CSS Electronics

Danish developer & manufacturer of CAN loggers

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

80+ GLOBAL: We ship globally and our products are used across 80+ countries

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

1K+ REACH: Devices are used by 1,000+ companies. End users are typically 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 or WiFi. 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 CANedge and CLX000.
For details, see the product data sheets.

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.

CANedge - pro specs 2x CAN/LIN logger

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.

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

100% free software/API tools

Both the CANedge and CLX00 are supported by free tools:

CANedge: The JSON config can be easily modified via our offline/online editor tool. Data can be DBC converted and plotted via a simple-to-use GUI/API - or converted to e.g. ASC/TRC/CSV. For the CANedge2, devices & data can be managed via CANcloud.

CLX000: The INI config can be modified in the Windows GUI, CANvas, which can also be used for DBC converting data. Data can be streamed via USB and displayed in Wireshark.

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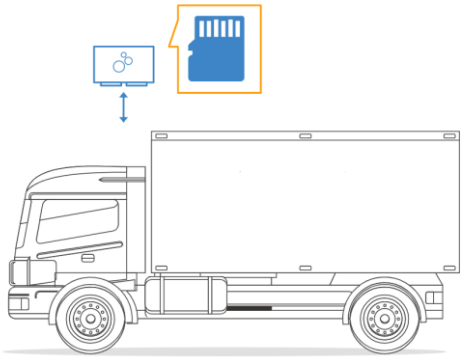
CSS Electronics ApS | +45 91 25 25 63 | contact@csselectronics.com | www.csselectronics.com

Example use cases



Vehicle 'black box'

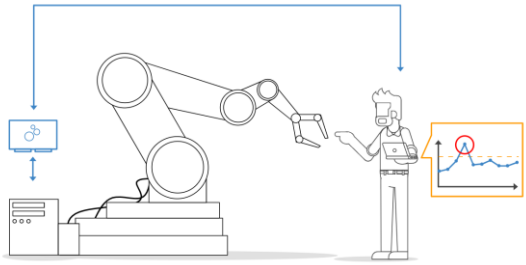
Need to monitor data from your vehicle fleet?

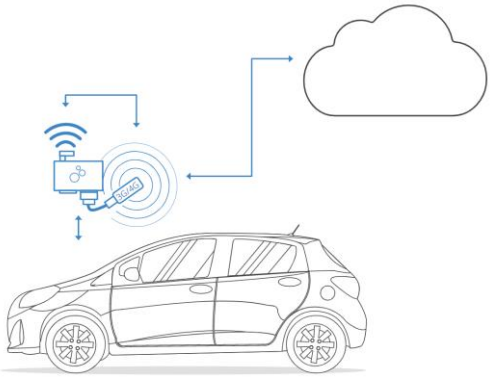
The CANedge1 is ideal for recording data over long periods from fleets - incl. cars (via OBD2) and heavy-duty vehicles (via J1939). With filters, compression & cyclic logging you can log years of data. Ideal for e.g. warranty/legal data storage or optimization.

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.





Vehicle telematics

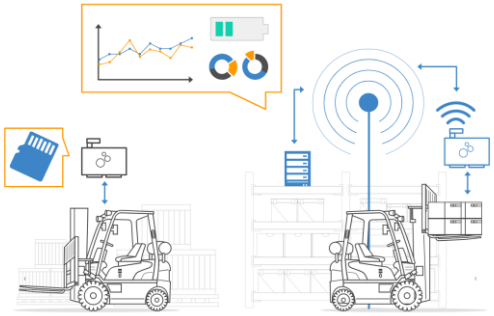
Need to monitor & optimize a vehicle fleet in near real-time?

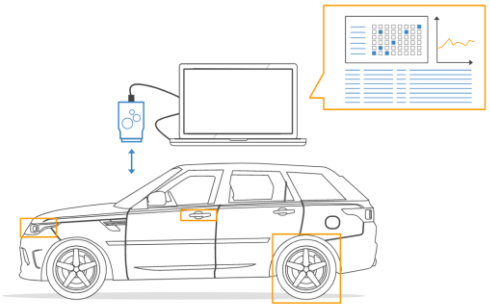
For 'on-road' upload of data, the CANedge2 can upload data via a 3G/4G hotspot e.g. powered via our DB9-USB adapter. Alternatively, the device can upload data when the vehicle periodically returns to e.g. a garage WiFi. Ideal for OBD2 logging, truck fleet management, predictive maintenance and more.

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.





