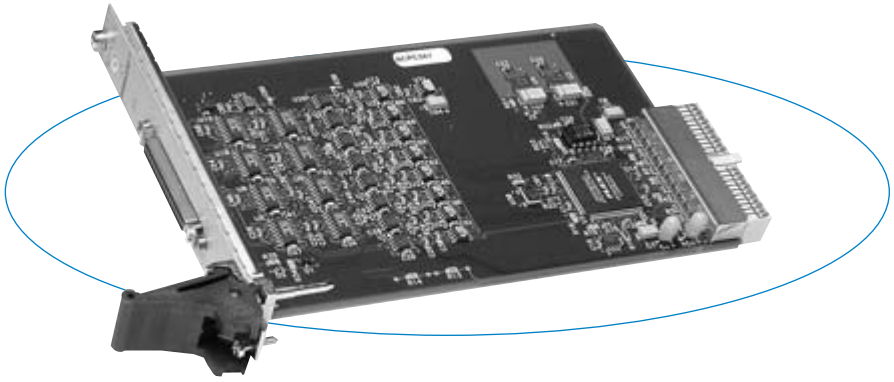
AcPC341 Simultaneous A/D Conversion Analog Input



This board is ideal for high-speed data acquisition. A large memory buffer reduces CPU interactions for increased overall performance.

AcPC341 boards provide fast, high resolution, simultaneous A/D conversion of eight channels.

These boards have sixteen analog inputs which are sampled as two eight-channel banks. Eight A/D converters (ADCs) permit simultaneous conversion of all eight channels in a bank. All 16 channels share two generous 512-sample memory buffers. Conversion of each bank requires only 8µS, and all 16 channels can be sampled in just 16µs.

Flexible configuration options give you extensive control over the conversion process. The channels or bank to be converted, timing, scan mode, and other parameters are user-programmable. Interrupt support adds further control to interrupt upon a programmable threshold when the data in memory exceeds the set threshold.

Features

- 16 differential inputs (±10V DC input range)
- Eight 14-bit A/D converters with simultaneous multi-channel conversion
- 8µS conversion time (125KHz) for 8-channel bank
- Two 512-sample memory buffers
- Data tagging for channel identification
- Programmable conversion timer
- Programmable channel conversion control
- External trigger input and output
- Continuous and single-cycle conversion modes
- Interrupt generation for memory full threshold conditions
- Precision calibration voltages stored on-board

Benefits

- Simultaneous channel conversion and on-board memory enable megahertz throughput rates.

Specifications

Analog Inputs

Input channels: 16 differential.

A/D resolution: 14 bits.

Input range: ±10V.

Maximum throughput rate:
Eight channels can be simultaneously acquired.
One channel: 125KHz (8µS/conversion)
8 channels (same bank): 1MHz (8µS/8 channels)
16 channels (high & low banks): 1MHz (16µS/16 ch. at maximum 2.2K ohm source resistance).

Data sample memory: Two 512-sample memory buffers allows writing to one buffer while reading from the other.

A/D triggers: Internal timer, external, and software.

Internal conversion timer: User-programmable delay between simultaneous conversion of 8-channel banks. Maximum delay is 2.09 second interval.

System accuracy: 2.4 LSB (0.014%).

Data format: Binary two's compliment.

Overvoltage protection: ±25V (power on), ±40V (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 105°C.

Relative humidity: 5 to 95% non-condensing.

MTBF: Consult factory.

Power: 265mA at +5V (320mA 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 operation.

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

AcPC341
Analog input board

AcPC341E
Same as AcPC341 plus extended temperature range

Software *(see Page 81)*

PMCSW-API-VXW
VxWorks® software support package

PCISW-API-QNX
QNX® software support package

PCISW-API-WIN
Windows® DLL Driver software package

Accessories *(see Page 87)*

5028-378
Termination panel, SCSI-2 connector, 50 screw terminals

5028-438
Cable, shielded, SCSI-2 connector at both ends