (.MF4) - easily process/convert File format

Safety 100% power safe

Configuration Advanced options (filters, prescalers, compression, error frame logging, data

encryption, triggers & more)

GNSS/IMU (optional)

GNSS/IMU Add 40+ GNSS/IMU signals (see deep dive)

MECHANICAL/SUPPLY

2 x DB9 (adapter cables available) Connectors +7V to +32V DC via Channel 1 DB9 Input supply

Consumption <1W

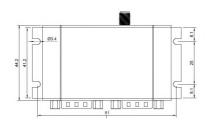
Dimensions 75 x 47 x 20 mm excl. antenna/flanges

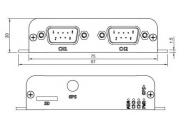
Weight

4-5 LEDs (PWR, CH1, CH2, MEM, GPS) **LEDs**

Temperature -25 degC to +75 degC

IP rating



























CANedge2

2xCAN/LIN Data Logger (SD + RTC + WiFi)



PLUG & PLAY: Log data out-the-box. Standalone. Power via CAN connector



SECURE WIFI: Push data via WiFi to your own server. Enterprise-grade security



PRO SPECS: Extractable 8-32 GB SD. 2xCAN/LIN. CAN FD. Zero data loss. 50 µs RTC



MANAGE FLEET: Easily update config/FW over-the-air across fleet. Auto-sync RTC via WiFi



COMPACT: Only 8 x 5 x 2 CM. 100G. Alu enclosure. 5 LEDs. Configure CH2 5V power out



INTEROPERABLE: Convert MDF4 to e.g. CSV, ASC, TRC. Free open source GUI/API

The plug & play 2xCAN/LIN logger records timestamped CAN data (Classical/CAN FD) to the extractable 8 GB industrial SD card.

The small device connects via WiFi access points (e.g. WLAN or 3G/4G routers) to securely push data to your server. Further, the device can be updated over-the-air. The CANedge2 is ideal for telematics & fleet management - as well as R&D field tests, diagnostics and predictive maintenance.

Software/APIs are free & open source - with no fees or lock-in.

New: The CANedge2 is now available with optional GPS/IMU.

Pro specs CAN logger - at half the cost

The CANedge2 combines innovative design, cutting-edge components - and incredibly low costs:

- Dual high speed CAN/LIN (incl. CAN FD) channels
- Extractable 8-32 GB industrial SD card (months of data)
- Binary MDF4 log file format (extensive tool support)
- Advanced message filtering & transmit functionality
- Start/stop logging triggers based on CAN ID & databytes Silent mode, bit rate auto-detection, cyclic logging
- CAN/LIN error frame logging
- Data compression & encryption (e.g. for GDPR, CCPA)
- Fast boot time. Safely disconnect during use



Open source software/API - naturally

All software/APIs for the CANedge is 100% free and open source.

Data is stored in the popular MDF4 standard to enable interoperability across CAN tools and custom systems.

Convert: Simple MDF4 converters let you convert data to e.g. CSV, ASC (Vector), TRC (PEAK) - for use in your favorite tools.

Process: The <u>asammdf GUI</u> lets you process your data incl. DBC conversion (J1939, OBD2, ...) and graphical plots (Windows/Linux).

Automate: Easy-to-use Python APIs let you automate processing of large amounts of data (incl. quickstart library on github).

Visualize: Easily visualize data in customizable dashboards

Technical specs

GENERAL

CE, FCC, IC certified Safety

Transients ISO 7637-2:2011 by TÜV SÜD Voltage tests

Warrantv 1-vear warrantv

Free, fast & high quality support Support

Origin Denmark

100% free & open source Software Documentation Online/PDF documentation

CAN BUS/LIN BUS

Channels $2 \times CAN/CAN FD + 2 \times LIN (master/slave)$ J1939, OBD2, CANopen, NMEA2000, FD, ... Protocols Bit-rate Auto-detect/simple/advanced customization

