

## PCIexpress Mini 8 Channels 16-bit, 200KSPS For All 8 Channels

### Features

- 8 Channels 16-bit A/D converter Simultaneously Sampled
- Fast throughput rate: 200 KSPS for all 8 channels
- 8 Channels SE or 4 PSEUDO Differentials
- Single-ended or 4 differential channels
- True bipolar analog input ranges:  $\pm 10$  V,  $\pm 5$  V, selection applies to all Channels
- Analog Input Clamp Protection
- $1\text{M}\Omega$  Analog Input Impedance
- Programmable 2<sup>nd</sup> Order Anti-alias Analog Filter
- Over-sampling capability with digital filter
- 8Kx16 SRAM
- PCIexpress compliant



### Block Diagram and Operational Overview

The **PCIe-Mini-AD8200** Simultaneously Sampled A/D offers a mix of up to 8 single-ended or 4 differential analog input channels. All channel features programmable gain 1 or 2 and can program to handle analog input with a single-ended or differential configuration.

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 8Kx16 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 16-bit A/D converters can provide a global acquisition and conversion time of  $\leq 5\mu\text{sec}$  per sample per channel.

The board offers a programmable digital filter:  $\pm 5$  V range, the  $-3$  dB frequency is typically 15 kHz.

In the  $\pm 10$  V range, the  $-3$  dB frequency is typically 23 kHz.

### Application:

This is a perfect solution for:

- Process control
- Industrial control
- Precision instrumentation
- Data acquisition systems (DAS)
- Multiaxis positioning systems

### A/D Device Specifications:

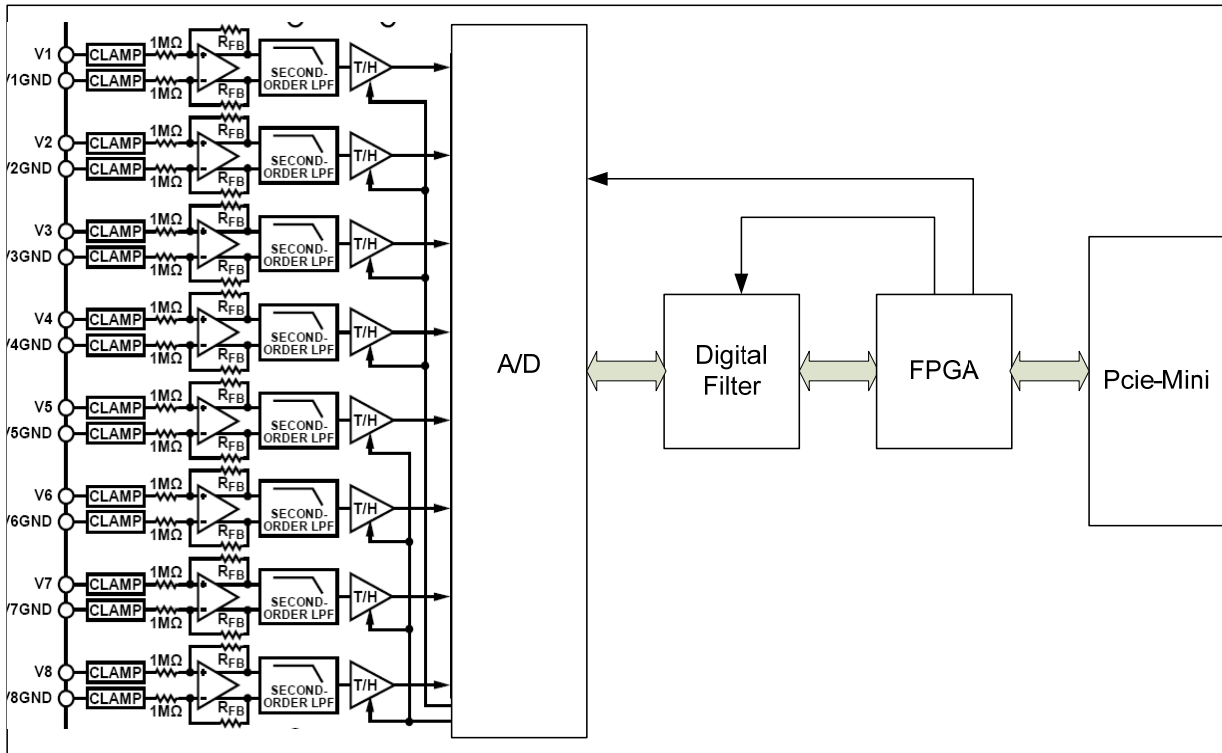
- 16-bit, charge redistribution SAR, A/D converter
- Hardware factory-calibrated and tested to ensure SNR and THD are within specifications
- Gain, offset, and linearity are also factory-calibrated
- Throughput
  - 200 KSPS
- INL:  $\pm 0.5$  LSB Max with no missing code
- 95.5 dB SNR,  $-107$  dB THD
- Analog input voltage ranges
  - Bipolar:  $\pm 10$  V,  $\pm 5$  V
- 7 kV ESD rating on analog input channels
- No pipeline delay

**Mechanical: Environmental:**

- Size – Mini PCI Type III Module  
44.6mm x 59.8mm
- Power – T.B.D.
- Front panel I/O
- Vibration – 0.5G, 20-2000 Hz rand
- Shock – 20G, 11 msec, ½ sine
- Weight – tbd
- MTBF – >250,000 hours

**Operating Environment**

- Operating temperature  
-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: **PCIe-Mini-AD8200**      8 Channels 16 Bits, 200KSP  
 Ext Temp: -40 °C to +85 °C