

AMC-ADIO24

AMC Analog/Digital I/O Module

Features

- 8 analog inputs ± 10 V, 16 bit
- 2 analog outputs ± 10 V, 16 bit
- 24 digital I/Os, TTL level
- 4 trigger I/Os (RS-485)

I/O Data Management

The AMC-ADIO24 is equipped with a Spartan FPGA that manages the I/O data exchange in cooperation with the PCIe bridge. FIFOs for input and output direction and DMA to the PCIe host CPU's memory minimizes undesired latency during PCIe read cycles at higher data rates. Read cycles of the PCIe CPU are reduced to setup and diagnosis tasks.

8 Analog Inputs With 16 Bit Resolution

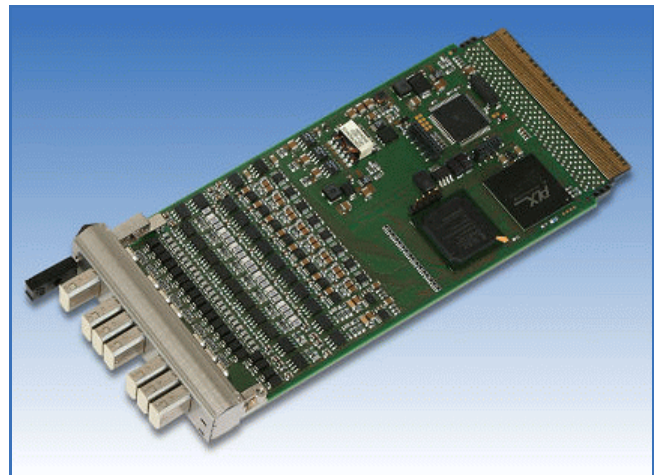
The eight over voltage protected analog inputs are connected to eight 16 bit A/D converters with a sampling rate of up to 200 kHz each.

2 Analog Outputs With 16 Bit Resolution

Both 16 bit analog outputs have a differential and a single ended output circuit, accessible at separate pins at a Harting® har-link® connector. The outputs are transient and short circuit protected.

24 Digital I/Os With Programmable Output Configuration

Each of the 24 TTL-level I/Os can be separately configured as input or output. The outputs can be configured as high side driver, low side driver or both (sink/source). The I/O port's state can be read back in any configuration via a comparator with hysteresis.

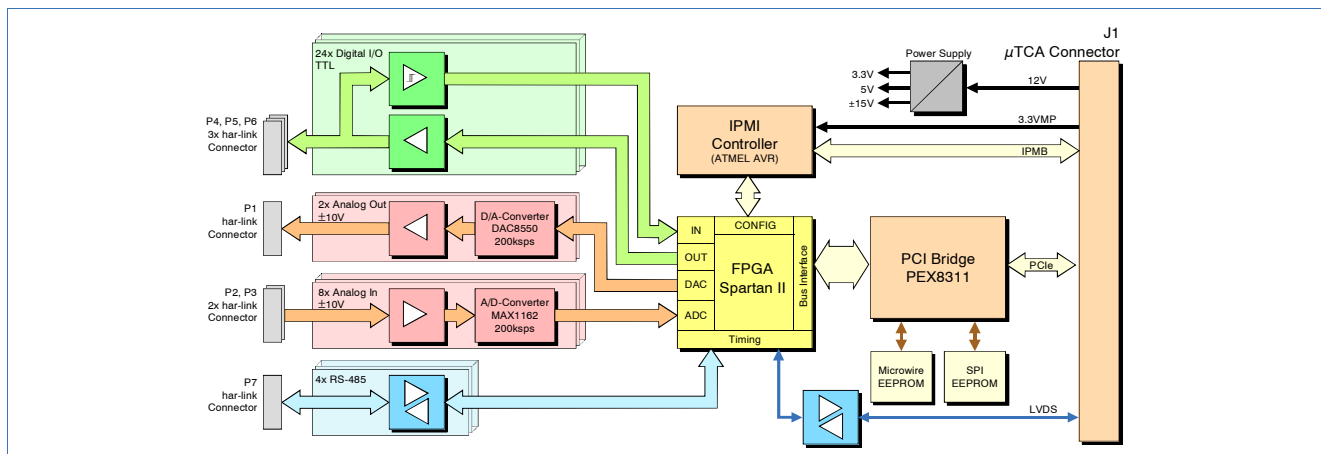


Trigger I/Os For Synchronisation

The firmware offers a so called 'Timing-Routing-Pool' with various trigger conditions (RS-485 trigger input, timer, software, free flow) that can be individually evaluated for each I/O.

PCIe Device Access

For setup and I/O data exchange a comprehensive register description is available.



Technical Specifications:

MicroTCA™ standards:	
: TCA:	PICMG® MTCA.0 R1.0, PICMG® AMC.0 R2.0
IPMI:	IPMI V1.5, controller Atmel® AVR
Updates:	PICMG® HPM.1 R1.0
PCIe bridge:	PCISIG® PCIe spec. R.1.0a
Process interfaces:	
I/O control:	FPGA Spartan® II
Analog inputs:	8 inputs, ± 10 V, 16 bit resolution, up to 200 kHz sampling rate
Analog outputs:	2 outputs, ± 10 V, 16 bit resolution, up to 600 kHz update rate
Digital I/Os:	24 I/Os, TTL level, programmable as input only, output sink, output source, output sink/source, max. current/channel: 64 mA sink, 32 mA source, up to 1 MHz input sampling rate, up to 1 MHz output update rate
Trigger ports:	4 RS-485 ports, trigger/sync, max. 1 MHz

General:	
Dimensions:	mid-height, single-width (73.5 x 180 mm) AMC
Ambient temp.:	0 ... +70 °C (free convection)
Humidity:	max. 90 %, non-condensing
Power supply:	3.3 V ($I_{3.3VMPMAX} = 60$ mA), 12 V ($I_{12VTYPICAL} = 0.6$ A, $I_{12VMAX} = 1.0$ A)
Connectors:	J1: AMC B/B+ compatible (MicroTCA™) P1 ... P7: 10-pin har-link (I/Os)
LEDs:	blue (hot plug), red (IPMI), green (OK)

Order information:	
Designation	order no.
AMC-ADIO24	8x AIN, 2x AOUT, 24x DIO, 4x trigger U.1001.01



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