CATS-INS - SPEEDBOX, DL2 & DASH4PRO

Race Technology have put together a complete testing solution combining the high accuracy, low latency vehicle speed and attitude measurements from the SPEEDBOX-INS with the flexible data logging abilities of the new DL2 data logger. The DASH4PRO connects to either unit and will display measured parameters from both the SPEEDBOX-INS and the DL2.

The system offers the unrivalled accuracy of the SPEEDBOX-INS with the flexibility of being able to use the DASH4PRO to display summary test data and to edit test start and end parameters without the need for a laptop computer, reducing the number of times a laptop has to be carried in the car. With all test results presented live on the DASH4PRO's display and logged on the DL2's memory card for post test analysis.

Measured Parameters
- Roll / Pitch / Yaw rates
- Roll / Pitch / Yaw angles
- 3 axis acceleration
- 3 axis speed
- Position
- Pitch and heading
- Output measurement offset

Performance Testing Measurements
- Measurement distance based on speed/acceleration/trigger/start/halt/analogue input
- Forward / total / deviation distance
- Programmable MFDD
- Total time
- Peak g-force
- Configure up to 5 tests on the DASH4PRO and show different data for each test
- 'Human readable' text storage of test results
- SPEEDBOX data combined and time aligned with sensor data from the DL2

Typical Applications
- Speed measurement
- Brake testing (<10cm error for 100 to 0 km/h test)
- Tyre testing
- Suspension/chassis development
- Vehicle attitude measurement (Roll, pitch, yaw)
- Performance testing

Two systems are available: CATS-INS (using the SPEEDBOX-INS) and a standard CATS using the standard SPEEDBOX MINI. The standard CATS system does not offer vehicle attitude measurements.

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Race Technology equipment is tightly integrated, giving the flexibility of separate components with the ease of use of a single, complete test solution. This new complete system fulfils the requirements for a very wide range of automotive testing scenarios.

- Stackable cases makes the transition from setup bench, or vehicle to vehicle quick and easy.
- Setup and configure all components from any of the USB ports.
- Setup tests, view results and display system messages using the DASH4PRO display.
- Single power connection. Connect power to either the SPEEDBOX or DL2 and the serial data connections distribute power to the rest of the system.

When connected together as a complete test system, the system has the following specification:

Inputs
- 12 analogue inputs, 0-25v, accuracy 0.4% +-20mV
- 4 frequency inputs, 0-25v, measure frequency, high time, low time, MSR
- Dual CAN ports live decode or log all data
- Trigger input for start/stop test conditions

Outputs
- Dual CAN ports
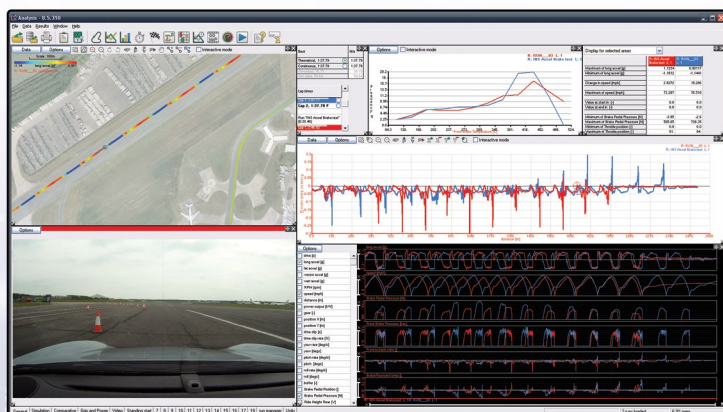- SD card storage
- Live monitoring on DASH4PRO

System features
- Log all data to SD card with automatic logging control or manual start/stop button
- Single power supply connection 9-18v, ~500mA
- Dimensions:
  SPEEDBOX & DL2: 163 x 118 x 86mm
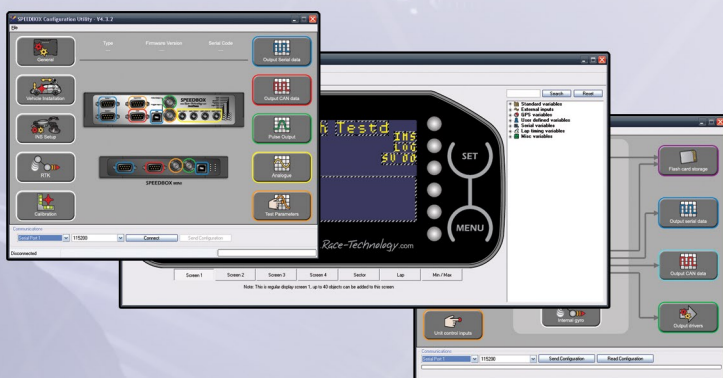 DASH4PRO Display: 124 x 58 x 15mm