DATA LOGGING

File format

8-32 GB extractable industrial micro SDHC SD CARD 50 us resolution (incl. battery backup) Real-Time Clock

Safety 100% power safe

Configuration Advanced options (filters, prescalers,

compression, error frame logging, data encryption, triggers & more)

MDF4 (.MF4) - easily process/convert

GNSS/IMU (optional)

Add 40+ GNSS/IMU signals (see deep dive) GNSS/IMU

MECHANICAL/SUPPLY

2 x DB9 (adapter cables available) Connectors +7V to +32V DC via Channel 1 DB9 Input supply

Consumption < 1 W

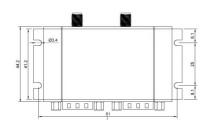
Dimensions 75 x 47 x 20 mm excl. antenna/flanges

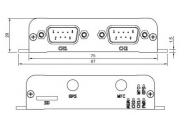
Weight

5-6 LEDs (PWR, CH1, CH2, MEM, WFI, GPS) **LEDs**

Temperature -25 degC to +75 degC

IP rating



























CANedge3

2xCAN/LIN Data Logger (SD + RTC + 3G/4G)



PLUG & PLAY: Log data out-the-box. Standalone. Power via CAN connector



SECURE 3G/4G: Push data via 3G/4G to your server. Update over-the-air. SIM. E2E security



PRO SPECS: Extractable 8-32 GB SD. 2xCAN/LIN. CAN FD. Zero data loss. 50 µs RTC



MANAGE FLEET: Easily update config/FW over-the-air across fleet. Auto-sync RTC via 3G/4G



COMPACT: Only 8 x 5 x 2 CM. 100G. Alu enclosure. 5 LEDs. Configure CH2 5V power out

INTEROPERABLE: Convert MDF4 to e.g. CSV, ASC, TRC. Free open source GUI/API

The plug & play 2xCAN/LIN logger records timestamped CAN data (Classical/CAN FD) to the extractable 8 GB industrial SD card.

The small device connects via 3G/4G (using your own SIM card) to securely push data to your server. Further, the device can be updated over-the-air. The CANedge3 is ideal for telematics & fleet management - as well as R&D field tests, diagnostics and predictive maintenance.

Software/APIs are free & open source - with no fees or lock-in.

New: The CANedge3 is available with GPS/IMU.

Pro specs CAN logger - at half the cost

The CANedge3 combines innovative design, cutting-edge components - and incredibly low costs:

- Dual high speed CAN/LIN (incl. CAN FD) channels
- Extractable 8-32 GB industrial SD card (months of data)
- Binary MDF4 log file format (extensive tool support)
- Advanced message filtering & transmit functionality
- Start/stop logging triggers based on CAN ID & databytes
- Silent mode, bit rate auto-detection, cyclic logging
- CAN/LIN error frame logging
- Data compression & encryption (e.g. for GDPR, CCPA)
- Fast boot time. Safely disconnect during use



Open source software/API - naturally

All software/APIs for the CANedge is 100% free and open source.

Data is stored in the popular MDF4 standard to enable interoperability across CAN tools and custom systems.

Convert: Simple MDF4 converters let you convert data to e.g. CSV, ASC (Vector), TRC (PEAK) - for use in your favorite tools.

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Automate: Easy-to-use Python APIs let you automate processing of large amounts of data (incl. quickstart library on github).

