

Optimizing in-vehicle data-logging for performance and speed

In-vehicle data-logging has a role to play throughout the development process – from development to after-market/service scenarios. Kvaser's Memorator data-loggers are an ideal fit for gathering megabits to gigabits of CAN data.



(Photo: Kvaser)

Whether you need to analyze performance data during ECU development or investigate intermittent faults caused by individual components when the vehicle is in use, placing a data-logger on the vehicle's electronic network for an extended period and evaluating the results is considered best practice.

It is tempting to think that 'bigger is better' when it comes to the memory capacity of data-logging devices. After all, when the automotive industry talks about data these days, it is generally in the context of RAID systems capable of holding terabytes of data. This is relevant in autonomous vehicle scenarios, when testing multi-radar, multi-video ADAS systems. But this is overkill for most data-logging tasks. The question to ask is: just how much relevant data do I want to collect and process? Wherever the task features on the megabits to terabits scale, there are ways to refine the data gathered. This can save from a cumbersome and expensive data block (literally) which costs in storage, transfer speed, and analysis time, said Kvaser.



(Photo: Kvaser)

Kvaser's Memorator data-loggers are an ideal fit for those gathering megabits to gigabits of CAN data. The Kvaser Memorator's support Secure Digital High Capacity (SDHC) and Secure Digital eXtended Capacity (SDXC) formats, the former offering between 4 GiB to 32 GiB, and the latter upwards of 32 GiB.

Compared to a hard-drive, an SD card offers numerous advantages in terms of cost, performance (higher speed, smaller size, and lower power consumption), and reliability (higher shock-resistance). These advantages become very tangible when recording data from the field – particularly in tough environments like heavy duty trucks and agricultural machinery.

Kvaser's Memorator data-loggers are available for different levels of data gathering complexity. Kvaser Memorator Light is a tool for logging serial data, with no pre-configuration or software setup required. A FIFO function holds data in a circular buffer and rewrites the oldest data when the buffer becomes full. The data-logger can be left on a vehicle for a prolonged period and if something happens that requires further investigation, the most recent information is available for analysis. This is an elegant troubleshooting that will save engineers the common headache of waiting around for a bug to reappear (or recording reams of data in hopes of catching it).

The Memorator data-loggers store the raw CAN frames in a binary format. Using Kvaser Memorator Tools, a free logger setup and configuration program, that data can be extracted into several formats, including: .kme, .csv, .asc, .dat, .log, and plain text.

Use filtering to maximize relevancy

Kvaser's Memorator Pro series, available with one, two, or five CAN channels, are data-loggers capable of running user-developed programs using the t programming language in Kvaser CANlib SDK. Able to log continuously, or log at particular pre- and post-trigger conditions, these devices are available without buffer size restrictions, so are limited by disk space only. Using the Kvaser's Memorator Pro series, it is possible to filter out messages and/or signals to be logged. This advanced CAN logging functionality is key to ensuring that users don't find themselves wading through a tsunami of data.

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