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INSIDER Special Edition - Embedded Technology E-Newsletter 01/23/12



Embedded Technology
Board-Level Electronics & COTS Solutions for Design Engineers

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In this edition, sponsored by [MEN Micro](#), [ACCES I/O Products](#), [Massachusetts Institute of Technology \(MIT\)](#), and [Super Talent](#):

- [New Thermal Conductivity Technique Could Cool Computer Chips](#)
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New Thermal Conductivity Technique Could Cool Computer Chips

The discovery of a new way to tune and enhance thermal conductivity — a basic property generally considered to be fixed for a given material — gives engineers a new tool for managing thermal effects in smart phones, computers, and a number of other powered devices. The finding was made by a group of engineers headed by Deyu Li, associate professor of mechanical engineering at Vanderbilt University.



Mechanical engineer Deyu Li working in his lab. (Photo: Daniel Dubois/Vanderbilt University)

Li and his collaborators discovered that the thermal conductivity of a pair of thin strips of material, called boron nanoribbons, can be enhanced by up to 45 percent depending on the process used to stick the two ribbons together. Although the research was conducted with boron nanoribbons, the results are generally applicable to other thin film materials.

"Traditionally, it is widely believed that the phonons that carry heat are scattered at van der Waals interfaces, which makes the ribbon bundles' thermal conductivity the same as that of each ribbon. What we discovered

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CompactPCI Serial Board from MEN Micro Provides Flexible Configuration

MEN Micro's new G215, a universal CompactPCI Serial peripheral board, provides flexible serial communication via an individual mix of UART and fieldbus interfaces for use in harsh embedded environments. Although equipped with five standard interfaces, the G215 features a configurable FPGA IP core that offers nearly unlimited interface options that enables several functionalities.

For more information, [click here](#).



Conduant Corporation (Longmont, CO) recently introduced the SNAP12 Optical FPGA input/output board for a wide variety of high-speed optical applications. The Conduant SNAP12 Optical FPGA board features a Xilinx® Virtex 6™ field programmable gate array (FPGA) for connecting ports and devices. Through an 8-lane Gen2 PCI Express interface and SNAP12 optics, the board can achieve performance rates up to 5 Gigabytes (GB) per second for 12 lanes in and 12 out simultaneously.

[Click here to learn more.](#)



Hardened for harsh, industrial environments, WinSystems' (Arlington, TX) low power PCM-VDX PC/104 single board computer is designed for medical, transportation, communication, and control applications. Packed with serial, USB, and Ethernet ports plus GPIO, it operates over an extended temperature range of -40°C to +85°C without a fan. Other features include: low power 1GHz Vortex86DX processor; 512MB of soldered-down onboard DRAM; 1MB of battery-backed SRAM; two 10/100 Mbps Ethernet ports four USB 2.0 ports; four serial RS-232/422/485 channels with FIFOs; PATA, LPT, PS/2 KYBD and Mouse controller; and 16 lines of general purpose I/O.

[Click here to learn more.](#)



Aerotech's (Pittsburgh, PA) A3200 MotionPAC is a software-based Programmable Logic Controller (PLC) that is completely integrated with Aerotech's A3200 motion controller. The MotionPAC can be used independently for full machine control or in conjunction with AeroBasic™ programs, and complies with IEC 61131-3 and PLCopen. Users can program in Ladder Diagrams (LD), Function Block Diagrams (FBD) or Structured Text (ST). The MotionPAC's tight integration with the A3200 motion controller allows users to command asynchronous, coordinated, blended, geared or cammed motion directly from LD, FBD, ST or directly start or stop AeroBasic programs. Moves can be specified as relative or absolute in user units (either English or metric).

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Super Talent - The Embedded Storage Solution Experts

Searching for a Storage Solution that is hard to find or simply does not exist yet? Super Talent designs and manufactures storage solutions based on our customers' needs. Whether you are looking for iTemp, horizontal or vertical mount, ZIF, PATA, mSATA; we have it or can make it to meet your specifications. Located in San Jose, California we can create a storage device for you in our ISO 9001 certified facility.

For more information, [click here.](#)

MORE NEW PRODUCTS

[SMT to DIP Adapters](#)

[Dual-Core Gyroscope](#)

[Micro Box Computer](#)

[Ultra-Low Phase Noise Clock Oscillator](#)

White Paper Spotlight

Hybrid/Electric Vehicle Traction Motor Design

Many automobile original-equipment manufacturers (OEMs) are working on new HEV and EV designs. One of their greatest challenges is designing traction motors, which, in most cases, are interior permanent magnet (IPM) synchronous machines. Minimizing electrical and magnetic losses is critical to deliver maximum range and fuel efficiency to consumers.

[Click here](#) to download the White Paper from Ansys.

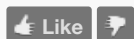


Ultra-Low Phase Noise Clock Oscillator

Wednesday, January 18 2012

Crystek Corporation (Fort Myers, FL) has launched the CCHD-957, a new Ultra- Low Phase Noise HCMOS Clock Oscillator with standby mode, featuring an extremely low close-in phase noise of -100 dBc/Hz @ 10Hz offset and a typical noise floor of -170 dBc/Hz @ 100kHz offset. The CCHD-957 also features a "Standby Function" – when placed in disable mode, the internal oscillator is completely shut down and its output buffer is placed in Tri-State. This family is housed in a 9x14mm SMT package and operates with a +3.3V power supply consuming 15mA of current. Stability is rated at 20-50ppm (0°C to +70°C) and ± 25 -50ppm (-40°C to +85°C). The CCHD-957 generates frequencies between 10MHz and 50MHz. Its output driver is capable of driving ± 24 mA, translating to a rise/fall time of ~ 3 nsec Max at 20% to 80% Vcc with a 15pF load.

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