

The best yet?

Embedded World set to buck the economic trends.
Graham Pitcher reports.



Embedded World, one of the biggest and most important events of its kind, takes place in Nuremberg from 2 to 4 March. The event includes a series of high tech exhibitions and special interest presentations.

Despite the challenging economic conditions, organiser Messe Nurnburg claims the number of international exhibitors has grown by 17% over last year.

"Embedded world is growing and I am sure this event will be one of the most successful ever," said exhibition director Alexander Mattausch. "This means embedded world is undoubtedly the top platform for the international embedded community to source information and exchange views at a high level. All the market leaders are here again in 2010."

And a measure of Embedded World's growing status is the fact that European project ARTEMIS – Advanced Research & Technology for Embedded Intelligence and Systems – will be holding its Spring Event alongside Embedded World. The two day event will offer a series of high profile free lectures for visitors to Embedded World.

Meanwhile, German trade association ZVEI is sponsoring Embedded World for the first time. According to Dipl Ing Stephan Gurke, from ZVEI's Research, Training and Production Engineering Department: "The German electrical industry reflects the whole spectrum – from suppliers to users who integrate embedded systems into their end products. It was therefore important for the association to enter this partnership. Embedded World offers exactly the right platform for professional and effective presentation and for obtaining comprehensive information."

And, looking to the future, the last day of this year's embedded world includes Student Day. The inaugural event will allow students to find out more about the embedded industry, while companies can meet potential new staff. A highlight of the day will be a lecture by Steve Furber, Professor of Computer Engineering at the University of Manchester.

As usual, the Embedded World conference will cover a range of hardware, software and tools issues. Opening the conference will be a keynote lecture given by Dr Reinhold Achatz, director of corporate research and technologies at Siemens, who will explore the theme 'optimising the embedded systems development process'. Dr Achatz has been in his present position since October 2006.

With 19 sessions and 14 classes, the embedded world Conference programme again promises to be an interesting conference, tailored to the requirements of development engineers.

The event also provides a venue for the electronic displays Conference 2010, said to be the most important European conference on innovative applications of electronic displays and systems. The conference will feature 45 lectures, including sessions on touch screens and graphical user interfaces

Prof Dr Karlheinz Blankenbach, conference chair said: "I am looking forward to the electronic displays Conference 2010, as we can present another highly interesting programme of lectures." An associated display will enable participants to see some of the new products on the market.



Fanless panel pc

Steatite's Embedded division will be exhibiting products ranging from single board computers to panel pcs.

Typical of the equipment to be seen is a 15in fanless panel pc featuring an Intel Atom 1.6GHz cpu. This device comes with 1Gbyte of ram, WiFi and Bluetooth wireless connectivity, two LAN ports, two serial ports, two USB 2.0 interfaces and a VGA port.

Meanwhile, the company will show a range of single board computers, including the PX5000EG, a Pico-ITX format board featuring VIA's x86 cpu running at 500MHz.

**Steatite: Stand 10-538 or
www.steatite-embedded.co.uk**

Flash micros for autos

NEC will be unveiling a range of all flash microcontrollers suited for use in low end automotive systems, such as motor control and lighting control. Included in the new range are three 16pin, three 20pin and two 30pin MCUs. Each is said by the company to feature standby power consumption of 0.65µA and to be suitable for use in a range of temperature environments.

**NEC: Stand 9-447 and 12-422 or
www.eu.necel.com**

ATCA blade with dual Xeons

Adlink Technology will be unveiling the aTCA-6100, said to be the first ATCA processor blade to feature dual 2.13GHz Intel Xeon 5500 processors.

With up to 48Gbyte of DDR3 memory and an optional PICMG mid size AMC bay, connectivity features include dual gigabit Ethernet or 10Gbit Ethernet fabric

interfaces and dual gigabit Ethernet base interfaces.

The aTCA-6100 is said to provide telecom equipment manufacturers and network equipment providers with a powerful solution for mission critical applications.

Adlink Technology: Stand 9-245 or www.adlinktech.com

8bit micro range

Visitors to Fujitsu's stand will be able to see a range of 8bit microcontrollers demonstrated. The parts deliver a rich set of on chip peripheral resources, combined with a high performance cpu core. Suitable for a range of applications, the product line features flash/rom/ram variations, general purpose basic resources and enhanced application specific resources with reinforced functions.