Visualize: Easily visualize data in customizable dashboards

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CAN BUS/LIN BUS

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DATA LOGGING

SD CARD 8-32 GB extractable industrial micro SDHC 50 us resolution (incl. battery backup) Real-Time Clock MDF4 (.MF4) - easily process/convert File format

Safety 100% power safe

Configuration Advanced options (filters, prescalers, compression, error frame logging, data

encryption, triggers & more)

GNSS/IMU

Add 40+ GNSS/IMU signals (see deep dive) GNSS/IMU

MECHANICAL/SUPPLY

2 x DB9 (adapter cables available) Connectors +7V to +32V DC via Channel 1 DB9 Input supply

Consumption

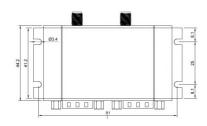
Dimensions $75 \times 47 \times 20 \text{ mm excl. antenna/flanges}$

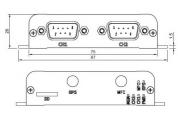
Weight

6 LEDs (PWR, CH1, CH2, MEM, LTE, GPS) **LEDs**

-25 degC to +75 degC Temperature

IP rating



























CANedge - GNSS/IMU details



GPS & 3D IMU - enrich your data

The CANedge comes with optional cutting-edge GNSS/IMU functionality - perfect for use cases like vehicle telematics.

- Add 40+ GNSS/IMU signals to your 2 x CAN/LIN data
- Full GNSS support (GPS, Galileo, BeiDou, GLONASS)
- Built-in gyroscope (roll, pitch, yaw) + accelerometer (X, Y, Z)
- High precision via sensor fusion incl. in GNSS hostile areas
- Signals encoded as 'internal' CAN data (separate channel)
- Configurable message inclusion/frequency (up to 5 Hz)
- DBC file for easy decoding to human-readable form
- Optionally sync the CANedge RTC via precise GNSS time
- Flexible deployment via external GNSS antenna

Technical specs (GPS & IMU)

GNSS & 3D IMU

Module u-blox NEO-M9V sensor module with built-in gyroscope and accelerometer GNSS Combine GPS, Galileo, BeiDou, GLONASS Sensor Fusion Up to 3x better accuracy incl. in GNSS (UDR) hostile areas (tunnels, urban) CAN encoding GNSS/IMU data output on 'internal' pseudo CAN channel encoded as CAN frames [5 Hz] Configurable Filter/prescale internal GNSS/IMU data Antenna GPS antenna as option (required for GNSS)

Signals

Position: Longitude and latitude Time: High precision timestamp Status: Fix type + satellite count Speed: Travel speed in m/s and km/h Altitude: Altitude in meters Roll, pitch, heading [automotives only] Distance traveled (since power on) 0-4 circular geofence statuses



The CANedge units with GNSS/IMU are ideal for vehicle telematics, diagnostics and analysis - with easy visualization in e.g. Grafana or asammdf













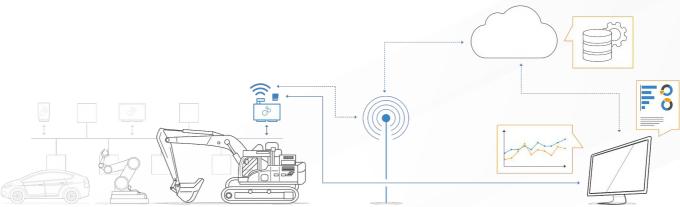








CANedge2/CANedge3 details



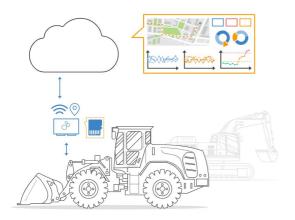
Reinventing telematics

Today, fleet telematics is vital across vehicles and machines.

However, end users face challenges: Expensive subscriptions. No data ownership. Security concerns. Vendor lock-in.

The CANedge2/CANedge3 provides a modern alternative:

- Upload data to your own local/dedicated/cloud server
- Add WiFi/SIM & server details to the config
- Log data to the SD. Auto-upload when connectivity
- Configure file splits to control upload frequency
- 100% secure: HTTPS, credential encryption and more
- Manage via over-the-air updates (FW & config)
- Zero fees. Zero lock-in. Interoperable. Open source tools



Technical specs (WiFi, 3G/4G, server)

WIFI or 3G/4G

Transfer modes Auto-push data to server from SD Protocol HTTP/HTTPS for fast, secure transfer Add 1-4 WiFi prioritized access points CANedge2 WiFi CANedge3 LTE Add your own micro SIM card Over-The-Air Configurable OTA firmware/config updates WiFi Heartbeat Device optionally sends periodic status LAN Standard IEEE 802.11 b / g / n (CANedge2) Antenna External (SMA)

Server Interface S3 REST - Use with AWS, MinIO, Azure, ...

