

Ralph's Accident Reconstruction Newsletter

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some devices and systems based on GPS which were alleged to be very accurate; they could be very accurate at times, but the impartial testing conducted on a group of them some years ago (I no longer remember the source) indicated that they were not always extremely accurate, but that there was no way for the operator to know what level of accuracy applied to a given test. Therefore, GPS is an interesting augmentation to a true accelerometer, and GPS has many wonderful uses, but reliable and accurate acceleration and deceleration testing are not among them.

There is a wide variety of accessories and optional sensors available to be used with the VC4000DAQ. There is a brake pedal activation switch, designed to start the recording when the brake pedal is applied. There is also an available load cell for the brake pedal, to record the applied pressure. There is a perception/reaction time system with a four-lamp assembly to test the perception and reaction times of a vehicle operator. There are optional, external, tri-axis accelerometers available to 100Gs for crash testing. External, angular-rate sensors can be added. (A detailed analysis of vehicle motion needs to consider the linear components in three mutually perpendicular planes of motion and also the vehicle rotation around each of the three associated axes. But most accident reconstructions only require knowledge of linear motion in one or two planes and possibly some rotation about the vehicle's z-axis.) There are temperature sensors for ambient air and roadway surface (or other surfaces) to 200 degrees F and thermocouple sensors available to measure and record temperatures across a tremendous range. A fluid-pressure sensor is also available. Last but not least, there is an OBDII vehicle sensor interface. The On-Board Diagnostics (OBD) of late model cars have a vast array of available data, including things like road speed, engine speed, throttle position, fuel pressure, and others. I already have the perception/reaction time option, the brake pedal activation switch, and the OBDII sensor interface. Other sensors and accessories can be obtained quickly if needed for a specific test or circumstance.

The best way to know for sure how fast a vehicle can accelerate, decelerate, or turn at a given location is to test it with an accurate, on-board accelerometer. Please call me whenever you need any vehicle dynamics testing or verification or whenever you have need of the other accident-reconstruction, component-failure-evaluation, or car/light-truck EDR download services I offer.

Ralph Cunningham, Inc.
Accident Reconstruction
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