



Case Details

The brake performance of a new passenger vehicle is critical for the safety of the vehicles occupants. An international manufacturer of passenger vehicles wants to investigate the durability of the brake system of a new vehicle, critical information used for the estimation of component life and setting of service intervals. They require a recording system which can monitor and log certain properties for one second prior to braking without input from the driver of the vehicle.

Key Requirements

- Must be able to monitor several sensors
- Triggered recording
- Begin logging prior to trigger

dataTaker Data Logging Products

- 1 Cost effective data logging solutions
- 2 Capable of measuring and logging DC voltage, current and resistance sources in addition to digital signals
- 3 Suitable for small to large scale applications
- 4 Rugged design and construction provides reliable operation under extreme conditions
- 5 Designed and manufactured in Australia to the highest quality standards



Taxi!: A dataTaker data logger was fitted to a taxicab to monitor its brake performance

dataTaker Solution

Equipment

dataTaker DT800 data logger

Sensors

- Thermocouples
- Accelerometer
- Road speed sensor

Implementation Notes

The most demanding use for a passenger vehicle is as a taxi because taxis spend long hours on the road in a wide variety of traffic conditions.

A prototype vehicle was instrumented and then operated as a taxicab in a major city centre for a trial period. Front disk pad temperatures, road speed, average deceleration and braking duration all needed to be monitored. The pad temperatures and road speed of the vehicle needed to be logged for one second before the brakes were applied. The whole task had to operate automatically with no driver input.

The DT800 was configured to wake from sleep mode when the ignition was turned on and sleep when the ignition was off. The DT800 was programmed to constantly read the sensors and record data when the brakes were applied. By using a shift register, the historical temperatures and speed of the vehicle were recorded. Using the DT800's histogram channel option the volume of data was greatly reduced.

Data was downloaded using a computer and sent to the test engineers on a weekly basis, where the data was investigated further and later the brake performance determined.