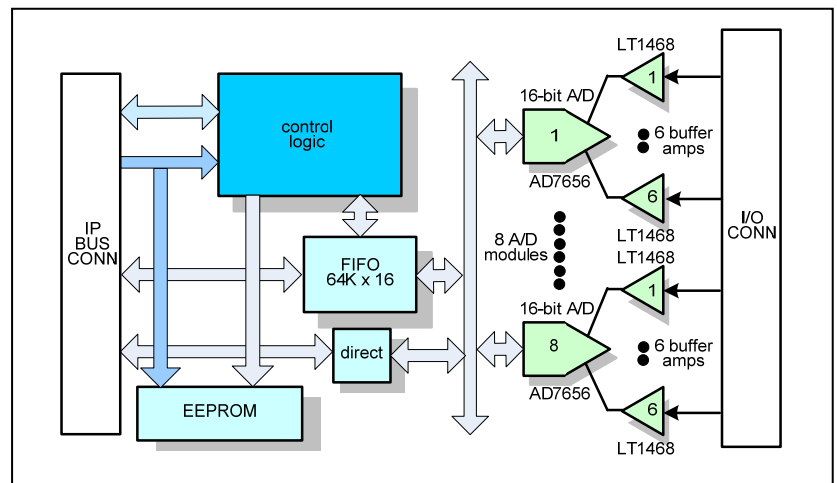
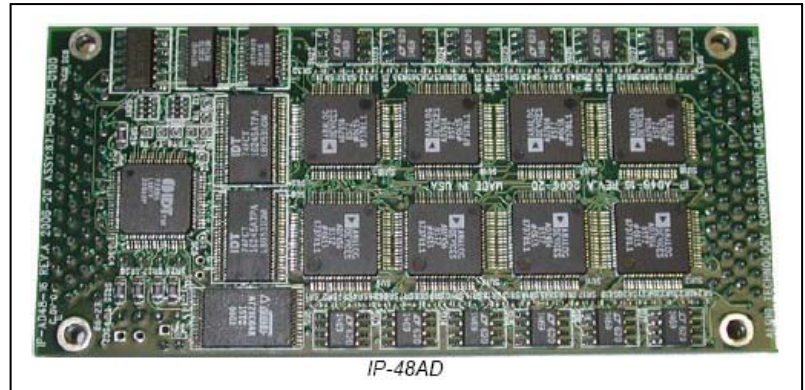


IP 16 bit A/D converter, 8 A/D modules, 48 input channels

Features

- 16-bit AD7656 A/D converter module
- 8 A/D modules each with 6 independent A/D channels for a total of 48 single-ended A/D's
- Acquisition time of 250Ksps
- Input ranges: $\pm 10\text{VDC}$, $\pm 5\text{VDC}$ software selectable or pin selectable
- 64Kx16 FIFO enables burst mode or continuous sampling
- Sampling clock selected from one of the following sources:
 - internal divider (TCLK0),
 - IPSTROBE,
 - external clock, or
 - host
- Trigger event selected from one of the following sources:
 - Write to IP register,
 - IPSTROBE, or
 - external trigger
- 8 or 32 MHz clock
- 2 interrupts and 2 slave DMA IP bus lines
- VITA 4 compliant
- 32 bytes of EEPROM are used for board ID



Block Diagram and Operational Overview

The IP-AD8250-48CH module contains 48 simultaneous channels of A/D conversion using a 16 bit, fast, successive approximation A/D's. The module can accept bipolar input signals at rates up to 250ksps, and the analog input signals are buffered with a fast buffer amplifier. The A/D contains low noise, wide bandwidth track-and-hold amplifiers that can handle input frequencies up to 8MHz.

The acquisition can be started by the host, a write to the IP register, activation of the IPSTROBE signal, or an external trigger. A state machine will read the data of each

individually selected A/D channel into the FIFO. FIFO pointers are used to monitor, stop or "throttle" the acquisition and inform the user by means of status or interrupt the progress of the acquired data.

The A/D converter data can be read directly by the host if desired bypassing the FIFO.

The sampling clock is available from an internal divider and the TCLK0 input, IPSTROBE signal, an external clock, or the host. Sampling occurs with A/D pairs.

The board ID can be read from the on-board EEPROM.

Applications:

This is a perfect solution for:

- Process control,
- Power line monitoring,
- Multi-axis positioning systems,
- Industrial control, or
- Precision instrumentation

AD7656 A/D Specifications:

- 16-bit, successive approximation A/D's
- 6 independent A/D's
- Fast throughput rate of 250ksps
- Wide input bandwidth of 86.5 dB SNR at 50kHz input frequency
- Can accept true bipolar inputs up to $\pm 4VDC \times Vref$
- External pins allow independent, simultaneous sampling of 3 A/D pairs
- Analog input voltage ranges: $\pm 10 V$, $\pm 5 V$
- Contains on-chip 2.5VDC reference
- Single 5 V supply operation

Input Buffer LT1468 Specifications

- 900MHz gain bandwidth, $f_c = 100kHz$
- $22V/\mu sec$ slew rate
- Settling time 900 nsec
- Low distortion -96.5 db for 100kHz, 10Vp-p
- Unity gain stable

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 – 1 ounce
- 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-AD8250-48CH 48 channel 16 bit A/D Industry Pack Module
IP-AD8250-48CH-I same as above with -40°C 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