Embedded News

The ARTEMIS office's Bi-Weekly Newsletter, Number 14

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ARTEMIS AGENDA

- Executive Board Meeting, September 6th, Brussels
- WG Communication Meeting, September 15th, Brussels
- WG Funding Strategy and JTI Structure, September 15st, Brussels
- Joint Steering Board/ Mirror Group meeting, September 21st, Brussels, Belgium

ARTEMIS : what's new?

ARTEMIS Office submitted the proposals for two workshops for the IST 2006 Event, which will take place in Helsinki, Finland, from November 21st to 23rd. The first proposals consist of a workshop on "ARTEMIS' SRA: Charting the Way Forward on Embedded Systems Research" and the second proposal consist of a workshop on "The ARTEMIS JTI on Embedded Systems: State of Play". ARTEMIS also agreed to support ENIAC for the organisation of the networking session on "Interfacing SME's with ICT Platforms" and MPSOC for the organisation of the networking session on "Towards strengthening the European MPSOC activities, within ARTEMIS".
The two proposed ARTEMIS workshops have been retained so far. The description is now published on the IST 2006 Conference Web-site and a final decision will be taken in September.

We kindly invite you to register on the IST 2006 website and express your interest for:
- The SRA session: ARTEMIS' SRA: Charting the Way Forward on Embedded Systems Research by clicking here.
- The ARTEMIS JTI on Embedded Systems and ENIAC JTI on nanoelectronics: State of Play by clicking here.

You can also:
- View the description of the SRA session: ARTEMIS' SRA: Charting the Way Forward on Embedded Systems Research by clicking here
- View the description of The ARTEMIS JTI on Embedded Systems and ENIAC JTI on nano electronics: State of Play by clicking here.

ARTEMIS will have an **Information Stand** at the IST 2006 conference which takes place in Helsinki from November 21st until November 23rd. For more information please visit http://europa.eu.int/information_society/isteevent/2006/conference/index_en.htm

IST / ICT Calls

Connectivity between Environment and Health Information Systems: Supporting synergy between environment and health research and policies
Deadline: 13 October 2006
This feasibility study should assess the know-how built over the years in interconnecting environment and health information systems, taking account of relevant research and policy perspectives of Commission services active in this domain, propose a joint vision for connectivity and integration of existing information systems, identify roles and synergies between the multiple stakeholders involved and advise on steps to advance its realisation. The study should explore elements of information systems which could be used for enabling description of trends in environment and health across Europe, evaluation or formulation of policies, benchmarking and communication to the general public. Time-limit for receipt of requests for documents or for accessing documents is 29 September 2006.

IST-RTD Impacts on EU Innovation System 28 July - 8 September 2006
This study will build further on the work underway to assess, more systematically, the effectiveness of network collaboration and knowledge transfers between IST-RTD and deployment of Information Society innovations at the regional level. The main aim is to assess how effectively IST RTD and deployment are being exploited in systems of innovation at the regional level.

Roadmap for application of robotics in medicine and healthcare study - submission deadline 20/09/2006
Deadline: To be announced
A study aiming to define a "Roadmap for application of robotics in medicine and healthcare" is planned to be launched in early 2007 and finish by the end of the first quarter of 2008. The study will provide input to the Work Programme of the ICT theme in FP7 and will also contribute towards the i2010 flagship initiative on "caring for people in an ageing society".
Contact: eHealth@ec.europa.eu

ARTEMIS ORCHESTRA

ARTEMIS launched the ARTEMIS Orchestra Contest which aims to demonstrate the capacilities of Embedded Systems to a broad public.
ARTEMIS encourages you to participate to this exciting contest. The flyer is available on the website. Link
The presentation of Pr. Hannu-Matti Järvinen, Tampere University is also available on the website: Link

Focus on...

This section contains information about events and news in the area of embedded systems. ARTEMIS Office would like to thank all the contributors to this section and welcome all your input if you are aware of relevant information.

