CPU Boards— Latest-and-Greatest from Our Members

We asked our members to tell us about their newest CPU boards. Here are their new offerings!

Creative Electronic Systems—
http://www.ces.ch/ces_info/welcome.html

CES's (Creative Electronic Systems) RIO2 8062 has been designed to provide a general purpose VME platform for high-speed interfaces using the PCI bus. Based on the PowerPC 603e or 604e processors, it offers versatile interrupt strategies, advanced multiprocessor synchronization, a block mover accelerator on VME and VSB, and supports hardware-chained block transfers and powerful user-defined indivisible macro instructions.

Operating under a complete self-hosted Lynx-OS development and target package or a BSP for Tornado VxWorks, the RIO2 8062 provides a huge speed improvement with an optimized CPU memory arbitration, a massive 1 Mbyte L2 cache delivering 400 Mbytes/sec and over 99% hit rate.

The enhanced VME interface provides a 30% performance improvement compared to its predecessor, while remaining 100% software compatible.

CETIA— http://www.cetia.com

CETIA, the VME industry's sole vendor dedicated to PowerPC-based single-board computers (SBCs) has unveiled its fourth generation PowerPC board. It is the only such product on the VME market which provides built-in symmetric multiprocessing (SMP) capabilities. The PowerEngine 4 series from CETIA is a highly integrated family of PowerPC SBCs that utilizes advanced ASIC technology to extract the maximum power possible from single or multiple PowerPC processors.

CETIA's VME64-compliant boards are available with single or dual 200 Mhz PowerPC 604e processors. Standard features for the first model of the PowerEngine 4 series, the VMPC4a, includes: up to 256 MBytes of DRAM; up to 32 MB of user flash memory; 2 serial ports and a parallel printer port; COBRA ASIC for Real-Time functionality and optimization; Ethernet interface; Fast/Wide SCSI interface; PCI mezzanine card (PMC) site; Fast PCI (50 Mhz) Bus option for P2 or PMC.

The PowerEngine 4 Series supports a wide variety of operating systems including IBM's AIX, Lynx OS from Lynx Real-Time Systems, and VxWorks from Wind River Systems. CETIA is a source code licensee of both AIX and LynxOS, which allows CETIA to provide extended tools and support for specific application requirements. Also for COTS developers, the VMPC4a can be easily adapted to harsh environments without running the risk of re-design with the addition of the "Ruggedizer", CETIA's state-of-the-art board-level heat drain.

Concurrent Technologies—
http://www.gocct.com

Concurrent Technologies latest CPU board provides support for the latest Pentium CPUs, including the 200Mhz with MMX support. In addition, the board provides ethernet, SCSI and graphics interfaces, as well as support for up to 2 PMC slave modules.

Industry standard operating systems including VxWorks and WindowsNT are supported.

Dynatem—http://www.dynatem.com

Dynatem's DPC1 offers a complete PC in a single VMEbus slot. This VME64 compatible SBC based upon the 100-200 MHz Pentium processor features fast ethernet, flat panel as well as SVGA support, and PMC expansion. Software offered includes Windows NT, VxWorks, QNX and Lynx-OS. Extended temperature and ruggedized versions allow use in rough environments.

The DPC1 offers a complete development environment with full VMEbus driver support for Windows NT 4.0. For development, an optional transition board is offered for hard disk and floppy support. The on-board IDE Flash disk enables full NT implementation without requiring a hard disk or floppy drive in the target environment. Since being introduced in 1996, the DPC1 has been designed into numerous industrial and military based systems.

ELTEK Elektronik—
http://www.eltec.de

The EUROCOM® 128 is the next generation of the Intel-line for the VMEbus. This compact computer unites all the functions expected of a modern single-board computer.

The Pentium processor can be used within different, special subject classes. The local memory is designed on SIMM-modules selectable from 8 up to 128 MByte. All common AT-interfaces are provided and a powerful, on-board VME interface is provided.

With the PCIO 200 extension board as a carrier for two PCMCIA cards, the EUROCOM® 128 is ideally complemented.

All AT-compatible software products such as Linux, LynxOS, VxWorks, WindowsNT, Windows 95 and QNX are supported on the EUROCOM® 128.

