UniCAN 3 Data Logger

Logger information and measurement data in real time

Data recording

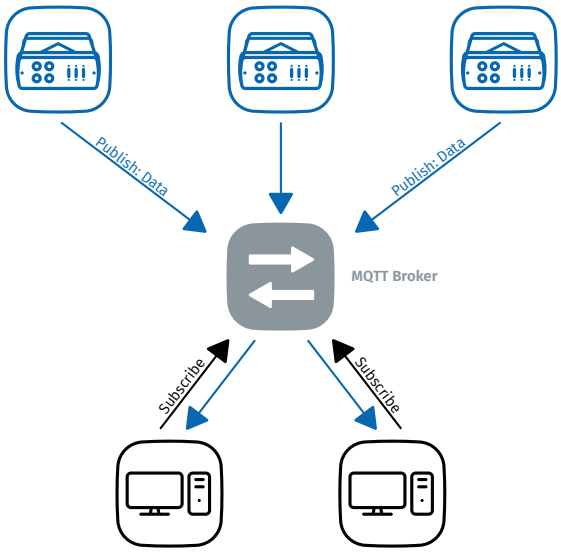
During vehicle tests, often there are several vehicles sent into the field at the same time and are often equipped with data loggers. These record the data from the tests so that the underlying measurements can subsequently be analyzed. In most cases, status information from the data loggers or vehicle data can only be retrieved or analyzed reactively or with a delay. Correcting errors is then sometimes very time-consuming and expensive. Instead, how can information be obtained in real time so that problems can be recognized earlier? With the MQTT function of the UniCAN 3 data logger from CSM, this is possible.

Many vehicles and devices at the same time

At various stages of vehicle development, vehicle fleets equipped with measurement technology are tested in road tests - for example for summer or winter trials. Data loggers, such as the UniCAN 3, are often installed to record the measured data. During conventional data acquisition by a data logger, the measurement data is either transmitted at fixed intervals or read out collectively at the end of the tests and therefore offers little opportunity to automatically detect problems with the hardware or the vehicles during a test drive. Instead, the data has to be searched for errors retrospectively and the tests may have to be repeated. Fleet management often also raises questions about the current status, including the quality of the recording or the location of the individual vehicles. Whether you have an entire fleet or just one logger, recognizing and eliminating deviations promptly is a considerable advantage when it comes to saving time and development costs.

Monitor status globally

The UniCAN 3 data loggers have an MQTT feature that enables the use of the standardized MQTT (Message Queuing Telemetry Transport) transmission protocol. This means that information about the status and position of the data loggers can be transmitted live and the results displayed in a web-based dashboard.[1] The real-time data transmission via MQTT takes place in parallel with the measurement recording or the upload of the measurement data. For variants of the UniCAN 3 that are already equipped with an LTE modem, no additional devices are required for global, remote data transmission.



When the add-on license is activated, the client (the UniCAN 3 feature on the software side) connects to an MQTT broker ("intermediary") and regularly stores status information there. On the user side, a second client - for example, a user for monitoring a fleet - connects to the MQTT broker and subscribes to receive messages from the data loggers.

„The new feature makes it much easier to manage vehicle fleets, as errors or deviations can be detected quickly. In addition to the status information of the devices (e.g. card memory status and position data), selected measurement channels can also be displayed live in the dashboards. Individual configuration with our CSMuniconf configuration software allows the information relevant to the MQTT application to be selected quickly and easily."

UniCAN 3 ETH data logger for worldwide fleet use. The data logger has an Ethernet interface, nine CAN interfaces and four digital I/O interfaces.

David Löw, Product Manager UniCAN Data Logger, CSM GmbH

Buffering the data on the UniCAN 3 protects it from loss in the event of temporary connection problems. Depending on the application and the measured variables being recorded, the adjustable update rate of the messages to the MQTT broker can be set from as often as one second to as long as ten minutes.

[1] Note: The MQTT broker and the setup of the dashboard are not part of CSM's scope of services. The setup must be carried out by the user or a service provider

React quickly in case of doubt

With the MQTT feature of the UniCAN 3 data logger, application-specific and relevant measurement data can be displayed and monitored in real time via a dashboard. For applications such as global fleet tests, this represents an enormous improvement in processes, as errors or deviations in the test procedure can be quickly identified and rectified.

Featured Products

UniCAN 3

The data logger UniCAN 3 was developed especially for the use in the automotive sector: Up to 12 CAN interfaces, freely configurable inputs and outputs, Wake-on-CAN, LAN and WLAN, support of CAN FD. In addition, data transmission via LTE modem or WLAN allows worldwide use.

UniCan 3 ETH

The UniCAN 3 ETH is a compact and robust data logger for the acquisition of data from various sources: With the Ethernet interface, nine CAN interfaces, digital inputs and outputs and numerous data transmission options, it can be used flexibly in any measurement task.

Complete solutions from a single source:

CSM provides you with comprehensive complete packages consisting of measurement modules, sensors, connecting cables and software - customized to your individual needs.

Further information on our products are available on our website at www.csm.de or via e-mail sales@csm.de.

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