FutureHorizons

The Global Semiconductor Industry Analysts

Future Horizons Newsletter

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ADI Unveils 24bit Smart Grid, Power Monitoring Sol'ns

Analog Devices Inc. has announced a 24bit data acquisition SoC series geared to enhance the performance of protection, monitoring and power quality measurement equipment used to manage transmission and distribution of electrical energy within smart grid systems. According to the company, the AD777x series includes an integrated sample rate converter, which simplifies the design challenge associated with making the power quality equipment compliant with the IEC61000-4-30 Class A standard.

The AD7770 enables higher performance and smaller form factor protection relays, while the AD7771 enables power quality measurement equipment to provide early detection of power grid electrical faults. The third SoC in the series, the AD7779, ensures fast power-up in circuit breaker equipment

ARM To Offer Cycle-Accurate Virtual Prototyping For Complex Socs Through An Asset Acquisition From Carbon Design Systems

Cambridge, UK, Oct. 20, 2015 - ARM has acquired the product portfolio and other business assets of Carbon Design Systems (Carbon), a leading supplier of cycle-accurate virtual prototyping solutions, to deliver design optimization, time-to-market and cost-efficiency gains for its partners. As part of this acquisition, Carbon's staff will transfer to ARM.

This combination of assets and expertise will significantly enhance ARM's capability in system-on-chip (SoC) architectural exploration, system analysis and software bring-up. It will also enable earlier availability of cycle-accurate models for future ARM® processors and ARM-based systems. The acquisition terms have not been disclosed.

"Early stage virtual prototyping of complex SoCs is now mandatory for leading silicon vendors, as demonstrated by the success of ARM Fast Models," said Hobson Bullman, general manager, development solutions group, ARM. "The integration of Carbon's virtual prototyping products into the ARM portfolio will deliver access to ARM IP earlier in the design cycle. This builds on the current industry leading solutions to enable further design optimization, time-to-market and cost-efficiency gains for our partners."

AMD And Nantong Fujitsu Microelectronics Co., Ltd To Establish Industry-Leading Semiconductor Assembly And Test Joint Venture

AMD AMD, -2.71% and Nantong Fujitsu Microelectronics Co., Ltd (NFME) (szse:TFWD) today announced the signing of a definitive agreement to create a joint venture combining AMD's high-volume assembly, test, mark, and pack (ATMP) facilities and experienced workforce in Penang, Malaysia and Suzhou, China with NFME's established outsourced semiconductor assembly and test (OSAT) expertise. Upon close, the new business will leverage the capabilities of 5 facilities and approximately 5,800 employees to offer differentiated ATMP capabilities and scale to service a broad range of customers. The transaction is expected to close in the first half of 2016, pending successful completion of regulatory approvals.

"We continue our strategic transformation by creating a joint venture combining AMD's high-volume assembly, test and packaging facilities and our experienced workforce with NFME's expertise in outsourced semiconductor assembly and testing," said AMD Senior Vice President, Chief Financial Officer and Treasurer Devinder Kumar. "NFME is an ideal partner with the vision and business plan to successfully lead the joint venture upon the close of the transaction. We continue to sharpen the focus of our ongoing investments on designing differentiated, high performance technologies and products that can drive long term profitable growth. The formation of this JV further strengthens our balance sheet with significant asset monetization."

Lam Buys KLA-Tencor as Chip-Sector Deals Mount

Lam Research Corp. on Wednesday announced a deal to buy KLA-Tencor Corp. for $10.6 billion, the latest sign that consolidation pressures among chip makers have spread to their suppliers.

The two Silicon Valley companies rank among the biggest makers of equipment used in semiconductor manufacturing. Lam has focused on machines that deposit or etch away materials on the silicon wafers used to make computer chips. KLA-Tencor's machines, by contrast, are used to spot defects in chips once the wafers are processed.

Such equipment makers have long been whipsawed by boom and bust cycles, as chip makers boost or cut back manufacturing capacity in response to demand. Acquisitions have been common over the years, as companies try to assemble a broader list of machines to sell customers.

Plessey LEDs In Circadian-Modulated Lighting

Plessey will provide Circadian ZircLight, a US company that makes equipment for the workplace, with LEDs for the development of circadian-modulated, smart LED lighting systems and lamps.