The Embedded WiSeNts project has finalised a report: "Survey: Critical evaluation of platforms commonly used in embedded wisents research" that presents an in-depth critical survey of a number of advanced research platforms for wireless sensor networks. The goal of the report is to evaluate these platforms with respect to their practical capabilities as research platforms, focusing on ease of use issues.
The report is intended to inform researchers' for selection of a platform and to increase awareness of the variety of available research environments. By contributing to the development diverse communities using these platforms, this report contributes to increased integration within the research community.
You can download the report at:
http://www.embedded-wisents.org/dissemination/dissemination.html

N E W S

Statistics in Focus : High tech industries and knowledge based services - The importance of R&D and Human Resources in Science and Technology (.pdf, 116 kB)
The publication presents data showing the importance of R&D and Human Resources in Science and Technology (HRST). HRST represented 47% of total employment in services, but only 29% in the manufacturing sector in 2004, the share of Scientists and Engineers (S&E) among HRST varying markedly across sectors.

In the total services sector the proportion of women among HRST was higher than in the manufacturing sector. In 2003, the proportion of researchers among business enterprise R&D personnel was generally higher in the high tech manufacturing sector than in the manufacturing sector as a whole. Link

Private sector plans to increase R&D investment

The Commission's DG Research and the Joint Research Centre (JRC) have jointly conducted a survey on private sector's future R&D-investment expectations and on companies' motivations to invest in research. The report, published on 23 August 2006, reveals companies' intentions to increase their research funding annually by 5 per cent over the next three years. This objective is very encouraging for European research as the increase registered in 2005 was only 0.7 per cent.

Private sectors' main incentives to increase their R&D investment are market demand for new products and services, technological opportunities, and company turnover/profit. Link

More regional specialisation - key to European competitiveness

Recent research indicates that regional clusters enable companies to reach higher levels of productivity and be more innovative. A report mapping and analysing the regional clusters of the EU-10 states that "the lack of regional specialisation might be an important factor explaining the European competitiveness gap with leading global peers".

The report, authored by Europe INNOVA, first recommends enhancing geographical specialisation and efficient allocation of economic activity accross the EU. With this regard, the authors suggest that the EU could help, for example, by removing barriers to trade, investment and labour mobility. Link

B U S I N E S S

Nokia takes Qualcomm fight to U.S. court

Nokia Corp. has filed a complaint against Qualcomm with the Delaware Court of Chancery in the U.S. Nokia is asking the Court to order Qualcomm to abide by its contractual obligations to international standards setting organizations to license intellectual property essential to GSM and UMTS technology standards on fair, reasonable, and non-discriminatory (FRAND) terms. Link

Confab to explore Russia's emerging electronics sector

Is the Russian semiconductor industry poised to take off? That's the question at the heart of this year's Semi Expo CIS, which will seek to provide a roadmap for the long-anticipated resurgence of the post-Soviet chip industry.

Direct foreign investment in Russia's economy in the January-June timeframe almost tripled year-on-year to $26 billion, according to a government report released on Tuesday (Aug. 8). The preliminary figures indicate that direct foreign investment jumped from $9.3 billion the previous year. Link

Report: LCD TV sales jump

Although news has abounded about a weak display market, the LCD TV sector has held its own, with unit shipments rising 135 percent year-over-year and 28 percent quarter-to-quarter to 9.4 million units during the second quarter, according to DisplaySearch Inc. Link

Boeing disconnects Connexion

In a widely anticipated move, Boeing has confirmed it would phase out its Connexion in-flight wireless service by the end of the year. The move marks the final blow for a much-hyped six-year program for Internet access on board airliners that was beleaguered from the start. Link

Will REACH really be like RoHS on steroids?

In the first of a two-part article, Dow Corning takes a look at how REACH, the EU's chemical legislation, will impact the electronics industry. With a targeted enforcement date of April 2007 and some form of use restrictions for an estimated 2,000 substances, the industry better get ready for the EU's next major environmental initiative now. Stay tuned for Part II next week. Link

Report: RFID market to slow

ABI Research on Thursday dropped its 2007 revenue projection for RFID software and services by 15 percent, citing consolidation among vendors, lower prices and smarter users spending less.

