AcPC330
16-bit A/D Analog Input

AcPC330 boards provide fast, high resolution A/D conversion. The AcPC330 has many features to improve your overall system throughput rate. You can scan all channels or define a subset for more frequent sampling. Burst mode scans selected channels at the maximum conversion rate. Uniform mode performs conversions at user-defined intervals. Both modes can scan continuously, or execute a single cycle upon receiving a trigger.

“Mailbox” memory allows the CPU to read the latest data in 32 storage buffer registers without interrupting the A/D converter.

Features
■ 16-bit A/D converter (ADC)
■ 8µS conversion time (125KHz)
■ 16 differential or 32 single-ended inputs (±5V, ±10V, 0-5V, and 0-10V input ranges)
■ Individual channel mailbox with one or two storage buffer registers per channel
■ Programmable scan control
■ Four scanning modes
■ User-programmable interval timer
■ External trigger input and output
■ Programmable gain for individual channels
■ Post-conversion interrupts

Benefits
■ “Mailbox” memory eliminates scanning interruptions for optimum throughput.
■ Data register indicates new and missed (overwritten) data values in the mail box.
■ Programmable interrupts simplify data acquisition by providing greater control.

Specifications

Analog Input
Input configuration: 16 differential or 32 single-ended channels.
A/D resolution: 16 bits.
Input ranges: ±5V, ±10V, 0-5V, and 0-10V.
Programmable gains: 1x, 2x, 4x, 8x.

Maximum throughput rate:
Only one channel can be updated at a time.
One channel: 125KHz (8µS/conversion)
[66KHz (15µS/conversion) recommended]
16 channels (differential): 4.2KHz (240µS/16 ch)
32 channels (single-ended): 2.1KHz (480µS/32 ch).

Data sample memory: Individual channel mailbox with one or two storage buffer registers per channel

A/D triggers: External and software.
Internal timer: One user programmable timer for analog input acquisition control.

System accuracy: ±0.1LSB (0.005%) typical
(SW calib., gain=1, 25°C).

Data format: Straight binary or two’s compliment.
Input overvoltage protection: -Vs -20V to Vdd 40V with power on,
-35V to 55V power off.

Common mode rejection ratio (60Hz): 96dB typical.
Channel-to-channel rejection ratio (60Hz): 96dB typical.

Environmental
Operating temperature: 0 to 70°C
(E version -40 to 85°C).
Storage temperature: -55 to 100°C.
Relative humidity: 5 to 95% non-condensing.
MTBF: Consult factory.
Power: 290mA at +5V (350mA maximum).

CompactPCI bus Compliance
Meets PCI spec. V2.2 and PICMG 2.0, R3.0.

Data transfer bus: Slave with 32-bit, 16-bit, and 8-bit data transfer operations.
Interrupts (INTA#): Interrupt A is used to request an interrupt.
Plug-and-Play: The system maps the base address into the PCI bus 32-bit memory space.

Ordering Information
I/O Boards
AcPC330
Analog input board
AcPC330E
Same as AcPC330 plus extended temperature range

Software
PMCSW-API-VXW
VxWorks® software support package
PCISW-API-WIN32
32-bit Windows® DLL Driver software package
PCISW-API-WIN64
64-bit Windows® DLL Driver software package
PCISW-API-LNX
Linux™ support (website download only)

Accessories
5028-378
Termination panel, SCSI-2 connector,
50 screw terminals
5028-438
Cable, shielded, SCSI-2 connector at both ends

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