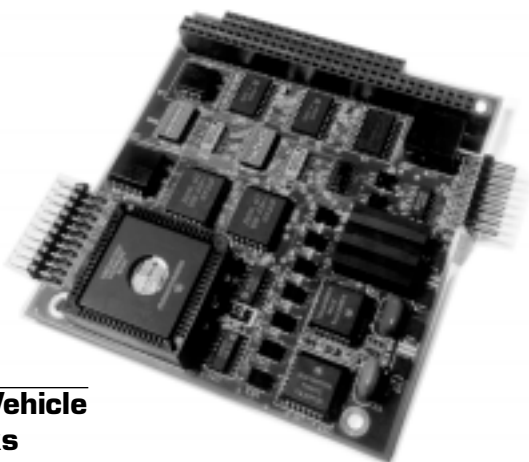


AVT-931—Dual J1850 Interface (VPW and PWM) in PC/104 form factor



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-931 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-931 are 16 and 32-bit DLL's, and a vehicle compatible cable.

The AVT-931 Hardware

The AVT-931 Interface board conforms to the PC/104 form factor. It is an 8-bit board but is equipped with 16-bit stackthrough connectors. (Alternate arrangements may be available upon request.)

It provides an electrically isolated interface between the host computer and the J1850 network of the vehicle under test. The AVT-931 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. It also specifies a Pulse Width Modulation (PWM) version with a bit rate of 41.6 kbits/sec. The AVT-931 was designed to communicate using both of these versions of the J1850 standard. (Simultaneous operations are not permitted.)

The AVT-931 conducts both transmit and receive operations, while in the VPW mode, at 4 times normal speed. (Operations at 4X speed in VPW may be required for some GM Class 2 modes.) Additionally, the architecture of the AVT-931 ensures that it is Ford SCP compliant.

The AVT-931 board utilizes a microcontroller with on-chip RAM and ROM. Also on the board are the VPW and PWM bus interface devices and an ISA bus interface (to the host). The AVT-931 is mapped into empty memory space of the host computer. On-board DIP switches permit the user to select the base address of the Interface board. The board occupies only 16 bytes of memory space in the host. The host interface consists of one read-write hardware register (with control and status bits), one read only register (FIFO), and one write only register (FIFO). The two FIFOs are implemented as a set of two way mailboxes. All communications between the host and interface board consist of commands and responses passed via the FIFOs.

A hardware User's Manual, included with the AVT-931, contains technical information on communications between the board and the host, connectors, memory map, and other information that a user would need. Available separately is a cable set that allows the AVT-931 to be connected directly to the vehicle under test through the OBD-II connector (J1962) now found in nearly all vehicles sold in the U.S.

The AVT-931 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 always available.

Specifications

Size: 3.8 x 4.3 x 0.5 inches

Weight: 3.5 ounces

Voltage: +5 VDC and +12 VDC (from host computer)
+12 VDC (from vehicle, optional)

Power: 1.2 watts (nominal)

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

Connectors: 16-bit stackthrough 16 pin header to the
vehicle OBD-II connector

Microcontroller: HCl 1KA2 (Motorola)

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.

**AVT-931 Dual J1850 Interface
(PC/104 form factor card)**

Ordering Information

The AVT-931 interface board, 15-conductor ribbon cable, both 16-bit and 32-bit DLL's, and documentation.

Order # 931-002

Accessories

Ordering Information

OBD-II cable.

Order # 101-002

Ribbon cable, 15 conductor.

Order # 101-003

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