Hewlett-Packard—
http:www.hp.com/go/workstations

Hewlett-Packard's recent release of its 744 Series VME computer product line delivers a scalable performance boost, while preserving customers' investments in HP's graphics and I/O options, enabling customers to speed up time to market and reduce system integration tasks. The new series is well suited for applications demanding higher performance, such as air traffic control, military C3I, telecommunications and medical imaging. The series offers full binary compatibility with existing applications, as well as a choice of HP-UX for UNIX® systems and HP-RT for real-time operating-systems environments.

The 744 Series represents HP's continuing commitment to VME. "We are very proud of the fact that many OEMs and systems integrators build their own product lines on HP VME computers," said John Stefanowicz, VME business manager in HP's Embedded Systems Operation. "In support of their product-development efforts, we offer five-year assurance of availability and a ten year commitment for support services on all of our VME products. In addition, HP has a trade-up program that allows customers to trade older HP workstations or competitive VME products for a discount on these new, high-performance offerings."

HP-UX 9.X and 10.0 for HP 9000 series 700 and 800 computers are X/Open™ Company UNIX-branded products. HP-UX 10.20 is an X/Open UNIX 95 branded product.

UNIX is a registered trademark in the United States and other countries, licensed exclusively through X/Open Company Limited.

MATRIX Corporation—
http://www.matrix.com

MATRIX Corporation continues its commitment to providing innovative solutions for harsh environment applications. It is pleased to announce the availability of the new PENTX™ Pentium-based 3U and 6U VMEbus boards. Both the single-slot and multi-slot/extended temperature versions of the PENTX provide full PC functionality and are optimized for rugged embedded applications.

The PENTX board is designed around a hybrid module combining the P54C Pentium processor and a PicoPower Vesuvius support chip set. Multi-Chip Module (MCM) technology makes it possible for the PENTX to operate effectively in extended temperature environments.

The PENTX boards support OS-9, VxWorks and Windows NT operating systems. 6U and conduction cooled versions will be available this Spring. PENTX takes the heat... and cold, shock and vibration.

Omnibyte—http://www.omnibyte.com

Omnibyte's Galaxy "Model R" is the latest in our line of Galaxy PowerPC-based processor boards for VME. It continues Omnibyte's commitment to the high-performance PowerPC VMEbus-based plaform. The "Model R" features a Raceway interface, as well as 2 PMC positions for I/O expansion. It can be populated with either the 604e or 603e processor at clock speeds up to 200+MHz.

The new Galaxy Model R (Raceway version) joins the Model E (Embedded version) and Model D (Desktop version) of Omnibyte's Galaxy family. Wind River's VxWorks RTOS is supported on the R & E versions, while the D version (CHRP/PR*P Compliant) also supports Microsoft's Windows NT, IBM's AIX and Sun's Solaris operating systems.

The Galaxy PowerPC family is just the latest in Omnibyte's 15 year commitment to VMEbus based 68000, 68040 and 68060 SBC and I/O solutions for serious VME users worldwide.

Performance Technologies—
http://www.pt.com

VME151/161 Single Board Computers/Communications Controllers— Performance Technologies' high performance, upgradable and software-compatible single board computer/communications controllers offer users flexible high end VMEbus processor solutions. The VME151/161 products act ideally as host processors or as communications subsystems controllers, freeing the host for other tasks.

The PTI single board computer/communications controller products offer a range of options such as the Motorola 68040 or 68060 MPUs, 25Mhz and 50MHz clock speeds, DRAM capacity up to 64 Mb, VME64 operating mode, and a SCSI-2 FAST peripheral interface. Add-on mezzanine I/O modules provide either 16 ports of async I/O, 4 ports of DMA supported sync I/O, or Ethernet parallel I/O.

The various models of the VME151/161 are designed around similar architectures, allowing users to easily integrate between platforms for ideal price/performance solutions. The VME 151/161 single board computers/controllers support VxWorks and OS-9 real time operating systems software.

Philips— Telephone: +31 40 278 20 25

Philips IAS' new VMEbus board provides a complete, up to 200-MHz Pentium PC in just two slots, complete with hard disk and high-speed peripheral interfaces. Superhigh integration packs advanced graphics, hard disk, mouse/keyboard interfaces, and high-speed SCSI II, PCI and USB connections (and there is even a loudspeaker). The EPC-9 is also the world's first VMEbus board to be field-upgradable to a 200-MHz Pentium Pro processor (EPC-10).

