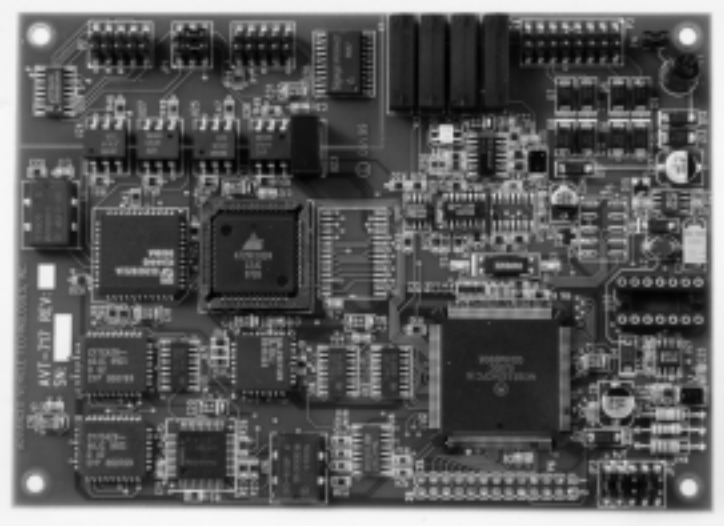
Advanced Vehicle Technologies, Inc.

AVT-717—UBP & CAN Interface for Automotive Networks



Vehicle Networks

The number and type of in-vehicle computer networks continues to grow and multiple networks are now found in many vehicles. The UBP (UART Based Protocol) network, developed by Ford, is finding a home in many newer models. CAN (Controller Area Network) is also found in many vehicles and is gaining widespread acceptance by many manufacturers. Complicating the issue is the fact that the CAN specification is physical layer and speed independent.

The AVT Solution

The AVT-717 provides a UBP interface that was designed for engineering and test applications. It also supports all CAN versions up to and including 2.0B. Additionally, the AVT-717 supports both two-wire and single wire versions of CAN (GM's Single Wire CAN). The baud rate and other network parameters are fully programmable.

The AVT-717 UBP & CAN interface hardware supports the following automotive network protocols:

- Ford UBP
- 2-wire CAN
- GM Single Wire CAN (SWC)

AVT-717 Hardware

The AVT-717 UBP & CAN Interface provides an isolated electrical interface between a host computer and the vehicle network. It performs the necessary protocol conversions and all required communication translations allowing a user with a PC (or similar) to communicate with a vehicle or module.

Ford UBP (UART Based Protocol) is a proprietary protocol with many unique timing, message construction, and communications requirements. All of these requirements are met with the AVT-717 and most operational parameters can be modified on-the-fly by the user with simple commands.

CAN (Controller Area Network) is a protocol that has been in use for a number of years and can be found in many industries. The specification is physical layer and speed independent. There have also been at least three different versions of CAN released over the years. The most recent version is 2.0B which uses a 29-bit arbitration field. As a result, there are many different implementations of CAN networks.

The AVT-717 provides both a 2-wire physical layer and the new GM Single Wire CAN (SWC) physical layer. Communications speed (baud rate) and other network operational parameters are fully user programmable. Additionally, the AVT-717 supports both CAN 1.0 and CAN 2.0B versions, on the same network at the same time.

Switching the AVT-717 between either of the protocols and operating modes is easily accomplished with simple software commands.

The AVT-717 was designed to be connected directly to the subject vehicle and the host computer. Power for the AVT-717 is provided by the vehicle or an external power source. Communications between the AVT-717 and the host computer are via either an RS-232 or RS-422 serial interface. The desired interface and baud rate are selected by configuring four jumpers. Optical isolation is used on the AVT-717 to electrically isolate the host computer from the vehicle or unit under test, at the serial interface.

The AVT-717 is available housed in a rugged polycarbonate enclosure or as an OEM module (circuit board only). A hardware User's Manual containing technical information is included with the AVT-717.

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: ..... *5.1 x 6.7 x 2.2 in. (Enclosure/Overall)*
4.0 x 5.6 x 0.5 in. (OEM module)

Weight: ..... *15 ounces (4 oz. OEM only)*

Voltage: ..... *+8 to +25 VDC (from vehicle)*

Power: ..... *2.2 watts (nominal)*

Host interface: ..... *RS-232 or RS-422 (jumper selectable)*

Host baud rate: ..... *9.6, 19.2, 38.4, 57.6 kbaud (jumper selectable)*

Connectors: ..... *DE-9S and DA-15P*

Microcontroller: ..... *MC68332 @ 16 MHz (Motorola)*

http://www.avt-hq.com
support@avt-hq.com

410-798-4038 (voice) • 410-798-4308 (fax)
1509 Manor View Road, Davidsonville, MD 21035

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-717
UBP & CAN Interface
(RS-232 Stand Alone unit)

Ordering Information

The AVT-717 interface board housed in a rugged polycarbonate enclosure, serial cable, and documentation.
Order # 717-002.

The AVT-717 interface board and documentation (OEM unit).
Order # 717-003.

Accessories

Ordering Information

9-pin serial cable.
Order # 101-001

OBD-II cable.
Order # 101-002

Ribbon cable, 15 conductor.
Order # 101-003

Ribbon cable, 9 conductor.
Order # 101-004

Toggle switch assembly.
Order # 101-005

Enclosure, polycarbonate. Complete unit.
Order # 101-006

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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