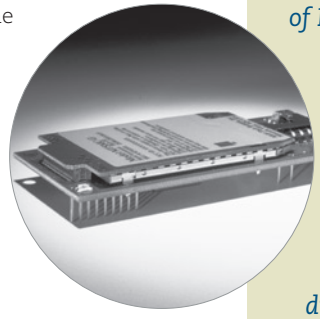
Diamond Systems

Wireless GPS Connectivity in a PC/104 Form Factor

Diamond Systems designs and builds rugged embedded computing products for a wide variety of applications. Their customer base includes companies in the military, aerospace, medical, industrial, transportation and instrumentation industries. Each design incorporates features to ensure that it can survive harsh environments such as extreme heat, cold and high humidity. Diamond Systems' adherence to PC/104 and other open standards enables them to quickly acquire new technologies to enhance their product line.

Utilizing the Multi-Tech SocketModem GSM/GPRS and SocketModem CDMA wireless modules, Diamond Systems is able to provide wireless communicaions along with GPS connectivity in a PC/104 form factor. PC/104 is a compact, rugged, easily expandable embedded computing standard based on PC technology. It is an ideal platform for developing embedded systems that will be used in military, industrial, transportation and scientific applications. You can configure a PC/104 system to meet your exact requirements easily by stacking boards on top of each other. The stacking nature of PC/104 boards makes a PC/104 system compact and rugged, and provides flexibility by letting you choose the boards you need.



The Diamond Systems JANUS-MM PC/104 module combines dual CAN interfaces with sockets for wireless communications and GPS to create a complete I/O subsystem for automotive and other vehicle applications such as busses, trucks and trains. Each CAN port is independently isolated from the system to eliminate sensitivity to noise and ground shifts in the network. JANUS-MM includes sockets and support circuitry for GSM/GPRS and CDMA wireless communication modules from Multi-Tech, as well as 8-channel and 12-channel GPS receivers from Trimble Navigation. A connector is provided to supply backup power for the GPS almanac. A built-in dual UART circuit provides the necessary interface to the modules.

"Utilizing only a single slot in a PC/104 stack, Janus MM enables the creation of compact vehicle-based applications that can communicate on the vehicle network, determine the vehicle's location, and exchange information with a central location," explains Jonathan Miller, President of Diamond Systems. "We selected Multi-Tech embedded wireless modems because Multi-Tech provides an industry standard modem interface along with a broad range of SocketModem modules that interface with many different cellular carriers both in North America and internationally," said Miller.

SocketModem GPRS

- *GPRS Class 10*
- *Packet data up to 85.6K bps*
- *Universal Socket Connectivity*
- *Carrier approved*

SocketModem CDMA

- *CDMA2000 1xRTT*
- *Packet data up to 153.6K bps forward and reverse*
- *Universal Socket Connectivity*
- *Carrier approved*

***Diamond Systems** is one of the leading worldwide suppliers of PC/104 I/O modules and highly integrated single board computers combining CPU and data acquisition on a single board. Diamond Systems' extensive product line includes A/D, D/A, digital I/O, serial communications, multifunction networking, and power supply modules as well as single board computers and enclosures. Diamond Systems also offers a full range of system solutions, including the capability to customize a board or system to meet the needs of a particular application.*

DIAMOND SYSTEMS CORPORATION

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MultiTech® Systems