A4D1 - High-Speed Analog I/O Module

The A4D1 module offers four channels of 10 MHz 14 bit A/D conversion, and one channel of 10 MHz 14 bit D/A conversion making it ideal for high-speed data acquisition, transient capture and control systems. The A/Ds from Analog Devices use a novel pipelined architecture as well as a wide-band sample-and-hold amplifier making them well suited for direct IF down conversion extended to 45 MHz. The A/Ds deliver data from a pipeline which is only four samples deep, resulting in low data latency - a requirement for servo control applications. Potentiometers allow each channel gain/offset error correction for accurate measurements.

The D/A on the A4D1 is an oversampling 14-bit D/A converter optimized for waveform reconstruction applications requiring exceptional dynamic range like direct digital synthesis or wireless communications. It has a 4x interpolation filter that reduces the original inband images by more than 69 dB and has a latency of 2.5 µs.

Each converter channel has a 1K or 64K sample FIFO to allow efficient data collection and transport to and from the host card. This allows data collection/ playback as single points or as a data set of up to 1K/64K samples in size, reducing the interrupt rate to the host board.

Software examples demonstrating module operation and communication are included in the Zuma/Armada Toolsets. A full calibration report ships with every module.

Ordering Information

<table>
<thead>
<tr>
<th>Module</th>
<th>Part Number</th>
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</thead>
<tbody>
<tr>
<td>A4D1 with 1K FIFOs</td>
<td>80020-12</td>
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<tr>
<td>A4D1 with 64K FIFOs in &amp; out</td>
<td>80020-12R</td>
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In System Performance

A/D

- S/N: 77.3 dB
- SFDR: 95.0 dB
- THD: 74.4 dB

D/A

- S/N: 95.6 dB
- SFDR: 76.5 dB
- THD: 70.0 dB