MultiCom II

Multi-Purpose Vehicle Interface Adapter on an ISA Card

EnGenius' MultiCom II is a flexible solution that provides ***simultaneous*** access to multiple vehicle networks as well as digital and analog input/output. (***Custom protocols*** can also be supported.) The MultiCom II is a half-size ISA card.

MultiCom II's unique design consists of a set of Physical Interface Modules (PIMs) that plug into its base platform. Each PIM (standard or custom designed) contains the specific interface circuits that allow MultiCom II to connect to external devices. The PIMs and the base platform can all function ***simultaneously***. This multi-purpose vehicle interface adapter provides a powerful, yet flexible, solution to meet a wide range of needs.

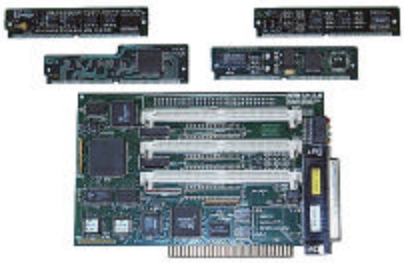
MultiCom II can also be programmed with custom applications. This makes it possible for MultiCom II to operate in a stand-alone configuration (i.e., without a PC) with access to all of the adapter's resources.

Interface Capabilities

MultiCom II is capable of supporting ISO 9141, ISO 9141-2, ISO 14230, ISO 11519-4, ISO 15765, SAE J1850 PWM, CAN, SAE J2284, Ford's DCL, RS485/RS422, RS232, SAE J1939, SAE J1708, and others (including custom protocols).

Applications

- Engineering development or in-vehicle use
- Stand-alone embedded control
- Protocol translation
- Network monitoring
- Module validation, test fixtures
- Diagnostics
- Heavy truck
- Light and medium duty vehicles



Base Platform Features

- Half-size ISA card
- Operates in a PC or as a stand-alone unit
- 3 Physical Interface Module (PIM) slots
- Trigger pulse output on message received or transmitted
- Trigger input to initiate message transmission
- 8 channel 10 bit A/D inputs (4 on the main connector, 4 are PIM accessible)
- 4 digital inputs (1 on main connector, 3 are PIM accessible)
- 4 digital outputs (1 on main connector, 3 are PIM accessible)
- 2 16552 UART channels are PIM accessible
- 20MHz 80C196KC microcontroller
- Interface to host PC via 4K dual-port RAM
- 32K RAM
- 128K Flash ROM

Optional Physical Interface Modules

- ISO 9141
- SAE J1850 PWM (using an HBCC)
- CAN
- SAE J1708
- Ford's DCL
- RS485/RS422
- RS232
- Digital I/O (8 inputs and 8 outputs)
- SAE J1939*

* *indicates PIM is under development*

Software & Documentation

- User manual provides a description of the hardware and application library interface
- DLLs for 16 bit Windows 3.X
- DLLs for 32 bit Windows 95/98/NT
- Static libraries for DOS

Technical Data for MultiCom II Physical Interface Modules

ISO 9141

- K support
- 5–1M baud supported
- Selectable line termination
- Timestamping available with byte stream or ISO 9141-2 message modes
- Configurable inter-byte and inter-message times
- Configurable timed interval transmission of 1 user-defined message
- Trigger pulse output on message received or transmitted
- Trigger input to initiate message transmission
- Jumper selectable ISO 9141 circuit voltage (on-board or external)
- Software configurable loop back

SAE J1850 PWM

- Uses Ford/Motorola Hosted Bus Controller Chip (HBCC)
- 10.4K, 20.8K, 41.6K, and 83.3K baud supported
- Selectable line termination
- Message timestamping
- Configurable inter-message times
- Configurable timed interval transmission of up to 10 user-defined messages
- Trigger pulse output on message received or transmitted
- Trigger input to initiate message transmission

CAN

- Uses Intel's 82527
- 50K, 62.5K, 125K, 250K, 500K, and 1M baud supported
- Configurable 11 and 29 bit CAN identifiers
- Selectable line termination
- Message timestamping
- Configurable message filtering at the board level
- Configurable inter-message times
- 7 configurable remote transmit objects
- Trigger pulse output on message received or transmitted
- Trigger input to initiate message transmission

SAE J1708

- 6.4K–12.8K baud supported
- Byte stream or message modes with timestamping
- Automatic separation of received bytes into discrete messages
- Trigger pulse output on message received or transmitted
- Trigger input to initiate message transmission
- Software configurable loop back

Ford's DCL

- Uses 16552 Dual UART
- 2.4K, 4.8K, 9.6K, and 19.2K baud supported
- Link master, link slave, and UART stream modes supported
- Byte stream or frame timestamping
- Automatic frame parsing with vertical parity nibble validation for link master or link slave modes
- Trigger pulse output on message received or transmitted
- Trigger input to initiate message transmission
- Software configurable loop back for UART stream mode

RS485/RS422

- Uses 16552 Dual UART
- 2.4K, 4.8K, 9.6K, and 19.2K baud supported (Other data rates available.)
- Byte stream timestamping
- Software configurable loop back

RS232

- Uses 16552 Dual UART
- 2.4K, 4.8K, 9.6K, and 19.2K baud supported (Other data rates available.)
- Used for custom applications

Digital I/O

- 8 digital inputs
- 8 digital outputs