

MIL/COTS

DIGEST

The Defense Electronic Product Source

Sept/Oct 2007

In This Issue

All the products you need for Aerospace and Defense

You're holding in your hands the second installment of *MIL/COTS DIGEST (MCD)* now part of *Military Embedded Systems* magazine. My vision for MCD is to dramatically expand our coverage of new COTS products for the Aerospace and Defense (A&D) markets. Why's that? Because we get about 100 new product announcements *per day!* How else can we tell you about all this great new stuff? MCD gives you a quickie "thumbnail" view of some of my favorite ones – in an easy-to-scan print format.

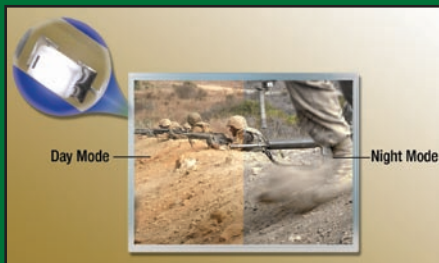
Even in an era of way-cool Web pages, old-fashioned paper is still handy for perusing new product listings, and easier to read while leaning back in a chair or on an airplane. In this eight-page supplement, you'll find 28 products, ranging from boards and systems to blades, vision systems, cameras, rugged box-level computers, LCDs, components, and ... well, you get the idea. A wide variety of new products awaits you.

Go ahead and start thumbing through. Something's bound to catch your interest.

(By the way ... one of the most intriguing products is the "hygienic design" industrial PC from noax Technologies. Think you can just hose it off?)

Chris Ciufo, Editor
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PS: In 2008, *MCD* will increase to quarterly as *Military Embedded Systems* increases to eight issues. So, look for even more products in the future.



Day-to-night mode LCDs

The NVIS A and NVIS B are VGA and XGA resolution TFT LCDs backlit by LED rails that can be switched back and forth between day and night mode via the company's standard PRISMA II industrial controller board. Compatible with Night Vision Imaging Systems (NVIS) technology, NVIS A is for upper echelon applications, while NVIS B is for applications with less stringent requirements. The units feature updated technology that eliminates the cumbersome and expensive filters – large glass overlays bonded to the outside of the display – previously used. NVIS LCDs can be used in military aircraft cockpits, tanks, trucks, ground mobile applications, and communications systems. The LCDs are 8.4" diagonal, scalable up to 15" diagonal, and fully RoHS compliant.

www.apolلودisplays.com

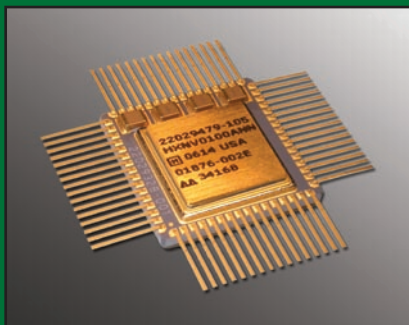
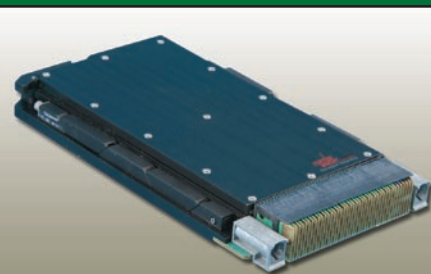
APOLLO DISPLAY TECHNOLOGIES, LLC

3U VPX SBC and carrier board

The VPX3-125 is a 3U VPX SBC featuring a single or dual core P.A. Semi PWRficient PA6T-1682M processor at 1.5 GHz. Highly suited to harsh environment A&D applications, the VPX3-125 provides 512 MB/1 GB DDR2 memory @ 400 MHz, 128 MB NOR flash, 1 GB NAND flash, and 512 KB NVRAM. I/O includes one XMC/PMC site, two 10/100/1000 Ethernet ports, RS-232 and RS-422 serial channels, and two x4 lane PCI Express egress ports off-board. Its optional 3U VPX I/O expansion companion carrier board, the ExpressReach, provides an XMC/PMC site supporting x8 lane PCI Express port (VITA 42.4) with differential pair I/O routing, along with two x4 PCI Express switch ports to simplify expansion.

