FutureHorizons

The Global Semiconductor Industry Analysts

Future Horizons Newsletter

December 2013

Wishing You All A Very Merry Christmas And A Peaceful And Prosperous New Year

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Industry News By Company

Seoul Semiconductor On Bull Run

After surviving the severe oversupplies in the industry, Seoul Semiconductor remains the world's fifth-largest manufacturer of light-emitting diode (LED) solutions and is strengthening its bottom line.

It argued against another possible oversupply in the global LED lighting market next year, stating that the demand for LED bulbs is rising thanks to increased consumer preference for energy-saving LED bulbs and growing government subsidies for the eco-friendly solutions.

"The LED market was severely hit by oversupply during 2010 and 2012. But the market has seen balanced supply and demand this year. While Chinese companies are expanding facilities, still, the penetration rate of LED lighting in the entire lighting market was less than 1 percent. This means the market has a high growth potential," said the firm's CEO, Lee Jeong-hoon, in a recent meeting with investors

AMD Unveils 28nm Mobile x86 processors

At this week's APU13 Developer Conference, Advanced Micro Devices (AMD) promised to deliver significant performance and battery life improvement for mobile devices such as fanless tablets and ultrathin notebooks with the roll out of its 2014 mobile Accelerated Processing Unit (APU) product roadmap.

Two new 28nm mobile x86 processors using a new ARM-based security block were unveiled, including a 2W tablet SoC. The chips, shipping before July, will double the performance/watt of the company's prior notebook and tablet offerings, AMD said.

Dialog Semiconductor And Sengled Lighting Partner For Development Of Ledotron-Compliant Smart Lighting Solutions .

Dialog Semiconductor plc (FWB: DLG), a provider of highly integrated power management, AC/DC, solid state lighting and short-range wireless technologies, today announced a strategic collaboration with Sengled, a global leading provider of LED lighting solutions and Dialog's first partner for the commercialisation of Dialog's smarteXite(TM) platform. Based on fully configurable logic, smarteXite integrates the latest digital dimming standard - Ledotron(TM) - and enables a new generation of highly flexible and intelligent LED driver ICs for smart lighting applications.

The collaboration between Dialog and Sengled includes the exchange of R&D data, joint development of new product concepts and prototype bulbs, common system level tests and qualification processes for new smart lighting solutions. Sengled will create LED lighting solutions using ICs from the smarteXite platform.

Fairchild Semiconductor's 1200 V Field Stop Trench IGBTs Provide Faster Switching Performance With Improved Reliability .

SAN JOSE, Calif.--(BUSINESS WIRE)--December 04, 2013-- Fairchild Semiconductor, a leading global supplier of high performance power and mobile semiconductor solutions, introduces a series of 1200 V field stop trench IGBTs. Targeting hard-switching industrial applications such as solar inverters, uninterruptible power supplies (UPS), and welders, this new IGBT series will help power engineers achieve better efficiency and reliability in their designs.

This new 1200 V field stop IGBT series minimizes conduction losses by having a VCE(SAT) of 1.8 V, which is far lower than that of the previous fast-switching NPT IGBTs. These new devices have one of the lowest VCE(SAT) ratings available in the 1200 V fast-switching IGBT market. The switching losses are low with an E(OFF) value of under 30 uJ/A. All devices contain a co-packed diode optimized for fast switching.

"New, innovative power electronic technologies are required to help solar inverter manufacturers reduce cost, improve efficiency and improve reliability," MH Lee, Director, Industrial Power Systems at Fairchild. "Our 1200 V field stop trench IGBT series helps customers drive higher energy efficiencies and high reliability in their solar inverter designs, and helps manufacturers address government regulations and meet their end-customers demand for increased energy savings."

Fujitsu Semiconductor Introduces Innovative Methodology For Leading-Edge "Customized Soc" Design

Tokyo, Nov 19, 2013 - (JCN Newswire) - Fujitsu Semiconductor Limited today announced that it has developed a new design methodology that enables both the higher circuit density and the shorter development time, for advanced 28nm SoC (System on a Chip) devices. Incorporating the new methods can improve the circuit density by 33%(1), and reduce the time for final layout process to as short as one month. It will be integrated into the company's new Customized SoC Solutions, and will be available for the development of RTL-handoff SoCs for customers. Fujitsu will start accepting orders to develop SoCs using the new methodology in February 2014.

