



Artisan Scientific

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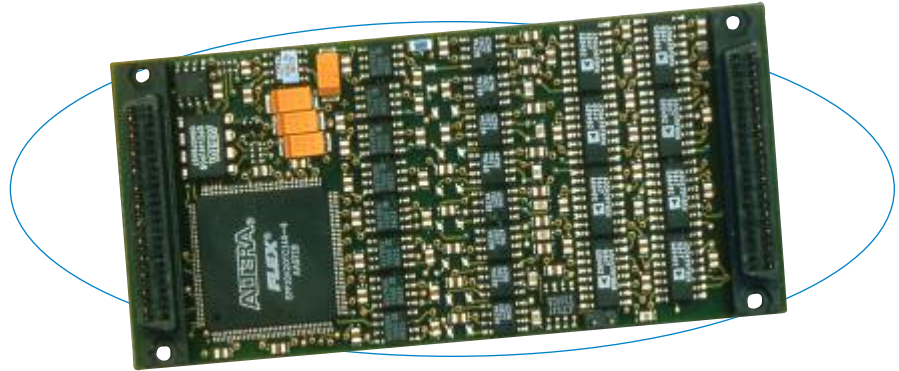
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IP340 and IP341 Simultaneous A/D Conversion Analog Input



The IP340 is ideal for high-speed data acquisition. A large FIFO buffer reduces CPU interactions for increased overall performance

IP340/341 Industry Pack (IP) modules provide fast, high resolution, simultaneous A/D conversion of up to 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. A FIFO buffer holds the first bank's data while the second bank is converted. Conversion of each bank requires only 8 μ S, and all 16 channels can be sampled in just 16 μ S.

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 flag a FIFO that is full or filled to a user-defined threshold level.

Features

- 16 differential inputs (\pm 10V DC input range)
- Eight 12 or 14-bit A/D converters (IP340/341) with simultaneous multi-channel conversion
- 8 μ S conversion time (125KHz) for 8-channel bank
- FIFO buffer with 512 sample memory
- Programmable conversion timer
- Programmable channel conversion control
- External trigger input and output
- Continuous and single-cycle conversion modes
- Interrupt generation for FIFO threshold conditions
- Precision calibration voltages stored on-board

Benefits

- Simultaneous channel conversion and on-board memory enable megahertz throughput rates.
- Programmable interrupts simplify data acquisition by providing greater control.

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Specifications

Analog Inputs

Input configuration: 16 differential.
 A/D resolution: 12 bits (IP340), 14 bits (IP341).
 Input range: \pm 10V.
 Data sample memory: 512 sample FIFO buffer.
 Max. throughput rate:
 Eight channels can be simultaneously acquired.
 One channel: 125KHz (8 μ S/conversion)
 8 channels (same bank): 1MHz (8 μ S/8 channels)
 16 channels (high & low banks): 1MHz (16 μ S/16 ch. at minimum 2.2K ohm source resistance).

Data sample memory: 512-sample FIFO memory buffer.

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

System accuracy:

IP340: 1.6 LSB (0.039%),
 IP341: 2.4 LSB (0.014%).

Data format: Binary two's complement.

Input overvoltage protection: \pm 25V with power on, \pm 40V with power off.

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

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

IP Compliance (ANSI/VITA 4)

Meets IP specifications per ANSI/VITA 4-1995.

IP data transfer cycle types supported: Input/output (IOSel*), ID read (IDSel*), Interrupt select (INTSel*).

Access times (8MHz clock):

ID space read: 0 wait states (250ns cycle).
 FIFO buffer read: 2 wait states maximum (500ns),
 1 wait state typical (375ns).

Registers read/write: 0 wait states (250ns cycle).
 Interrupt read/write: 0 wait states (250ns cycle).

Environmental

Operating temperature: 0 to 70°C (IP340/341)
 or -40 to 85°C (IP340E/341E models).

Storage temperature: -40 to 125°C (all models).

Relative humidity: 5 to 95% non-condensing.

MTBF: 594,898 hrs at 25°C, MIL-HDBK-217F, Notice 2.

Power:

+5V: 65mA (IP340/341), 76mA (IP340E/341E).
 +12V from P1: 7mA.
 -12V from P1: -6mA.

Ordering Information

Industry Pack Modules

IP340

12-bit A/D

IP340E

Same as IP340 plus extended temp. range.

IP341

14-bit A/D

IP341E

Same as IP341 plus extended temp. range.

Acromag offers a wide selection of [Industry Pack Carrier Cards](#).

Software (see [software documentation](#) for details)

IPSW-API-VXW

VxWorks® software support package

IPSW-API-QNX

QNX® software support package

IPSW-API-WIN

Windows® DLL driver software support package

IPSW-LINUX

Linux® support (website download only)

See [accessories documentation](#) for additional information.



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