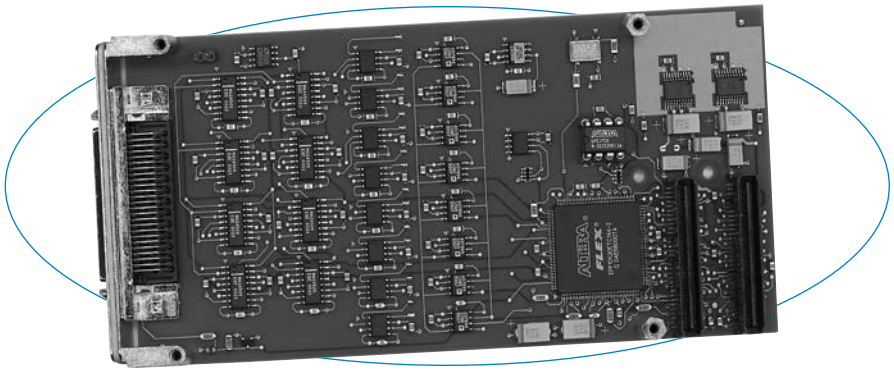
PMC341 Simultaneous A/D Conversion Analog Input



The PMC341 is ideal for high-speed data acquisition. Large memory buffer reduces CPU interactions for increased overall performance.

PMC341 modules provide fast, high resolution, simultaneous A/D conversion of eight channels.

These modules 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 memory is full.

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 configuration: 16 differential.

A/D resolution: 14 bits.

Input range: ±10V.

Data sample memory: 512 sample FIFO buffer.

Max. 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).

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

System accuracy: 2.4 LSB (0.014%).

Data format: Binary two's compliment.

Input overvoltage protection: ±25V (power on), ±40V (power off).

Common mode rejection ratio (60Hz): 96dB typical.

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

PMC Compliance

Conforms to PCI Local Bus Specification, Revision 2.2 and CMC/PMC Specification, P1386.1.

Electrical/Mechanical Interface: Single-Width Module.

32-bit PCI Target: Implemented by Altera FPGA.

4K Memory Space Required: One Base Address Register.

Signaling: 5V Compliant, 3.3V Tolerant.

Interrupts (INTA#): Interrupt A is used to request an interrupt.

Burst Read of Memory Buffer: 3 PCI Clock Cycles per sample read.

Register Access Times: 8 PCI clock cycles, typical.

Environmental

Operating temperature: 0 to 70°C (PMC341) or -40 to 85°C (PMC341E model)

Storage temperature: -55 to 105°C (all models).

Relative humidity: 5 to 95% non-condensing.

Power: 100mA at+5V. 15mA at +12V. -10mA at -12V.

MTBF: 2,943,878 hrs. at 25°C, MIL-HDBK-217F, notice 2

Ordering Information

PMC Modules

PMC341
14-bit A/D

PMC341E
Same as PMC341 plus extended temperature range

PMC341R
Same as PMC341, except with rear I/O connector

PMC341RE
Same as PMC341R 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