



Future Horizons Newsletter

July 2015

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Industry News By Company

[Low-Power 4G Chip Optimised For Iot, Wearables](#)

Altair Semiconductor has unveiled a line-up of MIPS-based chips to provide 4G connectivity to wearables and other IoT devices at remarkably low power budgets. The company has optimised the FourGee modems for the small form factor and very low power consumption characteristics that are typical of IoT devices.

It also claimed that its FourGee-1150 and 1160 chips offer up to 10 times better energy efficiency and half the connectivity cost of the standard LTE technologies being used today.

[Semiconductor Giant AMD Designed Its Very Own PC, And It's Breathtaking](#)

When Microsoft unveiled the original Surface, it showed the world that it is capable of designing something absolutely marvelous, that Apple didn't have a patent beautiful hardware. Today, AMD became the latest company (OEM?) to do the same with its first PC, designed in-house, AMD Project Quantum.

Project Quantum is a small form factor PC, taking about the same footprint as a console, designed inside and out by AMD. The PC features two of the latest Fiji-based GPUs making it what AMD claims, the most powerful computer in its class. AMD announced products on its latest Fiji-based architecture earlier today and Project Quantum is a testament to Fiji's ability to provide exceptional performance in a small package.

[Crocus Technology Attracts \\$21M \(€19M\) In Financing](#)

Crocus Crocus Technology, the supplier of magnetic sensors and embedded memory solutions designed with Magnetic Logic Unit™ (MLU) technology, today announces it has secured \$21M (€19M) in funding. All of Crocus' historical French and international investors participated in the round cementing their solidarity and long-term commitment: NanoDimension, Innovation Capital, IdInvest Partners, Ventech, Sofinnova, CEA Investissement, Rusnano and Industrial Investor Group. Kreos Capital also backed the round because of Crocus' strong prospects. It is the second time that this growth debt provider has helped finance Crocus' MLU strategy.

The upswing in prospects stems from the important performance advantages that Crocus' proprietary MLU technology, a disruptive CMOS-based rugged magnetic technology, brings to its magnetic sensors. Crocus' magnetic sensors have significant attributes that support applications where high sensitivity, high temperature, low noise and low cost are key, such as smart metering, power management and solutions for IoT (Internet of Things). Crocus began producing MLU-based magnetic sensors in mid-2014. Since then, the business line has experienced a sizeable increase in its global customer base, upwards of 250 new customers. The company aims to further develop its sensor business line to address a global market expected to grow from \$1.48 billion in 2014 to \$1.87 billion by 2018 (IHS Technology, Magnetic Sensor Market Tracker 2015).

ESCATEC Boosts Its Contract Design Capabilities With Addition Of Professional 3D Printer

ESCATEC has purchased one of the world's leading fused deposition modeling (FDM) 3D printers that will enable it to produce rapid prototypes in minutes rather than using an outside contractor that used to take several days.

Michael Walser, ESCATEC's Head of R&D, explained, "Having a high end 3D printer means that we can test out a new design in minutes and quickly refine it. When you are deep into the design of a new part, it is great to be able to touch and feel it, and then see how it fits in with the rest of the design. We can now work on a design continuously rather than stopping and starting while we have to wait for the next version to be delivered. It has not only improved productivity but also creativity as designers can try out new designs on-the-fly in-house rather than going through the formal process of engaging an outside contractor every time."

Freescall Semiconductor Unveils World's Smallest Scm For Internet Of Things

RTTNews.com) - Freescall Semiconductor (FSL) Tuesday said it has introduced the world's smallest single chip module or SCM for the Internet of Things or IoT.

As the IoT requires more processing horsepower to be packed into smaller spaces, Freescall's new SCM line of products can integrate hundreds of components including processors, memory, power management and RF parts, which would otherwise be deployed on a six-inch board, into a tiny 17mm X 14mm X 1.7mm package.

At the Freescall Technology Forum in Austin, Texas, today, the company unveiled the first product in its new SCM portfolio.

GlobalFoundries Takes Control Of IBM Semiconductor Division

The final step in closing the deal was winning approval from the U.S. government, which came this week. That was needed because of some of the technology that transfers from IBM to the new company, which was formed in 2009 and is controlled by United Arab Emirates.

The Vermont plant, which opened in 1957, has long been a major economic engine for the state. A study by the Greater Burlington Industrial Corporation estimated IBM's presence generates \$1 billion in economic activity each year.