Fujitsu: Stand 12-314 or www.my-fme.com

Apps engineers on hand

Demonstrations on the Avnet Memec stand will focus on: microprocessors and industrial networking; analogue and sensors; wireless connectivity; and microcontrollers and fpgas.

The company will have a team of application engineers on hand to present and explain the latest products and technologies. Avnet Memec is also featuring the latest innovations from ARM: ranging from the Cortex-M3 to dual core processors at 1.5GHz. Additionally, solutions will be presented from Maxim.

Avnet Memec: Stand 12-422 or www.avnet-memec.eu

First in a new generation

MEN's F19P is the first in a new generation of 3U single board computers and the first CompactPCI PlusIO SBC with the Intel architecture.

CompactPCI PlusIO – or PICMG 2.30 – delivers a migration path to the serial CompactPCI Plus standard and can be used both in CompactPCI systems and in hybrid systems with CompactPCI Plus. Equipped with processors ranging from

Intel's Core 2 Duo SP9300 down to the Celeron M722, and with a power dissipation between 5.5 and 25W, the 32bit/33MHz SBC has been developed for those embedded applications requiring high performance, reliability and low power dissipation.

The company will also be showing the first member of the MIPIOS family, a fanless and maintenance free box computer for extreme and harsh applications. The RC1 is based on the Intel Atom Z510 processor and is available with or without a 3.5in colour display.

MEN: Stand 12-545 or www.men.de

Workbench works wonders

IAR's Embedded Workbench is a set of development tools for building and debugging embedded applications using assembler, C and C++. The tools provide an integrated development environment which includes a project manager, editor, build tools and debugger. Working in a continuous workflow, developers can create source files and projects, build applications and debug them in a simulator or on hardware.

IAR Systems: Stand 10-209 or www.iar.com

STM32 development tool

Hitex Development Tools will be showing an easy and low cost way to get started on the development of products featuring STMicroelectronics' Cortex-M3 based STM32 microcontrollers.

The tool, called the STM32-comStick, left, comes with HiTOP IDE/debugger for flash programming and debugging plus a Tasking C-Compiler for Cortex. Several application examples are included.

The STM32-comStick features an STM32F107 microcontroller with 256kbyte of flash and 64kbyte of sram.

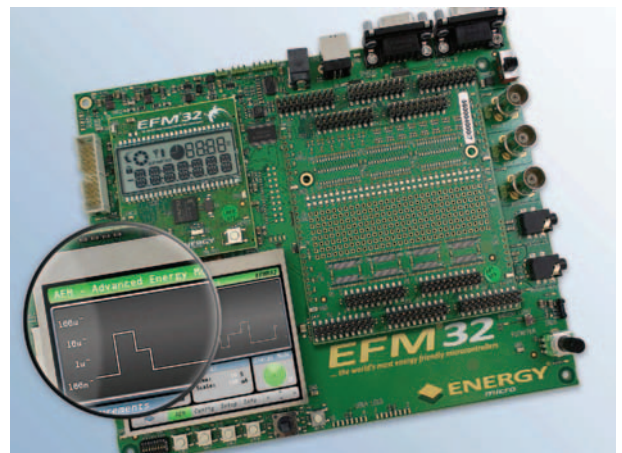
Hitex: Stand 10-305 or www.hitex.de.

Specfici scope controls

Yokogawa will be showing the DLM6000 series of digital and mixed signal oscilloscopes. With physical and on

screen interfaces developed following extensive market research and user feedback, the scopes incorporate dedicated backlit buttons for the most commonly accessed settings, along with Yokogawa specific controls, such as a five way selector button.

Yokogawa: Stand 10-416 or www.tmi.yokogawa.com



Gecko makes appearance

Energy Micro's EFM32 Gecko microcontrollers will be making their first appearance at Embedded World.

The family of low energy mcus is said to have a power consumption four times less than any other 8, 16, or 32bit microcontroller. The mcus draw 180µA/MHz when running applications

from flash memory and feature a shut off mode with which draws 20nA. Based on the ARM Cortex-M3 architecture, the devices support fast execution, low latency and ultra long operation time for any battery operated applications.

The company will also be highlighting a development kit for the mcus (pictured above). This consists of a motherboard, a replaceable mcu board and a prototyping board, along with a software development environment supported by major tool chains.

Energy Micro: Stand 12-350 or www.energymicro.com



SoM suits many designs

The network enabled ConnectCore Wi-MX51 can be seen at Digi's stand. The integrated and 'future proof' System on Module (SoM) solution is based on Freescale's i.MX51 application processor, which features a 600/800MHz ARM Cortex-A8 core, along with multimedia capabilities and a complete set of peripherals.

