

► GPS + UART Serial I/O PMC Adapter

The GPS + UART Serial I/O PMC (PCI Mezzanine Card) Adapter provides an integrated GPS (Global Positioning System) receiver plus one channel of UART (Universal Asynchronous Receiver/Transmitter) serial I/O. An external DGPS (Differential GPS) input is provided. The adapter is available in both conduction-cooled (CC) and air-cooled versions : ruggedised, industrial and commercial.

Architecture

The GPS + UART Serial I/O PMC Adapter employs a PCI-based dual-channel, high performance, industry standard 16550 compatible UART.

Features

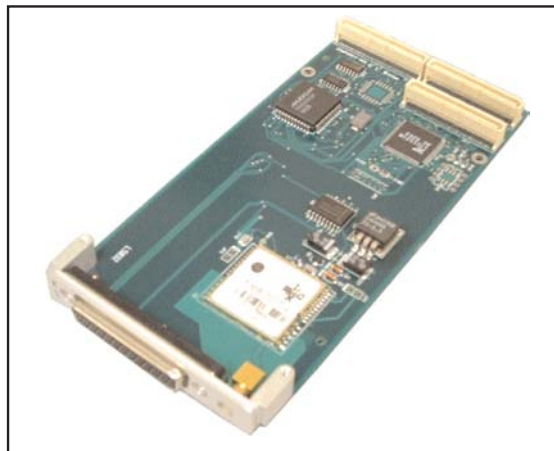
This board offers full GPS functionality to be integrated with the host in addition to an extra UART-compatible serial communication link.

Conduction-Cooling

The conduction-cooled GPS + UART Serial I/O PMC Adapter conforms to the CCPMC (Conduction-Cooled PCI Mezzanine Card) Standard, namely ANSI/VITA 20-2001.

Applications

- Distributed applications in harsh environments
- Avionics
- Mission-critical applications



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GPS + UART Serial I/O PMC and CCPMC Adapter Specifications

Bus Interface	32-bit, 33 MHz PCI-bus Electrically : 5 V signaling, PCI Rev. 2.2 Mechanically : Single CMC formfactor IEEE P1386.1
Serial Channels	1 x RS232 channel with GPS option (includes RS232 interface for DGPS)
Serial Interface	Front and Rear-panel RS232 Signals : RxD, TxD, RTS, CTS, DTR, DSR, CD, RI
DGPS Interface	Front and Rear-panel RS232 Signals : RxD, TxD
GPS Receiver	L1 Frequency, C/A Code, 12 Channel
GPS Data Format	NMEA 0183
GPS Update Rate	1 Hz max
DGPS Correction Data Format	RTCM SC-104
Bit Rates	User-programmable standard rates up to 115,2 kbps
I/O Addresses	Automatic assigned to the slot by PCI Rev. 2.2 Plug-and-Play
I/O Options	Air-cooled versions use front-panel I/O with MCX connector for GPS Antenna. Conduction-cooled version uses rear connector PMC JN4 I/O and has various MCX connector alignment options to facilitate GPS antenna routing in conduction-cooled installation.
Interrupts	PCI INT A
Operating Limits	Altitude < 18 000 m, Velocity < 515 ms ⁻¹ Either limit may be exceeded, but not both – COCOM (Coordinating Committee on Export Controls) restrictions apply
Receiver Type	12-Channels
Max Update Rate	4 Hz
Accuracy	Position : 2,5 m CEP 5,0 m SEP
Acquisition	Cold Start = 36 s Warm Start = 33 s Hot Start <3,5 s Aided Start = 5 s
Timepulse Accuracy	RMS 50 ns, 99% <100 ns
Dimensions	Air-cooled : 149,00 mm x 74,00 mm with envelope acc to CMC spec. Conduction-cooled : 143,65 mm x 74,00 mm with envelope acc to VITA 20 spec. Outside Dimensions : 160,00 mm x 75,00 mm x 15,00 mm
Mass	60 g ± 10 g
Power Requirement	+5 V at 0,6 A
MTBF	Figures according to MIL-HDBK-217F, Parts Count Method (Predicted) : Ground, Mobile T _j = 65 C T _a = 45 C 56 000 hrs Naval, Sheltered T _j = 60 C T _a = 40 C 97 000 hrs Airborne, Inhabited Cargo T _j = 75 C T _a = 55 C 75 000 hrs
Software Drivers	The GPS PMC serial interface is compatible with the industry-standard 16550 UART. As such, no specific driver is required for most Operating Systems. <ul style="list-style-type: none"> VxWorks source code to locate the device in PCI space and obtain a pointer to the UART is supplied as an example Linux kernel V2.4.x, tested with Red Hat 7.1 and 8.0 Windows NT/2000/XP
Supporting Software	Sample driver usage software (C/C++ source code)
Options	Port software drivers to various other operating systems on request

Environmental Specifications

	Commercial	Industrial	Ruggedised/Conduction-Cooled
Temperature			
- Operating	0 C to +55 C	-15 C to +75 C	-40 C to + 85 C
- Storage	-40 C to +85 C	-40 C to +85 C	-55 C to +125 C
Humidity	0% to 90%	0% to 95%	0% to 95%
Shock	N/A	30 g peak for 11 ms	40 g peak for 11 ms
Vibration			
- Sine	2 g (peak) 10 Hz to 100 Hz	10 g (peak) 5 Hz to 2 kHz	10 g (peak) 5 Hz to 2 kHz
- Random	0,04 g ² /Hz at 15 Hz to 2 kHz	0,1 g ² /Hz at 15 Hz to 2 kHz	0,1 g ² /Hz at 15 Hz to 2 kHz

Designations

CCII/SIO/PMC/GPS/FP/COM	Commercial	Front-panel or Backplane I/O	GPS + UART Serial I/O
CCII/SIO/PMC/GPS/FP/IND	Industrial	Front-panel or Backplane I/O	GPS + UART Serial I/O
CCII/SIO/PMC/GPS/FP/RGD	Ruggedised	Front-panel or Backplane I/O	GPS + UART Serial I/O
CCII/SIO/PMC/GPS/BP/CC	Conduction-cooled	Backplane I/O	GPS + UART Serial I/O