



## IPM-ADC

Analog to Digital IPack Module  
16-bit A/D with 16 differential lines

### FEATURES

- ▶ 16-bit A/D converter
- ▶ 2048 word FIFO
- ▶ 32 bit 1us resolution timetag
- ▶ On-board IRIG-B decoder
- ▶ 4us conversion time (250 kS/s)
- ▶ 16 differential or 32 single-ended inputs
- ▶ Available input voltages:  
±2.5V, ±5V, ±10V, 0-2.5V, 0-5V,  
and 0-10V ranges
- ▶ Programmable scan control
- ▶ Four scanning modes
- ▶ User-programmable interval timer
- ▶ External trigger input and output
- ▶ Programmable gain for individual channels
- ▶ Post-conversion interrupts
- ▶ Available in extended temperature
- ▶ Programmable data format (binary 2's complement, straight binary)

### OVERVIEW

The IPM-ADC provides a fast 16-bit resolution Analog to Digital (A/D) conversion. Available as a 32 MHz single-size Industry Pack (IPack) module, the IPM-ADC offers programmable scan control and up to four scanning modes.

The user 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. Analog samples and timetags are accessible through a 2048 word FIFO.

The IPM-ADC includes on-board IRIG-B decoder and sampling timetags providing accurate timing and synchronization between channels and modules.

### CARRIER BOARD SUPPORT

The functionality of the IPM-ADC is further enhanced by the power of MAX Technologies' line of intelligent multi- platform (PCI, CPCI and PXI) carrier boards. All modules and carrier boards are synchronized and time correlated to 32-bit microsecond-resolution.

### SOFTWARE SUPPORT

The MX-Foundation library provides high-level abstraction of hardware and allows to easily control mixed protocols and I/O modules on one or multiple carrier boards.

### SOFTWARE

- ▶ MX-Foundation multi-protocol software API available for Windows, Linux and Mac OS X
- ▶ MAXIM Windows GUI



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## Specifications

### Input channels

- 16 differential or 32 single-ended

### Switch-selectable input range

- $\pm 2.5V$ ,  $\pm 5V$ ,  $\pm 10V$ , 0-2.5V, 0-5V, and 0-10V ranges

### Software-programmable gain (per channel)

- 1X, 2X, 4X and 8X

### Time Synchronization

- 32-bit Resolution: 1 microsecond, Accuracy: 1 microsecond
- IRIG-B AM, Digital and 1-PPS inputs

### Input resistance

- 1 MOhms, typical

### Resolution

- 16-bit

### Sampling Rate

- One channel (max.): 250 KHz (4 $\mu$ s/conversion)
- 16 channels (differential): 15.6 KHz (64 $\mu$ s/16 ch)
- 32 channels (single-ended): 7.8 KHz (128 $\mu$ s/32 ch)

### Input over-voltage protection

- With power ON: Vss -20V to Vpp 40V
- With power OFF: Vss -35V to Vpp 55V

### IPack Module bus clock

- 32 MHz

### Physical dimensions

- IndustryPack Standard - Single size
- 3.9" x 1.8" (9.906 cm x 4.572 cm)

### Reliability MTBF (MIL-HDBK-217 FN2, 30 °C)

- 468 917 hours

### Environmental

- Standard Operating Temperature: 0°C to 70°C
- Relative Humidity for operation: 0 to 95% (non-condensing)

### Power consumption

- +5V: 233 mA max
- +12V: 10 mA max
- -12V: 10 mA max

## Supported IndustryPACK Carrier Boards

The IPM-ADC is a standard IndustryPack (IPack) module that can be used with MAX Technologies' PCI, CPCI and PXI intelligent carrier boards.

## Software

<b>MAXIM</b>	MAXIM is a powerful and easy-to-use test & measurement GUI application for Windows XP
<b>MX Foundation</b>	MX-Foundation is a multi-protocol high-level API that take full advantage of the MAX Technologies' intelligent carrier boards. MX-Foundation is available for Windows, Linux and Mac OS X.

## Ordering Information

Part Number	Description
<b>MAX-IP-200136</b>	ADC IPack Module, 250 KHz, 16-bit resolution, 32-single / 16-differential lines, 2K FIFO, IRIG-B input