www.cwcmembedded.com

CURTISS-WRIGHT



One-million bit nonvolatile memory

The HXNV0100 is a one-million bit nonvolatile static memory component for strategic space electronics applications. The memory array and control electronics are both radiation hardened, providing high reliability for low-voltage systems operating in radiation environments. The magnetic RAM runs from a 3.3 V power supply and

offers >1e15 read/write cycles. Fabricated with Honeywell's Silicon-On-Insulator (SOI) Complementary Metal Oxide Semiconductor (CMOS) technology and combined with magnetic thin films, the new memory component can either replace plated wire memory or be integrated into new systems designs.

www.honeywell.com

HONEYWELL INTERNATIONAL

All the Right Stuff for Avionics and UAV Applications:



Designing and building board-level products and integrating sub-systems for today's advanced avionics and UAV applications is tough enough. Doing it in a true COTS environment is even tougher. But Aitech is more than equal to the challenge. Aitech delivers more than two decades of harsh environment, open systems architecture expertise and proven solutions in UAV and avionics applications such as Predator, Global Hawk, C-130, F-18, F-16, UCAV/J-UCAS, and many more...

COTS Compliant Solutions from Aitech.

And Aitech continues to provide advanced VMEbus and CompactPCI products designed, built and tested to -55°C to +85°C as standard. Because when it comes to manned or unmanned air vehicles, you can't bypass the laws of physics! And when it comes to light weight, low power, extreme reliability, ease of maintenance, minimized development costs, ease of technology insertion and upgrades, Aitech delivers every time.

We can't change the physics... but we can ensure your COTS sub-systems are designed, built, and tested to perform reliably at the temperature extremes of your specification – without custom development, "work-arounds", or compromises.

We take the extra steps... including pre-screened parts qualification, HALT, and 100% HASS/ESS testing to ensure that every standard Aitech product meets all your temperature and rugged performance specifications...standard.

We've been doing it... meeting full temperature-range specifications with standard products is just part of our 20+ year heritage and commitment to COTS advancements – from the first conduction-cooled Mil-Spec VME board in 1984, to today's highest functionality MIPS/Watt boards, multi-Gigabyte mass Flash mass memory cards, and high-speed mezzanines...for manned and unmanned applications.

We have the proof... visit our web site or call for more information and our catalog of proven solutions.



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Toll Free: 888-Aitech8 - (888) 248-3248
Fax: (818) 718-9787
www.rugged.com

3U CompactPCI codec board



The MPEG4CPCI is a single 3U form factor CompactPCI MPEG4 codec board that encodes up to four concurrent full-size real-time analog inputs at a full frame rate of 25/30 fps from PAL or NTSC video and audio sources. The board decodes and plays back video and audio recordings from storage to display, and a preview feature allows incoming video to be viewed on the host screen in parallel with the recording process. The MPEG4CPCI features a 32-bit PCI architecture and supports Windows NT/2000/XP, Linux, and QNX. Text and graphics annotation can be superimposed on any channel, and audio/video synchronization is provided on each channel. The device operates from 0 °C to +60 °C, and an extended temperature version (-40 °C to +85 °C) is available.

www.ampltd.com

ADVANCED MICRO PERIPHERALS

XScale touch panel computer



The TPC-120H is an Intel XScale PXA 12.1" SVGA TFT touch panel computer featuring two 10/100BASE-T Ethernet ports. The computer's resolution is 800 x 600, and it comes complete with a Windows CE operating system to support thin-client solutions. I/O includes two RS-232 and one RS-232/485 serial port, two USB 1.1 ports, and one VGA port. The fanless TPC-120H provides one CompactFlash expansion slot and 64 MB SDRAM in a super slim design.

www.eAutomationPro.com

ADVANTECH eAUTOMATION GROUP

Dual-channel PMC/XMC digitizer

The AD491 – an 8-bit, 1 GHz PMC/XMC digitizer featuring two Virtex-4 FPGAs – includes two ADC channels that provide a 30 MHz to 1,000 MHz (1 GHz) sampling range. Useful for connecting to a remote server or storage system, the AD491 provides 8-bit data resolution and onboard clock generation in steps of 1 MHz. Memory comprises 2x32 M x 16 DDR2 SDRAM (128 MB), 4x 2 M x 32 QDR2 SRAM devices (32 MB), and a 128 Mb flash device. Several interfaces – PCI; PCI-X 64-bit 133 MHz, 3.3 V; PCI-X/PCI 64/32-bit 66 MHz, 3.3 V; PCI 64/32-bit 33 MHz, 3.3 V; and four-lane PCI Express – are available. Includes 4x 2.5 Gbps optical transceivers for SFPDP, Fibre Channel, GbE, and InfiniBand applications.

