USING J1708 ON THE CT/OBC605

Doc: 57-6001 Rev B
Date: 09 Apr 2009

INTRODUCTION

The CT605 and OBC 605 (hereafter referred to as 605) both have the option for connecting to the J1708 vehicle data bus commonly used on large commercial vehicles. The following document outlines some installation and programmatic issues related to the successful use of J1708 data.

VEHICLE INSTALLATION

J1708 is based on the RS422 electrical protocol, with some minor variations to accommodate multiple transmitters. Please observe the following guidelines during installation.

Connect the 605 directly to chassis ground. Excessive resistance in the ground path can shift the relative levels of the signals and cause data reading and sending errors.

Keep J1708 Stub short. Do not extend the J1708 wires provided on the 605 cable assembly. If additional length is required, use 14 AWG twisted wire with 1 twist per inch.

PROGRAM CONSIDERATIONS

Opening/Closing the J1708 Port – Opening the port initializes communication between the main processor and the J1708 controller. All parameters related to J1708 must be reset when the port is opened; closing the port clears the filter table and settings.

Buffer – Once the port is opened and the filter mode is set, data that is received by the J1708 controller and passes the filter settings is sent to the main processor. Messages are buffered, whether or not they are read. A read of the data may return data "old" values.

For time-critical data, it is recommended to read the data until the buffer is empty then use the last value. Something such as the following may be effective.

while (J1708_get_message = -1)

Alternatively, use the *j1708_get_specific_message(...)* function, which will return the most recent message.

***printf* and J1708** – The *printf* or *sys_printf* functions format and send messages on the console port. These functions will cause additional delay and may slow operation of the J1708 functions, such as when reading the buffer until empty.

Disable/Allow/Deny Filter – Message filtering resides on the J1708 controller. This avoids excessive interrupts and processing burden on the main processor.

When the J1708 port is opened, the filter is empty and the default is in *allow* mode. As messages are added to the filter, any matches received on the J1708 data bus will be passed to the main processor and begin populating the buffer on the main processor.

J1708_get_message will return the first message received.

The message table is stored on the J1708 controller. Up to 30 messages may be stored on the table.

Allow mode passes all messages that match one of those in the table to the main processor buffer.

Deny mode passes all messages EXCEPT those that match the table entries to the message buffer.

Disable does not do any filtering at all. All messages present on the J1708 data bus are passed to the main processor message buffer.