In lowering its forecast for the radio-frequency identification market to $3.1 billion, ABI said there were four interrelated factors, particularly within the asset-management and supply-chain-management markets. The factors were market consolidation, collaborative solutions, the growing availability of off-the-shelf commercial RFID software packages, and the improving level of skills in RFID project planning. Link

German government stimulates sensor network research

The German government will stimulate development of sensor networks with €3 million. With the money, the ministry for research and education will fund a project that aims at developing extremely low power chips. Link

EVENTS

18 - 21 September 2006
EuroOSCON Open Source Convention
Brussels, Belgium
This event will offer a forum where coders, system administrators, entrepreneurs and business people, working in free and open source software, gather to meet, debate and share ideas.

25 - 29 September 2006
3rd European Conference on Complex Systems ECCS '06
Oxford, United Kingdom
The Conference is sponsored by the complex systems cluster of projects financed by FET. It will unite researchers in complex systems and will this year - for the first time - extend beyond ICT into all areas to which complex systems research can contribute. It will serve as a showcase for projects funded by FET and is expected to have a significant outreach following the successful conference held in Paris in 2005.

21 - 23 November 2006
IST 2006
Helsinki, Finland
The IST conference is the main networking event and showcase covering research and development in information society technologies (IST). In 2006, it will be organised by the European Commission in cooperation with the Finnish Presidency of the European Union and will take place in Helsinki, Finland. It will coincide with the launch of the EU's Seventh Framework R&D Programme. Day One of the conference programme will feature high-level policy discussions on how governments can help ICTs contribute to an innovative Europe, with Days Two and Three devoted to the Seventh Framework Programme and other topics surrounding European research and innovation. Organisations from across Europe can submit proposals via the website for the Exhibition (deadline: 21 April) and the Networking Programme (deadline: 15 June).

BMW, DaimlerChrysler and GM cooperate on hybrid drive

Automotive OEMs BMW, DaimlerChrysler and General Motors are jointly developing hybrid drives, a combination of combustion engine and electromotor. According to news agency Reuters, the three companies plan to invest $1 billion in the development. Link

LG.Philips to Build 3rd LCD Plant in China

Seoul, Korea-based LG.Philips LCD has initiated plans to build its third overseas module plant and has inaugurated a subsidiary in Guangzhou, China, to prepare for the plant's construction.
The unit, named LG.Philips LCD Guangzhou Co. Ltd., was set up with initial capital of $1 million (964 million Korean won) following an investment deal inked in May with Guangzhou's development district administrative committee in Guangdong province to build a module plant. Link

IMEC, ICOS Vision Team for 3-D Packaging Metrology

Metrology and inspection tool provider ICOS Vision Systems Corp. NV and research center IMEC reported that they will work together under a two-year Joint Exploration and Development Program (JEDP) on three dimensional (3-D) packaging. Research will be performed at the IMEC laboratories with ICOS providing technology and equipment for inspection and metrology. Link

Semiconductor Investments Continue to Climb in Q2

In the second quarter of 2006, venture capitalists invested the highest dollar amount into the most deals since Q1 2002, according to the MoneyTree Report by PricewaterhouseCoopers and the National Venture Capital Association based on data by Thomson Financial. Link

Philips Shares Climb on Reported $10B Semi Sale

Shares in Royal Philips Electronics NV climbed close to the company's 52-week high as reports began to surface that the company had sold its semiconductor division for more than $10 billion. Link

VoIP Service Revenue Doubles; Will Hit $120 Billion in 2009

VoIP service revenue doubled in North America, Europe, and Asia Pacific from 2004 to 2005, and will continue to boom for at least the next five years, according to a new report by Infonetics Research. Link

DRAM Exceeds Expectations in Q2

Tight supplies, rising prices and increasing demand for DDR SDRAM caused global DRAM revenue to exceed expectations in Q2, boosting the market share of the Taiwanese suppliers that specialize in the part, according to a preliminary estimate from market research firm iSuppli Corp.

