# CPCI-DAS08

Low Cost, CompactPCI-bus Compatible, 8-Channel Analog Input Board with 7 Digital I/O Bits and Three 16-bit Counters

Features

- Extremely low cost
- 8 Single ended analog inputs
- 12-bit A/D resolution
- ± 5 volt input range
- 50 kHz sample rate
- Three 16-bit counters
- 7-bits digital I/O (4 out, 3 in)
- Connector compatible with CIO-DAS08
- Register compatible with CIO-DAS08
- Fully plug-and-play

Block Diagram

cPCI-DAS08 Block Diagram
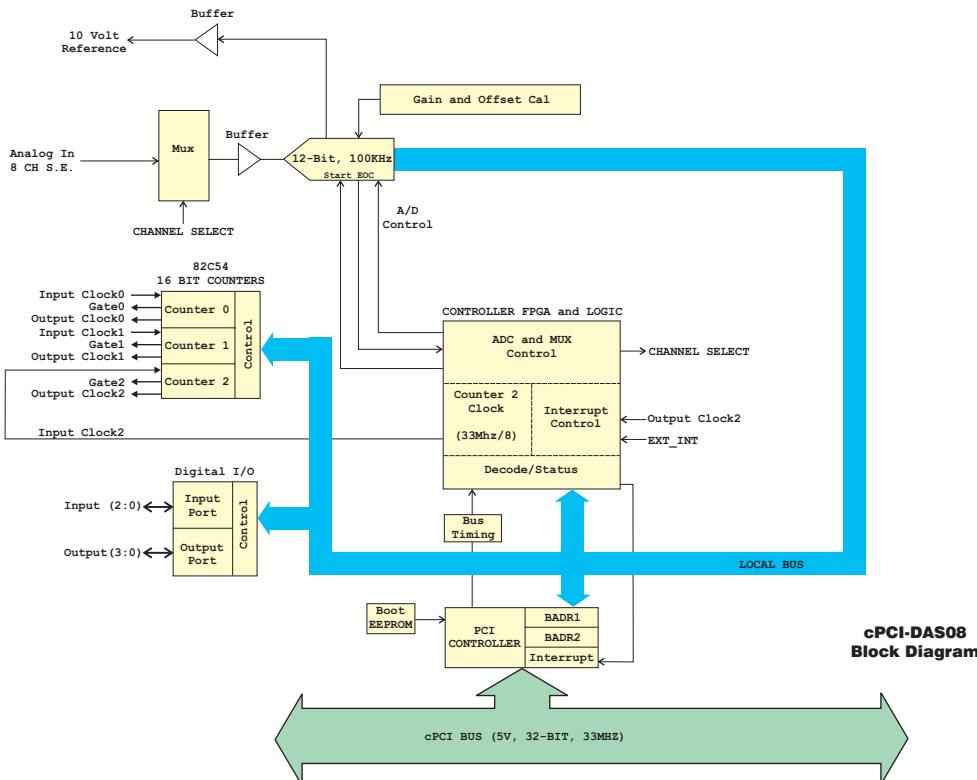
I/O Connector & Cables

All I/O signals are brought through a 37-pin "D" connector. The (optional) C37FF-XX series cable brings all of the pins out and is suitable for use with all compatible screw terminal and signal conditioning accessory boards. The CPCI-DAS08 connector pinout is identical to the standard ISA bus CIO-DAS08 and is fully compatible with the same wide assortment of signal conditioning accessory boards.

10VREF	19		37	IN0
LLGND	18		36	IN1
LLGND	17		35	IN2
LLGND	16		34	IN3
LLGND	15		33	IN4
LLGND	14		32	IN5
LLGND	13		31	IN6
LLGND	12		30	IN7
DGND	11		29	+5V
DOUT4	10		28	DGND
DOUT3	9		27	DIN3
DOUT2	8		26	DIN2
DOUT1	7		25	DIN1
CTR2OUT	6		24	EXT INT
CTR1OUT	5		23	CTR2GATE
CTR1IN	4		22	CTR1GATE
CTR0OUT	3		21	CTR0GATE
CTR0IN	2		20	-12V
+12V	1			

Functional Description

The CPCI-DAS08 is a low-cost analog input board for CompactPCI bus compatible computers. Offering 8 single-ended 12-bit analog inputs with sample rates up to 50 kHz and A/D resolution of 2.44 mV. The board also provides 4 digital output bits, 3 digital input bits, and three 16-bit down counters (in the form of a single 82C54). The CPCI-DAS08 is connector and software compatible with ComputerBoards highly popular ISA-based CIO-DAS08 board and is supported by the same wide variety of external signal conditioning products.