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.

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CLX000

Low cost CAN logger & interface

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

STREAM: Stream data in real-time to PC via USB in Wireshark (incl. plugins)

STANDALONE: Log CAN data to 8-32 GB SD card (no PC needed). RTC (CL2000/CL3000)

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

WIFI: Easily collect CAN data via 3 WiFi modes & web interface (CL3000)

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.

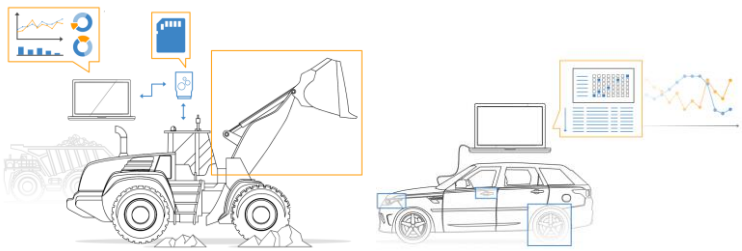
For the CL2000/CL3000, data is date & time stamped via a real-time clock with battery backup. Further, the CL3000 lets you collect data remotely via WiFi across different modes.

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

Compact CAN logger + interface

The CLX000 lets you log raw CAN data to an 8-32 GB SD card - 100% standalone with no PC required:

- Power via CAN 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
- Silent mode, filters, transmit lists, cyclic logging
- Timestamp data via real-time clock (CL2000/CL3000)
- Stream data in real-time via USB in Wireshark
- DBC convert logged/streamed data via free software



Collect CAN data via WiFi (CL3000)

The CL3000 supports 3 WiFi modes for collecting your CAN data remotely (for pushing data, see also the CANedge2).

1) Access Point: Access the CL3000 SD like a WiFi hotspot via your PC, phone or tablet to download/delete data
2) Station: The CL3000 connects to a WiFi access point and can be accessed by other devices on the network
3) Push: The CL3000 connects to a WiFi access point (incl. 3G/4G) and uploads log files to your own FTP server

[Note: Going forward, we focus increasingly on the CANedge2 as our WiFi CAN logger. At some point the CL3000 may be phased out. For new WiFi projects we therefore recommend the CANedge2]

Technical specs

GENERAL

Safety	CE, FCC, IC certified
Warranty	1-year warranty
Support	Free, fast & high quality support
Origin	Denmark
Software	100% free
Documentation	Online/PDF documentation

CAN BUS

Channels	1 x CAN (Classical)
Protocols	J1939, OBD2, CANopen, NMEA2000, ...

DATA LOGGING

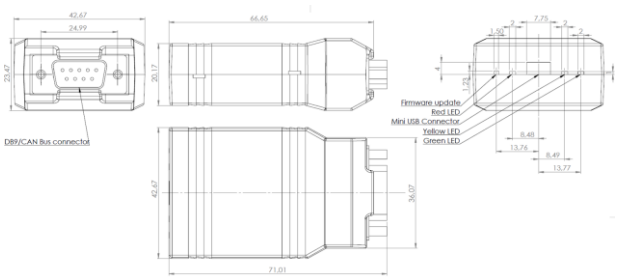
SD CARD	8-32 GB SD card (extract via USB)
Real-Time Clock	1 ms resolution (CL2000/CL3000)
File format	CSV-style plain text format
Safety	100% power safe
Configuration	Simple configuration options

MECHANICAL/SUPPLY

Connectors	1 x DB9 (adapter cables available)
Input supply	+7V to +32V DC via DB9
Consumption	<1W
Dimensions	66.7 x 42.7 x 23.5 mm (L x W x H)
Weight	50 G
LEDs	3 external LEDs (PWR, DATA, MEM)
Temperature	-20 degC to +65 degC
IP rating	IP40

WIFI (CL3000)

Modes	Access Point, Station, Push (FTP server)
Other	Internal antenna. WPA/WPA2, 802.11 b/g/n



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CANedge1

2xCAN/LIN Data Logger (SD + RTC)

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

CONFIGURABLE: Filters. Transmit lists. Triggers. Cyclic logging. Silent mode

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.

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
- 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).