Worldwide DRAM revenue rose to $7.5 billion in Q2, up 14.3 percent from $6.6 billion in Q1. iSuppli had previously expected revenue growth of only 4.4 percent.

Link

EU antitrust authorities look at HD-DVD, Blu-ray licensing

The European Commission possibly is preparing an antitrust probe regarding licensing practices in the high-capacity DVD industry. However, it is too early to launch a formal investigation, a Commission spokesperson said.

Link

AMD acquisition of ATI hints at entertainment platform

Jerry Sanders, a walking symbol of controlled chaos, is probably having a good laugh. In one bold move, the company he co-founded has shaken up PC industry supplier relationships in the near term and revived the possibility of CPU and graphics processor integration in the long term, as the personal computer evolves into an entertainment platform. Link

Analyst: Chip market slowed in June

Monthly chip sales are expected to have deteriorated to a three-month average of $19.4 billion in June from $19.7 billion in May, according to Bruce Diesen, an analyst with Terra Securities ASA. The reason is a PC slow down that is likely to get worse in the next quarter, the analyst said.

Link

T E C H N O L O G Y

How to achieve low-cost, reusable wireless infrastructure through modular baseband design

The key to delivering enhanced performance while lowering costs is the adoption of modular, standards-based architectures and amortizing R&D across multiple products. Link

Simplify set-top-box software updates

IPTV and VOD providers are eager to deploy the latest set-top-box (STB) features. Standardized, centralized, and efficient STB update systems will be crucial for effective management and ongoing competitiveness of video networks. Here are the challenges and potential solutions.

Link

Image sensors from thin, bendable chip

Thin is always in. Runway supermodels have played that concept to extremes for years, but in the world of semiconductors, ultrathin and flexible chips are just taking their first strides toward commercial viability.

Modern semiconductors carry an ever-increasing number of transis-tors, which has led to innovations such as the multicore processor over the past couple of years. But a separate effort to create ultrathin and flexible chips may make it possible to add computing, sensing, and imaging capabilities to electronic equipment. The resulting “silicon nanomembranes” will measure 100 nanometers or less in thickness. Link

Harnessing parallelism from video-processing DSPs, part 1

Part 1 shows how video applications present opportunities for multiple forms of parallelism. It then reviews the hardware and software approaches for exploiting these opportunities, and explains how memory systems impact performance. Link

Harnessing parallelism from video-processing DSPs, part 2

Part 2 reviews DSP architectures popular for video applications, evaluating parallel execution capabilities and memory system design. It also explores the coding challenges associated with each architectural approach. Link

Reduce cycle times for design rule checking

IC design rule checking (DRC) cycle time includes translation, run time, and debug time. Mentor Graphics’ James Paris shows how you can reduce that overall time while maintaining accuracy.

Design rule checking (DRC) is the gold standard in the hand-off of IC designs to the manufacturer. From the beginning, when newly developed physical verification tools automated the manual check method, a DRC-clean design was the most accurate ticket to yield. Based on a compliance method of pass/no pass, the system was simple and straightforward, giving designers a faster method of sign-off and measurable assurance for successful silicon. Link

What is mobile WiMAX?

Designed to leverage the IP infrastructure to deliver high-speed data to handsets, PDAs, and other mobile devices mobile WiMAX can compete with or complement cellular. The first mobile WiMAX products are scheduled to be rolled out late this year or very early in 2007.

Designed from the beginning to connect to the IP network, mobile WiMAX offers low latency and high Quality of Service. It will have no difficulty accessing IP multimedia data or implement technologies such as VoIP. This is the basic argument driving the mobile WiMAX campaign for market acceptance. Link

How VoIP works: Protocols, codecs, and more

Learn the basics of packetization, network latency and bandwidth, transport and media protocols, and speech and video codecs.

