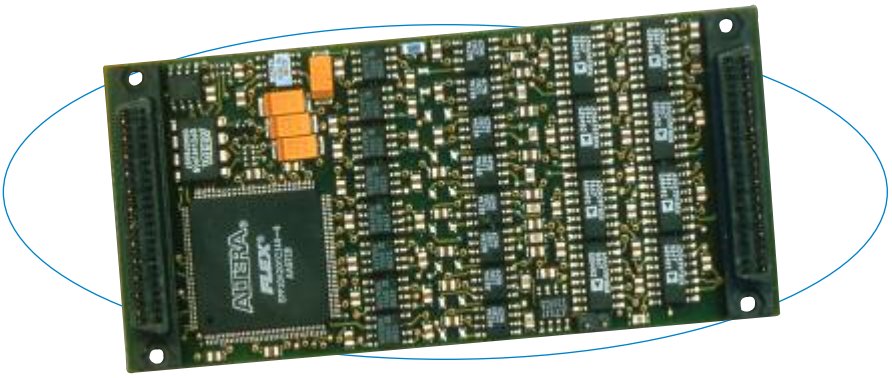
IP340 and IP341 Simultaneous A/D Conversion Analog Input



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

Features

- 16 differential inputs (±10V DC input range)
- Eight 12 or 14-bit A/D converters (IP340/341) with simultaneous multi-channel conversion
- 8µS 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.

Specifications

Analog Inputs

Input configuration: 16 differential.

A/D resolution: 12 bits (IP340), 14 bits (IP341).

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 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 compliment.

Input overvoltage protection: ±25V with power on, ±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.

RedLinX™ Embedded Solutions
www.redlinx.co.za

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