HTTPS Data + OTA updates optionally via TLS 1.2 WPA/WPA2 Supports WPA/WPA2 Credentials Optionally encrypt WiFi/SIM/S3 passwords Firmware All firmware updates are digitally signed User Access Manage user access via S3 policies

Easily manage data/devices on your server

The device uploads data to an S3 server - which makes it easy to manage your server files via any S3-compatible tools or SDKs.

Further, the 100% optional CANcloud tool lets you manage your S3 server devices & data via your browser:

- Host yourself or simply log into your server via our link
- Monitor device status across your fleet via dashboard
- Browse, download, share & delete uploaded log files
- Easily update config/firmware over-the-air
- Browser based (works on all OS & devices)
- 100% free and open source easy to customize



The CANcloud status dashboard lets you monitor device data upload and their status (SD %left, firmware version, config status)























CANmod.gps

GPS-to-CAN with 3D Inertial Sensor & UDR



PLUG & PLAY: Standalone no PC required. Integrate with any CAN bus to add GNSS/IMU data. DBC included



INERTIAL DATA: Built-in gyroscope (roll, pitch, yaw) and accelerometer (X, Y, Z). 100 Hz frequency



COMPACT: Only 7 x 2 x 5 CM. 70G. Alu enclosure. 4 LEDs. 5-26 V DC via DB9. USB for config/firmware/stream



⊚+⊕+& SENSOR FUSION: High precision position and attitude data via sensor fusion of the GNSS/IMU



USE GLOBALLY: 1 Hz GNSS position. Hot start via battery backup. GPS, Galileo, BeiDou, **GLONASS**



___O

CONFIGURABLE: Configure CAN IDs, bit rate, data frequency & geofences via JSON config and GUI

This standalone GPS-to-CAN module produces GNSS position and 3D inertial data (via a gyroscope & accelerometer) and outputs it via configurable CAN bus frames.

The module supports 'Untethered Dead Reckoning' - meaning that even if the GNSS signal is lost entirely, the module can deliver continuous positioning through IMU-based estimates (no external inputs required).

You can integrate the module with any CAN bus, e.g. vehicle networks or CAN hardware. As an example, you can use it as a plug & play add-on module for the CANedge.

Incl. antenna. Optional adapters (dropdown).

Easily add GNSS/IMU data to any CAN bus

The CANmod.gps makes it easy to add position and 3D inertial data to your CAN bus - e.g. for use by ECUs or CAN hardware.

- Compatible with any high speed CAN bus (2.0A, 2.0B)
- Fully configure CAN IDs, bit rate and message frequency
- Power at 5-26 V DC via standard DB9 adapter cables Optionally record data via any CAN interface/logger/...
- Ex: Use as add-on for the CANedge (power via 2nd port)
- DBC included for decoding to human-readable form
- Optionally stream sensor data via USB in real-time
- White label e.g. for inclusion in your production



Technical specs

GENERAL

CE, FCC, IC certified Safety

Functionality The device produces GNSS/IMU data and

outputs it via CAN bus and/or USB

Warranty 1-year warranty

Support Free, fast & high quality support

Origin Denmark

Software 100% free & open source Documentation Online/PDF documentation

CAN BUS

1 x CAN/CAN FD Channels

Fully configurable (CAN 2.0A/2.0B) CAN TDs Bit-rate Fully configurable (up to 1 Mbit/s)

SENSOR GNSS/IMU

Battery Backup

Module NEO M8U (GNSS + gyro + accelerometer) Sensor Fusion Enhanced precision in GNSS hostile areas

