

## ► 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

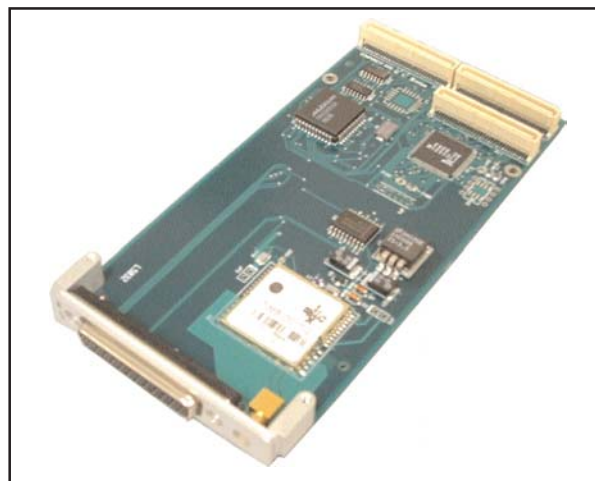
This board offers full GPS functionality to be integrated with the host in addition to an extra UART-compatible serial communication link.

### 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**

<b>Bus Interface</b>	32-bit, 33 MHz PCI-bus Electrically : 5 V signaling, PCI Rev. 2.2 Mechanically : Single CMC formfactor IEEE P1386.1
<b>Serial Channels</b>	1 x RS232 channel with GPS option (includes RS232 interface for DGPS)
<b>Serial Interface</b>	Front and Rear-panel RS232 Signals : RxD, TxD, RTS, CTS, DTR, DSR, CD, RI
<b>DGPS Interface</b>	Front and Rear-panel RS232 Signals : RxD, TxD
<b>GPS Receiver</b>	L1 Frequency, C/A Code, 12 Channel
<b>GPS Data Format</b>	NMEA 0183
<b>GPS Update Rate</b>	1 Hz max
<b>DGPS Correction Data Format</b>	RTCM SC-104
<b>Bit Rates</b>	User-programmable standard rates up to 115,2 kbps
<b>I/O Addresses</b>	Automatic assigned to the slot by PCI Rev. 2.2 Plug-and-Play
<b>I/O Options</b>	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.
<b>Interrupts</b>	PCI INT A
<b>Operating Limits</b>	Altitude < 18 000 m, Velocity < 515 ms <sup>-1</sup> Either limit may be exceeded, but not both – COCOM (Coordinating Committee on Export Controls) restrictions apply
<b>Receiver Type</b>	12-Channels
<b>Max Update Rate</b>	4 Hz
<b>Accuracy</b>	Position : 2,5 m CEP 5,0 m SEP
<b>Acquisition</b>	Cold Start = 36 s Warm Start = 33 s Hot Start <3,5 s Aided Start = 5 s
<b>Timepulse Accuracy</b>	RMS 50 ns, 99% <100 ns
<b>Dimensions</b>	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
<b>Mass</b>	60 g ± 10 g
<b>Power Requirement</b>	+5 V at 0,6 A
<b>MTBF</b>	Figures according to MIL-HDBK-217F, Parts Count Method (Predicted) : Ground, Mobile T <sub>j</sub> = 65 C T <sub>a</sub> = 45 C 56 000 hrs Naval, Sheltered T <sub>j</sub> = 60 C T <sub>a</sub> = 40 C 97 000 hrs Airborne, Inhabited Cargo T <sub>j</sub> = 75 C T <sub>a</sub> = 55 C 75 000 hrs
<b>Software Drivers</b>	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"> <li>VxWorks source code to locate the device in PCI space and obtain a pointer to the UART is supplied as an example</li> <li>Linux kernel V2.4.x, tested with Red Hat 7.1 and 8.0</li> <li>Windows NT/2000/XP</li> </ul>
<b>Supporting Software</b>	Sample driver usage software (C/C++ source code)
<b>Options</b>	Port software drivers to various other operating systems on request

**Environmental Specifications**

	Commercial	Industrial	Ruggedised/Conduction-Cooled
<b>Temperature</b>			
- 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
<b>Humidity</b>	0% to 90%	0% to 95%	0% to 95%
<b>Shock</b>	N/A	30 g peak for 11 ms	40 g peak for 11 ms
<b>Vibration</b>			
- 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 <sup>2</sup> /Hz at 15 Hz to 2 kHz	0,1 g <sup>2</sup> /Hz at 15 Hz to 2 kHz	0,1 g <sup>2</sup> /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