Several top Vermont IBM executives have moved over to GlobalFoundries and the new company hired 3,000 former IBM employees.

Imagination Technologies Losses Grow As It Pursues R&D Drive

UK chip designer Imagination Technologies suffered widening losses as a drive to invest in developing products and tap into the growing "internet of things" overwhelmed its revenue growth in 2015.

The FTSE 250 company said in its full-year results on Tuesday that revenues to April 2015 had increased to £177m, up from £170.8m a year earlier, in line with analyst expectations.

However, the group, which counts Apple as its biggest customer, saw losses grow to £12m, up from £314,000 a year earlier. Consensus analyst estimates had expected the company to return to significant profits this year.

[IR Hirel Launches Compact DC-DC Converter Rated At 185 °C Optimized For Downhole Tools For Oil And Gas Exploration](#)

Munich, Germany – July 7, 2015 – IR HiRel, an Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) company, today announced the introduction of the HiRel HTB28 series, the industry's first hermetic hybrid DC-DC converters rated at 185 °C in a 1 inch wide package. The new devices are designed specifically for oil and gas exploration downhole tools and can withstand the high temperature as well as the high shock environment typically found in these applications. As oil and gas are more and more difficult to find, exploration takes place in environments which are challenging and where temperatures are higher.

This off-the-shelf product family with multiple output voltage options speeds time-to-market for downhole tool manufacturers in challenging designs requiring operating temperature up to 185 °C. The HTB28 series provides high reliability through a conservative and rigorous design approach and using hermetic hybrid packaging technology that also enables a highly compact package 1 inch wide, 3.82 inch long (including the flange) and 0.41 inch high, saving approximately 20 percent of space compared to a PCB-based product. With its narrow width, the HTB28 series can fit in the smallest downhole drilling tools in the market or in development.

[Intel Subsumes Smart Eyewear Maker](#)

Intel has acquired Recon Instruments, a smart eyeglass maker, for a reported \$175 million. Recon has created smart glasses with a heads-up display for sports.

Intel's venture capital arm invested in Recon in 2013 with the goal of accelerating product development, marketing and sales. Intel hopes the formal acquisition will expand its presence in the head mounted display market.

Recon will continue to sell its Jet and Snow glasses, and will also partner with Intel's new devices group to develop smart device platforms for a broader set of customers and market segments, according to a recent press release.

[Sondrel Announces Further Investment In Graduate Training For The Semiconductor Sector](#)

Graham Curren, Sondrel CEO, has announced his commitment to further investment in the training of graduate engineers looking to develop a career in the IC design sector, by providing a teaching fellow, and nine scholarship awards to students engaged on the Sondrel University of Nottingham Ningbo (UNNC) School of VLSI Design.

This unique program, created in partnership with the University of Nottingham, and with the support of Mentor Graphics, is now in its third year, with over 100 students having successfully completed the course, and progressing to take up positions in the semiconductor sector. The bilingual course is run on the University of Nottingham's Ningbo Campus, in China, as a three month intensive industry training program. There are two intakes in 2015, at the end of June, and in September, with demand continuing to be strong from students looking to enhance their EE qualifications as well as those opting to embark on a new career path.

Synopsys And UMC Expand 14-Nm FinFET Collaboration To Include Designware Embedded Memory And Test Solutions

Synopsys, Inc. (Nasdaq: SNPS) and United Microelectronics Corporation (NYSE: UMC;TWSE: 2303) ("UMC") today announced an expanded collaboration to include Synopsys DesignWare® Embedded Memory IP and the DesignWare STAR Memory System® test and repair solution on UMC's second 14-nanometer (nm) FinFET process qualification vehicle (PQV). The PQV provides additional silicon data, enabling UMC to further tune its 14-nm FinFET process for optimal power, performance and area. This PQV follows the successful tapeout and silicon bring-up of the first UMC 14-nm FinFET PQV containing Synopsys DesignWare Logic Libraries and utilizing the StarRC™ parasitic extraction tool.

"Our expanded collaboration with UMC demonstrates our mutual goal to help designers incorporate DesignWare IP into their SoCs on UMC processes," said John Koeter, vice president of marketing for IP and prototyping at Synopsys. "With more than 45 FinFET test chip tapeouts, Synopsys continues to make significant investments in providing high-quality IP for FinFET processes, enabling designers to lower integration risk and speed their time to volume production."

