EMAC The EMAC Newsletter

EMAiL Vol 4.0

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

FEATURES

Embedded Systems Conference: Silicon Valley:

EMAC will be exhibiting at booth 1247 in the upcoming Embedded Systems Conference - Silicon Valley. The conference will take place at the McEnery Convention Center in San Jose, California beginning Sunday, April 1st and continuing through Thursday, April 5th. Contact us for a free pass.

For Additional Information - http://www.embedded.com/esc/sv/

Product News:

End of Life Products

The following Single Board Computers, PC/104 modules and peripherals are being phased out. Please contact our Sales Department for questions regarding replacements and final purchases of these End of Life Products.

Discontinued Item	Product Description
PCM-3336	386 PC/104 CPU Module w/ 2COM/ VGA / LCD
PCM-4823	486 Half EBX SBC w/ 2COM / LAN / LCD Option
PCA-6741	Half EBX SBC w/ 133MHz CPU / 4COM / LAN / LCD
PCM-9340	Half ISA SBC w/ 133MHz CPU / 2COM / LAN / VGA
PCM-9578	EBX SKT 370 SBC w/ 2COM / 2USB 1.1 / 3,4 LAN / VGA
PCM-3663	Dual LAN PC/104 Module
PCM-3835	IDE Compact Flash Carrier PC/104 Module
PCM-3840	IDE DOC Carrier PC/104 Module
PCM-3810	SSD Flash Disk PC/104 Module
DiskOnChip 2000	Flash disk in a standard 32-pin DIP package

Wide Temperature Range SBCs

In order to facilitate the needs of customers operating in an environment with harsher temperatures, EMAC now offers several Single Board Computers that have been proven to perform in a wider range than normal. Ordinarily, EMAC SBCs are proven to function in an

environment with a standard temperature range of 0 to 60 degrees C. With the Phoenix Gold program, operational temperature range has been widened to –20 to 80C on specified boards. The Phoenix Platinum pushes the boundaries even further to an extreme –40 to 85C.

Special versions of the following boards are now being offered with the extended temperature Phoenix Gold program:

PCM-9371F-J

PCM-9375F-J

PCM-9579F-J

PCM-9579F-M

SoM-4475FL-J

SoM-4486FL-M3

We currently provide a version of one board which can be offered with the extreme range of the Phoenix Platinum specifications:

PCM-9375F-J

Please contact the EMAC Sales Department for more information on pricing, availability and minimum quantities for these wide temperature range Single Board Computers.

Newsletter Promotion:

EMAC Embedded Linux Operating System

EMAC, Inc. currently offers an Embedded Linux Operating System for virtually all its single board computers. Our standard Linux installation is FREE with the purchase of an SBC and suitable disk media. This Embedded Linux OS has been designed to assist our customers in the low cost rollout of a large number of long life systems. EMAC's Embedded Linux O S Distribution offers several benefits:

- Cost reduction by allowing smaller capacity RAM/flash devises and avoiding licensing fees
- Faster boot time given the same hardware configuration
- Added security and a greater reliability verses desktop counterparts
- Reduction of wear and extending the life of the system (no flash burnout or moving parts of hard disk drives)
- Eclipse Integrated Development Environment (IDE) can help greatly reduce the time and cost of developing your application
- Customization of software configuration and archived part number available

When additional functionality beyond EMAC's Standard Linux Distribution is required, we assess a build fee for optional modules. This build fee covers the cost of assembling the build and technical support for the modules. Multiple identical SBCs with the same build on a single order are only charged this fee one time per order. If repeat orders are planned, an image of the build can be archived under a unique part number for a fee of $50.00 annually. This part number can then be ordered again and again with no additional build charges, saving the customer the cost of build and configuration fees and assuring the receipt of the same build.

As a special promotion, with the mention of this newsletter, we are offering the first year of the archive subscription service for free. Offer good for a limited time.

For more information on EMAC's Linux Operating System, please visit our website http://www.emacinc.com/operating_systems/linux_embedded.htm or contact the EMAC Sales Department info@emacinc.com

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Product Highlight:

iPac-9302

EMAC has created the iPac-9302, an inexpensive, feature packed Single Board Computer (SBC) based on the Cirrus EP9302 processor. This ARM9 board features, A/D, PWM, Digital I/O, Serial, USB, and Ethernet, all on a board that is same footprint of a PC/104 module at 3.77" x 3.54". This Industrial Strength SBC is perfectly suited for just about any Embedded Data Acquisition and Control application.

