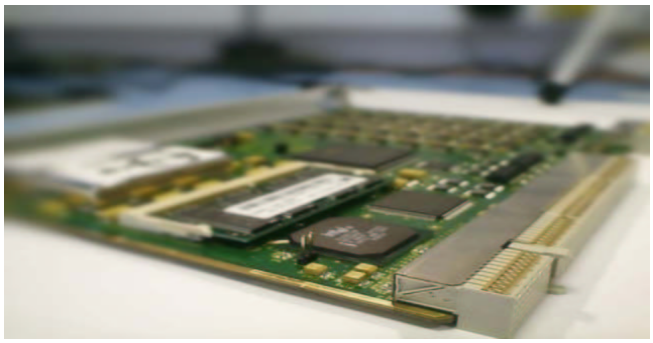
ACQ32CPCI

2 Channel Simultaneous, 250 kSPS, 16 Bit Resolution, Intelligent CompactPCI™ Data Acquisition Card



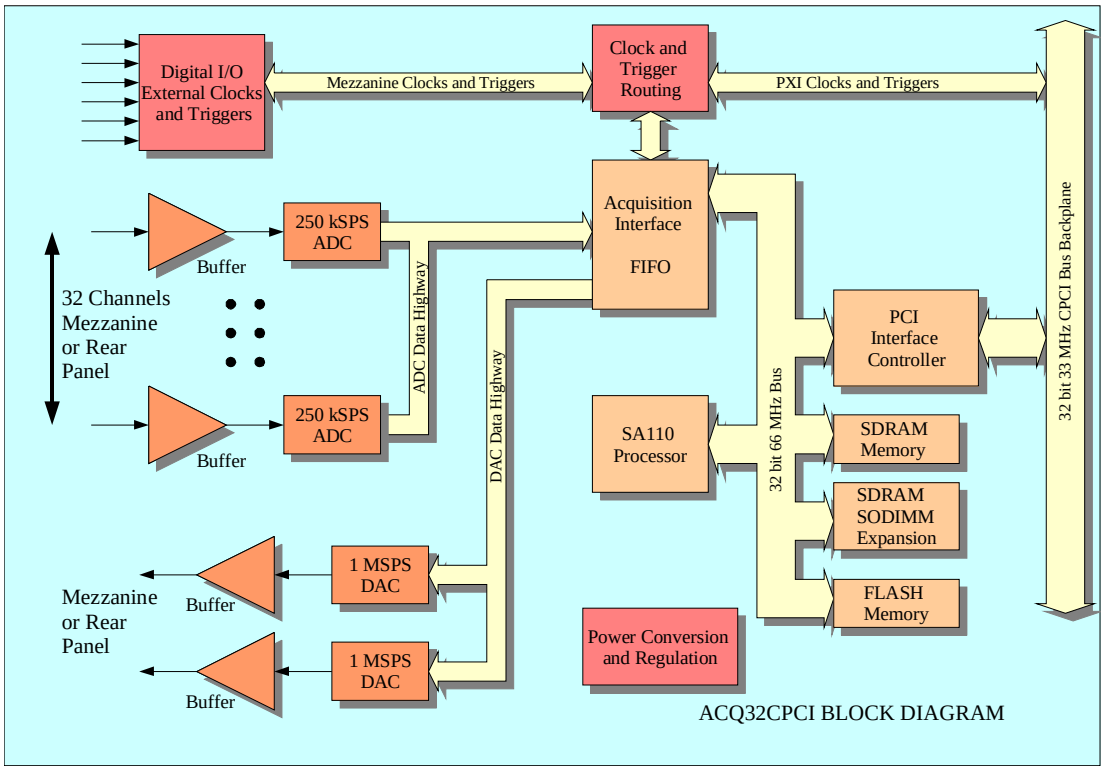
Features

32 Channels Simultaneous Inputs
2 Channels Simultaneous Outputs – waveform capable
250 kSPS per channel.
6U CompactPCI Data Acquisition Card
16 bit resolution
Flexible Digital I/O Subsystem, PXI™ compatible backplane clock and trigger routing
Support for multiple board synchronisation
StrongARM™ Microprocessor
Up to 128 MB sample memory
PCI 2.1 Interface, Target and Initiator
DMA based fast host data upload
Open Source Linux Driver

