DGE Inc.

SJC Protocol and Gateway

Overview

The SJC (Serial to J1850/CAN) protocol, specifically designed for DGE's Gateway module, acts as an interface between a host RS-232 port and CAN-B, CAN-C, and J1850 vehicle buses.

The host computer may be any device that supports RS-232 communications, including a PC or a PDA (Personal Digital Assistant). The host computer sends and receives CAN and J1850 messages via the RS-232 link. Filters for CAN and J1850 messages are set up using RS-232 commands, with the filtering taking place on the Gateway module.

The Gateway module is being used in a wide variety of vehicle mule builds and instrumentation systems with DGE-generated custom message translation software. For a detailed description of Gateway capabilities, see the DGE web site at www.dgeinc.com.

Benefits

The SJC communications protocol, along with the Gateway module, allows a user to write high-level PDA or PC-based software for controlling or monitoring various vehicle buses. Engineers can rapidly perform CAN and J1850 bus analysis in order to identify and resolve bus-related issues. The capability to monitor all buses simultaneously with a common time-stamp is beneficial for troubleshooting network-timing issues.

Features

- Full duplex RS-232 interface at 115,200 baud
- A 16-bit absolute time-stamp contained in all received messages
- Absolute time-stamps with a resolution of 100µs
- The same time-stamp referenced by all bus messages
- Sequence numbers for missing message detection
- Simultaneous monitoring of all or selected bus messages
- Ability to transmit selected bus messages
- Ability to enable or disable all J1850 bus message filtering
- Ability to enable or disable all CAN-B and CAN-C bus message filtering
- Ability to enable or disable filters for individual bus messages
- Ability to request the selected bus filter configuration
- CAN-B or CAN-C receiver transmitter status message

Possible Expansions

DGE will customize hardware and software to meet customer requirements for specific applications. Possible customizations could allow:

- Increased time stamp resolution (24 or 32 bit)
- Custom message filtering
- Long-term bus message logging
- Display of message signals in engineering units
- Custom RS-232 communication baud-rates
- Customer-specified instrumentation applications
- Custom host PDA or PC software
- Custom PC or PDA graphical user-interface (GUI)*

** DGE has software development experience with both Palm™ and iPAQ™ personal digital assistants.*

Specifications

- -40 °C to +85 °C operation
- 9V to 16V operation (200ma typical)
- 3.3" x 1.1" x 2.7" metal housing (stand-alone version)

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