www.4dsp.com



4DSP

Conduction-cooled FPGA PMC modules



The PMC-CX Series comprises user-configurable Virtex-II FPGA PMC modules with conduction cooling and differential digital I/O. Accordingly, I/O includes 16 bidirectional CMOS I/O lines, 24 bidirectional RS-422/485 differential I/O lines, and rear I/O connection. The series features customizable FPGAs with 11,500 or 24,192 logic cells (Xilinx Virtex-II XC2V1000 or XC2V2000), and FPGA code loads

from PCI bus or flash memory. PMC-CX modules feature 256 K x 36-bit dual ported SRAM memory, along with support for dual DMA channel data transfer to the CPU and both 5 V and 3.3 V signaling. The series operates at extended temperatures of -40 °C to +85 °C.

www.acromag.com

ACROMAG

High-availability MicroTCA server

The U-3000 – a NEBS Level 3/ETSI compliant, high-availability MicroTCA communications server – provides fully redundant power, cooling, and front-accessible MCHs. The 3U rack-mount MicroTCA system accommodates two-post 19" to 24" racks and features dual redundant, hot-swap 400 W AC or -48 Vdc power supplies with power and cooling for up to 80 W per slot. The server features a dual-star topology with a fully passive MTCA.0 R1.0 backplane for 10 Gbps throughput. The U-3000's horizontal, flexible design enables installation of double-wide and/or single-wide AdvancedMCs: 4 double-wide and 2 single-wide AdvancedMCs or 10 single-wide AdvancedMCs.

www.alliancesystems.com



ALLIANCE SYSTEMS

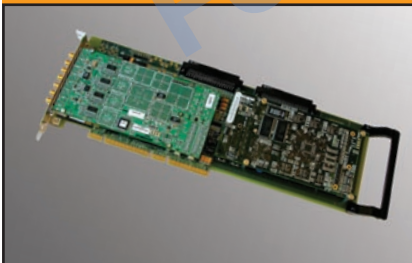
Quad-core Xeon appliance



The FW-8890 is a 2U, two-way, quad-core Xeon rack-mount appliance for enterprise-grade network security and management applications. Its Intel core micro-architecture increases performance headroom for single- and multi-threaded applications. An onboard Cavium Nitrox CN1010 VPN Accelerator increases total system throughput by processing high-level IPsec and IKE, IPv6, SSL, and wireless LAN security protocol macro commands, reducing host I/O traffic and offloading the system processor. The FW-8890 provides up to 12 enterprise-grade Intel Gigabit NICs, and Intel Virtualization technology enables migration of more environments including 64-bit applications and operating systems to virtual environments.

www.lannerinc.com
LANNER ELECTRONICS

Software radio FPGA blade



The Xilinx FPGA Blade is a PCI software radio FPGA blade consisting of GE Fanuc radio PMC modules and an FPGA PMC module mounted on a PCI carrier card. The circuit card assembly occupies one PCI bus slot, and the Xilinx FPGA module includes a Virtex-II FPGA with up to 8 million gates. The module also includes 128 MB (64-bit wide) SDRAM, six QDR SRAM banks, and a PCI 2.2 compliant high-performance bus interface. The device provides direct data transfer to processor via P4 user I/O and has a 64-bit, 66 MHz PCI host interface on the PMC modules. The Xilinx FPGA Blade supports Windows, Linux, and Solaris. Baseband processing custom coding in the Xilinx FPGA is also supported.