Software
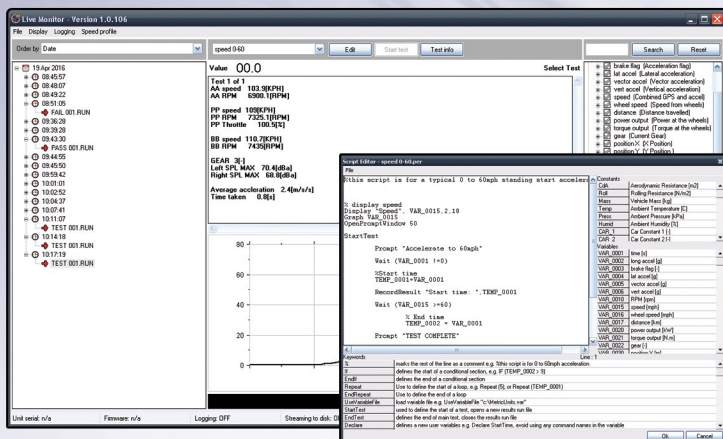A full software suite is supplied:
- Post test analysis with the Analysis software
- Configuration software for all hardware
- Live testing software with script based testing
- Live monitor software to view all variables
- Run Processor - Extract required data, and post process triggered tests, applying multiple tests to the same run file.
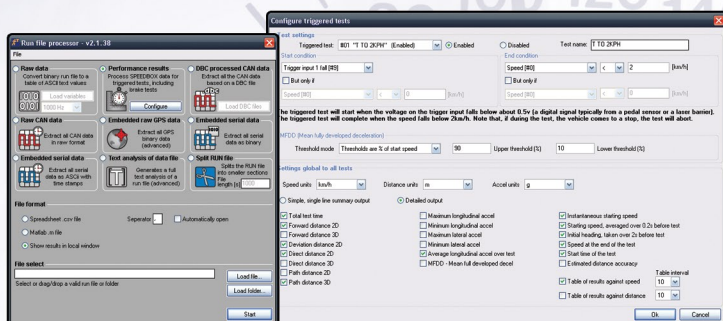

Analysis software - process data from multiple sources

Configuration software: SPEEDBOX, DASH4PRO & DL2

Live Monitor - Run live test scripts and monitor variables

Run Processor - Run triggered tests and extract data

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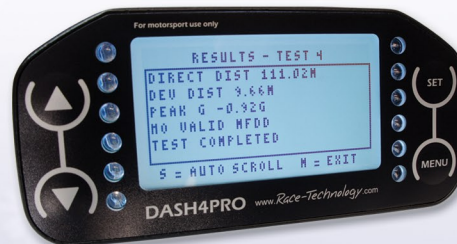
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DASH4PRO - Display Examples

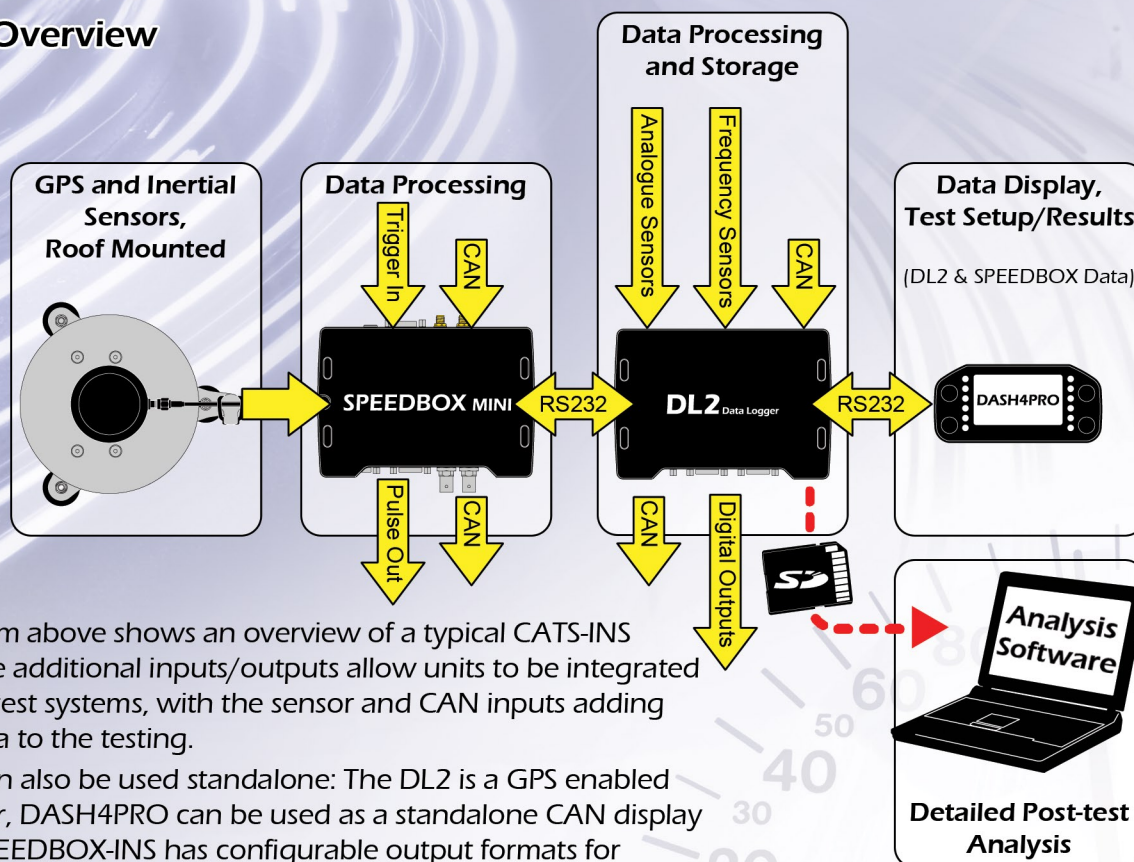Setup Test Conditions

View Live Results

Recall Test Results

OLED or LCD Display Types

The DASH4PRO is a fully configurable display, available with either an LCD or OLED display type. The graphical display allows custom screen layouts to be created with different text sizes, graphs and barcharts. Multiple screens of data - scroll through to display the relevant variables.

System Overview

The diagram above shows an overview of a typical CATS-INS system. The additional inputs/outputs allow units to be integrated into other test systems, with the sensor and CAN inputs adding further data to the testing.

All units can also be used standalone: The DL2 is a GPS enabled data logger, DASH4PRO can be used as a standalone CAN display and the SPEEDBOX-INS has configurable output formats for integration with other systems.

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