The age of voice-over-Internet-protocol (VoIP) is here, bringing together telephony and data communications to provide packetized voice and fax data streamed over low-cost Internet links. The transition from circuit-switched to packet-switched networking, continuing right now at breakneck speed, is encouraging applications that go far beyond simple voice transmission, embracing other forms of data and allowing them to all travel over the same infrastructure. Link

Read channel accelerates disk data rates

Jointly developed with Hitachi, Infineon's new read channel core that will achieve 30 percent higher data rates, compared with its predecessor. The core is part of a system-on-chip design that integrates all functions necessary to control a disk drive. Link

A guide for developers of WiMax infrastructure applications

Michael Livingston and Reiner Franke of Atmel examine the alternative technologies and specifications the embedded developer must consider in building the broadband WiMax infrastructure. Link

Neil Armstrong: Design freedom spurs engineering innovation

Engineer and Apollo astronaut notes that engineering teams given the freedom to think creatively can overcome design challenges often more efficiently. Link

How to use UML in your SoC hardware/software design: Part 3

After dealing with how to capture the semantics of your SoC hardware/software model in xtUML, Stephen Mellor and his coauthors describe how to compile it into software and silicon. Link

How to provide a power-efficient architecture

Processors have evolved from super-scalar architecture to instruction-level parallelism, where each evolution makes more efficient use of fast single instruction pipeline. It's anything but a smooth ride with many challenges including the amount of energy consumed per logic operation. Here's what can be done to reduce total power consumption. Link

10G stretches under OIF IA

Standardized 10 Gb/s fiber optic transmission links are stretching to greater distances thanks to an Implementation Agreement (IA) approved by Optical Internetworking Forum (OIF) members last week. Link

Designing a multimedia interface with low EMI

All electronic products that are marketed world wide undergo some sort of EMI/EMC testing to prove they won't create interference, or be interfered with by other devices before they are offered for sale to the public. For testing purposes, products are grouped into two classes: Intentional Radiators and Unintentional Radiators. For example, cell phones and walkie-talkies intentionally radiate energy, and a TV, PC or laptop PC shouldn't. Link

Tutorial: Integrating voice and stereo on a single Bluetooth device

Users don't want to carry separate Bluetooth devices but designing the ability to play voice and music on one device has challenges

Bluetooth stereo is forecast to become the fastest growing Bluetooth application—and the second largest. As a result, designers are bringing Bluetooth and music-on-the-go together with Bluetooth accessories, primarily stereo headphones for streaming music. Link

Tutorial: Designing with Bluetooth's Enhanced Data Rate (EDR)

Fitting a higher data rate within the existing air interface has necessitated the use of two more modulation schemes to support Bluetooth EDR. This poses unique challenges.

Demand for faster data transmission, longer battery life and the need to connect greater numbers of devices are driving Bluetooth technology to ever-higher data rates and range. Link

Maximizing TV quality in mobile handset designs

Coming handsets will have TV capability as a checklist item. Make sure that when you Mobile TV is hot, and consumers are growing more interested as vendors begin to advertise and promote mobile phones with TV capability. For manufacturers, however, considerable technical issues must be considered when adding mobile TV capability to handsets and portable devices. For example, it's imperative to have a constant picture and audio, regardless of environmental interference factors, and the TV receiver must operate at low power. Link

Improving Temperature Measurement to Optimize Inventory Control and Custody Transfer Systems

"The measurement of temperature is critical in the determination of the true volume of product in a hydrocarbon storage tank and how that may be improved with the use of true averaging sensors or multiple-spot temperature sensors. Simple temperature measurement has been performed for many years, in ways as simple as glass thermometers hung in a tank or as sophisticated as a tank gauging system mounted on the tank roof. Temperature has the most significant effect on the accurate determination of liquid quantities when correcting to standard conditions for custody transfer and inventory control purposes."
This article was provided by Weed Instrument Company, Inc., a leading manufacturer of temperature sensors and transmitters, nuclear-qualified instrumentation, and industrial fiber optic networking equipment.

