

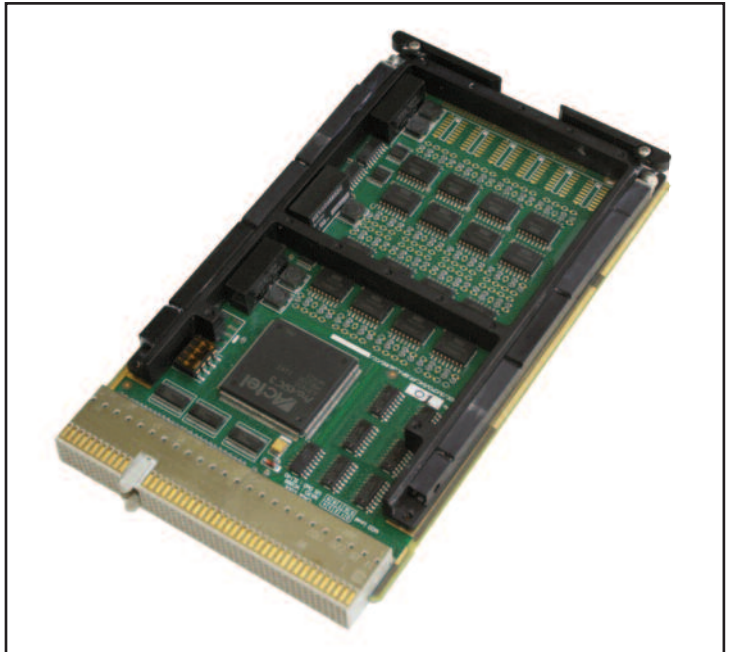
▶ 3U cPCI 52-Channel Isolated Analog to Digital Converter Board

The 52-Channel Isolated Analog to Digital Converter (ADC) Board utilises 16 separate digitally isolated analog to digital converter channels, each with a sample rate of 250 kSps.

Up to 12 of these channels can each be multiplexed four ways to provide 48 channels at a reduced data rate. A Field-Programmable Gate Array (FPGA) is used to provide access to the digital data over the PCI bus.

Backpanel I/O is also supported, with a maximum of 49 channels (limited by available I/O pins on the cPCI connector).

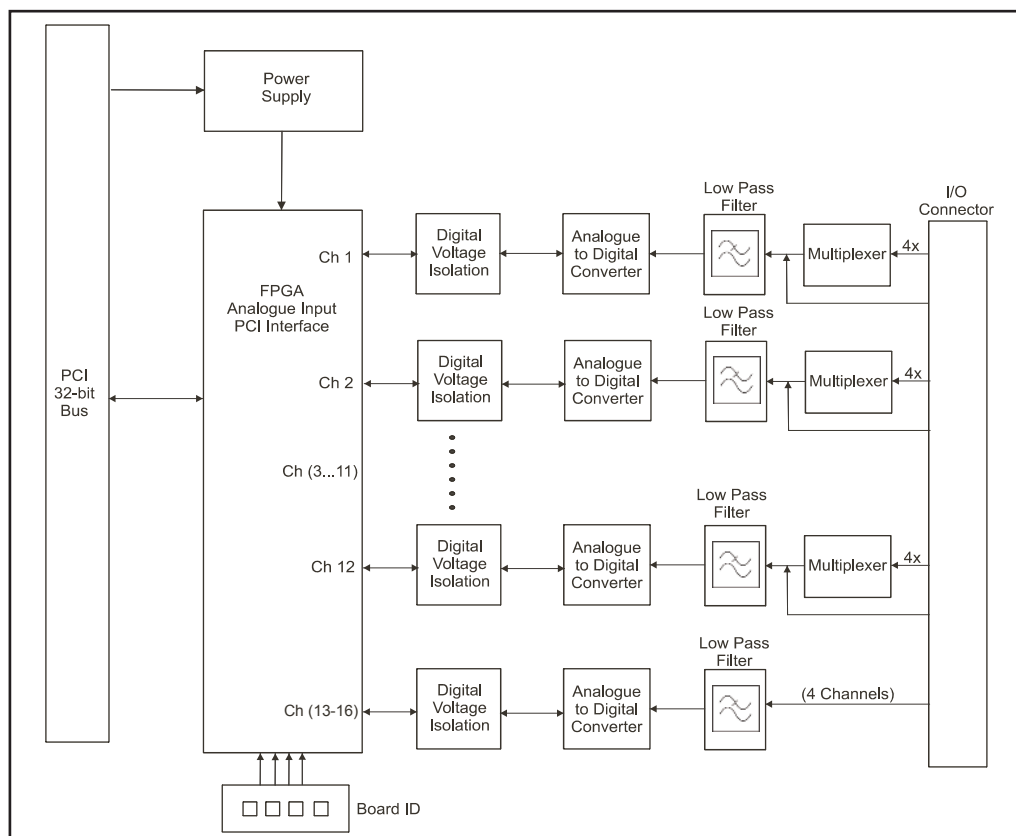
Input channel to system isolation is 2 500 V RMS.