Digi International: stand 12-244 or www.digi.com

It's a record breaker

Kontron says the CP305 is bringing record breaking performance per watt to 3U CompactPCI systems.

The Kontron CP305 features EN50155 compliant reliability and a low thermal design power. With a 1.6GHz Intel Atom processor, Intel 945GSE plus ICH7M chipset and up to 2Gbyte of DDR2 memory, the CP305 has a typical power consumption of 10W. Designed for reliable operation in temperatures ranging from 0 to 60°C, the board features a range interfaces, including gigabit Ethernet and up to six USB 2.0 ports.

Available in single (4HP) or dual slot (8HP) configurations, the CP305 features integrated board support packages for Linux, Microsoft Windows XP, XP Embedded and VxWorks.

Kontron: Stand 12-404 or www.kontron.com

ARM9 range expanded

Toshiba Electronics Europe has expanded its range of 32bit ARM9 microcontrollers with the TMPA900CMXBG, a device that includes USB Host functionality, USB Device support and features that simplify compliance with the IEC60730 Class B home appliance safety standards.

Based on the low power 32bit ARM926EJ-S core operating at up to 200MHz, the micro simplifies the design and reduces the component count of embedded systems that need to combine human-machine interface support with multiple connectivity



options. It features an lcd controller, a touch screen interface and an image process accelerator.

As well as 16kbyte of boot rom and 32kbyte of embedded ram, the TMPA900CMXBG has a built in memory controller. Supplied in a 289pin bga with 91 GPI/O pins, the part is available in clock speeds of up to 200MHz.

Toshiba: Stand 12-460 or www.toshiba-components.com

Secure platforms to be seen

Green Hills Software will be featuring demonstrations of secure networking and medical device platforms, multicore development and JTAG debugging at Embedded World.

Demonstrations will include: Platform for Secure Networking, based on the INTEGRITY rtos and including secure virtualisation, advanced file systems, dual TCP/IP v4/v6 host and routing stack, USB and tools that enable developers to create secure connected devices; Platform for Medical Devices, which incorporates the INTEGRITY rtos, a range of middleware and an integrated tool suite; and Multicore Development Solutions, which feature comprehensive operating system support and development tools for deploying multicore systems.

Green Hills Software: Stand 10-319 or www.ghs.com

Networking power

As part of the global launch of the XPort Pro, Lantronix will be demonstrating the part's ability to deploy advanced applications at the network edge.

In addition to having a form factor identical to the XPort, the XPort Pro's 32bit processing power and memory can handle resource intensive applications on one platform. These features, together with advanced networking and security features, enable M2M edge computing with virtually unlimited customisation and application hosting potential.

Lantronix: Stand 12-222 or www.lantronix.com

Robotics package on show

National Instruments will be demonstrating its recently announced LabVIEW Robotics 2009 package, that provides a standard development platform for designing robotic and autonomous control systems.

NI LabVIEW Robotics 2009 delivers a robotics library with connectivity to standard robotic sensors and actuators, foundational algorithms for intelligent operations and perception and motion functions for robots and autonomous vehicles. With this software, engineers can implement ideas faster with seamless deployment to real time embedded and fpga hardware.

When combined with NI CompactRIO or NI Single Board RIO devices, LabVIEW Robotics 2009 provides a complete robotic control system development platform.

National Instruments: Stand 10-221 or www.ni.com/uk

Tool suites enhanced

Geensys will be debuting Reqtify 2010, said to be a major new version of its tool suite for the automated management of embedded systems and software requirements, traceability and impact analysis. Geensys will also announce enhancements to AUTOSAR Builder, including a new ARTOP based module, as well as new capabilities for ControlBuild, a front to back environment for the design, development, validation, deployment and maintenance of control and automation systems.

Geensys: Stand 10-531 or www.geensys.com

Partner Pavilion showcase

Analog Devices will be hosting a Partner Pavilion, where it will showcase a select group of companies and technologies.

Through a series of product and technology demonstrations, attendees will see how the power/ performance, connectivity, scalability, and flexibility of ADI's products are enabling innovation.

Demonstrations in the Pavilion include: motor control: tiny boards

[Bluetechnix]; DSP function modules (Danville Signal Processing); uClinux development kit (IP Thinking); and a Linux smart camera reference design (Super Computing Systems).

