

Dear Karen,

In this issue, we focus on solving several common problems associated with embedded systems. First, we offer a solution to help consolidate I/O processing on a single card. Next, we explain how to unburden your host CPU by integrating a processor on an FPGA module. And then we get back to basics with a tutorial on developing A/D applications.

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## Multi-function I/O Cards Simplify Designs

Whenever possible, it is highly desirable to reduce the number of boards and slots used in an embedded system. Consolidating functions on a single card reduces costs, development time, size, weight, and power. To help designers process a variety of I/O functions on a single, high-density board, Acromag offers the 730 series of multi-function I/O modules. The 730 series is available in [PMC](#), [PCI](#), and 3U [CompactPCI](#) formats. Each model features analog inputs, analog outputs, digital I/O, and a counter/timer on a single card. It's four boards in one. And, Acromag's function libraries provide example routines with C source code to exercise the I/O and speed integration.



**Tech Note: Enhance Performance Using FPGA Modules with Integrated Processors**

**FPGA Modules with hard or soft-core processors are ready to drive real-time applications.**

## FPGA Video



[Learn about custom board level solutions using FPGA modules](#)

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October 29, 2009

Seattle, WA

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Engineers developing DSP and high speed logic applications are now well-aware that FPGAs can help them create an integrated, sophisticated solution. The availability of commercial off-the-shelf (COTS) FPGA boards can make these solutions viable and do so in reduced development times. Today, with systems architected to perform extremely time-critical tasks on a COTS FPGA module, the host CPU is often relegated to managing the flow of processed data to and from the FPGA module across a PCI-X bus, PCIe, Serial RapidIO, or other data interface. This data transfer is usually necessary because some processing or data storage activities are shared between the FPGA module and host CPU. Must these activities be shared? Could more processing and management of the data be performed in one place? If the application has high-speed requirements and more of the slower data management or calculation tasks can be lifted from the host CPU, then a COTS FPGA module with an integrated processor might be the solution.

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## Tech Note: Minimize A/D Problems by Starting with a Simple Base

**Converting analog signals to a digital stream is easy, but great care is needed to ensure a clean signal**

A common task of real-time systems is to extract information from the real world in a form that can be manipulated by a computer to make logical decisions. Converting real world phenomena like music, earthquakes or air temperature to a proportional voltage is a well-known art predating the digital revolution 50 years ago. Analog-to-digital converters (A/D) bridge the gap between these worlds. However, the big challenge is to extract meaningful data in a noisy environment.

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## New Acromag Representative in NE USA

Acromag is pleased to announce [Network Allies, LLC](#) as our new Representative for Maine, Vermont, New Hampshire, Massachusetts, Connecticut, and Rhode Island. Located in Osgood Landing, North Andover, MA Network Allies can help you with all of your embedded I/O needs. To contact Network Allies by phone dial 978-486-0300. [Read more](#)

## New Distributor for Germany, Benelux

Acromag is very pleased to announce [systema computer GmbH](#) as our premier distributor for Germany and the

Benelux region. They bring a wealth of experience in delivering embedded solutions and an extensive product line to complement Acromag's family of I/O and FPGA boards. To contact systerra computer, call +49 (0) 611 9748 470. [More info](#)

## New Distributor for Scandinavia

Acromag is excited to announce the signing of [RECAB](#) as premier distributor for Scandinavia. RECAB has extensive COTS experience and several offices in the Nordic countries to assist you with your emdedded I/O needs. To contact systerra computer, call their office in Sweden at +46 8 683 03 00. [More info](#)

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Sincerely,



Acromag Marketing Communications Department