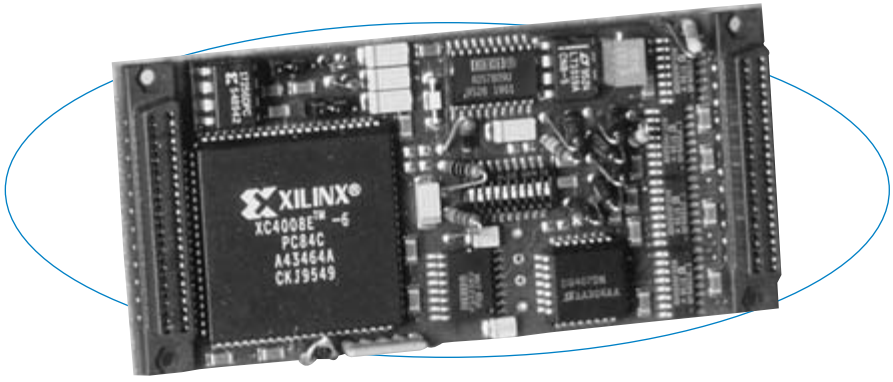
IP330
16-Bit A/D
Analog Input



Advanced memory management techniques allow the IP330 to operate with minimal interruption of the A/D converter.

IP330 Industry Pack (IP) modules provide fast, high resolution A/D conversion.

The IP330 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.

"Mail box" 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 Inputs

Input configuration: 16 differential or 32 single-ended.

A/D resolution: 16 bits.

Input ranges: ±5V, ±10V*, 0-5V, and 0-10V*.
* Requires ±15V external supplies.

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

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

Programmable gains: 1x, 2x, 4x, 8x.

A/D triggers: External and software.

System accuracy: 2 LSB (0.0030%) typical
(SW calib., gain=1, 25°C).

Data format: Straight binary or two's compliment.

Input overvoltage protection: Vss -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.

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 PROM read: 1 wait state (375ns cycle).
Channel port/register read/write: 0 wait states.
Interrupt select cycle read: 1 wait state.
Mail box I/O read: 1 wait state. 6 wait states if ongoing internal mail box write.

Environmental

Operating temperature: 0 to 70°C (IP330) or -40 to 85°C (IP330E model).

Storage temperature: -55 to 100°C.

Relative humidity: 5 to 95% non-condensing.

MTBF: 798,625 hrs at 25°C, MIL-HDBK-217F, Notice 2.

Power:
+5V: 40mA.
+12V from P1: 20mA.
-12V from P1 or ±15V through P2: 15mA.

Ordering Information

Industry Pack Modules

IP330
32 single-ended or 16 differential inputs.

IP330E
Same as IP330 plus extended temperature range

For Industry Pack Carrier Cards, see Page 5.

Software *(see Page 81)*

IPSW-API-VXW
VxWorks® software support package

IPSW-API-QNX
QNX® software support package

IPSW-ATX-PCI
ActiveX®/OLE Controls 2.0 software package

IPSW-LINUX
Linux™ support (website download only)

For accessories information, see Page 87.