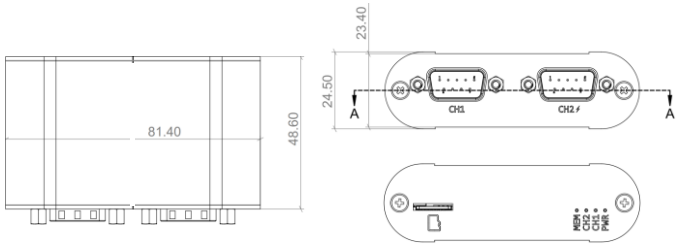
Technical specs

GENERAL	
Safety	CE, FCC, IC certified
Voltage tests	Transients ISO 7637-2:2011 by TÜV SÜD
Warranty	1-year warranty
Support	Free, fast & high quality support
Origin	Denmark
Software	100% free & open source
Documentation	Online/PDF documentation

CAN BUS/LIN BUS	
Channels	2 x CAN/CAN FD + 2 x LIN 2.0 (slaves)
Protocols	J1939, OBD2, CANopen, NMEA2000, FD, ...
Bit-rate	Auto-detect/simple/advanced customization

DATA LOGGING	
SD CARD	8-32 GB extractable industrial micro SDHC
Real-Time Clock	50 us resolution (incl. battery backup)
File format	MDF4 (.MF4) - easily process/convert
Safety	100% power safe
Configuration	Advanced configuration options

MECHANICAL/SUPPLY	
Connectors	2 x DB9 (adapter cables available)
Input supply	+7V to +32V DC via Channel 1 DB9
Consumption	<1W
Dimensions	52.5 x 81.4 x 24.5 mm (L x W x H)
Weight	100 G
LEDs	4 external LEDs (PWR, CH1, CH2, MEM)
Temperature	-25 degC to +75 degC
IP rating	IP40



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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.

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
- Data compression & encryption (e.g. for GDPR, CCPA)
- Fast boot time. Safely disconnect during use

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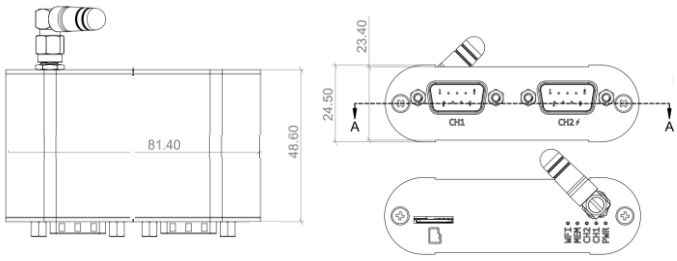
Bit-rate	Auto-detect/simple/advanced customization

DATA LOGGING	
SD CARD	8-32 GB extractable industrial micro SDHC
Real-Time Clock	50 us resolution (incl. battery backup)
File format	MDF4 (.MF4) - easily process/convert
Safety	100% power safe
Configuration	Advanced configuration options

MECHANICAL/SUPPLY	
Connectors	2 x DB9 (adapter cables available)
Input supply	+7V to +32V DC via Channel 1 DB9
Consumption	<1W
Dimensions	52.5 x 81.4 x 24.5 mm (L x W x H) ex ant.
Weight	100 G
LEDs	5 external LEDs (PWR, CH1, CH2, MEM, WFI)
Temperature	-25 degC to +75 degC
IP rating	IP40



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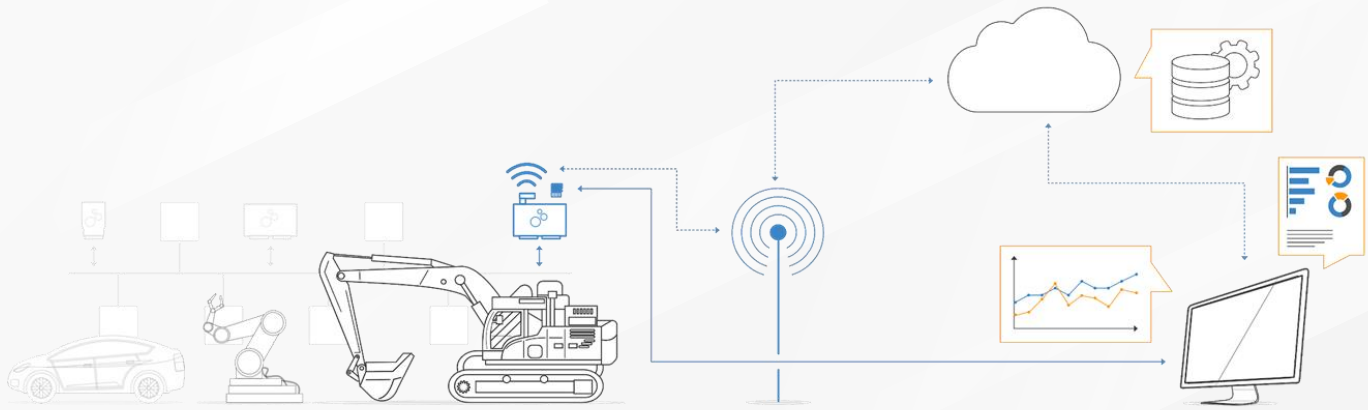
CANedge2 - WiFi details



