

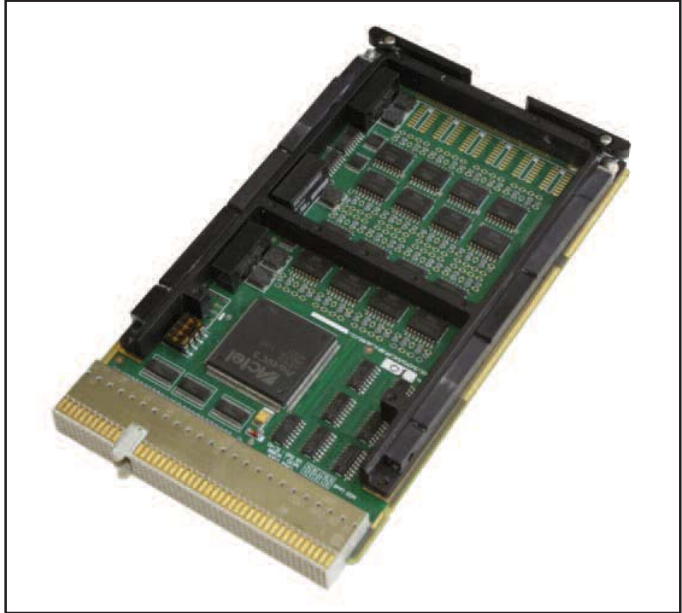
## ► 3U cPCI 52-Channel Isolated Analog to Digital Converter Board

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).

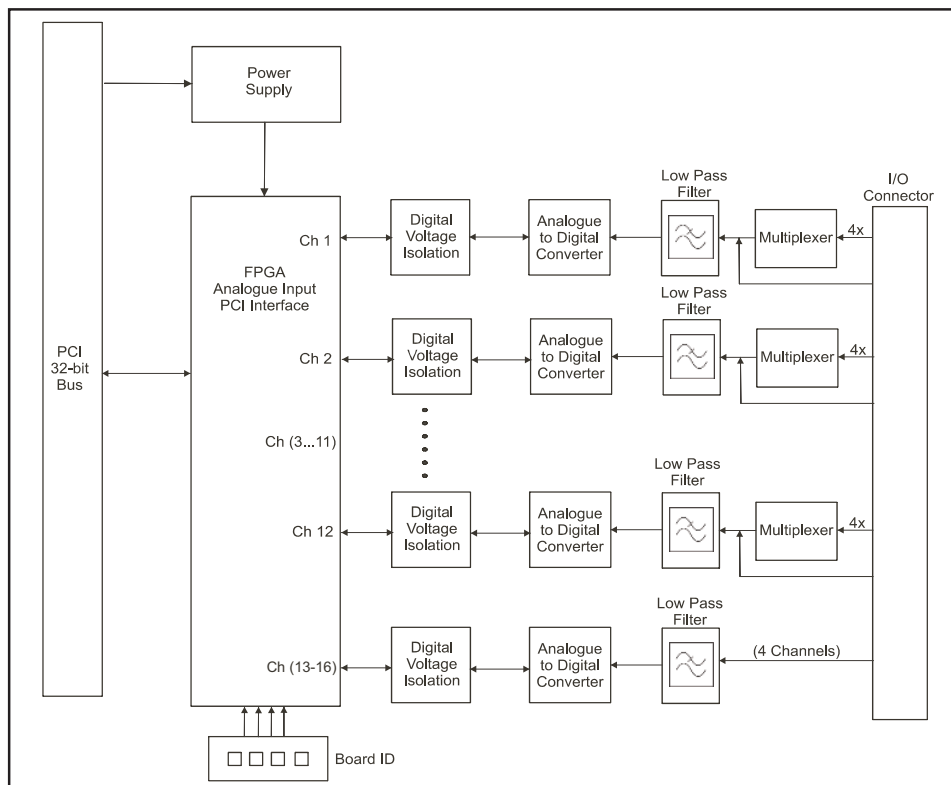
Input channel to system isolation is 2 500 V RMS.



**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

<b>Formfactor and Bus Interface</b>	PICMG 2.0 (R3.0) 3U CompactPCI 32 bit, 33 MHz, 3,3 V PCI signalling, 5 V tolerant		
<b>Analog Input Type</b>	Differential or single-ended		
<b>Number of Analog Inputs</b>	Frontpanel :16 full speed or 4 full speed and 48 reduced performance Backpanel :16 full speed or 5 full speed and 44 reduced performance		
<b>Maximum Sample Rate</b>	250 000 samples/second per channel (full speed) 10 000 samples/second per channel (reduced performance)		
<b>Voltage Isolation</b>	2 500 V RMS (input channel to system)		
<b>Resolution</b>	16 bit		
<b>Input Amplifier</b>	Programmable gains of 1, 2, 4 and 8 (optional 1, 10, 100 and 1000) Maximum slew rate of 0,2 V/μs		
<b>Input Bandwidth</b>	up to 125 kHz (-3 dB)		
<b>Power</b>	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)		
<b>MTBF</b>	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
<b>Software Drivers</b>	Support for Linux. VxWorks, Windows and others are costed options.		
<b>Physical Characteristics</b>			
<b>Cooling Type</b>		<b>Air-Cooled</b>	<b>Conduction-Cooled</b>
<b>Dimensions</b>		100,0 mm x 160,0 mm	100,0 mm x 160,0 mm
<b>Mass</b>		200 g +/- 10 g	225 g +/- 10 g
<b>Environmental Specifications</b>			
<b>Grade</b>	<b>Commercial</b>	<b>Industrial</b>	<b>Ruggedised</b>
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
<b>Designation</b>	<b>Cooling</b>	<b>Connector</b>	<b>Grade</b>
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