Based near Boston, Massachusetts, USA, Circadian ZircLight's lighting division is developing white light fixtures and backlighting which are claimed to control bioactive light spectral wavelengths to maximise productivity during the day and prevent the harmful effects of light exposure at night.

REAP And Universal Semiconductor Form Joint Venture For Future Solar Cells

LED lighting and solar cell manufacturer Renewable Energy and Power Inc. (REAP) has formed a joint venture (JV) with Universal Semiconductor Inc. to produce Gen IV solar cells.

Under the deal, REAP will combine its solar cell technology with conventional silicon solar cells manufactured by Universal Semiconductor. The JV has the potential to increase around 50% of the power produced by the current solar cells, REAP says. The solar cells will be manufactured in Universal Semiconductor's wafer fab in San Jose, Calif.

Renesas Rolls Out Innovative Driving Dev't Platform

Renesas Electronics America has unleashed what it describes as a comprehensive, vehicle-level driving platform to expedite autonomous and automotive driving innovation. Together with Harbrick, NewFoundry, Arada Systems, eTrans and Cogent Embedded, Renesas developed a fleet of cars to operate as a modular and open laboratory for automotive customers. This strategy allows safe integrated solutions beyond silicon, while minimising design risk and speeding up time to market through pre-testing and integration, stated the company.

Renesas will expand, develop and offer novel vehicle-level platforms that can be used by algorithm experts, sensor makers, system integrators and other subject matter experts as a working sandbox in real-world environments where they can collaborate, validate, experiment and benchmarking innovative ideas. Renesas will expand the scope of these vehicles going forward to integrate cockpit, HMI, safety, security and powertrain platforms.

Seoul's Package-Less LED Gains Traction

Seoul Semiconductor has announced that following successful use in LCD backlighting applications, its Wicop LED packaging is being fast adopted in lighting systems.

Wicop is a wafer-level form of packaging in which the chip is bonded directly to the PCB with IC and other components. Compared to the widely used 3030 LED package (3x3mm), the latest version Wicop2 , which Seoul announced last month, takes up a quarter of the area with twice the brightness.

Wicop2 also has over 30 percent less thermal resistance compared to conventional LEDs due to the removal of previously essential lead frames and substrates, according to the company. A 12W LED lighting application may need eight 3030 LED packages, whereas for the same performance Wicop2 uses 50 percent (four Wicop2 packages) less the area.

TSMC: Chips On The Slide

Results below targets? Blame China. It is a one-size-fits-all excuse: from fried chicken to cars, companies are pinning their woes on the slowdown in the Middle Kingdom. It is probably true, though the place is so big and opaque, who will ever really know?

On Thursday, Taiwanese semiconductor manufacturer TSMC joined the list. It reported its first year on year decline in quarterly earnings in three years. Its fourth-quarter revenues, it says, will post their first decline in four years. Finally, it cut its investment budget for this year by 30 per cent, to $8bn. One of the principal causes? China’s slowdown, which comes on top of sluggish smartphone growth globally.

LG True To Its Promise: Builds Smart Fact From Science Fiction

Through science fiction you can communicate with a diverse imaginary world replete with unique scientific discoveries and technologies. Today's technology has exceeded even the most fanciful prophecies of science fiction in the past. LG has made wider steps in fulfilling the today's modern technologies, marching ahead toward more promising future scientific advances. Companies are likely to push the limits of hi-tech innovation to stay in the lead. Consumers are always looking for the next superior inventories. It will be vital for a giant firm like LG to continue its heavy investment in research and development to continue launching competitive devices. LG is always rewarded for innovation; it remains one of the top electronics companies in the globe, creating products that are capable of winning over rivals.

Three Tech Megatrends Expected To Send Waves Across Industry

IDTechEx has revealed three megatrends emerging in the world of technology: namely structural electronics (SE), 3D printed electronics (3DPE) and energy independent electric vehicles (EIVs).

Structural electronics is replacing the old components-in-a-box approach with smart materials as load-bearing parts and as smart skin and e-textiles. For example, a recent IDTechEx interview with one of the largest car Japanese companies revealed that their experimental 3D printing of ultra-lightweight car seats based on bird bone structure, will now become 3DPE with electrics and electronics built into the seat as it is grown.