Analog Devices: Stand 12-322 or www.analog.com

Mixed signal fpgas on view

Actel will showcase its embedded technologies, including mixed signal fpgas. Design demonstrations will be made of embedded ARM processors in a mixed signal fpga, while supporting ecosystem partner solutions include: mixed signal fpga evaluation kits; rtos for ARM based mixed signal fpgas; motor control; and how to integrate an embedded ARM process in a mixed signal fpga.

Actel: Stand 12-230 or www.actel.com

Live demonstrations

Silicon Laboratories will showcase its latest embedded mixed signal technologies using live product and hands on demonstrations.

Visitors can try their hands at seven demonstrations, including: attempting a lunar landing with a creative proximity sensing application demo; getting human interface applications up and running quickly with QuickSense Studio; and seeing how SiLabs' C8051F91x/0x microcontrollers can reduce embedded system power requirements.

Silicon Laboratories: Stand 12-136 or www.silabs.com

COM Express line extended

congatec is previewing its highest performance module, the conga-BM57. This features the Intel Core i7-620M processor with a core speed of 2.66GHz, a 4Mbyte L2 cache and up to 8Gbyte of dual channel DDR3 memory. The board also features the Mobile Intel QM57 Express chipset.

congatec: Stand 12-122 or www.congatec.com

FPGA development tools

Using Altium's NanoBoard 3000, right, electronics designers can construct sophisticated 'soft' processor based systems inside fpgas without any prior fpga expertise.

Engineers do not need any specialist Vhdl or Verilog skills, says the company. Instead, they use their existing board layout and systems design skills to construct, test and implement fpga based embedded systems. The IP libraries and intuitive graphical editors that are central to Altium Designer mean they can simply add processors, memory controllers, peripheral blocks and software stacks. .

Also on show will be prototyping peripheral add on boards, which work with NanoBoard 3000 and NanoBoard NB2. The board is said to do away with the need to create custom pcbs for prototyping.

Altium: Stand 11-306 or www.altium.com

Quick as a flash

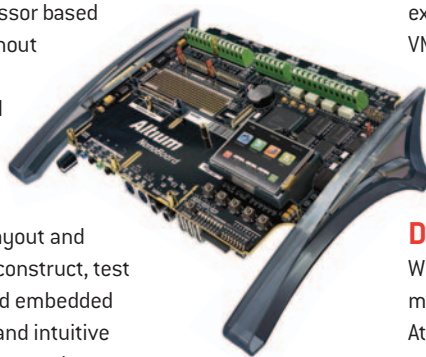
Silicon Storage Technology will be demonstrating its 1.8V high speed quad bit serial flash memory. Running at 80MHz, and with sustained burst data rates of up to 320Mbit/s, the 26WF series provides serial flash performance exceeding that of typical parallel flash, as well as supporting 8, 16, 32 and 64byte burst mode operation with wrap around.

SST: Stand 12-450 or www.sst.com

Latest additions unveiled

Emerson Network Power will be showcasing its latest embedded computing products, featuring Intel Atom and Intel Core i7 and Core i5 processors.

Based on a range of form factors, including MicroATX, Mini-ITX, VME, CPCI and COM Express, these motherboards are the newest additions to Emerson's



range of embedded motherboards, blades and modules.

The company will also feature extended temperature versions of its VME products based on the latest PowerPC processors.

Emerson Network Power: Stand 9-457 or www.emersonnetworkpower.com

Demos and presentations

Wind River will showcase its latest multicore and open source solutions. Attendees will be able to see Wind River's product range, along with several demos and customer devices around the show floor, three presentations at the Embedded World Congress and a half day workshop held in conjunction with Synopsys.

Partners showcasing Wind River demos around the event include Freescale, Texas Instruments, Kontron, Elektrobit, Esterel and Altera.

The company will also be making a number of presentations, including: developing safe systems; the Android operating system; and hardware accelerated network data forwarding.

Wind River: Stand 11-118 or www.windriver.com

Hybrid system on show

One of the highlights on the Schroff stand will be a hybrid system that combines established bus formats, such as VME or CompactPCI, with the emerging technology of MicroTCA in a single 3U high 19in subrack.

One side of the subrack is equipped with conventional 19in components to accommodate 3U VME or 3U CPCI boards, while the other side consists of a MicroTCA board cage that accepts AMC single modules. The board cage can be positioned left, right or centrally in the subrack and can have any chosen width.

Schroff: Stand 12-318 or www.schroff.co.uk

To register for Embedded World, and to access further information on the event, go to www.embedded-world.de