www.gefanucembedded.com
GE FANUC EMBEDDED SYSTEMS

Multi-threat security appliances

The FortiGate-3810A and FortiGate-3016B are multi-threat security appliances for large enterprise and MSSP applications. The appliances are highly scalable and deliver up to 26 Gbps of firewall performance. Ideally suited for network core and data center deployments, FortiGate-3810A and the FortiGate-3016B combine Fortinet's existing FortiASIC-CP6 content processor with its new FortiASIC-NP2 network processor, which enables firewall throughput of up to 26 Gbps from a single device. Additionally, hardware-accelerated GbE interfaces are available for all FortiGate-3000 Series platforms to enable wire speed firewall and near wire speed VPN performance; this ensures that time-sensitive applications like VoIP or IPTV do not suffer from network latency or jitter. The FortiGate-3810A and FortiGate-3016B also accommodate optional AdvancedMC expansion, providing hardware-accelerated 10-gigabit XFP interfaces, gigabit SFP interfaces, and hard drive storage options.

www.fortinet.com



FORTINET

DSP motion control kit



www.ezembedded.com

The MCK2812 is a DSP motion control kit that contains three parts: MCK2812 DSP board, PM50 power module, and IB-2812 interface board. The MCK2812 can be used for a variety of applications, including digital motor control (DC brush/brushless servo motor, stepping servo motor, AC servo motor), as a Variable Frequency Control (VFC) packing mechanism, as a digital control machine tool, and for electrical control. The DSP board features a DSP controller (TMS320F2812) operating at 150 MHz with a single DC power supply of +5 V or +24 V, along with an RS-232 serial port and opto-isolated CAN communication interface. Memory includes 128 K word on-chip flash program memory, 18 K word on-chip data/program RAM memory, and 128 K word on-board data/program RAM memory.

EZ-EMBEDDED

Intel-based processor blade

The ATCA-7140 blade is an Intel-based processor blade featuring two Dual-Core Intel Xeon (2.13 GHz) LV processors. The blade suits any 32- or 64-bit application requiring high-performance processing and provides SMP support. The blade also supports the PICMG 3.0 GbE base interface and PICMG 3.1, Option 1 and 2 fabric interfaces. The ATCA-7140 has an AdvancedMC site for I/O, coprocessing, or SAS hard disk drive flexibility, and is designed for NEBS and ETSI compliance. The ATCA-7140, which also provides multiple software packages and an operating system, is RoHS (6 of 6) compliant.

www.motorola.com/computing



MOTOROLA INC.

Xilinx DSP platform family

The Spartan-3A DSP is a digital signal processing platform family featuring the Xilinx XtremeDSP slice, which can be interconnected in many different ways on-chip and provides an 18-bit x 18-bit multiplier, 18-bit pre-adder, 48-bit post-adder/accumulator, and cascade capabilities for various DSP applications. The Spartan-3A DSP provides up to 2,200 Gbps memory bandwidth, and the chip's DSP48A slices can implement wide math functions, DSP filters, and complex arithmetic, all at low power consumption. The device provides up to 53,712 logic cells, 2,268 Kb block RAM, and 373 Kb distributed RAM. Xilinx development tools including System Generator for DSP and AccelDSP synthesis have been updated for the Spartan-3A DSP.

www.xilinx.com



XILINX

Rugged USB interface

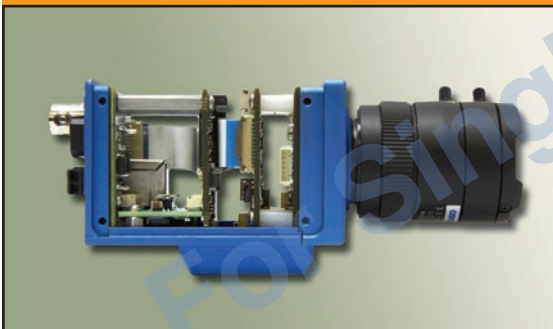


The SiliconDrive USB CF is a USB interface in the rugged and industry-standard CF (Type 1) form factor. It provides enhanced protection from host system voltage and power anomalies, preventing data and drive corruption. It also incorporates a more precise useable-life monitoring system to compensate for lower-endurance storage components. The SiliconDrive USB CF incorporates a robust storage management architecture to ensure long product life; therefore, it is well-suited to space-constrained embedded applications such as SBCs, edge routers, wearable computers, and medical devices that demand high-performance, high-reliability storage solutions. The SiliconDrive USB CF reduces host system design complexity, board space, and susceptibility to electrical noise by requiring that only 4 signals be routed on the host system motherboard versus the 50 required for standard CF interfaces.