Position: 2.5 m CEP Accuracy

Heading: 1 degree (50% at 30 m/s) Velocity: 0.05 m/s (50% at 30 m/s) Battery enables 'aided starts' (3s)

SIGNALS

CAN Signals Position: Longitude & latitude [1 Hz]

Time: Precise epoch timestamp [1 Hz] GNSS status and satellite count [1 Hz] Speed: Travel speed in m/s [1 Hz] Altitude: Altitude in meters [1 Hz] Attitude: Roll, pitch, heading [1 Hz] Distance since power on and total [1 Hz] Geofences: Status of geofences [1 Hz] IMU:Angular/acceleration rates [100 Hz]

MECHANICAL/SUPPLY

1 x DB9 (adapter cables available) Connectors +5V to +26V DC via DB9 (pin 1 or 9) Input sup /

Consumption

Dimensions 65 x 48 x 24 mm (L x W x H)

Weight

LFDs 4 external LEDs (PWR, CAN, MEM, SIG)

-25 degC to +70 degC Temperature

IP rating TP40

Antenna u-blc. ANN-MS-0-005 (magnetic base, 5m)





















CANmod.temp

4 x Thermocouple-to-CAN [Temperature Sensor]



PLUG & PLAY: Standalone no PC required. Integrate with any CAN to add temperature data. DBC included



PRECISE: High accuracy with cold-junction compensation & line frequency filtering. Fault detection



COMPACT: Only 7 x 2 x 5 CM. 80G. Alu enclosure. 3 LEDs. 5-26 V DC via DB9. USB for config/FW/stream

▼ TYPE USE ANY TYPE: Configure B, E, J, K, each thermocouple channel N, R, S, T type (B, E, J, K, N, R, S, T)



THERMOCOUPLES: Output data from 4 thermocouples at 5 Hz. High signal resolution of 0.01 degC

CAN IDs, bit rate, message frequencies and more via JSON config and GUI

This thermocouple-to-CAN module produces temperature data from 4 thermocouple sensors and outputs it via CAN bus (standalone) or USB.

The module supports all thermocouple types (B, E, J, K, N, R, S, T) and can be easily daisy-chained.

You can integrate the module with any CAN bus system - e.g. to provide temperature data for your ECUs or existing CAN hardware.

As an example, you can use the module as an add-on for the CANedge - ideal for e.g. engine dynos, EGT analysis or temperature telematics.

Probes not included.

Add temperature data to any CAN bus

Add temperature sensor data via 4 thermocouples to your CAN bus - e.g. for use by ECUs or CAN hardware.

- Compatible with any high speed CAN bus (2.0A, 2.0B)
- Fully configure CAN IDs, bit rate and message frequency
- Daisy-chain multiple modules for 8, 12, 16, ... channels
- Power at 5-26 V DC via standard DB9 adapter cables
- Optionally record data via any CAN interface/logger/...
- Ex: Use as add-on for the CANedge (power via 2nd port)
- DBC included for decoding to human-readable form Optionally stream sensor data via USB in real-time
- White label e.g. for inclusion in your production

Example: Log/stream sensor data

The CANmod.temp is often used as an 'add-on' for the CANedge. This setup lets you record e.g. vehicle data via Channel 1 and temperature data via Channel 2. The data can be easily DBC decoded via e.g. the asammdf GUI, Python or MATLAB.

You can also stream the sensor data in real-time via USB using SavvyCAN to view raw/decoded data (e.g. via plots) - ideal for validating your setup pre-deployment or for lab testing.