Also available is an optional Screw Terminal board for the iPac that is stackable, providing numerous I/O points with screw termination, in a very small package. Two Screw Terminal boards are required to accommodate all of the iPac I/O.

The resident flash on the iPac can be programmed via it's serial bootloader firmware over the RS232 com port or via it's JTAG port. Software can be written with Microsoft's .NET Micro Framework or Linux.

EMAC Inc. is working to provide a .NET Micro Framework Port. .NET Micro Framework (NMF) is a New platform developed by Microsoft to simplify Embedded Application design. NMF is fully integrated into Microsoft Visual Studio allowing the user to develop with familiar tools even when debugging code that is running on the target device. The .Net Micro Framework provides a managed code environment that brings a fantastic degree of efficiency and reliability to the realm of embedded software development. For more information on .NET Micro Framework go to: http://msdn.microsoft.com/embedded/netmf/.

On the Linux side EMAC provides a Free Eclipse IDE that is pre-integrated to provide everything the user needs for developing iPac 9302 applications. All the compiling, converting debugging, and downloading inherent to iPac 9302 development can be done from one easy to use high level interface. The distribution provides an SDK for the EMAC iPac 9302 which contains source examples for the Ethernet, USB, Digital I/O ports, A/D, PWM, SPI, SD/MMC. The EMAC Eclipse IDE is a powerful, yet flexible Integrated Development Environment for the iPac 9302 and even features CVS version control support (For a screen shot of EMAC's Eclipse based Development Environment please visit: http://www.emacinc.com/images/som/eclipse5282.jpg).

For more information about the iPac 9302, please visit our website at: http://www.emacinc.com/sbc_microcontrollers/ipac_9302.htm. or email us at: info@emacinc.com.

Engineering Success Story:

Harris Broadcast Mixer Reference Story

When EMAC Harris decided to build their next generation high end Audio Mixer that would be RoHS compliant they again came to EMAC to design the new processor core module. The system had a number of constraints, same PC board size, lower cost, faster processing speed, and reliability to name a few. The system also had to run Win CE 5.0 and be able to load the Operating System via Ethernet on Demand.

EMAC choose the Cirrus EP9315 ARM9 processor. This processor replaces the older AMD SC520 133Mhz CPU. The EP9315 is faster and runs much cooler than its predecessor. In addition the EP9315 provides Accelerated Video, USB 2.0 Host, two serial ports, and a high-speed synchronous serial interface (SPI). The SPI was required to maintain backwards compatibility allowing the processor to interface to the existing Mixer FPGA.

EMAC then went to work on overhauling the boot-loader. The boot-loader has to be able to go out to a TFTP server and check for a newer version of the OS. If one exists it copies it to a Compact Flash (CF) Disk then once copies removes the old version and continues the boot process. If it cannot connect to the TFTP server or the image on the server is the same as the local image, it then boots the local image. EMAC implemented a full FAT16 file system within the boot-loader to allow Harris to put images on the CF from a CF reader attached to a desktop PC. In addition there is an INI file which allows for system configurations to be set at boot time. A scripting/batch provision was also provided.

Since production quality at Harris is paramount and the annual production quantity was several hundred units per year, Harris will have EMAC continue to do the manufacturing as well as the design. EMAC with its own in-house production line can handle production runs up to several thousand units annually and prides itself on its production quality. EMAC only manufactures boards in which it designs, assuring an intimate knowledge of the hardware which translates into a high yield, high quality production run.

EMAC Extras:

EMAC Specials

This month's SPECIAL is the: PCM-6892E … Pentium Socket 370, EBX SBC with Video, Audio, & dual Ethernet … $220.00.

PCM-6892E - ftp://ftp.emacinc.com/PCM-6892E_manual.pdf

All the items on the EMAC Specials page are either discontinued or must leave our inventory. However, these products are NEW and have a one-year warranty. As always these products have EMACs 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/specials/emac_specials.htm

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EMAC, Inc. Homepage:
http://www.emacinc.com