www.siliconsystems.com

SILICONSYSTEMS

Ultra-compact video-over-Ethernet camera



The Nuvation IP Camera is a production-ready camera for streaming real-time, full-color, compressed 720 x 480 (D1 resolution) video over Ethernet at 30 frames per second. Progressive image capture is -540 HTVL equivalent, and the camera has a wide dynamic range of 102 dB typical/120 dB max. (Video encoding options include H.264, MPEG-4/H.263, and JPEG.) The embedded

Linux-enabled camera features a TI DaVinci DM6446 Dual-Core DSP with ARM926, along with Pixim's ultra Wide Dynamic Range (WDR) imaging technology. The Nuvation IP Camera comes in an ultra low-power, compact form factor measuring (L) 3.25" (79 mm), (H) 1.7" (43 mm), and (W) 1.8" (47 mm), excluding mounting bracket and lens. Interfaces include USB 2.0, analog video (NTSC/PAL), and Ethernet (RJ-45). The device is also RoHS compliant.

www.nuvation.com

NUVATION

Multifunction, single-slot VME card

The 64CS4 is a GbE-capable, multifunction, single-slot VME card designed to eliminate the complexity of using multiple, independent, single-function cards. The 64CS4 – ideal for avionics, ground mobile, and C3I applications – accommodates up to five independent function modules that may be selected from the included library. The card's GbE interface transfers data to and from the board without a VME backplane bus, enabling the board to be used as a stand-alone remote sensor interface without a separate computer board. The 64CS4 operates at -40 °C to +85 °C and 0 °C to +70 °C, and conduction cooling is available.

www.naii.com



NORTH ATLANTIC INDUSTRIES

VXS switch fabric backplane



The VITA 41 VXS is a switch fabric backplane for military and aerospace applications, enabling users to integrate a cost-effective, high-performance upgrade to the latest VITA standards. The 12-slot backplane provides 10 VME64x payload slots and two fabric switch slots. Other features include interswitch links, SMT passive termination, and decoupling capacitors. A passive ABG option is also available. The VITA 41 VXS backplane comes in a dual star configuration and can also be customized with multiple configurations.

www.gavazzi-computing.com

CARLO GAVAZZI CS

COTS power management



The COTS Continuum Power Management features address power dissipation issues to benefit customers who want to use new technologies in legacy systems: Power Management Software API – A standardized API across product lines ensures board configuration control and system power optimization; Power Disconnect – Users power down a module via an external hardware mechanism, supporting the fail-over concept in systems with redundant chassis-level CPUs; CPU Low Power Mode – The CPU operates at lower power modes under software control, providing a single variant configuration to support both low- or high-performance mode; Peripherals Component Low Power Mode – Reduces power dissipation for component functions not being used by a given application, via software control; and Power Surge Prevention – Enables control of system module power-up sequencing.

www.cwcmbedded.com
CURTISS-WRIGHT

High-power DC-DC converter



The DC500 converter is a high-power DC-DC unit that converts inputs of 18 V to 32 V to outputs of 28 Vdc with 90 percent efficiency. Customized output voltages are also available, and single outputs of up to 560 W are provided as standard. Input transients are 50 V, and input inrush current is limited to 50 A. DC500 converters are unaffected by time, temperature, and radiation, and they provide output short-circuit protection with autorecovery.

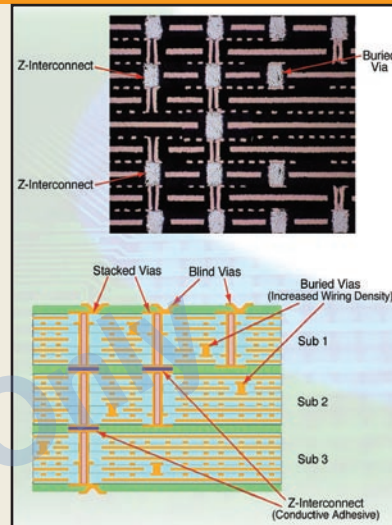
www.centuryele.com
CENTURY ELECTRONICS

Vertical PCB interconnects

The HPC-Z interconnects solve thick board drilling and wire density problems. They also meet the need for functional isolation with the capability of isolating high-speed channels on one subassembly and low-speed channels on another. HPC-Z provides interconnections within the board, and eliminates unnecessary Plated-Through-Holes (PTH) drilling. The interconnections provide signal connections only where desired, with functional isolation for single- or double-side surface-mount partitions. HPC-Z eliminates PTHs that are blocking other wiring channels, which increases wireability, eliminates PTH stubs, and results in a thinner, faster board. HPC-Z provides a "PTH-like" connection at lamination with a pad-to-pad connection made with conductive epoxy. Since there is vertical connection with a lamination in place of a PTH, aspect ratios for drill and plate are limited to subassembly dimensions.

