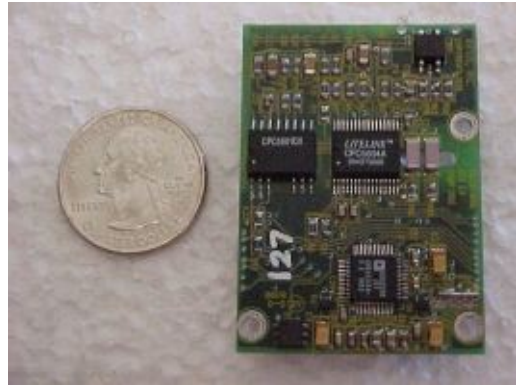


AIO-audio-octal/quad Specification Sheet

Arius, Inc. provides embedded signal processing solutions to commercial and industrial users.

AIO modules provide configurable analog and digital IO capabilities to Arius PC/104 DSP modules. FPGA technology provides a flexible, reconfigurable interface between the AIO module and the DSP. Each AIO module has a 48 bit serial number along with an ID code and a reprogrammable configuration register.

The AIO-audio module adds up to 8 input and 8 output channels to each AIO site on any of our DSP modules. Operating at up to 96 KSPS, the AIO-audio provides 16 bit data and 40 KHz bandwidth.



Key Features

- Four AK4552 stereo delta-sigma codecs provide 8 channels of input and output.
- Up to 96 KSPS at 16 bits simultaneously sampled on all 8 ports.
- Small form factor allows multiple modules per DSP board.
- Low power design - <400 mW
- Variable sample rates from 8 KHz to 96 KHz with DMA data transfers.
- Configuration data stored on module.
- Available in quad version for lower cost.

Description

The AIO-audio module is a four or eight channel delta-sigma analog converter module. The module uses two or four AK4552 stereo converter chips with external anti-alias filters to provide wide bandwidth and wide dynamic range in a small low power form factor.

Sampling at speeds from 8 KSPS to 96 KSPS, the AIO-audio module provides bandwidths from 3.6 KHz to 43 KHz. Sample rate is controlled by a clock divider in the interface FPGA on the DSP board.

The AK4552 provides 24 bits of resolution, with approximately 16 bits of dynamic range. Either 16 bits or 24 bits per sample can be provided to the DSP chip under software control.

Data from the high-speed codecs is transferred to and from memory by DMA driven by the main FPGA on the DSP board. The DMA supports burst operation to minimize bus arbitration. Buffer size is limited only by the available board memory. Burst speeds are supported up to 40 MB/s.

To save power, any unused codec chips may be individually powered down. A power supply circuit allows the codecs and the op-amp chips to be powered down in groups of four channels to bring power consumption of unused circuitry to nearly zero.

The AIO module fits Arius DSP boards using two board to board connectors and a two point nylon screw mounting for strength and rigidity.

Other Planned AIO Products:

- High-speed analog I/O is supported with a 14 bit, 10 MSPS ADC/DAC AIO module.
- E1-T1 AIO module provides access to all channels via DMA data transfers.
- MultiMediaCard AIO module provides mass storage to 64 MB of Flash memory with no external components.
- USB 1.1/2.0 interface for high speed transfers.
- Ethernet 10BaseT/100BaseX

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