Technical specs

GENERAL

CE, FCC, IC certified Safetv

Functionality Supports 4 x thermocouples for outputting

temperature data via CAN and/or USB

Warranty 1-year warranty

Support Free, fast & high quality support

Origin

Software 100% free & open source Documentation Online/PDF documentation

CAN BUS

1 x CAN/CAN FD Channels

CAN TDs Fully configurable (CAN 2.0A/2.0B) Fully configurable (up to 1 Mbit/s) Bit-rate

SENSOR TEMPERATURE

Module Pro specs MAX31856MUD+

Channels 4 thermocouple sensors/channels Supports -210°C to +1800°C Temperature

DegC via automated edge linearization Formatting Lab-grade with cold junction compensation Accuracy

Up to 0.01 degC resolution Resolution 0ther

Line frequency filtering, fault detection, overvoltage protection

SIGNALS

CAN Signals Probe temperatures in deaC [5 Hz]

Ambient temperature [5 Hz]

Faults: Status of each sensor [5 Hz]

MECHANICAL/SUPPLY

Connectors 1 x DB9 (adapter cables available) Input supply +5V to +26V DC via DB9 (pin 1 or 9)

Consumption <1W

Dimensions 65 x 48 x 24 mm (W x L x H)

Weight

LEDs 3 external LEDs (PWR, CAN, MEM)

Temperature -25 degC to +70 degC

IP rating

























CANmod.input

Analog/Digital/Pulse to CAN Bus Converter



PLUG & PLAY: Standalone no PC required. Integrate with any CAN bus to add input sensor data. DBC included

+DIGITAL: Digital input reading of each channel. 1 kHz. Configure low/high/hysteresis



COMPACT: 7 x 2 x 5 CM. 70G. 8 LEDs. 5-26 V DC via DB9. 3.3V excitation signals. USB for config/FW/stream

+PULSE: Pulse input reading of each channel. 16 kHz. Frequency or counter mode (up to 32 bit)



8 X ANALOG: 8 analog input channels (1 kHz, 10 bit). Configurable voltage ranges (0-0.625V to 0-10V)

□OD CONFIGURABLE: Configure sensors, CAN IDs, bit rate, frequencies and more via JSON config and GUI

This sensor-to-CAN module produces analog, digital & pulse measurements from 8 input channels - and outputs the data via CAN bus. The module is 100% standalone, no PC required.

The compact device offers pro specs incl. high accuracy and high-frequency sampling - as well as configurable input ranges and digital thresholds.

The module integrates with any CAN bus to provide data for ECUs or CAN tools. For example, you can use the module as an add-on for the CANedge.

Optionally add the DB25-to-input adapter.

Easily add analog/digital/pulse data to any CAN bus system

Add analog/digital/pulse data via 8 input channels to your CAN bus e.g. for use by ECUs or CAN hardware.

- Powerful parallel sampling of analog/digital/pulse signals
- Configure input range for optimal resolution/amplification
- Configure digital high/low levels incl. optional hysteresis
- Quickly connect sensors via DB25-input adapter cable
- Optionally output signals via CAN FD for fewer frames
- Daisy-chain multiple modules for 16, 24, 32, ... channels
- Dedicated excitation signal for input sensors (~3.3 V)
- Power device at 5-26 V DC via standard DB9 adapter cables
- Optionally record the data via any CAN interface/logger/... DBC included for easy decoding to human-readable form
- Optionally stream sensor data via USB in real-time



Example: Log/stream sensor data

The CANmod.input is often used as an 'add-on' for the CANedge. This setup lets you record e.g. vehicle data via Channel 1 and analog/digital/pulse data via Channel 2. The data can be easily DBC decoded via e.g. the asammdf GUI, Python or MATLAB.

You can also stream the sensor data in real-time via USB using SavvyCAN to view raw/decoded data (e.g. via plots) - ideal for validating your setup pre-deployment or for lab testing.