The CPCI-DAS08 is completely plug-and-play. There are no switches, jumpers or potentiometers on the board. All board addresses, interrupt channels etc. are set by your computers plug-and-play software.

CPCI-DAS08 Specifications

Analog input section

Resolution	12-bits (2.44 mV)
Input ranges	±5V
A/D pacing	Software polled
Data transfer	Software polled
Number of channels	8 single-ended
A/D conversion time	10μs
Throughput	50kHz min
Relative Accuracy	±1LSB
Differential Linearity error	No Missing Codes guaranteed
Integral Linearity error	±1 LSB
No missing codes guaranteed	12 bits
Gain drift (A/D specs)	±180ppm/°C
Zero drift (A/D specs)	±60ppm/°C
Input leakage current	±60 nA max over temperature
Input impedance	10Meg Ohms min
Absolute max. input voltage	±15V
VREF output	+10.00V ±0.1V @ 2 mA max

Digital Input / Output

Configuration	3 fixed input, 4 fixed output
Output / Input chip	74ACT273 / 74LS244
Output High	3.94 volts min @ -24mA
Output Low	0.36 volts max @ 24mA
Input High	2.0 volts min, 7 volts absolute max
Input Low	0.8 volts max, -0.5 volts absolute min
Interrupts	INTA# - mapped to IRQn via cPCI BIOS at boot-time
Interrupt enable	External, Programmable
Interrupt sources	External

Counter section

Configuration — Three 16-bit down counters (82C54)
Gate, Clk and Output of counter 0 and 1 are available at connector.
Gate and Output of counter 2 are available at connector, CLK 2 is connected to a frequency divider set at PCI bus clock / 8.

Clock input frequency	10Mhz max (30ns min pulse width)
Input low / high	0.8V max / 2.0V min
Output low / high	0.4V max / 3.0V min at ±2.4 mA

Power consumption

+5V Operating	251 mA typical, 436 mA max
+12V	13 mA typical, 19 mA max
-12V	17 mA typical, 23 mA max

Environmental

Operating / Storage temp	0 to 50 °C / -20 to 70 °C
Humidity	0 to 90% non-condensing

Software

All PCI-DAS08 series boards come complete with ComputerBoards' powerful *Insta*Cal™ software package. *Insta*Cal is a complete installation, calibration and test program for ComputerBoards data acquisition boards. Complete with extensive error checking, *Insta*Cal guides you through installation and setup of your data acquisition board and creates the board configuration file for use by your program or application software package. *Insta*Cal is described in the software section of this website.

The boards are fully supported by ComputerBoards' powerful Universal Library. Universal Library is a complete set of I/O libraries and drivers for all of our boards, for all Windows based languages. When using the Universal Library you can switch boards or even programming languages and the syntax remains constant. Universal Library is fully described in the software section of this website.

The CPCI-DAS-08 boards are fully supported by a wide variety of applications software packages including SoftWIRE™, DAS-Wizard™, (and DAS-Wizard Pro™), HP VEE®, HP VEE Lab and Lab-VIEW™. For further details of these, as well as a variety of other software packages, please refer to the software section of this website.

SoftWIRE for Visual Basic combines the simplicity of graphical programming with the power and flexibility of programming in VB!

Ordering Guide

CPCI-DAS08   Low cost, 8-channel, 12-bit analog input board for PCI-bus computers.

Multiplexers and Thermocouple Input Boards

CIO-EXP32	32 channel, differential input Mux with switch selectable gains and CJC.
CIO-EXP-16	16 channel, differential input Mux with switch selectable gains and CJC.

Bridge, RTD & GP Signal Conditioning Input Boards

CIO-EXP-BRIDGE16	16 channel, Wheatstone bridge signal conditioning board.
CIO-EXP-RTD16	16 channel, RTD signal conditioning board.
CIO-EXP-GP	16 channel, general purpose signal conditioning board.

ISO-5B isolated Input Boards

ISO-RACK08	8 channel, ISO-5B isolation module mounting rack.

Screw Terminal Boards and Boxes

CIO-MINI37	37 terminal, screw terminal board
SCB-37	37 terminal, shielded screw terminal box