I-O Extension Module Adds Analog and Digital Processing Capabilities to FPGA Computing Boards

The new AXM-75 is a multi-function I/O extension module that adds A/D, D/A, and digital I/O signal processing functions to a FPGA processor board.

Acromag’s extension I/O modules plug directly onto their PMC and XMC reconfigurable FPGA cards equipped with an AXM mezzanine connector. Using the AXM-A75, engineers can interface a number of high-level analog voltage signals to and from the FPGA. TTL-level digital I/O channels can monitor and control discrete devices. A 68-pin VHDCI receptacle provides easy field I/O connections. The operating range is -40 to 85°C. Typical uses include hardware simulation, in-circuit diagnostics, machine control, signal intelligence, and image processing. List price is $1700.

“The AXM-A75 multi-function I/O module simplifies the interface between an FPGA and sensors or controllers” explained Joseph Primeau, Acromag’s sales and marketing director. AXM extension modules like the AXM-A75 provide a convenient method to interface real-world signals to and from the FPGA for high-speed measurement and control operations.

There are sixteen differential analog input channels on the AXM-A75. Each input has its own high-speed 16-bit 250kHz A/D converter offering the ability to simultaneously sample all channels. A low-pass filter removes unwanted EMI. The input range is ±10 volts with programmable gain of 1x, 2x, 4x, or 8x. Serial FLASH memory stores the factory calibration constants.

Two quad DAC devices drive eight analog output channels with a range of ±10V. Each channel has its own high-speed 16-bit D/A converter which allows updating of individual channels or all outputs simultaneously. The D/A settling time is 10µS.

Sixteen bi-directional digital I/O channels provide the ability to read or write 5V logic levels on TTL devices. Each I/O channel is individually configurable as an input or output for great flexibility to match your requirements. The open drain outputs are pulled high via a pull-up resistor.

Acromag has designed and manufactured measurement and control products for more than 50 years. They are an international corporation with a world headquarters near Detroit, Michigan and a global network of sales representatives and distributors. Acromag offers a complete line of embedded I/O products including bus boards, mezzanine modules, wiring accessories, and software. Industries served include military, aerospace, manufacturing, transportation, utilities, and scientific research laboratories.

For more information about Acromag products, call Inside Sales at (248) 295-0310 or Marketing Communications at (248) 295-0310, FAX (248) 624-9234. E-mail solutions@acromag.com [1] or write Acromag at P.O. Box 437, Wixom, MI 48393-7037 USA. The web site is www.acromag.com [2].

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