ADVANCED VEHICLE TECHNOLOGIES, Inc.

AVT-718 - CAN-B Support

This document describes changes to the AVT-718 hardware and firmware to provide support for the DaimlerChrysler CAN-B physical layer.

The AVT-718 now supports, through software command selection:

- Single Wire CAN (J2411)
- CAN-C (ISO 11898)
- CAN-B (ISO 11512)

CAN-B

CAN-B is also known as ISO 11519. This is a 2-wire physical layer but is very different from the ISO 11898 2-wire physical layer, which is more prevalent. These two physical layers are NOT compatible.

Hardware

AVT-718 hardware revision "E" consists of a modified AVT-718 main board and the addition of the AVT-718W 'add-on' board. The AVT-718W add-on board is connected to the main board through connector P2 and sits above the main board.

Changes to the main board include the removal of some spare resistors, cut one track on the bottom of the board, add four wires to the bottom of the board, and install connector P2.

The CAN-B signals have the same names as the CAN-C signals: CAN_H and CAN_L.
They are found on the "NETWORK" connector pins #6 and #14 (respectively) on the AVT-718.

Firmware

The AVT-718 operational firmware version 2.0 was developed and released to support the additional CAN-B physical layer capability. The following is a summary of command and response changes with version 2.0.

A complete description of changes, commands, and responses is on the next page.

1. When entering CAN mode the CAN mode response (91 10) is immediately followed by a report of which physical layer is selected (82 11 xx).

2. When entering CAN mode from power-on or reset, no physical layer is selected; 82 11 00.

3. Physical layer selection command has been updated.
   71 11:   report physical layer selected.
   72 11 00:   Select no physical layer.
   72 11 01:   Select Single Wire CAN.
   72 11 02:   2-wire CAN-C.
   72 11 03:   2-wire CAN-B.

4. Physical layer response has been updated.
   82 11 00:   No physical layer.
   82 11 01:   Select Single Wire CAN.
   82 11 02:   2-wire CAN-C.
   82 11 03:   2-wire CAN-B.

5. The CAN-B transceiver monitors the two CAN signal lines and provides a signal to indicate a fault condition has been detected. (Faults such as, open signal line, signal line shorted high or low, etc.) There is no indication of what type, kind, or duration of a fault, just that one has been detected. The AVT-718 will report the detection of a fault condition through the $21 $26 response report.

6. The AVT-718 will not provide a response if and when the fault condition clears. It only reports when the fault condition is first detected. Only one report will be issued. The fault condition will have to clear before another fault condition can be detected and reported.