Technical specs

GENERAL

CE, FCC, IC certified Safety Functionality Produces analog/digital/pulse data from 8

input sensors and outputs via CAN/USB

Warranty 1-year warranty

Support Free, fast & high quality support

Origin

Software 100% free & open source Documentation Online/PDF documentation

CAN BUS

1 x CAN/CAN FD Channels CAN TDs Fully configurable (CAN 2.0A/2.0B) Fully configurable (up to 1 Mbit/s) Bit-rate

SENSOR TEMPERATURE

Channels Supports 8 input channels Types Supports analog, digital, pulse sensors Input Range 0-10V, 0-5V, 0-2.5V, 0-1.25V, 0-0.625V Ranges are locked in channel pairs of two 10 bit Resolution Thresholds Digital high/low switch thresholds (0-100%) incl. dead-zone/hysteresis Pulse Modes Pulse inputs can be measured as

SIGNALS

CAN Signals Analog output in millivolt (mV) [1000 Hz] Digital output as 'actual' (dead-zone,

low, high) and 'low'/'high' [1000 Hz] Pulse output as a frequency/counter value (for reset/accumulate mode) [1000 Hz]

frequencies or counters (up to 32 bit)

MECHANICAL/SUPPLY

Input sup y

Connectors 1 x DB9 (adapter cables available)

1 x DB25 (adapter cables available) +5V to +26V DC via DB9 (pin 1 or 9)

Consumption <1W

65 x 48 x 24 mm (L x W x H) **Dimensions**

Weight

8 external LEDs (PWR, CAN, MEM, CH1/CH2, **LEDs**

CH3/CH4, CH5/CH6, CH7/CH8)

-25 degC to +70 degC Temperature

IP rating TP40





















CANmod, router

4 x CAN to 1 x CAN (or USB) Converter



PLUG & PLAY: Connect up to ___ 4 x CAN to receive / transmit the data via 1 x CAN (or USB) no configuration required

via 1 x CAN. Easily demux data. Optionally transport via CAN FD for max throughput



COMPACT: 7 x 2 x 5 CM. 75G. 7 ア LEDs. Supply via DB9/USB. 5-26) V. Mounting flanges. USB for config/FW and streaming

SEAMLESS: Fully supported by CANedge/CANmod software/API tools. As if directly interfacing the 4 x CAN



PRO SPECS: 4 x CAN FD. Basic galvanic isolation. Silent mode. Zero data loss. 1 ms precision. Error frame support.

CONFIGURABLE: Configure filters, prescalers, transmit lists, CAN IDs, bit-rates and more via JSON config and GUI

The CANmod.router lets you receive/transmit CAN data (Classical or FD) from/to 4 isolated secondary CAN buses via 1 primary CAN bus (or USB).

The compact module is 100% standalone (no PC required) and offers pro specs, daisy chaining and powerful configuration options.

It can e.g. be used with the CANedge, enabling you to log 5 x CAN buses (or beyond via daisy chaining).

The device can also be used as a powerful 4 x CAN FD to USB interface with free software/API tools.

Tip: Add the DB25-to-4x-DB9 for quick installation.

Interface four CAN buses with just one CAN bus (or USB)

Receive/transmit data from/to 4 x CAN buses via 1 x CAN bus (or USB) - e.g. for use by CAN loggers, ECUs or via USB streaming.

- 4 x CAN (incl. CAN FD) with basic galvanic isolation
- Power via DB9 (5-26 V and DB9 cables) or USB (5V)
- Independently configure each secondary CAN interface
- Optional silent mode and customizable bit-rates
- Advanced message filters and prescalers
- Configure transmit lists and/or control via primary CAN
- Support for CAN error frame logging
- Quickly connect 4 x CAN via DB25-to-4x-DB9 adapter cable
- Daisy chain multiple modules for 8, 12, 16, ... CAN channels



Example: CANedge + CANmod.router = 5 x CAN bus data logger

The CANedge supports 2 x CAN. By adding a CANmod.router, you can now log 1 x CAN (CH1) + 4 x CAN (CH2) - or beyond.