Qualcomm Strikes A Deal Boosting China's Biggest Semiconductor Foundry's Technology

Qualcomm Inc. recently inked a deal that will boost the technology of China's biggest semiconductor foundry, Semiconductor Manufacturing Internal Corp. (SMIC).

Apart from Qualcomm, the joint venture will also involve Huawei Technologies Co. and Belgium's chip research center, Imec. The endeavor seeks to develop advanced 14-nanometer chips.

As part of the deal, SMIC, which has seen a 6-percent rise in its shares, is also expected to decrease research costs and subsequently narrow the gap between the semiconductor manufacturer and its rivals such as Intel Corporation and Taiwan Semiconductor Manufacturing Co. Ltd.

Industry News & Trends

[UK Researchers Make Wafer-Scale MoS₂ Films At Room Temperature](#)

Researchers at the University of Southampton's Zepler Institute have successfully fabricated and characterised large-area 2D films of MoS₂ at room temperature using a process which is scalable to any size wafer.

Previously only commercially available in small flakes, these wafer-scale films pave the way for the large-scale manufacture of a wide variety of devices including flexible and transparent optoelectronics, gas sensors, memory devices and photovoltaics (PV), according to the mea.

Fabricated using ambient pressure CVD, the MoS₂ films have an important advantage over other 2D materials like graphene: they enable the emission and detection of light.

[Electromobility: The "Luftstrom" Research Project Makes Charging Batteries In Electric Vehicles More Efficient And Much Quieter](#)

Munich, Germany – June 24, 2015 – The “Luftstrom” research project investigates how batteries in electric vehicles can be charged more efficiently. Luftstrom (English: Airstream) will help accelerate the conversion to climate-friendly mobility. Twelve partners in the German automotive sector, its supply industry and the sciences are collaborating on this project for the next three years. The use of new power semiconductors is expected to reduce losses during charging and, ultimately, make charging almost noiseless.

Electric vehicles are mainly charged overnight. However, charging in the charging device and voltage regulators creates heat that fans of water-cooled aggregates have to dissipate, for example. This can be quite noisy. As a result of the Luftstrom research, the electronic power components will lower the losses during charging by 30 percent. This means lower waste heat – and with less cooling effort the cooling units become more compact and operate more quietly. Components that already cause very few losses, such as auxiliary power supplies, might even be able to do without the previously required water cooling – which means that the loud fans would be eliminated.

[UK State-Backed 3D Printing Facility Opens](#)

The largest metal part made by 3D printing has been unveiled by Rolls-Royce, the aerospace company, at a new facility specialising in the technology.

The component for a Trent XWB-97 aircraft engine, produced from titanium powder fused layer by layer using heat from an electro-beam machine, is to be tested this year.

The national additive manufacturing unit, a £15m investment, was opened on Monday at the government-funded Manufacturing Technology Centre.

3D Printing Tech To Produce Curved Circuits

A group of Korean scientists have developed three-dimensional (3D) printing technology that can produce curved and flexible electronics circuits.

Ulsan National Institute of Science and Technology (UNIST) said Tuesday the materials science and engineering research team led by Professor Park Jang-ung has succeeded in imprinting 0.001 millimeter ultrafine patterns on plastic circuit boards at room temperature.

The new technology could be used to produce flexible wearable electronics devices.

Fibre Optic Communication Gets Boost

Photonics researchers at the University of California, San Diego succeeded in expanding the maximum power at which optical signals can be sent through optical fibres, thereby increasing the distance information travel while maintaining the receiver's accuracy in deciphering the message.

This advance has the potential to increase the data transmission rates for the fibre optic cables that serve as the backbone of the Internet, cable, wireless and landline networks. The research is published in the June 26 issue of the journal Science.

Graphene Insulator For IC Interconnect

Graphene insulator shows promise. Using graphene instead of tantalum nitride as an insulator for the interconnect in ICs can increase chip performance by up to 17%, says a team of researchers from Stanford University and the University of Wisconsin-Madison.

As geometries shrink, the use of graphene increases the benefits, say the researchers, with improvements of up to 30% in performance.

“Researchers have made tremendous advances on all of the other components in chips, but recently there hasn’t been much progress on improving the

Divergent Unveils Part-3D Printed Supercar

A San Francisco start-up has become the latest outsider to try to challenge the automobile industry’s traditional approach to manufacturing, with a “supercar” that relies on 3D printing for its central structural components. The company, Divergent Microfactories, was due to show off a prototype on Wednesday of a high-performance, lightweight car designed to be built in small volumes in low-cost factories around the world.

