FOR IMMEDIATE RELEASE

Embedded Systems Bulletin – April 2009

Natick, Massachusetts – May 7, 2009 – VDC attended the 2009 Embedded Systems Conference in San Jose in early April. This bulletin presents our observations of that event.

EMBEDDED SYSTEMS CONFERENCE (ESC) – SILICON VALLEY 2009

Despite this year's murky global economic outlook, the 20th Embedded System Conference appeared to be moderately well attended on Tuesday and Wednesday, with a substantial number of exhibitors, fair floor traffic, and a cautiously optimistic murmur emanating from attendees on the floor.

As result of the weaker economy, few of the vendors we spoke to had expected the conference to offer a large attendance or significant new business opportunities, yet many indicated that they had generated a surprising number of quality leads as a result.

Multi-core, virtualization, security, small form factors, and particularly application-specific support for customers continued to be strong themes among embedded systems providers.

Many embedded systems vendors are realizing that to win business in today's environment they must be able to take cost out of the development process for their customers.

A clear theme with embedded vendors up and down the value chain from processor vendors to board and systems vendors and to software vendors was increasing the depth and breadth of application support that they are making available to their customers, often in off-the-shelf packages – be it application-specific development boards or software tool kits. There appears to be a number of strong correlations between the increase in supplier support for application-specific solutions and customer focus on multi-faceted cost reduction and time-to-market compression. There is no doubt, but, that OEMs are looking to reduce their own operating expenses while simultaneously adding more value for their customers. In order to do this, OEMs need more support from their embedded solutions providers. One element of this expanded support is higher levels of value add from embedded suppliers in the less differentiated or 'pre-competitive' feature sets and services.

To be clear: OEMs are NOT looking for their embedded platform suppliers to develop applications. On the contrary, they are looking for their embedded platform suppliers to free more of the OEM development resources so that OEMs can develop more applications. As for everything else beneath the application: it's all on the table.

We expect that this trend will continue. In fact, we think it will be a significant input to the redefinition of the embedded platform supplier – OEM relationship. (VDC Research will be writing about this in the coming month.)

BEST OF SHOW

Keeping with the overriding theme of increasing application-specific support to take out cost, Xilinx was showcasing its targeted design platforms being offered in support of its new Virtex-6 and Spartan-6 FPGAs announced in February of this year.

The targeted design platforms that Xilinx is now offering to its customers are pre-packaged integration packages, each focused on a specific application. These targeted design platforms integrate design tools, development boards, IP cores and software that will be used around the FPGA in specific applications. The goal of these platforms is to lower development costs for customers by freeing their own designers from many of the mundane tasks of building a systems infrastructure so that they can focus their efforts on adding their own unique value-add.

Really, a big part of this new strategy is just taking a lot of the pieces of support that were already available for Xilinx and putting them in one place for customers to access them more efficiently and, of course, making them visible. The idea of aggregating the support platform for specific applications to get them farther along the development curve and faster should be very well received and much appreciated by customers.

BEST OF SHOW – RUNNER UP

A new and interesting exhibitor at the show was CPU Tech, an embedded processor vendor with an already long history in the military/aerospace market. CPU Tech is now bringing secure processors to all verticals of the embedded market with its Acalis line of secure processors. The Acalis secure processors directly address the need for anti-tamper (AT) technology in today's critical computing and communications systems while providing a trusted, long-term supply. Acalis protects algorithms, rules and data from cloning, malicious insertion and countermeasures.

The reason that CPU Tech’s products are of interest to VDC is that the requirement for higher levels of security at various stages in applications is becoming a growing concern in many application segments. Therefore security is an important trend to follow and firms that can provide innovative and effective security solutions for OEMs should find increasing levels of success in the embedded market.

WALKING THE FLOOR

Altera announced its collaboration with National Semiconductor Corp. to drive the transmission, processing and display of digital data within automotive applications.

The graphics interconnect solutions being jointly developed by Altera and National address the growing use of digital video in automotive infotainment and driver-assistance applications. This collaboration leverages Altera's low-cost Cyclone III FPGAs and National's FPD-Link II embedded clock SERDES architecture to deliver high-speed, long-range data-exchange solutions that provide high bandwidth, low electromagnetic interference (EMI), increased reliability and lower system costs.