- Power the CANmod.router via the CANedge 2nd port 5V
- Maximise 4 x CAN throughput via CAN FD (mux-mode)
- Easily demux routed data via MF4 converter or Python API
- Control transmission on the 4 x CAN via CANedge
- Daisy chain to $\log 1 + 8 \times CAN$, $1 + 12 \times CAN$ (or beyond)

Technical specs

GENERAL

CE, FCC, IC certified Safety

Functionality Routes data from 4 isolated CAN buses

(incl. FD) to one primary CAN bus / USB

Warranty 1-year warranty

Support Free, fast & high quality support

Origin Denmark

Software 100% free & open source Documentation Online/PDF documentation

CAN BUS (CAN-P)

1 x CAN channel (incl. CAN FD support) Channels Standard ISO 11898: Compliant with CAN (between 5K and 1M) and CAN FD (1M, 2M, 4M, 5M)

CAN BUS (CAN-S)

4 x CAN channels (incl. CAN FD support) Channels Isolation Basic galvanic isolation ISO 11898: Compliant with CAN (between 5K Standard and 1M) and CAN FD (1M, 2M, 4M, 5M) Configuration Each CAN-S channel can be independently configured

Support for logging CAN error frames

Error Frames ROUTER MODES

Traffic from/to 4 x CAN-S is muxed and Mux-Mode transported through'tunnels' via CAN-P Demuxing done via software/API tools to restore original CAN frames

MECHANICAL/SUPPLY

1 x DB9 (adapter cables available) Connectors 1 x DB25 (adapter cables available) Input supply +5V to +26V DC via DB9 (pin 1 or 9)

Consumption

65 x 48 x 24 mm (L x W x H) Dimensions

Weight

7 external LEDs (PWR, CAN-P, MEM, CAN-S1, LEDs

CAN-S2, CAN-S3, CAN-S4)

Temperature -25 degC to +70 degC

IP rating





















CANedge software/API tools

100% free and open source, naturally







Easily configure your device

The CANedge/CANmod JSON config can be modified via a GUI editor - either online via browser or offline (e.g. from the SD).

- GUI editor for user-friendly configuration
- Optionally edit your config directly in e.g. Notepad++
- Batch tool available for large-scale configuration OTA

Learn more



Load data in your favorite tools

Simple MDF4 converters let you convert data to e.g. CSV, ASC (Vector), TRC (PEAK) - for use in your favorite tools.

- Drag & drop files/folders onto the converter to process
- Optionally use via the CLI or in scripts for automation
- Decompress/decrypt as part of conversion
- Works on both Windows/Linux

Learn more



DBC convert & plot your data via GUI/API

The free asammdf GUI/API lets you process your data:

- DBC convert data to physical values (incl. J1939, OBD2)
- Easily create advanced graphical plots
- Resample or concatenate your data
- GUI executable for Windows/Linux (no installation)
 - Powerful Python API for big data automation

Learn more

CANedge software

Manage your server devices & data

CANcloud is a simple browser tool that lets you manage your S3 server devices & data from any PC/tablet with no installation.

- Host yourself or simply log into your server here
- Monitor device status across your entire fleet
- Browse, download, share & delete uploaded log files
- Easily update config/firmware over-the-air
- Browser based (works on all OS & devices)

Learn more



















CANedge software/API tools

100% free and open source, naturally





Automate your data processing

Need to automate your CAN bus data processing via Python? The free Python API enables easy listing, loading and DBC decoding of your data - from local disk or your server.

Learn more

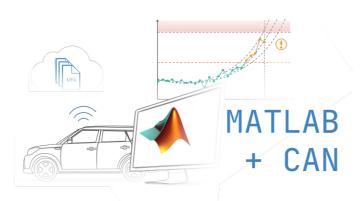
Visualize your data in dashboards

With our plug & play dashboard integrations, you can quickly get your CAN/LIN data integrated with custom Grafana dashboards.

Perfect for presenting specific views e.g. for internal sharing, diagnostics - or as services towards clients.

Learn more





Easily load data in MATLAB

MF4 data from the CANedge can be natively loaded via MATLAB's Vehicle Network Toolbox - or converted to compatible MAT/CSV.

This makes it simple to continue using MATLAB for end users that are familiar with this tool from other projects.

Learn more