www.eitny.com

ENDICOTT INTERCONNECT TECHNOLOGIES, INC.



Rugged, ultra-slim laptop



TPM 1.2 and Kensington lock security features, and a smart card reader. It also accommodates an optional GPS receiver.

www.getac.com

The M230 is a rugged laptop designed for field-based, harsh environment applications. The device packs high performance into an ultra-portable, slim design that meets MIL-STD 810F and IP54 standards for durability. It includes a large 14" XGA or 15" SXGA TFT LCD high-resolution display, an optional ATI M54 chip for additional graphics processing power, and storage up to 120 GB. The M230 accommodates a wide range of plug-ins and offers an Intel Core Duo L2400 1.66 GHz processor, 2 MB L2 cache, and 512 MB DDR2 (expandable to 4 GB). Options include a sunlight readable display, touch screen, waterproof membrane keyboard,

GETAC INC.

RISC-based, ready-to-run computer

The ThinkCore IA240-241 is a RISC-based, industrial ready-to-run embedded Linux computer featuring a MOXA ART 32-bit ARM9 industrial communication processor. Memory comprises 64 MB onboard RAM and a 16 MB flash disk. Also provided are four RS-232/422/485 serial ports, four-channel digital input, and four-channel digital output, along with dual 10/100M Ethernet for redundant networking. ThinkCore IA240-241 also offers wireless LAN expansion (802.11b/802.11g), a robust fanless design, and an IP30 protection mechanism. SD socket storage expansion is supported, and the unit can be utilized via DIN-rail or wall-mount installation. ThinkCore IA240-241 operates at -40 °C to +75 °C.

www.moxaUSA.com



MOXA TECHNOLOGIES

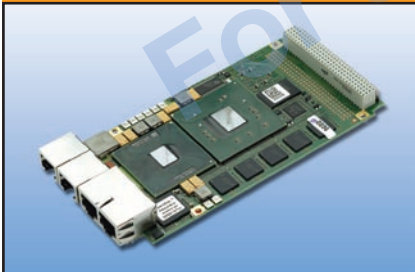
Industrial-grade box computer



The Matrix 520 is an industrial-grade, Linux-ready box computer. The unit includes an AT91RM9200 (ARM9-core) CPU and a Linux 2.6.x prebuilt operating system. Memory comprises 32 MB SDRAM and 16 MB flash, and storage is provided via an internal SD memory card slot. I/O includes two host and one client USB 2.0 ports; two 10/100 Mbps Ethernet ports; 21 pins, TTL-level GPIO; and eight 921.6 Kbps baud TTY (serial) ports. A GNU C/C++ tool chain is included, and power input is 9-40 Vdc, 300 mA @ 12 V.

www.artila.com
ARTILA ELECTRONICS

Embedded system module



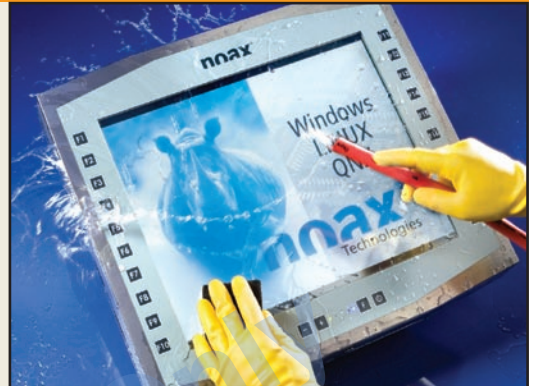
The EM6 SBC is an Embedded System Module (ESM) ideal for embedded industrial and communications applications where high computing power is necessary. The single board computer is powered by an Intel CoreT Duo or single core Celeron M processor, along with the Intel 3100 chipset. The EM6's Altera Cyclone FPGA provides flexibility, and required system I/O can be tailored for specific applications using IP cores such as IDE, graphics, additional fieldbus and legacy interfaces, and binary I/O. Memory includes 1 GB flash and DDR2 SDRAM with ECC for shock and vibration resistance. Front I/O comprises two GbE controllers via PCI Express and two COM interfaces via RJ-45 connectors. The EM6 can function as a stand-alone system, with an application-specific carrier card, or be connected to additional PCI-104 modules.

