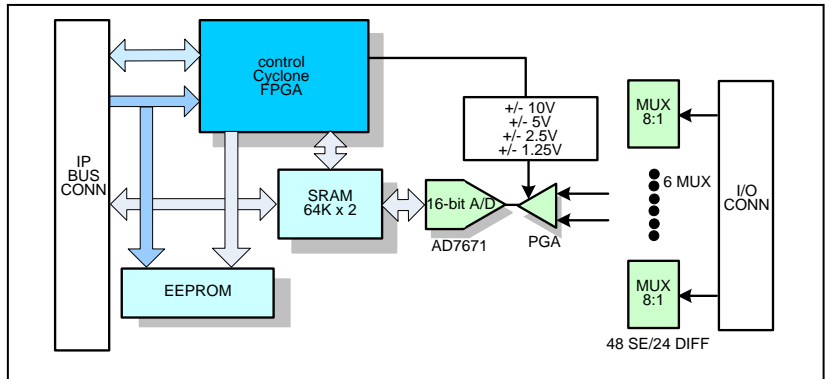
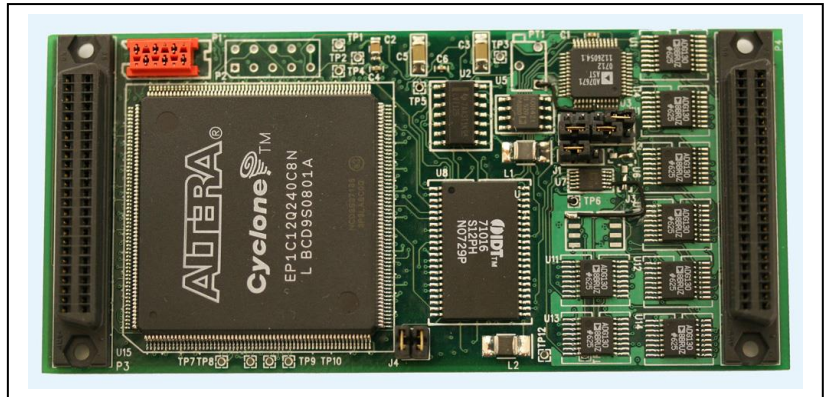


IP 16 bit A/D converter, 48 multiplexed input channels

Features

- 16-bit AD7671 A/D converter
- Acquisition time of $\leq 2\mu\text{sec}$ (500Ksps)
- Multiplexed 48 single-ended or 24 differential channels
- Fault and over-voltage protected analog input (-40 VDC to +55 VDC)
- Software programmable single-ended or differential input and gain for each channel
- Input ranges: $\pm 10\text{VDC}$, $\pm 5\text{VDC}$, $\pm 2.5\text{VDC}$, $\pm 1.25\text{Vdc}$ via software programmable gain amplifier
- A/D jumper selectable gain (1-2-4-8)
- Internal sequencer with channel list for selected channel acquisition
- On-board input switches for offset or gain calibration
- 64Kx16 dual-ported SRAM
- Flash EEPROM for gain/offset correction data
- 8 or 32 MHz clock
- 2 interrupts and 2 slave DMA IP bus lines
- VITA 4 compliant
- The programmable internal sample clock offers sampling rates between $2\mu\text{sec}$ and 32sec intervals.



Block Diagram and Operational Overview

The IP-48-ADM multiplexed A/D offers a mix of up to 48 single-ended or 24 differential analog input channels. Each channel features programmable gain and can be individually programmed to handle analog input with a single-ended or differential configuration or a calibration mode.

The acquisition can be started by the host or by an on-board sequencer that uses a channel list to specify which channel to acquire. A local 64Kx16 but dual ported SRAM stores the acquisition data. Memory pointers can be selected to limit the number of scans gathered, as well as the control of interrupt generation.

The AD7671 can provide a global acquisition and conversion time of $\leq 2\mu\text{sec}$ per sample per

channel. The acquisition time increases to $< 8\mu\text{sec}$ with channel change and/or gain change.

Two different threshold levels can be selected for each channel. When enabled, the result of the acquisition is compared with one or both of the thresholds and a programmable interrupt will be generated to the host if the channel is outside or inside the defined band gap.

The board can also be set to monitor one channel and start acquisition on the channel list when ever the band gap has been violated. A programmable digital filter selects the minimum number of consecutive values before the interrupt is generated or acquisition starts.

Application:

This is a perfect solution for:

- Process control,
- Industrial control, or
- Precision instrumentation

AD7671 A/D Device Specifications:

- 16-bit, charge redistribution SAR, A/D converter
- Hardware factory-calibrated and tested to ensure SNR and THD are within specifications
- Gain, offset, and linearity are also factory-calibrated
- Throughput
 - 1 MSPS (warp mode)
 - 800 kSPS (normal mode)
- INL: ± 2.5 LSB Max ($\pm 0.0038\%$ of full scale) with no missing code
- Analog input voltage ranges
 - Bipolar: ± 10 V, ± 5 V, ± 2.5 V
 - Unipolar: 0 V to 10 V, 0 V to 5 V, 0 V to 2.5 V
- No pipeline delay
- Single 5 V supply operation

Industry Pack Specifications:

- Meets ANSI/VITA 4-1995
- 8/32 MHz synchronous operation
- Supports ID, 128 byte I/O, interrupt. & 8 Mbyte memory spaces
- 2 Interrupts per module
- Two passive DMA channels are possible.
- Hardware self timed per IP module
- Triggered via system reset and software control
- Jumper or software time-out function
- 5, +/-12 volt reset-able fuse per IP

Mechanical: Environmental:

- Size – VITA 4 compliant
1.8" x 3.9" or 46 mm x 99 mm
- Power – 1.0 watt
- Vibration – 0.5G, 20-2000 Hz rand
- Shock – 20G, 11 msec, 1/2 sine
- Weight – 2 ounces
- MTBF – >250,000 hours

Operating Environment:

- Operating temperature
Commercial: 0 to +70 °C
Optional: -25 °C to +80 °C
- Non-operating: -40 °C to +85 °C
- Airflow requirement – 5 CFM
- Humidity – 5 to 90% (non-cond)
- Altitude – 0 to 10,000 feet



Ordering Information:

Part number:	IP-48-ADM	48 channel 16 bit A/D Industry Pack Module
	IP-48-ADM -8	8 channel 16 bit A/D Industry Pack Module
	IP-48-ADM -8I	Same as above with -40 to +85 C

Optional Accessories:

Part number:	TB-50-HDR	50 pin terminal block and 1meter flat ribbon cable
	CBL-50-HDR	50 pin, 1meter flat ribbon cable, IDC header connector