Meanwhile, teams in Australia, the UK and the US demonstrating supercapacitor car bodies using in-mould electronics. Also in Japan, IDTechEx was recently told by a chemical giant that such structural electronics materials are now top of its priorities.

Clash Of Connected Cars: LTE V2X Takes A Stand Against DSRC

Competition is generally seen as positive, especially in this industry where every company is always pulling out all the stops to outdo the competition. In particular, Huawei and Qualcomm focusing their efforts on infiltrating the promising vehicle-to-vehicle (V2V), vehicle-to-infrastructure communication market, often collectively titled V2X, by proposing an LTE standard called "LTE V2X."

The move is at odds with incumbent automotive technology suppliers who have been working more than a decade to develop and test, and finally implement, a dedicated short-range communications (DSRC) technology designed for V2V, V2I communications.

DSRC, based on the IEEE 802.11p standard, uses a dedicated wireless frequency, 75MHz of spectrum in the 5.9GHz band, allocated by the Federal Communications Commission in 1999 specifically for intelligent transportation systems.

Cambridge Chemists Make Super-Battery Breakthrough

A breakthrough in electrochemistry at Cambridge university could lead the way to rechargeable super-batteries that pack five times more energy into a given space than today's best batteries, greatly extending the range of electric vehicles and potentially transforming the economics of electricity storage.

Chemistry professor Clare Grey and her team have overcome technical challenges in the development of lithium-air batteries — the only cells theoretically capable of giving electric cars the range of petrol and diesel vehicles without having to carry excessively bulky and heavy battery packs.

If the technology can be turned from a laboratory demonstrator into a commercial product, it will enable a car to drive from London to Edinburgh on a single charge, with batteries that cost and weigh one-fifth of the lithium-ion cells that power today's electric cars.

Altair Semiconductor Powers Novatel Wireless's New MiFi M100 4g LTE Personal Mobile Hotspot

HOD HASHARON, Israel – October 20, 2015 – Altair Semiconductor (www.altair-semi.com), a leading provider of LTE chipsets, today announced that its FourGee-3800/6300 Cat-4 chipset is powering Novatel Wireless's [NASDAQ:MIFI] new MiFi® M100 Dragon, a 4G LTE personal mobile hotspot that launched last month on U.S. Cellular's network.

The MiFi M100 is compatible with LTE bands 2, 4, 5, 12 and 17, and enables secure, super-fast 4G LTE service on U.S. Cellular and their roaming partners' network. It can connect up to 15 devices simultaneously and – leveraging Altair's power-optimized technology – offers a battery life of 10 hours.

"We are pleased to collaborate with Novatel Wireless on the MiFi M100, providing a low-cost, ultra-low power LTE solution that enables affordable and reliable connectivity, as well as extended battery life," said Eran Eshed, VP of Marketing and Business Development at Altair. "A 10-hour battery that is dedicated to data will easily outlast a phone's mobile hotspot function, which can quickly drain the phone's battery."

Camera Filter Yields Sharper, Brighter Photos In Low Light

A researchers from the University of Utah Electrical has created a camera colour filter for digital cameras that lets in three times more light than conventional filters. According to computer Engineering professor Rajesh Menon, the innovative device results in much cleaner, more accurate pictures taken in lowlight. The filter can be used for any kind of digital camera, but Menon is developing it specifically for smartphone cameras.

Anyone who's taken a picture of birthday candles being blown out or a selfie during a romantic candlelit dinner knows how disappointing it is when the photo comes out dark and grainy

"Overall, camera phones are very good, but they are not very good in lowlight," said Menon. "If you go out on a hike in the evening and take a picture of the sky you will see that it's very grainy. Lowlight photography is not quite there and we are trying to fix that. This is the last frontier of mobile photography."

Wireless Vision Shows Promise For Medical, VR Apps

A team of researchers at MIT's Computer Science and Artificial Intelligence Lab (CSAIL) has always considered the possibility that wireless signals such as Wi-Fi have the capability to see things that are invisible to the naked eye.

Since 2013, a CSAIL team has been developing technologies that use wireless signals to track human motion. The team has revealed that it can detect gestures and body movements as subtle as the rise and fall of a person's chest from the other side of a house, allowing a mother to monitor a baby's breathing or a firefighter to determine if there are survivors inside a burning building.