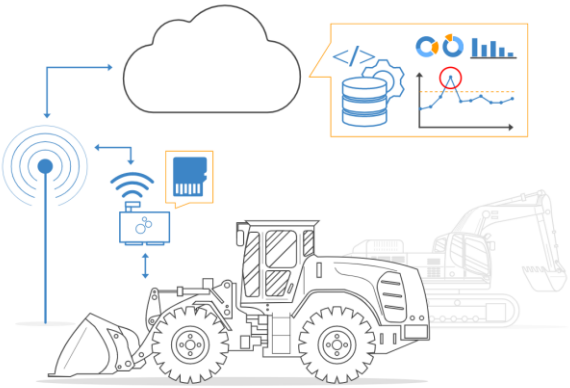
Reinventing telematics

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 provides a modern alternative:

- Upload data to your own local/dedicated/cloud server
- Add WiFi access point & server details to the config
- Log data to the SD. Auto-upload when connected to WiFi
- Configure file splits to control upload frequency
- 100% secure: HTTPS, credential encryption and more
- Manage via over-the-air updates (FW & config)
- Power 3G/4G access point or GPS via 2nd port 'power out'
- Zero fees. Zero lock-in. Interoperable. Open source tools



Technical specs (WiFi/server)

WIFI

Transfer modes	Auto-push data to server from SD
Protocol	HTTP/HTTPS for fast, secure transfer
Access Points	Add 1-5 WiFi prioritized access points
Over-The-Air	Configurable OTA firmware/config updates
WiFi Heartbeat	Device optionally sends periodic status
LAN Standard	IEEE 802.11 b / g / n
Antenna	External (SMA, 2400 Mhz, <2 dBi gain)
Server Interface	S3 REST - Use with MinIO, AWS, Azure, ...

SECURITY

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

The CANedge2 can also connect to a 3G/4G USB router to upload on-the-road. The hotspot can optionally be powered via the device

Easily manage data/devices on your server

The CANedge2 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)

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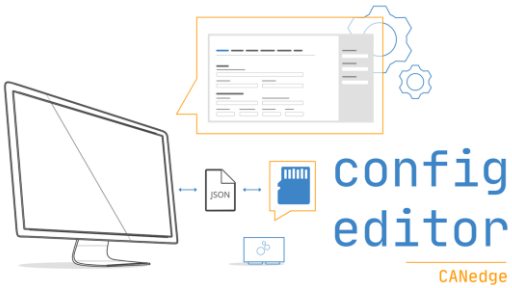
CANedge software/API tools

100% free and open source, naturally



Easily configure your device

The device JSON config can be modified via the simple editor tool - either online via browser or offline (e.g. from the SD card).

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

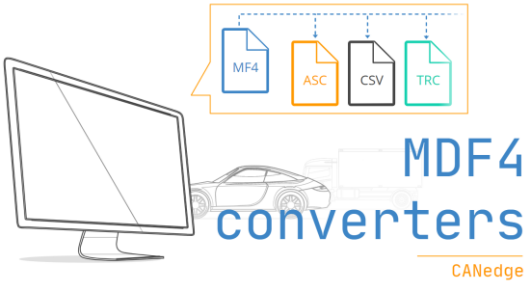
Learn more

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

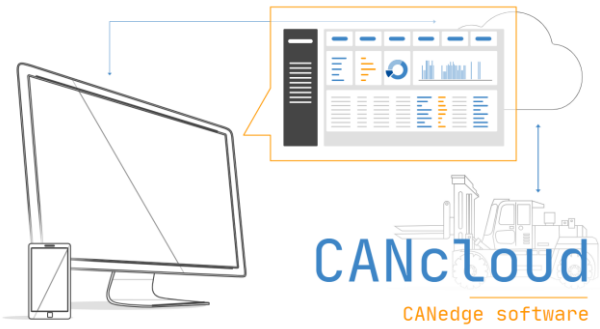
Learn more

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



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CSS Electronics ApS | +45 91 25 25 63 | contact@csselectronics.com | www.csselectronics.com