

► **GPS + High-Speed Serial I/O PMC Adapter** (Not recommended for new designs)

The GPS + High-Speed Serial I/O PMC (PCI Mezzanine Card) Adapter provides an integrated GPS (Global Positioning System) receiver plus four channels of high-speed (>10 Mbps) serial I/O and one channel of UART (Universal Asynchronous Receiver/Transmitter) (<1 Mbps) 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 + High-Speed Serial I/O PMC Adapter uses the Motorola MPC860 PowerQUICC Integrated PowerPC Microprocessor as a communication controller.

Features

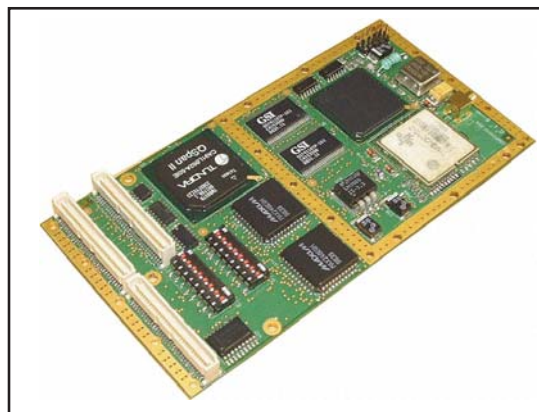
This board offers full GPS functionality to be integrated with the host in addition to an extra four channels of high-speed serial I/O and one channel of UART-compatible serial I/O.

Conduction-Cooling

The conduction-cooled GPS + High-Speed 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
- Position tracking applications



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Specifications	
Bus Interface	32-bit, 33 MHz PCI-bus Electrically : 5 V signaling, PCI Rev. 2.2 Mechanically : Single CMC formfactor IEEE P1386
Serial Interface	RS232/422/485 configurable
Serial Channels	4 x SCCs (Serial Communication Controllers) for high-speed serial links - Synchronous or Asynchronous 2 x SMCs (Serial Management Controllers) for UART serial links - Asynchronous only
DGPS Interface	Front or Rear-panel RS232 Signals : RxD, TxD
GPS Receiver	L1 Frequency, C/A Code, 12 Channel
GPS Data Format	NMEA 0183
DGPS Correction Data Format	RTCM SC-104
GPS Update Rate	1 Hz max
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	16-Channels
Max Update Rate	4 Hz
Accuracy	Position : 2,5 m CEP (Circular Error Probability); 5,0 m SEP (Spherical Error Probability)
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
Power Requirements	+5 V at 0,6 A
Software Drivers	Various software drivers offered including for VxWorks, Windows NT, Windows 2000* and Windows XP* operating systems as standard; others are costed options. (*Standard PC HAL only)
Supporting Software	Sample driver usage software (C/C++ source code)
Options	Port software drivers to various other operating systems on request



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Characteristics		
	Dimensions	Weight
Air-cooled	149,00 mm x 74,00 mm with envelope according to CMC specification	60 g ± 10 g
Conduction-cooled	143,65 mm x 74,00 mm with envelope according to VITA 20 specification	60 g ± 10 g
Outside Dimensions	160,00 mm x 75,00 mm x 15,00 mm	60 g ± 10 g

Reliability				
MTBF	Figures according to MIL-HDBK-217F, Parts Stress Method			
	Ground, Mobile Naval, Sheltered Airborne, Inhabited Cargo	T _j = 65 C T _j = 60 C T _j = 75 C	T _a = 45 C T _a = 40 C T _a = 55 C	56 000 hrs 97 000 hrs 75 000 hrs

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

Part Selector			
Part Designation	Grade	I/O Options	Serial I/O Channels
CCII/SIO/PMC/4PA+GPS/FP/COM	Commercial	Front-panel or Backplane I/O	GPS + 4HSS I/O
CCII/SIO/PMC/4PA+GPS/FP/IND	Industrial	Front-panel or Backplane I/O	GPS + 4HSS I/O
CCII/SIO/PMC/4PA+GPS/FP/RGD	Ruggedised	Front-panel or Backplane I/O	GPS + 4HSS I/O
CCII/SIO/PMC/4PA+GPS/FP/CC	Conduction-cooled	Backplane I/O	GPS + 4HSS I/O