Applications

Transient Recorders
Simulation
Test and Measurement
Machine Health Monitoring
Precision Process Monitoring
Industrial Automation
Closed Loop Control
Vibration Analysis

The ACQ32CPCI card represents the latest in intelligent, high channel density, Analog Data Acquisition products from D-TACQ Solutions Ltd.. The board samples 32 input channels simultaneously at 250 kSPS (kilo-samples per second) per channel at 16 bit resolution, whilst offering excellent AC and DC performance. The board also offers 2 channels of analog output offering complementary performance to the inputs. This product offers the advanced features of an intelligent board including programmable triggering, flexible clocking; and a host of data management functions. High internal data bandwidth gives extremely low latency between clock input and data in either local memory or DMA to host memory. Dedicated, high speed Digital I/O allows multiple boards to be synchronised together for high channel count applications. Based on the PCI based ACQ32PCI, the CompactPCI™ version brings improved functionality and features including mezzanine based signal conditioning and PXI™ compatible clock and trigger routing. The ACQ32CPCI's onboard intelligence frees the host processor from complex real time design issues, allowing industry standard operating systems like Windows NT™ and Linux to be used in high performance applications, which were previously the province of dedicated real time operating systems.



Performance (Typical)

Analog Input

Number Of Channels	32	THD	-90 dB*
Throughput	250 kSPS	SINAD	84 dB*
Resolution	16 bits	SFDR	100 dBc*
Coupling	DC, Single Ended	SNR	86 dB*
Sampling	Simultaneous	Full Power BW	250 kHz
Input Impedance	Factory Set 100 kΩ	Small Signal BW	2 MHz
Voltage Range	±10V	Crosstalk (3 dB)	<90 dB @ 1 kHz FS Input (250 kSPS)
Offset Error	<0.005%	Temperature Stability	<25 ppm/°C
Gain Error	<0.01%		
INL	±3 LSBs	**Typical values measured at full scale 9.76 kHz input*	
DNL	±1 LSBs		

Analog Output

Number Of Channels	2	Output Capacitance	<30 pF
Throughput	1 MSPS	Voltage Range	±10V
Resolution	16 bits	Offset Error	<0.02%
Coupling	DC, Single Ended	Gain Error	<0.03%
Sampling	Simultaneous	Output Setting Time	3µS (FS Step)
Output Impedance	100 Ω – reconstruction filter	Crosstalk (3 dB)	<90 dB @ 1 kHz FS Output (1 MSPS)
		Temperature Stability	<25 ppm/°C
Output Current	±15 mA (max)		

Digital I/O

Number	14	In addition the ACQ32CPCI provides a flexible Expansion Digital
Switching Characteristics	TTL	I/O subsystem consisting of an 8 bit address bus, a 16 bit databus
Dedicated I/Os	6	and a simple control protocol.
Programmable WaveForm Outputs	8	

The Dedicated I/Os are used for high-speed control including clocks, triggers and multi-board synchronisation , these are available on the Front Panel, Rear Panel or using PXI compatible P2 backplane routing.

Processor Characteristics

Processor	StrongARM™ SA-110, 230 MIPS
FLASH	1 MByte
SDRAM	4 MBytes (2 Mbytes Processor, 2 MBytes Acquisition Data)

Standard 144 pin SDRAM SODIMM socket for up to 128 MBytes expansion

PCI Interface 32 bit 33 MHz compatible compliant to PICMG™ CompactPCI™ Specification R2.2

External Connectors

The ACQ32CPCI can be ordered for either front or rear panel connection. Front panel connections are achieved by utilising a mezzanine board which connects to the front panel. This allows a flexible specification of front panel connectors including customer customisation. The mezzanine or rear panel transition module can also be used for signal conditioning, – Contact D-TACQ Solutions for further information. On available modules.

Ordering Information

ACQ32CPCI-WWW-XX-Y

WWW = Acquisition Speed = 250 or 100 kHz XX = Number of Channels = 32, 16, 8

Y = Mezzanine or Rear Panel Transition

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