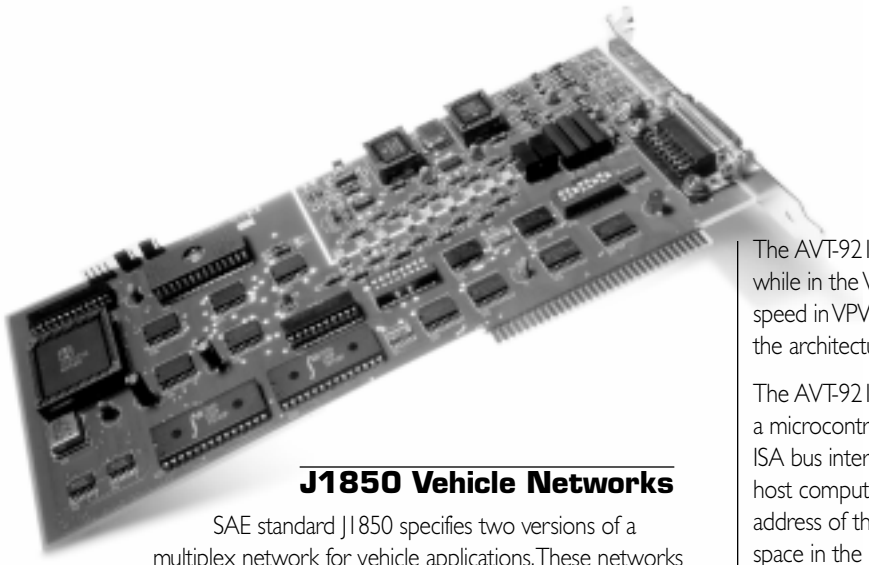
Advanced Vehicle Technologies, Inc.

AVT-921—Dual J1850 Interface (VPW and PWM)



J1850 Vehicle Networks

SAE standard J1850 specifies two versions of a multiplex network for vehicle applications. These networks support computer communications between the various electronic modules now found in production vehicles. With the advent of these networks, engineers, technicians, and others need to be able to test, monitor, and communicate with a J1850 network.

Complicating this issue is the fact that a J1850 network may be implemented in either of two incompatible versions: Variable Pulse Width (VPW) or Pulse Width Modulation (PWM).

The AVT Solution

The AVT-921 supports both VPW and PWM versions of the J1850 in-vehicle networking standard and was designed for engineering and test applications. It also supports GM's special 4x mode (in VPW). It is easily integrated with a software application to perform many network functions, including: monitor and log network traffic, analyze communications, simulate a node, test one or more modules, and more.

Available for the AVT-921 are 16 and 32-bit DLL's, and a vehicle compatible cable.

The AVT-921 Hardware

The AVT-921 is an ISA bus board designed for installation in an 8-bit ISA slot of a PC-AT or compatible computer. It provides an isolated electrical interface between the host computer and the J1850 network of a subject vehicle. The AVT-921 board performs the necessary protocol conversions and all required communications translations permitting the host computer to communicate with the vehicle network.

SAE standard J1850 specifies a Variable Pulse Width (VPW) version with a bit rate of 10.4 kbits/sec. The standard also specifies a Pulse Width Modulation (PWM) version with a bit rate of 41.6 kbits/sec. The AVT-921 was designed to communicate using both of these versions of the J1850 standard. (Simultaneous operations are not permitted.)

The AVT-921 is capable of conducting both transmit and receive operations, while in the VPW mode, at 4 times the normal speed. (Operations at 4X speed in VPW may be required for some GM Class 2 modes.) Additionally, the architecture of the AVT-921 ensures that it is Ford SCP compliant.

The AVT-921 PC board is XT form factor and 3/4 length. The board contains a microcontroller, RAM, ROM, both VPW and PWM bus interfaces, and an ISA bus interface. The AVT-921 is mapped into empty memory space of the host computer. On-board DIP switches permit the user to select the base address of the AVT-921 board. The board occupies only 16 bytes of memory space in the host.

A User's Manual is included with the AVT-921 (it includes technical information on communications between the board and the host). Also available is an OBD-II cable that allows direct connection of the AVT-921 to the subject vehicle through the OBD-II connector (J1962) now found in nearly all vehicles sold in the U.S.

The AVT-921 is a memory mapped device. If programming under DOS, no DLLs are required as the applications software can communicate directly with the board. To support 16-bit applications, a 16-bit DLL is included. To support 32-bit applications, a 32-bit DLL is included along with a brief installation utility.

All AVT equipment is warranted for one year from date of purchase. Free firmware upgrades are available for one year from date of purchase. Prompt technical support (telephone or e-mail) is aways available.

Specifications

Size: ..... *4.2 x 10.0 inches*

Weight: ..... *7 ounces (board only)*

Voltage: ..... *+5 VDC and +12 VDC (from the host computer)*
+12 VDC (from vehicle)

Power: ..... *2.0 watts (nominal)*

Host interface: ..... *8-bit ISA bus, memory mapped, base address selectable*

Connectors: ..... *8-bit ISA bus, DA-15P (to vehicle OBD-II)*

Microcontroller: ..... *HIP 7030A0 (Harris), 68HC05 core*

Information

Refer to our Web Site for the most up-to-date information including technical manuals, application notes, unit Commands and Responses, hardware and firmware revision status, and more.

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AVT-921 Dual J1850 Interface (ISA bus card)

Ordering Information

The AVT-921 interface board, both 16-bit and 32-bit DLL's, and documentation.
Order # 921-002

Accessories

Ordering Information

OBD-II cable.
Order # 101-002

Engineering Support Services

We provide engineering support services and custom engineering. These services are also available at your site (travel and related expenses are billed at actual costs).

Ordering Information

Engineering Support
Order # 101-007

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