GPS unit for the DL350 ScopeCorder is invaluable for in-vehicle testing

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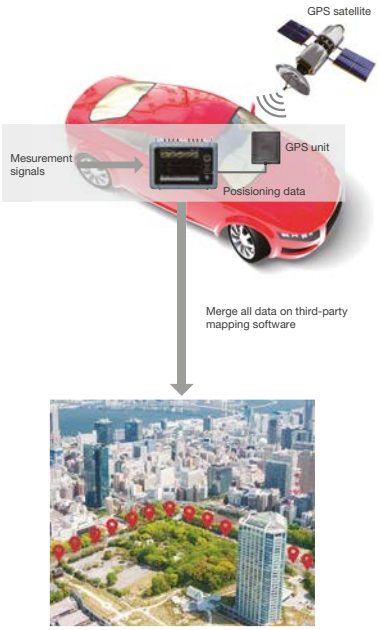
The DL350 combines in one compact instrument all the measurement and recording capabilities that are required in the field. Unlike traditional oscilloscopes or recorders, many different signals can be measured (utilising 18 different types of module), inputs are isolated and measuring resolutions up to 16 bits are available. With the GPS unit, the DL350 is the one box measurement solution for drive and mobile testing.

The DL350 records the chosen GPS data as measurement traces alongside the actual measurement data where latitude, longitude, altitude, speed, direction and GPS status can each be shown separately. Direction is expressed in degrees from 0 to 360, where 0 represents North, 90 represents East etc. The current direction is determined by calculating the course from the previous to the current position.
The status channel, consisting of two bits, provides a measure of the reliability of the GPS data. If at least 4 satellites are available then the status of the 3D position determination (3D FIX) is set to a bit value of “1” and the absolute determination of the position is ensured. When the PPS status (“Pulse per Second”) is set to “1” then the timing pulses are synchronized with the GPS time.

Since the GPS data in the DL350 are recorded as normal traces, they can also be handled in the same way. That means that user-specific scaling can be performed; manual cursor or automatic parameter measurements are possible and the traces can even be used to trigger waveform acquisitions.

With an offline analysis tool, the measured values can be conveniently related to the location information. Using a cursor to select a measuring point, the position of the test vehicle on the map is simultaneously displayed with the corresponding measured value. This off-line analysis is particularly useful when the test engineer, who needs to analyse the data, is not present during the drive test.

As the DL350 can not only measure values such as temperatures, vibrations, voltages, currents and logic signals but also serial bus data via CAN, LIN or SENT, it is possible to record relevant vehicle related data, such as engine speed, engine temperature and coolant temperature. In the case of e-vehicles, the charging status, power, speed etc. can be additionally measured all in conjunction with the current position of the test vehicle so changes in performance can be directly related to changes of gradient or position.



Click here to read the latest article on Vehicle Electronics Dec 2017 edition on how portable instruments can bring versatility to automotive testing.

For more information on the DL350 ScopeCorder and optional GPS unit, visit tmi.yokogawa.com/eu

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