Controllers bring USB systems together

At the Embedded Systems Conference in Taipei, Taiwan, Future Technology Devices International (FTDI) unveiled the Vinculum family of embedded USB host controller devices. Vinculum USB host controller ICs not only handle the USB host interface and data transfer functions but thanks to the inbuilt 8/32bit MCU and embedded Flash memory, Vinculum encapsulates the USB device classes as well. When interfacing to mass storage devices such as USB Flash drives, Vinculum also transparently handles the FAT file structure communicating via UART, SPI or parallel FIFO interfaces via a simple to implement command set. Link

Project promotes self-healing software

IBM Haifa researchers recently hosted the first meeting to launch Shadows, the European Commission's Eur 5 million research project to promote the design of self-healing software systems. IBM Research in Haifa, Israel will lead nine European academic and industrial institutions to address the problem of growing software complexity and its detrimental impact on software reliability. The Shadows project introduces a new model-based paradigm for the development of self-healing software systems capable of automatically diagnosing and repairing the root cause of failures and performance problems, and prevent them from reappearing. Link

Software looks at RF design from all angles

The RF Module for Comsol Multiphysics enables novel simulation capabilities for the design of today's sophisticated RF, microwave, and photonics components, and in general the software makes it easier than ever to study components and systems that deal with propagating electromagnetic waves. With it users can design and prototype devices for the transmission, guiding, receiving and filtering/processing of electromagnetic waves in applications where the range of frequencies spans from radio to optical. With the module, users can consider all sorts of multiphysics effects including the interconnection of electromagnetics phenomena with heat transfer, structural mechanics, and more. Link

P R O D U C T S

Details of ST's Nomadik multimedia processor disclosed

An STMicroelectronics executive provided a glimpse of its future Nomadik multimedia processor platform consisting of multiple CPUs, DSPs and subsystems on a single chip. Link

CELL PHONE CHIPSET SHRUNK BY ALMOST A THIRD

All of the electronics for a 3G phone could fit in a package 25 millimeters by 25 millimeters, or 30 percent smaller than current designs, according to the Texas firm Freescale. The company says that at less than an inch square, its redistributed chip packaging (RCP) method could replace BGA and flip-chip packaging as the dominant packaging and assembly approach for highly integrated chips. RCP uses a batch-processing photolith and plating method to place metallization steps on embedded die as the subsystem is defined and implemented, the company says, and is compatible with system in package (SiP), with package on package (PoP), and with integrated cavity packages. Link

RF driver IC and integrated RF power targets communications equipment

Microsemi Corporation, a manufacturer of high performance analog/mixed signal integrated circuits and high reliability semiconductors, announces the addition of the DRF100 and DRF1200 to its family of high voltage, flangeless-packaged, RF MOSFET Power Products.

Digital power management: Changing the value ecosystem

The old maxim about change being the only constant is certainly true for design engineers, especially when considering analog and digital parts for your next design. Here's some guidance to help you decide whether you should consider digital or analog power management in your next design. It's not as simple as you may think.Link

Image sensor, 1/5-inch, 1.3-MP enables thinner phones

Avago claims the ADCC-3100 is the industry's first 1/5-inch optical format, 1.3-megapixel SFF CMOS image sensor with advanced image processing including spot metering, bad cluster detection, and auto detection capabilities for cell phones. Link

Reconfigurable Java processor rolls out

A reconfigurable system-on-chip, the Imsys IM3000 microcontroller, takes aim at low-cost Internet appliances, mobile communicators, telematics systems and industrial control applications—especially where small memory size, low component count and low power consumption are key considerations. Link

CAN-enabled PIC MCUs add more on-chip flash

Microchip Technology Inc.'s new four-member PIC18F4685 family of low-power 8-bit Controller Area Network (CAN) microcontrollers boasts 80 or 96 Kbytes of flash and integrated EEPROM memory to accommodate the growing complexity of CAN applications.