The board also packs auto-sensing 10/100 BaseT Ethernet, two RS-232 serial ports, and a parallel port. Two PMC mezzanine slots provide flexible I/O across the PCI bus with an optional VGA module.There is an 8- to 256-Mbyte fast page or EDO DRAM, with a 64-bit wide data path and 256kbyte secondary cache.

The ruggedized board extends Philips' established EPC range, runs Windows 95 and Windows NT and carries the CE mark. A 32-bit VMEbus interface, and an EXMbus expansion module interface are used for industrial applications.

Radstone Technology—
http://www.readstone.com

Radstone Technology's PPC-2 PowerPC Processor Range— The PPC-2 series of 603e and 604 based PowerPC processor boards extends Radstone Technology's range of processor solutions in the severe-environment application area.

The PPC-2 range couples leading operating system support with a versatile range of hardware options which allows application development (in commercial build standard), through to tactical deployment (up to rugged, conduction-cooled environments).

With consistent, hardware-independent OS support for VxWorks/Tornado, LynxOS, and Windows NT, the PPC-2 series is targeted at high-performance applications such as real-time system control, industrial process control and information gather/disperse systems.

ROTEC GmbH— http://www.rotec.com

ROTEC GmbH offers a product line of VME CPU boards with Industrial-PC processor technology. The GAMMA-4 is a 3U VMEbus CPU-board with a 5x86-P75@133 processor. The board is designed for use in industrial environment and real-time applications. Windows 95 / NT4.0 and VxWorks are supported. For real-time applications, ROTEC offers the Automation-Tool Vision-Control under Windows95/NT4.0. It contains a "hard" real-time kernel, which is triggered by an NMI of hardwaretime inside Gamma4 CPU board, a Visualization Tool and a Soft IEC1131-PLC. More information is available on our web-site http://www.rotec.de.

SKY Computers—
http://www.sky.com

SKY Computers, Inc. designs and manufactures scalable, heterogeneous multiprocessor solutions for embedded real-time applications. Centered around the 320 MB/sec SKYchannel Packet Bus, these solutions are constructed from a diverse set of technology building blocks for processors, architectures, intelligent I/O interfaces, ultra-fast bulk memory, and data communication

architectures. The modules build upon SKY's 16-year expertise in designing and deploying high-performance multiprocessor systems for use in radar, sonar, signal intelligence, and medical imaging.
SKY offers a variety of commercial off-the-shelf (COTS) products that are implementations of these building block solutions. For example, SHARCpool, SKY's latest processor daughtercard, can be combined with the SKYram memory daughtercard on a 6U VME SKYchannel board to provide a balanced architecture of 1.44 GFLOPS of processing and 8 MB SRAM plus 256 MB DRAM each accessed at 320 MB/sec in a single VME slot. Large systems may be built by connecting VME boards with the 8-slot SKYchannel Crossbar Backplane, providing an aggregate 1.6 GB/s data transfer mechanism over VME P2. SKY also offers FPDP digital I/O interfaces, RISC-based processor daughtercards, 9U VME motherboards, desktop systems, and standalone embedded systems with over 20 GFLOPS per cu. ft. SKY's COTS products with their range of compute processing, I/O and memory options, are the basis for, but not the final solution to your unique requirements. Only SKY Computers has the expertise, flexibility, and resources to provide the complete solution.

Themis Computer—
http://www.themis.com

Themis Computer offers the most advanced SPARC VME single board computers and systems for the embedded market. Ranging over the full spectrum of SPARC performance from the SPARCstation 5-compatible SPARC 5/64 to the Ultra 1 Workstation-compatible USP-1 (to be announced in April 1997), Themis has a 100% Sun Compatible VME product that fits any system integrator's most demanding applications.
The SPARC®20MP is today's highest performance multiprocessing SPARC VME Engine. Themis's SPARC 20MP has improved MBus and VMEbus performance. Significant performance gains have been achieved without sacrificing the SPARC 20MP's 100% binary compatibility with Sun's SPARCstation™20 family. The SPARC 20MP offers an enhanced VME64 interface, a faster 50 MHz MBus architecture and VME driver compatibility across the entire SPARC processing technology range. The SPARC 20MP enhances the SPARCstation 20 architecture and adapts it for use in embedded applications.
The SPARC 20MP runs Sun's standard Solaris® 1.1.2 (SunOS 4.1.4) and Solaris 2.5 operating systems. Solaris gives users access to the thousands of off-the-shelf software applications already written for Solaris, the world's most popular UNIX operating system. Other supported operating systems, include VxWorks 5.3 and VadsWorks.