SoCs with the leading-edge technology, such as 28nm process, are required to have more and more functionality and performance, which drive the need for more circuits packed into the chip. Designing such SoCs is becoming increasingly complex and taking significantly longer development time, while addressing the power consumption is also becoming more challenging. In order to cope with such difficult SoC design, Fujitsu semiconductor has developed innovative design methods that enable higher density, shorter development time, and lower power consumption.

HCL Infosystems To Cease Manufacturing PCs

India's leading IT company HCL Infosystems has decided to exit PC manufacturing business. As part of a company-wide restructuring, HCL plans to phase off its manufacturing business over the next three years. The company said it aims to focus more on services and distribution verticals.

"We will be stopping manufacturing. My distribution today does lot of distribution of PCs of multiple brands. We will be in PC distribution and in after sales services but will not manufacture HCL branded products sometime in the future," HCL Infosystems CEO and managing director Harsh Chitale told PTI.

On specific timeline, he said the plan is underway but "manufacturing is not something that is keeping me awake, it's not part of HCL story now."

Bluetooth Smart Radio Offers Extended Battery Lifetime

Imec, Holst Centre and Wicentric have unleashed their integrated ultra-low power Bluetooth Smart radio solution that boasts up to five times lower than modern radios and a small memory footprint. Featuring Imec and Holst Centre's 2.4GHz ultra-low power radio and Wicentric's exactLE product line of Bluetooth Smart software, the radio solution is aimed at Internet of Things applications such as personal health monitoring systems and smart home devices.

Autonomous wireless sensor systems running on batteries or energy harvested in the environment can be used for personal health monitoring, smart homes, intelligent cars and for monitoring machines, buildings or the environment. However, practical applications for wireless sensor networks largely depend on their size, autonomy and power consumption.

Infineon Expands Its Lead Over Competitors in the Power Semiconductor Segment: Total Market Revenue is Approximately US Dollar 15 Billion; Infineon Has Maintained Its Leadership for Ten Years

Neubiberg, Germany – December 2, 2013 – Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) remained the world's leading supplier of power semiconductors – for the tenth time in a row. This was the result of a study by the North American market research institute IHS Inc. In an overall declining market Infineon held a market share of 11.8 percent compared with 12 percent in the previous year, the survey concludes. The company's number two competitor Toshiba had a market share of 7.1 percent, followed by Mitsubishi with 6.9 percent. It is notable that Infineon's lead over its second-place competitor increased from 3.8 to 4.7 percentage points in a year-on-year comparison. During the 2012 study period, the market volume for power semiconductors dropped by nearly 16 percent to US Dollar 15 billion.

Microchip Acquires Belgian Semiconductor Firm EqcoLogic

Microchip Technology Inc., a Chandler-based provider of microcontrollers, has acquired the Dutch company EqcoLogic, for an undisclosed price.

EqcoLogic, a fabless semiconductor company based in Brussels, Belgium, is an innovator in equalizer and coaxial transceiver products and technologies.

The acquisition will allow Microchip to add these products and technologies to its automotive business.

Terms of the deal were not disclosed

New Member Of The EiceDRIVER™ Family: 1EDI Compact Driver With Coreless Transformer Technology For Applications Up To 1200 V

Neubiberg, Germany – November 26, 2013 – At this year's SPS IPC Drives trade fair for electrical automation, Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) will present its new 1EDI EiceDRIVER™ Compact Single Channel Gate Driver for applications with isolation voltages of up to 1200 volts. The galvanically isolated driver components are based on the Coreless Transformer Technology developed by Infineon, which enables output currents of up to 6 amperes on separate output pins. The basic system includes UVLO (under voltage lockout) for IGBTs and MOFETs as well as an active shutdown in the event that the driver is not connected to the power supply. The 1EDI drivers are supplied in a compact DSO-8 housing and can be used at ambient temperatures of up to 125°C in applications such as industrial drives, inverters, welding equipment, induction cooking appliances and power supplies for servers or telecommunications.

