

Welcome to EMAC E-mail, a newsletter from EMAC, provider of single board computers, peripherals, and custom engineering to meet your embedded systems needs.

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### Trade Show News:

#### Embedded Systems Conference - Chicago June 4-5, 2002

Our next show will be in June, 2002 Embedded Systems Conference at Stephens Convention Center in Rosemont, IL. Come see us at Booth # 426 this June 4-5, 2002. We will be displaying our new compact half EBX board, the PCM-53E52

**Free Registration Guest Passes - <http://www.esconline.com/chicago/freepass.htm>**

Looking forward to seeing you there!

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### Product Highlight :

#### MicroPac 515C

The MicroPac series of single board computers feature micro size with micro power consumption at a micro price. The MicroPac 515C has dimensions of 5.375" by 3.625" with a power requirement of 45 ma. typical and 80 ma. with the DUART upgrade option installed.

The MicroPac 515C single board computer utilizes the Infineon C515C microprocessor. EMAC integrated this powerful processor onto a board that can provide up to 32 digital I/O lines, 4 serial RS-232/485 ports, 128K of Flash or ROM, 512K of RAM, serial EEPROM, CAN interface, LCD interface, keypad interface, SPI compatible interface, 8 channels of A/D, and 4 channels of D/A.



The MicroPac 515C is ideally suited for controller applications requiring in-circuit Flash reprogramming, onboard graphic or character LCDs and/or keypad interface circuitry. It is also ideal for low cost data acquisition and control applications. The 8 channels of A/D allow the board to be connected to temperature sensors, pressure sensors, strain gauges, and LVDTs. Conditioned signals from these sensors can be used to make decisions in controlling

motors, lights, heaters, etc.

For additional details, contact the EMAC Sales department at [info@emacinc.com](mailto:info@emacinc.com) and visit our product web page at [http://www.emacinc.com/sbc\\_microcontrollers/micropac515.htm](http://www.emacinc.com/sbc_microcontrollers/micropac515.htm).

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## Newsletter Promotion :

### PCM-53E52

Embedded systems and single board computers are often utilized for data acquisition and I/O processing. Until recently, PC/104 expansion boards provided these functions, increasing both system size and cost. Using the EMAC PCM-53E52 SBC and PCD-812 I/O daughter card, you can now obtain analog and digital I/O features on a single embedded system. To celebrate the release of our PCM-53E52 SBC and PCD-812 I/O daughter board, EMAC is offering a FREE 32MB RAM upgrade with the purchase of a PCM-53E52, good through June 15, 2002.

*FREE 32MB RAM UPGRADE - PCM-53E52 Pentium SBC*



With a footprint roughly equal to a 3.5-inch hard drive (145 mm x 102 mm), the PCM-53E52 provides a full range of PC-compatible features:

- AMD Elan SC520 133MHz processor (Pentium 120 equivalent)
- ISA and PCI bus expansion with onboard PC/104 Plus connector
- Supports M-Systems' DiskOnChip® 2000 Flash disk; solid-state design replaces all moving parts.
- Onboard 10/100 Base-T Ethernet interface
- Built-in Enhanced IDE hard disk drive interface and floppy disk interface
- Includes three RS-232 and one RS-422/485 serial ports, along with one EPP/ECP parallel port

In conjunction with the PCM-53E52, the optional PCD-812 I/O daughter board provides comprehensive I/O features for data acquisition applications:

- Digital I/O:** 14 General-purpose inputs/outputs and 8 High Drive outputs
- Analog Input:** 7 Channel 12-bit Resolution A/D
- Analog Output:** 2 Channel 12-bit Resolution D/A
- Counter:** 2 Channel 16-bit
- Keypads:** Supports up to a 20-Key Keypad
- Displays:** Supports up to a 40 x 4 Character LCD Display

For additional details, contact the EMAC Sales department at [info@emacinc.com](mailto:info@emacinc.com) and visit our product web page at [http://www.emacinc.com/pc\\_compatible\\_sbcs\\_info/pcm53e52.htm](http://www.emacinc.com/pc_compatible_sbcs_info/pcm53e52.htm).

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## Technical Forum:

*General Software's Embedded BIOS™2000*

## *Powers New EMAC Single Board Computer*

June 3, 2002, Chicago, Illinois, Embedded Systems Conference -- General Software, Inc. the leading supplier of embedded firmware, announced today that EMAC has selected Embedded BIOS™ 2000 for its new single board computer -- the PCM-53E52. Powered by Embedded BIOS and based on the AMD ElanSC520 133Mhz processor, the compact, Half-EBX board is used in harsh environments and limited-space applications. For data acquisition and additional flexibility, an optional I/O daughter board is also available. EMAC selected this particular configuration for several reasons. For low power, high performance PC compatibility, they chose the AMD ElanSC520. And, by selecting Embedded BIOS 2000, they realized maximum hardware support and quicker time to market.