The method echoes one pioneered by another US start-up, Local Motors, and highlights the potential of new manufacturing techniques designed for low production runs and flexible designs to challenge the economics of large-scale auto plants.

East European News & Trends

Huawei And Russian Partner To Develop New Software In Kazan's 'IT City'

China's Huawei and Russia's iTeco are pooling efforts in the development of software for cloud services and virtualization. The project will be based in the new 'IT city' of Innopolis outside Kazan. A subsidiary will be set up to further the endeavor, Lenta.ru reported.

The subsidiary will reportedly be owned by iTeco, while Huawei is expected to bring into play its software and hardware platform, staff and other resources in an effort to market their joint Russian-made solutions across Russia and the four other BRICS countries (Brazil, China, India, and South Africa).

The University of Innopolis, this new higher educational institution established in the 'IT city,' will play its part by doing research and training programs in the field of cloud software products, the source said.

Russia's First Industrial Nanotech Park Under Construction Outside St. Pete

A real estate project called "Nanopark Gatchina" is under way in the Leningrad region outside St. Petersburg. This will be Russia's first industrial nanotech park, an effort seen as the foundation for a new medical, pharmaceutical and radiation technology cluster, Dp.ru reported.

The primary driver in this project is the Leningrad region; Rusnano, the largest government-owned nanotech company in Russia, reportedly supports the endeavor. The project calls for the development of in excess of 17 hectares next to the town of Gatchina where a business incubator with clean rooms, laboratories and 'off-the-shelf' industrial facilities and engineering sites are to be built to accommodate start-ups and high technology firms.

Russian Clouds Have Their Tier III Data Center In Moscow

An up-to-date data center called Cloud DC Moscow 1 has opened in the Russian capital to serve as the nucleus of a future cloud infrastructure complex there. The data center has been specifically designed and built to be fully compatible with cloud infrastructure, reported the website of Russia's Presidential Council for Economic Modernization and Innovation Development.

Cloud DC Moscow 1 is physically located in Zelenograd, a former suburb and now a scientific and industrial borough of Moscow focused on microelectronics and high technology business. In this area the City of Moscow is developing its own electronics and IT cluster.

The cluster is currently home to a reported 100+ companies employing more than 7,000 highly skilled staff.

IBM And Russian Partners Want To Create High Tech Personalized Medicine In Russia

IBM, Russia's Skolkovo Foundation and the Moscow-based First Oncology Research and Advisory Center are forming a partnership to focus on the development of a platform for high tech personalized medicine in Russia, the Skolkovo Foundation website announced.

According to an MoU inked just recently, the partnership will pursue a number of shared strategic, technological and marketing goals in advancing the platform that will offer physicians innovation technologies in order to add health and productivity to the lives of oncology patients and people with age-related degenerative problems.

It is expected that the platform will enable doctors to quickly choose the best possible therapy for a specific case and apply new techniques to fighting a disease, the partners said.

IBM Watson Health, a time-tested U.S. system, and OncoFinder, a solution developed at the First Oncology Research and Advisory Center in Russia, will lend physicians a hand in making clinical decisions.

World Economic Round Up

The Bank of Russia said that the five major emerging national economies, known by the acronym BRICS, were a step closer to setting up a US\$100 billion pool of mutual reserves by signing an “operational agreement”. The pool would be drawn on by the central banks of Brazil, Russia, India, China and South Africa whenever they suffered a shortage of dollar liquidity, helping them maintain financial stability. Financial stability has been Moscow’s sore point over the past year as the Russian economy has slipped into recession, while the country has lost access to global capital markets, due to Western sanctions, and has had to drain billions of dollars from its reserves. India’s weak exports underscore the challenges faced by the south Asian economy that is struggling to gain momentum despite efforts by policy makers to accelerate growth

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 – 21st September 2015
- Industry Forecast Briefing, London – 24th September 2015

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

Telephone: +44 1732 740440

Email: mail@futurehorizons.com

[Download Future Horizons Full Events Calendar Here](#)

Industry Events

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MARK YOUR CALENDER FOR THE NEXT

INDUSTRY FORECAST BRIEFING

THURSDAY 24th September 2015

and

SILICON CHIP INDUSTRY WORKSHOP

MONDAY 21st September 2015

BOTH BEING HELD AT

HOLIDAY INN KENSINGTON FORUM, LONDON

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