Development and integration of embedded systems at electronica 2010

The world's leading companies in the area of embedded hardware and software will meet at electronica 2010, the number 1 international trade fair for components, systems and applications in the electrical and electronics industry, from November 9 to 12, 2010. The wide range of exhibits will extend from individual components for mobile devices through to complete system solutions for industrial complexes. The exhibition area will be supplemented by the Embedded Forum during which the latest trends, themes and highlights in the industry will be discussed.

Whether used in the area of automotive, in industrial or in other applications, embedded systems are now an integral part of nearly every electronic device and are becoming increasingly more important. Industry leaders will present their latest boards and CPUs at electronica 2010. In order to integrate embedded systems, it is absolutely essential to have synchronized embedded software solutions and development platforms – electronica 2010 will also feature the latest systems and developer tools in this respect.

Programming and testing of embedded systems
The companies pls, Programmierbare Logik & Systeme GmbH, Lauta, and HighTec EDV-Systeme GmbH, Saarbrücken, will jointly present a completely new development platform for single-chip systems. Single-chip systems or SoCs (System-on-a-Chip) are frequently used in automotive applications and other embedded applications. By integrating all functions on an integrated circuit, very small dimensions can be realized.
The development platform for power architecture SoCs from STMicroelectronics and Freescale primarily comprises a GNU compiler from HighTec and the Universal Debug Engine (UDE) from pls. An efficient universal device family (UAD2+/UAD3+) from pls supports debugging via a JTAG-Interface and a Nexus port, and therefore completes the UDE. When used as a programming tool, the development platform facilitates the development, testing and maintenance of microcontroller applications. The power architecture development platform is designed for automotive and industrial applications (pls, Programmierbare Logik & Systeme GmbH, Lauta, Hall A6, Stand 442; HighTec EDV-Systeme GmbH, Saarbrücken, Hall A6, Stand S04).

Göpel electronic will present new software technologies in the area of measuring and test systems. Based on VarioTAP models, Göpel will demonstrate the latest test software for the MicroBlaze from Xilinx and the CORTEX A8 Core from ARM. The microcontroller from Xilinx and the ARM processor are often used in embedded systems. The VarioTAP processor model for the Microblaze Softcore from Xilinx permits the in-system combination of boundary scan tests with processor emulation and CPLD/FPGA programming based on a single JTAG test and debug interfaces, as well as high-speed processor assistant flash programming. Thanks to the software,

it is possible for the first time to formulate adaptive test and programming strategies for embedded systems with Xilinx FPGA on an implementation platform. VarioTAP establishes a virtual test controller in the switching center of the unit to be tested and can therefore perform different function tests (Hall A1, Stand 351).

Innovations in the area of embedded hardware
Epson Europe Electronics GmbH, Munich, will present, for example, microprocessors for embedded systems at electronica 2010. One of the highlights will be the S1A20100. Based on the connected sensors such as gyro sensors, air pressure sensors and a compass, the component provides a computing platform with dedicated algorithms. Integration in existing system architectures therefore becomes easier. Possible applications include, for example, sports watches and activity monitors (Hall A4, Stand 224).

Another new product at electronica 2010 will be embedded boards from Data Modul AG, Munich, which are based on the latest Atom platforms “Luna Pier Refresh and “Tunnel Creek”. Data Modul will also be bringing the new ECM-QM57, one of the first 3.5 boards with an Intel Calpella platform, to the trade fair. The board contains an Intel® CoreTM i7-620LE/ i7-620UE CPU with an Intel QM57 chipset and has 4 GigaByte of DDR3 RAM. The ECM-QM57 is especially suitable for applications in which maximum computing power and high graphic performance are required, for example in applications in the area of home automation, point of sale, kiosk systems and medical technology (Hall A3, Stand 207).

electronica Embedded Forum
The exhibition area will be complemented by the electronica Embedded Forum in which highlights and themes in the industry will be described and discussed. Representatives from Microsoft will provide a first-hand account of the development of systems based on Windows Embedded 7. With regard to the topic of motor control, the Embedded Forum will discuss key factors for improved energy efficiency and lower system costs. An overview of the main trends and factors in small form factor boards will show the development of small integrated circuits for use in embedded boards.

The up-to-date program of the Embedded Forum can be found in the electronica event database at: www.electronica.de/event-database [1]

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