This is the largest amount of program memory available on any PIC18 microcontroller with an onboard ECAN module for CAN connectivity, according to Microchip. Additionally, automotive and industrial designers can benefit from the small 28- and 44-pin package sizes of this family for space-constrained applications. Link

Improved high-voltage ICs boost motor, welding apps

International Rectifier's IRS21xx and IRS21xxx additions to the company's line of G5 600-volt high-voltage integrated circuits (HVICs), 19 new versions in all, integrate a range of new features for motor control, lighting, switch mode power supplies, and welding applications. Link

Audio and stereo amp ICs extend Boomer portfolio for portables

National Semiconductor's LM4941 audio amp and LM4985 stereo amp additions to the company's Boomer line of Class AB amplifiers, in the industry's smallest micro SMD package (0.4 mm pitch), improves performance in space-constrained portable and wireless applications. Link

LED assemblies operate in extreme temps up to 175 degrees C

TT electronics IRC Advanced Film Division offers populated LED assemblies using its Anotherm substrate technology, which can be used in a variety of high-brightness LED display applications including gaming and vending machines, outdoor signage and displays, emergency vehicle lighting, as well as architectural and general lighting. Link

PLDA claims first FPGA-based PXI Express development kit

Claiming an industry first, intellectual property (IP) controller vendor PLDApplications (PLDA) said Thursday (Aug. 3) it would launch the PXIe XpressLite CY2 Development Kit for CompactPCI Express on Aug. 8 during National Instruments Inc.'s 12th annual NIWeek worldwide virtual instrumentation conference and exhibition. Link

Humidity / temperature meter allows one-hand operation

The Humiport 05 from E+E Elektronik provides mobile precise measurement of relative humidity and temperature in the ranges of 5…95% RH and -20…50°C (-4…122°F). Dew point, absolute humidity and mixing ratio can be displayed. Link

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PLDA describes the x1 endpoint add-in board, based on Altera Corp.'s Cyclone II FPGA, as a complete production-ready or system prototyping solution. Link

High current, low noise linear regulators low temperature apps including avionics

Linear Technology two high current, low noise linear regulators for a wide range of applications including avionics, military, industrial, RF and telecom. Link

Zero-crossover op amp delivers glitch-free performance

Product Review - Proclaiming a step advance for low-noise, high-performance operational amplifiers, Texas Instruments' OPA365 utilizes a zero-crossover input architecture to achieve glitchless rail-to-rail performance for precision data conversion applications. Link

Chip switches USB 2.0, audio signals in single package

Pericom Semiconductor Corp. recently developed 3.3-V devices that it claims are the first to support both USB 2.0 High Speed and high-fidelity audio signals in a single chip.

The PI3USB411 and PI3USB412 USB 2.0 devices can switch high-speed differential signals at a rate of more than 1.2-Gbits/s, as well as low THD audio signals. The devices also feature USB 1.1 and USB 2.0 Full Speed support, high bandwidth (more than 600-MHz for USB channels), sub-1-ohm Ron (0.5-ohm typically) for audio channels, as well as off-isolation and crosstalk for all channels. Link

ST's multimedia processor plans disclosed

An STMicroelectronics executive provided a glimpse of its future Nomadik multimedia processor platform consisting of multiple CPUs, DSPs and subsystems on a single chip.

Speaking at the Design Automation Conference here, Pierre Paulin, director of SoC platform automation at ST's central R&D, said it is integrating "a reconfigurable array of DSP cores"—as many as six—and "multicore CPUs" into a Nomadik processor slated for production in 2008 using 45-nm process technology. Though not a member of ST's Nomadik team, Paulin provides CAD tool support for the team. "They are my customer," he explained.

