

Digilent PmodAD1™ Analog To Digital Module Converter Board Reference Manual

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215 E Main Suite D | Pullman, WA 99163
(509) 334 6306 Voice and Fax

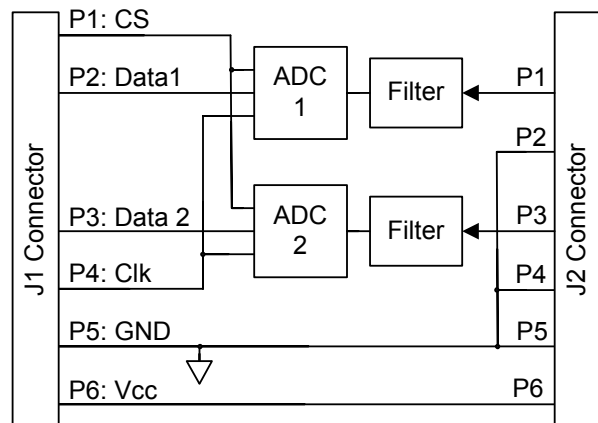
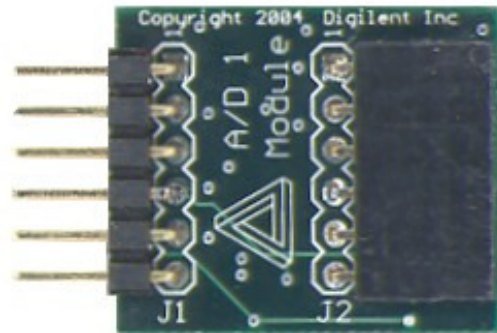
Overview

The Analog to Digital Module Converter Board (the AD1™) converts signals at a maximum sampling rate of one million samples per second, fast enough for the most demanding audio applications.

The AD1 uses a 6-pin header connector, and at less than one square inch is small enough to be located at the signal source.

Features include:

- two AD7476A 12-bit A/D converter chips
- a 6-pin header connector
- a 6-pin connector
- two 2-pole Sallen-Key anti-alias filters
- two simultaneous A/D conversion channels at up to one MSa per channel
- very low power consumption
- small form factor (0.95" x 0.80").



AD1 Circuit Diagram

Functional Description

The AD1 converts an analog input signal ranging from 0-3.3 volts to a 12-bit digital value in the range 0 to 4095.

The AD1 has two simultaneous A/D conversion channels, each with a 12-bit converter and filter. Each channel can sample a separate stream of analog signals. The AD1 can also convert a single stream of analog signals using only one channel.

Each channel has two 2-pole Sallen-Key anti-alias filters with poles set to 500 KHz. The filters limit the analog signal bandwidth to a

frequency range suitable to the sample rate of the converter.

The AD1 uses the SPI/MICROWIRE™ serial bus standard to send converted data to the host system. The serial bus can run at up to 20 MHz.

The AD1 has a 6-pin header and a 6-pin connector for easy connection to a Digilent system board or other Digilent products.

The AD1 can be powered by voltage from either a Digilent system board or an outside device. Damage can result if power is supplied from both sources or if the outside device supplies more than 3V.

For more information, see www.digilentinc.com.

For more information about the AD7476A 12-bit converter chip, refer to the corresponding ADI data sheet at www.analog.com/AD7476A.

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➤ Address :

401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd
Minhang District, Shanghai , China

➤ Sales :

Direct +86 (21) 6401-6692
Email amall@ameya360.com
QQ 800077892
Skype ameyasales1 ameyasales2

➤ Customer Service :

Email service@ameya360.com

➤ Partnership :

Tel +86 (21) 64016692-8333
Email mkt@ameya360.com