Panasonic To Sell Three Japan Chip Factories To Israel's Towerjazz: Sources

TOKYO (Reuters) - Japan's Panasonic Corp <6752.T> will sell three domestic semiconductor factories to Israel's TowerJazz <TSEM.TA> as early as the current business year ending March, sources with direct knowledge of the matter said, bringing the embattled electronics giant closer to completing the overhaul of its loss-making businesses.

Panasonic is also in talks with another company to sell its five overseas chip plants, the sources said on Wednesday, declining to be identified because the information is not public yet.

Samsung To Invest US$50mn In Venezuelan Electronics Industry

Korean electronics firm Samsung will invest US$50mn under an agreement with the Venezuelan government to meet the country's growing demand for electronics and establish itself as an electronics exporter, according to a statement made by economic vice president Rafael Ramírez.

After nearly a year of negotiations, more than 400,000 products will be imported into the country between November and December. The first factory is expected to be installed in 2014 and is planned to be a major producer of tablets, cell phones and computers.

STMicroelectronics And Yogitech Partner To Develop Comprehensive Safety Package For Microcontrollers

STMicroelectronics, a global semiconductor leader serving customers across the spectrum of electronics applications, and Yogitech, a leader in providing functional safety solutions, have signed an agreement to create a comprehensive package that will simplify the development and certification of safety-critical applications based on STM32 microcontrollers.

ST and Yogitech have agreed to develop a safety manual and software test libraries as a simple, quick, and effective means of detecting and flagging potentially dangerous failures in STM32 designs using tailored development tools from IAR Systems. Directed at a market estimated at over €400 million in Europe alone, the initiative aims at allowing engineers to choose from over 500 ST microcontrollers to create innovative and safe industrial products for factory-automation applications.

STMicroelectronics' Microcontroller Powers Artificial-Intelligence Cars From Anki Drive

STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, announced that its STM32 microcontroller was selected by Anki, a robotics and artificial intelligence (AI) startup, for use in their first product – Anki Drive™, in which consumers can download an app on their compatible iOS devices to interact and race against intelligent robotic miniature race cars.

Each car in Anki Drive analyzes data from the race track 500 times per second. The performance and processing capacity of ST's STM32 microcontroller delivers the real-time responsiveness in the Anki Drive cars, which are equipped with optical sensors, wireless chips, motors, and over 20,000 lines of code. The ARM® Cortex™ M-based STM32 also provides excellent power efficiency giving Anki Drive users the perfect balance of functionality and battery life.

Toshiba Ships Ultra-Small CMOS Image Sensor For Automotive Camera Applications

Toshiba America Electronic Components, Inc. (TAEC)*, a committed leader that collaborates with technology companies to create breakthrough designs, today announces sample shipments of its TCM5126GBA, a VGA 1/4 inch CMOS image sensor for automotive camera applications. The device combines a small chip-scale package (CSP) with through silicon via (TSV) 1 technology for a 30 percent size reduction compared to equivalent products 2. The ultra-compact image sensor will drive smaller camera modules for rear viewing in parking assist systems, surround view systems and side view systems in new car models.

Pressure-Cooked Nanoparticles Enhance E-Vehicle Batteries

Researchers at the University of California, Riverside's Bourns College of Engineering have discovered a new process for improving lithium-ion batteries found in today's electric cars.

Today's electric car batteries take a long time to charge, and are big and bulky. Aiming to solve most of these problems, the engineers have redesigned the component materials of the battery – the cathode—in an environmentally friendly way.

Lithium iron phosphate (LiFePO4), one type of cathode, has been used in electric vehicles because of its low cost, low toxicity and thermal and chemical stability. However, its commercial potential is limited because it has poor electronic conductivity and lithium ions are not very mobile within it.

Magnetic Cellulose Gel Enables Acoustic Apps In Cars

Researchers from KTH Royal Institute of Technology have developed what they claim as the world's first magnetic cellulose membrane loudspeakers to the list of products that can be produced from wood. According to them, the flat, sonorous and environmentally-friendly speakers are made with a novel material derived from wood pulp. Unlike ordinary speakers, they require no heavy permanent magnets.