ST's original Nomadik processor developed in 2004 integrated a single ARM core with two subsystems for handling audio and video. Link

Power amp enables cutting edge 3G WCDMA handsets

Anadigics offers a heterojunction bipolar transistor power amplifier for a WCDMA cellular handset that features advanced designs including an integrated MP3 audio player, digital camera with video capabilities, and two-inch color screen. Link

RF design software has entry-level option

Two important options are available with recently launched Concerto v6 from leading RF and microwave design software house Vector Fields. Concerto Linux is designed for 64bit PC implementation providing considerable enhanced capabilities and Concerto Essential for those not involved with very large models. The 64bit addressing removes any practical limit to the size of computer memory and thereby extends the maximum model sise beyond the 30,000,000 cell limit for 32bit machines. Link

Embedded CPU is easier to interface

A compact 32bit PowerPC SBC interfaces via a flat cable connection for easy integration with user specific I/O boards or even wire-wrap prototype boards.

With integration level of ICs offering the possibility to pack a complete computer on very small PCB form factor we have seen the creation of many new proprietary form factors targeting the replacement of the venerable old PC-104 mezzanine concept. These new formats include ETX, E2Brain, DIMM-PC, EPIC, X-Board etc (many of them were invented by Kontron). These computers on modules (COMs) or systems on modules (SOMs) are designed to help the final user to build his or her own system without the burden of designing the CPU part of the project but to focus on the application specific carrier.

This is a smart approach, but most of these new products use very high density connectors. Link

Infra-red camera aids optical alignment

Applied Scintillation Technologies (AST) has been awarded a US Patent (7,075,576) for its compact, low cost CamIR1550 infra-red camera. The product now has patents in both Europe and the USA. AST Sales and Marketing Director, Stuart Quinn, said: 'The CamIR1550 uses our highly specialised knowledge of phosphor selection and coating techniques to offer a highly cost-effective alternative to IR cameras with specially processed detectors'.

'This lightweight portable system has high sensitivity (to 0.2uJ/cm2) and is optimised between 1500 and 1600nm, making it ideally suited to applications in the telecommunications industry'. Link

Controller optimises NAND Flash performance

Silicon Storage Technology has announced a new Flash-based NAND controller that provides optimised performance for multilevel cell (MLC) NAND Flash devices. The SST55LD019M is ideal for use in space-constrained consumer applications where NAND Flash is replacing traditional hard disk drives. The SST55LD019M NAND controller is tailored to support high-volume applications and is offered in the industry's smallest package. Link

Video decoder is easily portable

TIVR Communications has developed highly optimised SMPTE VC-1 Simple and Main Profile (Microsoft's WMV9) video decoder software for mobile and embedded platforms. TIVR's VC-1 decoder benchmarking results show that real-time (15 frame/s) decoding of QVGA (320x240) resolution VC-1 Simple Profile streams coded at 192Kbit/s is achievable with 37MHz of ARM9 CPU load (on an average). A TIVR source commented: 'The availability of highly optimised solution for VC-1 decoder on ARM9 will pave the way for playback of WMV9 content even on nonWindows Mobile OS based devices'. Link

Touch sensor is complete user interface

Quantum Research Group announces the QT1106, a complete control integrated circuit that combines the functionality of a touch slider or wheel with seven additional keys. The wheel or slider uses a simple, inexpensive sensing element between three connection points. The device detects a single rapid touch anywhere along the sense elements. Link

DVB channel decoder cuts size and power

Philips has introduced a very small low-power DVB-T/H channel decoder, the TDA10048HN. Combined with the latest generation of silicon tuners (the TDA18211/18271HD), the TDA10048HN offers a very small compact digital TV front end. For manufacturers, this will allow production of a cost effective, rapidly integrated product, which can be used in any home entertainment device be it STBs, DVD recorders, iDTV, portable media players (PMPs), or multiple-tuner products such as personal video recorders (PVRs). Link

ARM9-based micros integrate Flash memory

The industry's first series of ARM9-based general-purpose micros with internal Flash memory, the STR91X family from STMicroelectronics, is now available through Arrow. The devices combine a 16/32bit ARM966ES RISC processor core, dual-bank Flash memory, large SRAM for data or code, and a rich peripheral set. The 16/32bit ARM9 core can perform single-cycle DSP instructions, making the device a natural choice for speech processing, audio algorithms, and low-end imaging applications. Link