"The Embedded BIOS built-in debugger allowed us to get the hardware up and running in a short period of time," says Eric Rossi, president of EMAC, Inc. "This headless board also capitalized on Embedded BIOS' console redirection feature. The ability to redirect the video to a serial port meant that users could configure BIOS services without the need of an external video card. This will be a major benefit to customers when the PCM-53E52 is deployed in the field."

"The PC AT compatibility and natural low power consumption profile of the ElanSC520 make it a perfect fit for single board computers such as PCM-53E52 from EMAC", says Tim Raper, Product Marketing Manager of AMD. "We are getting a lot of positive feedback from our customers regarding the Windows and Linux compatibility of the ElanSC520, especially when used with General Software's Embedded BIOS 2000."

"We are pleased to play a part in this new single board computer design," commented Matthew J. Schiltz, General Software president and CEO. "EMAC and General Software enjoy a solid business relationship. Besides being a valued customer, EMAC also is one of our Technology Centers, offering custom Embedded BIOS adaptations and consulting services."

### **About EMAC, Inc.**

Since 1984, EMAC, Inc. has provided customers worldwide with a comprehensive line of products and services for the embedded systems market. Its products include single board computers and peripherals; its custom engineering and manufacturing services include hardware design, driver development, BIOS adaptation, and software application development. For more information about EMAC, Inc., visit [www.emacinc.com](http://www.emacinc.com), e-mail [info@emacinc.com](mailto:info@emacinc.com), or contact Paul Fell or Bill Hummel at 618-529-4525.

### **About Embedded BIOS™2000**

Embedded BIOS delivers the most comprehensive BIOS development environment for x86 embedded systems. The modular architecture of the Embedded BIOS Adaptation Kit allows an OEM to support multiple, on-going BIOS adaptations while leveraging existing libraries of CPU, chipset, and board-specific features. The rule-based, expert system -- BIOSStart® -- provides access to over 600 OEM-selectable configuration options and enables fast and easy development of perfect-fit firmware -- often without editing BIOS source code.

Embedded BIOS addresses the entire lifecycle of embedded products, from board bring-up, configuration prototyping, testing with system diagnostics, and product manufacturing to in-field diagnostics and software reload.

Embedded BIOS supports industry-standard operating systems that run on PC-compatible hardware, including the full spectrum of Windows, Linux, and real-time operating systems.

## About General Software, Inc.

General Software, a Windows Embedded Partner Gold-level member, provides superior enabling firmware and world-class support for OEM manufacturers of telecommunications, data communications, consumer electronics, dedicated servers, and other specialized computing devices. General Software's well-architected and reliable firmware products reduce risk, speed development, and address embedded OEM product lifecycle needs. For more information about General Software and its embedded firmware, visit [www.gensw.com](http://www.gensw.com), e-mail product [\\_info@gensw.com](mailto:info@gensw.com), or contact Leslie O'Brien at 800-850-5755 or 425-576-8300.

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## Engineering Success Story:

### Cincinnati Test Systems

When Cincinnati Test Systems (CTS) required a versatile Single Board Computer (SBC) with Analog and Digital I/O, which was both easy to program and inexpensive, they chose EMAC's MicroPac 180 with MTBASIC. And when they needed an SBC with 24 bits of A/D, again they chose EMAC, however, this time they chose EMAC's Semi-Custom design services. EMAC took the MicroPac 180 core and MTBASIC that CTS was so comfortable with and added a 24 bit A/D, a few relays, and modified the firmware in the I/O coprocessor to pulse width modulate three valves. The result was a low cost product solution that can detect leaks in a Pneumatic system to 1/1000th of a PSI. CTS wrote and maintains all the software and EMAC manufactures the units. A win-win for both CTS and EMAC.

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## EMAC Extras:

### EMAC Specials

This month's SPECIAL is the: SBC-555 ... Pentium Half-size ISA CPU card ... \$265.00  
SBC-555 - [http://www.emacinc.com/pc\\_compatible\\_sbcs\\_info/sbc555.htm](http://www.emacinc.com/pc_compatible_sbcs_info/sbc555.htm)

All the items on the EMAC Specials page are either discontinued or must leave our inventory. However, these products are NEW and have a full two-year warranty. As always these products have EMAC's service and reliability to back them.

These items could serve as a prototype for a new product without the cost of newer more expensive boards. At the same time they could serve as an inexpensive alternative to the one time application or to the basement tinkering. So don't be the last to pick up these great specials as they are of limited quantities.

EMAC Specials - [http://www.emacinc.com/emac\\_specials.htm](http://www.emacinc.com/emac_specials.htm)

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<http://www.emacinc.com>

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