49-Channel Conduction-Cooled Isolated Analog to Digital Converter Board

Architecture

An FPGA is used to control and read the data from the analog to digital converters and provides the PCI Interface. High-speed digital isolators are used to isolate the system side bus from the analog inputs. Multiplexers are used to increase the total number of differential inputs.



Block Diagram of the 52-Channel Isolated Analog to Digital Converter Board



▶ 3U cPCI 52-Channel Isolated Analog to Digital Converter Board

Features

- high number of analog Inputs
- programmable gain amplifiers
- Air-Cooled and Conduction-Cooled versions
- Commercial, Industrial and Ruggedised grades
- wide range input (-10 V to +10 V)
- high sample rate of 250 000 samples per second
- high-speed digital isolation
- board Identification switch
- wide bandwidth (up to 125 kHz)
- input pin overvoltage protection

Formfactor and Bus Interface	PICMG 2.0 (R3.0) 3U CompactPCI 32 bit, 33 MHz, 3,3 V PCI signalling, 5 V tolerant		
Analog Input Type	Differential or single-ended		
Number of Analog Inputs	Frontpanel :16 full speed or 4 full speed and 48 reduced performance Backpanel :16 full speed or 5 full speed and 44 reduced performance		
Maximum Sample Rate	250 000 samples/second per channel (full speed) 10 000 samples/second per channel (reduced performance)		
Voltage Isolation	2 500 V RMS (input channel to system)		
Resolution	16 bit		
Input Amplifier	Programmable gains of 1, 2, 4 and 8 (optional 1, 10, 100 and 1000) Maximum slew rate of 0,2 V/μs		
Input Bandwidth	up to 125 kHz (-3 dB)		
Power	3,3 V DC at 2,5 A (8,25 Watt); 5 V DC at 0,7 A (3,5 Watt); 12 V DC at 0,2 A (2,4 Watt)		
MTBF	Figures according to MIL-HDBK-217F, Parts Stress Method		
	Commercial and Industrial Grades	Ground Benign, Controlled, 25 C	400 000 hrs
	Ruggedised Grade	Ground, Mobile, 45 C Naval, Sheltered, 40 C Airborne, Inhabited Cargo, 55 C	110 000 hrs 190 000 hrs 95 000 hrs
Software Drivers	Support for Linux. VxWorks, Windows and others are costed options.		
Physical Characteristics			
Cooling Type		Air-Cooled	Conduction-Cooled
Dimensions		100,0 mm x 160,0 mm	100,0 mm x 160,0 mm
Mass		200 g +/- 10 g	225 g +/- 10 g
Environmental Specifications			
Grade	Commercial	Industrial	Ruggedised
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% - 90%	0% - 95%	0% - 95%
Shock	10 g peak for 11 ms	20 g peak for 11 ms	40 g peak for 11 ms
Vibration			
- Sine	2 g (peak) at 10 Hz to 100 Hz	5 g (peak) at 5 Hz to 2 kHz	10 g (peak) at 5 Hz to 2 kHz
- Random	0,04 g²/Hz at 15 Hz to 2 kHz	0,06 g²/Hz at 15 Hz to 2 kHz	0,1 g²/Hz at 15 Hz to 2 kHz
Designation	Cooling	Connector	Grade
CCII/ADC/3UCPCI/52C/FP/COM	Air	Frontpanel	Commercial
CCII/ADC/3UCPCI/52C/FP/IND	Air	Frontpanel	Industrial
CCII/ADC/3UCPCI/52C/FP/RGD	Air	Frontpanel	Ruggedised
CCII/ADC/3UCPCI/49C/BP/COM	Air	Backpanel	Commercial
CCII/ADC/3UCPCI/49C/BP/IND	Air	Backpanel	Industrial
CCII/ADC/3UCPCI/49C/BP/RGD	Air	Backpanel	Ruggedised
CCII/ADC/3UCPCI/49C/BP/CC	Conduction	Backpanel	Ruggedised