AMCC unveiled its strategy to drive advanced storage solutions into residential and enterprise applications with complete reference designs encompassing all the hardware, software and enclosure components needed to accelerate time to market.

ARM announced a number of new products and initiatives at the show.

The company announced the expansion of its System Generator product with the introduction of two new fast models for the Cortex-A9 MPCore multicore processor and for the Cortex-M3 processor.

ARM also announced the Keil Microcontroller Prototyping System (MPS), in which ARM Cortex-M class processors and user-defined peripherals can be prototyped and evaluated. Keil MPS allows silicon manufacturers to implement a Cortex-M system without needing access to the RTL code. Moreover, since the system is fully configured, the integration and development of additional IP and software can begin sooner.

With 10 product-related announcements in the month on March alone, Atmel Corporation had plenty to talk about at this year's conference.

The company's most recent announcements included the introduction of a new family of 0.7V tinyAVR microcontrollers. These new products target the mobile device market with its AT42QT1040 is based on Atmel's patented QTouch charge-transfer sensing method. The company also announced the launch of new solutions around the AVR32 product line supporting digital audio streaming and playback. Atmel also hinted that more important announcements would be on the way.

At the show **Emerson Network Power Embedded Computing** launched its new "Commercial" ATCA bladed server platform, the Katana 2000.

The Katana 2000 is targeted at intensive data processing applications that exist outside of the core network. It is a typical ATCA platform, but without the costly and stringent NEBS certification, so that customers targeting applications that do not have NEBS requirements can still get the benefits of an ATCA platform without the cost of the NEBS certification.

Emerson Network Power Embedded Computing was also showcasing its first active backplane board, in a microATX form factor, as the firm enters the industrial motherboard market for the first time.

Eurotech was showcasing the many small form factor boards that it now provides based on the Intel Atom processor architecture. With PC/104+, COMs, and custom form factors now sporting Atom processors, Eurotech is quickly gaining traction in new mobile media and mobile communications applications with these small form factor boards.

Freescale Semiconductor verified the demand for multicore platforms and smaller processing geometries to drive ever greater performance in many embedded markets today, and the firm's commitment to multicore solutions with its announcement that it is accelerating availability of key communications products based on 45-nm process technology.

The release of these products is in response to strong demand from wireless infrastructure equipment manufacturers targeting advanced 3G and 4G systems. Freescale is now sampling the PowerQUICC® MPC8569E processor, the dual-core QorIQ™ P2020 device and the six-core MSC8156 StarCore® digital signal processor (DSP).

The great diversity of **Kontron's** product portfolio was on display once again with new product announcements made at the show that spanned product categories including ATCA boards, IP network rack mount servers, embedded motherboards (Mini-ITX, ATX, and Flex-ATX), and its first entry into the server board market.

The KTC5520-EATX SSI EBB-compliant server board features two quad-core Intel Xeon processors and KVM/VM functionality. It is targeted at the medical imaging, simulation, storage and multimedia telecom and data center markets.

Microchip announced an AC/DC reference design based on the new dsPIC33F "GS" series of digital-power Digital Signal Controllers (DSCs). This reference design demonstrates how digital-power techniques are applied to reduce component count, lower product cost, eliminate oversized components, and incorporate topology flexibility to innovate the best solution for the application. Microchip also announced the first seven next-generation 16-bit dsPIC® Digital Signal Controllers (DSCs) for common, multi-loop Switch-Mode Power Supplies (SMPSs) and other power-conversion applications.

National Instruments announced a new programming interface available from the NI Labs virtual research lab that makes it easier for C/C++ developers to take advantage of the NI LabVIEW FPGA Module and NI FPGA-based hardware for embedded control and acquisition applications.