China's Lenovo considers using Russia's Baikal chip in its hardware

Lenovo, a sizable Chinese computer maker, is said to be interested in using the Baikal, the new Russian computer processor, in its PCs and mobile gadgets, the Russian news daily Vedomosti reported, citing a source in one of Russia's federal ministries.

Gleb Mishin, the Lenovo CEO for Russia, the former Soviet Union and Eastern Europe, has confirmed the information, Vedomosti said.

The Baikal project is currently focused on the development of three chips: the Baikal M, the Baikal M/S, and the Baikal-T1. The latter is designed for use in mobile telecom devices. The Russian company is gearing up for the launch of an upgraded processor with capacity enough to enable work with office apps.

Russian IT Developer Looks Set To Take On Microsoft And Amazon In Domestic Clouds

Parallels, a Russian IT company, has launched a project to develop a locally built cloud computing platform, The Moscow Times reported, citing a source in Kommersant, a Russian business daily.

The new cloud service, used to store data online, is expected to challenge existing U.S. platforms such as Microsoft Azure and Amazon Cloud.

The move comes as officials promote local IT services and technology to reduce the country's reliance on Western know-how.

The platform—to be called Rosplatforma—"will become the foundation of Russia's electronic sovereignty [and] a strategic export to countries seeking technological independence from the U.S.," The Moscow Times quoted Parallels as saying.

Developer From Urals Offers Solutions For 'Smart House' Control

iRidium mobile, a Urals-based IT developer, is creating technological process control and automation platforms for 'smart house' systems, intelligent buildings, and Internet of things devices, the Skolkovo Foundation website reported.

To achieve the goal, the company from the city of Nizhny Tagil has secured $313,000 grant funding from the Skolkovo Foundation.

By now, the developer came up with a number of products, the source said. First of all, it's special software to control various solutions for automation. Also, a special IT tool has been designed, enabling users to promptly develop a control app compatible with the world's most widespread operating systems, including Android, iOS, Windows, and Mac OS.

With New Discovery, One Could Download Thousands Of HD Movies Within One Second

A Russo-Australian research team has developed an ultrafast all-optical switching system based on silicon nanostructures. According to the Moscow Lomonosov State University, a participant in the experiment, the device could provide the basis for the next generation of computers and is thought to be capable of transmitting data at unparalleled speeds.

The results of the research have been published in the Nano Letters journal.

In the experiment, the scientists used electron-beam lithography, followed by plasma etching, to produce special nanoparticles. As a result, they came up with what is described as a disk-shaped device 250 nanometers in diameter, which was able to switch optical pulses in a matter of several femtoseconds

World Economic Round Up

The Organisation for Economic Co-operation and Development (OECD) has said that a dramatic slowdown in world trade, prompted by shifts in China and other emerging markets, risks weighing down the global recovery. The Paris-based group of mainly developed economies cut its growth forecasts, predicting the world economy will expand by 2.9 percent this year and by 3.3 percent in 2016. This compares with earlier projections of 3 per cent and 3.6 per cent respectively. The downward revisions, in the OECD's twice-yearly Economic Outlook, come only weeks after the International Monetary Fund (IMF) said the world economy would grow at the slowest pace since the crisis. Fears over the state of the Chinese economy have jolted markets since the summer, prompting the Bank of England (BoE) to delay a much-anticipated rise in interest rates.

The latest economic news by country to include USA, Europe, UK, Japan, China, Asia Pacific and India can be found each month in our Semiconductor Monthly Report.

Industry Events 2015

Future Horizons Events

- Silicon Chip Industry Training Seminar – London – 16th November 2015
- Industry Forecast Briefing, London – 19th January 2016

To book your place on any of our events please contact us on:

Telephone: +44 1732 740440
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Industry Events

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MARK YOUR CALENDER FOR THE NEXT

SILICON CHIP INDUSTRY WORKSHOP
MONDAY 16 November 2015
AND
INDUSTRY FORECAST BRIEFING
THURSDAY 19 January 2016

BOTH BEING HELD AT

HOLIDAY INN KENSINGTON FORUM, LONDON

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