Transtech Parallel Systems—
http://www.transtech.com

The TSP4 from Transtech Parallel Systems offers up to 200MHz PowerPCs on a single slot VME board. Each of the four CPUs (603eV or 604eV) operates as an independent node with its own local memory. Internode communication is supported through an onboard PCI backbone and fast DMA controllers. The TSP4 has a PMC slot for networking, graphics and other I/O. Available software includes VxWorks BSPs and TTOOLs.
TSP4 is ideally suited to scaleable high performance embedded applications including communications, radar/sonar and simulation.
Transtech also provides high performance VME boards based on Analog Devices' SHARC and Texas Instruments' TMS320C4x DSPs. These boards are suited to real-time imaging, radar/sonar and signal processing.

V•I Computer—
http://www.vicomp.com

V•I Computer's new Power•4e-200 with its 200MHz PPC 604e microprocessor is the fastest PowerPC VME Engine ever introduced (6.5 SPECint95 and 6.1 SPECfp95 estimated performance). In addition, the Power•4e is the only 6U PPC VME solution that can offer up to 256 Mbytes DRAM and a full complement of I/O and still require only one VME slot.
In addition, the Power•4e is the first PowerPC VME single board computer to support 100Base-TX Ethernet. The Power•4e features a PMC/PCI local mezzanine bus and VME64 interface, bringing a new level of integration, I/O performance, flexibility and processing power to VME systems designers.
The Power•4e addresses the growing need for increased processor performance in military and telecommunications environments. With this new single board computer, V•I Computer sets the standard for PowerPC computing in real time and embedded applications.

Vista Controls Corporation—
http://www.vistacc.com

The Vista Controls SCORE 603 PowerPC board is the latest offering in the SCORE processor series for VME. The SCORE 603 continues Vista's commitment to I/O-intensive applications and systems solutions with the unique combination of On-board dual redundant Mil-Std-1553B and one PMC mezzanine slot for expansion. The SCORE 603 also features 8 MB to 64 MB DRAM w/EDC , 8 or 16 M Flash, Ethernet, 4 Serial Channels, and 8 bit Digital I/O.
The exceptional feature set offered on the SCORE 603 make it the best price/performance choice for those applications which require high levels of I/O capability in a single slot. The PMC slot allows even greater expansion of I/O capabilities with the addition of Vista's wide range of PMC Modules to complement the SCORE 603.
Vista's SCORE 603 is offered in Lab, Rugged Air Cooled, Rugged Conduction Cooled and Mil-Temp versions. The SCORE 603 supports VXWorks and VADSWorks operating systems; and support for the C and Ada programming languages.

VMIC— http://www.vmic.com

VMIC continues to make technological breakthroughs by offering yet another extremely fast, Intel-based CPU board. The VMIVME-7686 brings Intel Pentium Pro processor power to the VMEbus platform with processor speeds ranging from 180 to 200 MHz. Besides the speed, there are other unique features that put this board in front of the competition. It has a VMEbus interface that is based on the high-performance PCI-to-VME interface from Newbridge/Tundra, it has a PCI ultra fast/wide SCSI-2 controller that supports narrow/wide peripherals at burst speeds of up to 20/40 Mbyte/s, and it supports Ethernet LANs with the DEC 21142 PCI Ethernet controller. The on-board fast Ethernet controller options are 10baseT, 10base2, 100baseTX, and 100baseT4. When the 10baseT and 100baseTX options are ordered, autodetection with LED indication is provided. Another unique feature of this board is that the user has dynamic software control of endian data conversion, which allows independent control of the master and slave modes.
The VMIVME-7686 processor has 32-bit addressing and a 64-bit data bus. The Intel Pentium Pro processor is compatible with the off-the-shelf applications for Windows, and Windows NT, VxWorks, and Lynx operating system software for the PC/AT architecture. VMIC supplies support software for Windows NT, VxWorks, and Lynx operating systems. A front panel connection for the Universal Serial Bus (USB) allows system expansion to modern peripherals at up to 12 Mbps.
This board fits well in a variety of markets including simulation, instrumentation, industrial control, process control and monitoring, factory automation, telecommunications, intelligent networked PLC controllers, automated test, and data acquisition.

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