With the new NI C Interface to LabVIEW FPGA, developers can use LabVIEW graphical tools to program the field-programmable gate array (FPGA) within NI hardware and choose either LabVIEW or C/C++ tools to program the processor within the system. This new LabVIEW FPGA feature helps engineers and scientists with C expertise implement FPGAs within their designs, without the burden of learning hardware design, and gives them the option to reuse their existing embedded C code.

Renesas introduced the R2J15116FP, a compact, high-performance digital amplifier.

The new IC accepts an IIS digital-audio signal input, performs processing with a built-in audio digital signal processor (DSP) unit, and then amplifies the result to deliver adaptively tuned stereo output to two speakers at up to 15 watts per channel. A key feature of the device is its space-saving 7mm x 7mm (body size) package, which fits into thinner LCD and plasma flat-panel TV sets, as well as into thinner computer monitors. Consumer electronics manufacturers have learned that thinner flat-panel TVs gain consumers' attention and sales, so they're devoting considerable effort into finding smaller components and designing clever video system packaging. This chip is aimed at capitalizing on those requirements by reducing thickness while boosting audio quality.

RTD Embedded Technologies released a high-performance PC/104 family product in its PCI/104-Express board based on the Intel Core 2 Duo line of processors making the board both high performance and energy efficient.

Texas Instruments was another of the exhibitors stressing the importance of providing ever greater application-specific support and development for customers with the announcement of two application development kits, one for medical and one for video.

The first was a new ultrasound development kit that enables medical imaging developers to speed time-to-market, improve performance, and lower development costs.

The second consisted of comprehensive IP-camera and DVR reference designs to provide H.264 high profile on a single platform for video security products.

VersaLogic announced its support for the new SUMIT (Stackable Unified Module Interconnect Technology) interface.

Per the recently adopted specifications from the Small Form Factor Special Interest Group (SFF-SIG), VersaLogic's products feature a wide variety of interface signals on the SUMIT connector. This simplifies the task of interfacing with the system and designing custom I/O modules. The signals available on VersaLogic's CPU boards include PCI Express lanes, low-speed signals such as LPC and SPI, and legacy USB and ISA signals. Five VersaLogic SUMIT products are expected to be available in Q4 of 2009.

VIA Technologies continues to focus on innovation in the growing market for smaller and smaller form factor boards with lower and lower power.

The firm announced at the show the first expansion HD module for the VIA EPIA-P710, the VIA P710-HD. Featuring the powerful 4300E embedded graphics processor from S3 Graphics, this first Pico-I/O module for stackable Pico-ITXe boards delivers Hi-Def video playback and advanced graphics in an extremely low power, compact form factor.

WinSystems introduced a family of open frame color flat-panel PCs to speed a customer's project time to market. An ever-increasing number of OEMs require ready-to-mount flat-panel display subsystems as the man-machine interface (MMI) in applications such as test instrumentation, medical devices, machine control, homeland security, transportation, and kiosks.

The trends of increasing security requirements to meet growing threat levels in communication, networking, and military communications applications along with taking cost out of the development process for embedded OEM customers were clear at this show. These are trends that VDC will continue to track and report on in its embedded research services along with the other latest developments in the embedded systems market.

ABOUT VDC RESEARCH GROUP

VDC Research Group (VDC) is a technology market research and strategy consulting firm that advises clients in a number of technology markets including: Automatic Identification and Data Collection, Embedded Hardware and Systems, Embedded Software and Tools, Industrial Automation and Control, Mobile and Wireless, and Power Conversion and Control. Using rigorous primary research and analysis techniques, the firm helps its clients identify, plan for, and capitalize on current and emerging market opportunities. We strive to deliver exceptional value to our clients by leveraging the considerable technical, operational, educational and professional experience of our research and consulting staff. During our nearly four decades of ongoing operation, we have had the pleasure of serving most of the world's leading technology companies, many high-profile start-ups, and numerous blue-chip early and later stage investors. Our products and services consist of research reports, annual research programs, and custom research and consulting services. Founded in 1971, the firm is located in the Boston area. Please visit our Web site at www.vdcresearch.com to learn more.

For more information, please contact:

Eric Heikkila, Director, Embedded Hardware and Systems Practice, 310.393.9086, erich@vdcresearch.com

###