www.menmicro.com
MEN MICRO

"Hygienic design" industrial PC

The S19 is a 19" stand-alone industrial PC in a V2A (304) stainless steel enclosure. The enclosure is completely sealed in a "hygienic design" with no external fan. The NEMA12- and NEMA4-compliant computer features an Intel Celeron M @ 1.0 GHz or an Intel Pentium M @ 1.4 GHz. The S19's TFT XGA (1,280 x 1,024) 300 cd/m² display has a resistive analog touch screen with protective foil. Memory ranges from 512 MB to 2 GB, and I/O includes COM 1 RS-232, COM 2 RS-232, LPT, and 4x USB 2.0. The unit measures 19.6" (W) x 17.1" (H) x 5.4" (D) (498 x 435 x 136 mm) and weighs just under 50 lbs. The S19 operates at temperatures of 32 °F to +104 °F (0 °C to +40 °C).

www.noax.com



NOAX TECHNOLOGIES AG

Rugged SSD card



Advanced Media introduces its harsh environment RiDATA Solid State Disk (SSD) card, geared toward the aerospace and aviation markets. The nonvolatile flash SSD card features 16 GB and 32 GB capacities. RiDATA uses NAND flash memory technology and offers 1.8" and 2.5" module-type flash SSD for an ATA/IDE interface and 2.5" for a SATA interface. It also supports up to PIO Mode-4 and up to Multiword DMA Mode-2. The device has a flash media interface of 8- or 16-bit access and supports up to eight flash-

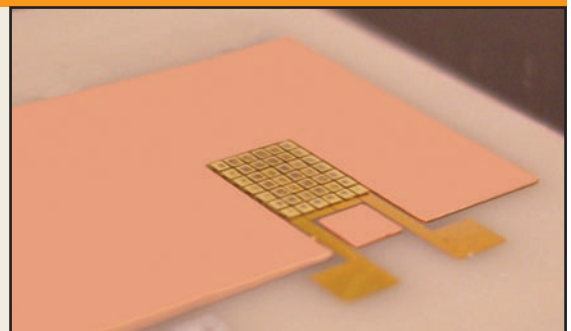
www.ritekusa.com

ADVANCED MEDIA (RITEK USA)

Nano-structured thermoelectric cooler

Nextreme's thin film Embedded Thermoelectric Cooler (eTEC) addresses thermal management needs of the electronics, photonics, biotech, and defense/aerospace industries. Functioning as a miniature, solid-state heat pump, eTEC is ideal for cooling hot spots that result from localized areas of high heat flux on an IC. The nano-structured devices are designed to add only 100 microns of height to a heat spreader, enabling unobtrusive integration close to the heat source. The eTEC has an ultra-fast, millisecond response time for rapid cooling and heating to maintain an application's precise temperature. The device pumps a maximum heat flux of 150 W/cm² with some designs delivering as much as 400 W/cm².

www.nextreme.com



NEXTREME



IN THE HEAT OF BATTLE

WE'LL HELP YOU KEEP YOUR COOL.

Temperature extremes on the battlefield can be brutal. They play havoc with the thermal limits of today's high-performance electronics and make aerospace and defense system integrators fight a two-front challenge – maximizing performance while beating the heat. We can help. We're experts in power management and thermal design. From intelligent component selection process to innovative, patented board and system cooling technologies, we knock-out heat so you can take full advantage of today's cutting-edge processing power.

**CURTISS
WRIGHT** Controls
Embedded Computing

www.cwcembedded.com



Our new 3U VPX and CompactPCI Single Board Computers utilize ultra-low power processors from P.A. Semi™ and Intel® to maximize performance-per-watt in weight and space-constrained environments.

POWER MANAGEMENT... ABOVE & BEYOND