Richard Olsson, a KTH researcher in chemical sciences who supervised the doctoral research behind the magnetic cellulose gel, said the material may open the way for innovations in such areas as acoustic applications for automobiles.

Multi-Gas Sensor Transforms Smartphones Into Breathalysers

Sensirion has developed a multi-gas sensor for smartphones. The sensor platform will allow phones to act as alcohol breathalysers and monitor air quality, amongst other applications, as part of the next stage of smartphone evolution, the company said.

Sensirion plans to sell these sensors to smartphone makers. The company has working examples of multi-gas sensors and plans to ship samples to potential customers in the spring of 2014 with the aim of ramping production in 2015.

The multi-gas platform would be based on CMOS process technology using an array of miniature metal-oxide semiconductor (MOS) detector sites, said Moritz Lechner, co-CEO of Sensirion. As well as targeting specific gases the multi-site sensor will allow a process of profile matching to indicate the likely presence of other gases and scents.

Smart Card Payment Terminals Find Way To Emerging Markets

At this year's CARTES Secure Connexions event held near Paris, a number of firms have demonstrated smart card and mobile point-of-sale solutions (MPOS) in hope of securing a share of this emerging and potentially lucrative market.

The underlying message delivered by a vast majority of the exhibitors was of course their capability to secure data and payment transactions, and mobile payment terminals were definitely something everyone should keep an eye out for.

All established POS vendors had a mobile merchant version on display, often a mock-up device still under development or ready for commercialization sometime next year. But what's so special about MPOS when NFC-based mobile phone applications have already been demonstrated for direct smartphone-to-smartphone secure payment transactions?

Bluetooth Smart Floating Remote Temperature Sensor Makes It Easy To Accurately Monitor Air Or Water Temperature

Ultra low power (ULP) RF specialist Nordic Semiconductor ASA today announces that British startup, Blue Maestro, has specified a Nordic nRF51822 System-on-Chip (SoC) in each of its GBP £29 (US$50) 'Tempo' Bluetooth Smart (Bluetooth low energy) temperature sensors that allow consumers to accurately measure and monitor air or water temperature 24x7 anywhere in their home or business, from a smartphone.

In operation, the weather- and water-proof Tempo is takes full advantage of the embedded Nordic nRF51822 SoC high +4dB maximum output power to maximize operating range to up to 250-ft (75m) – including through walls and floors (which will, however, reduce the range depending on construction material) – while still achieving a one-year continuous use operating life from a pair of regular (and user-replaceable) AA batteries due to the class-leading ultra low power operating characteristics of the nRF51822.

MEMS Chip With 360-Degree View Aimed At Diagnostic Imaging

A microelectromechanical silicon chip developed by researchers from the A*STAR Institute of Microelectronics, Singapore, together with colleagues from the National University of Singapore, has presented itself as a feasible solution for in vivo diagnostics. According to them, the chip can rotate scanning laser beams by 360 degrees at high speed.

Scientists are widely investigating the MEMS used by the researchers in Singapore, with the aim of adding complex functionality to optical or mechanical applications. Typically, these systems are complex structures, such as movable parts or mirrors that are edged into a silicon chip. Their small size makes MEMS devices ideal for circumferential diagnostic imaging systems. The small scanning angles, however, limited earlier attempts to fabricate such devices. The difficulty arose from the inability to fully use standard MEMS-based actuators and their linear movements for rotational devices.

Composite Human-Computer Interface Targets Smart Devices

The pan-European initiative SMARCOS, which stands for Smart Composite Human-Computer Interfaces, has brought forth a technology that allows the interfaces of various smart devices to follow consumers' actions and react immediately to their needs. Coordinated by the VTT Technical Research Centre of Finland, SMARCOS focuses on developing technology based on internet sharing between devices, which allows the

interfaces and attributes of various digital devices to work seamlessly together in smart ecosystems.

The smart coaching service, for example, can use all the user's digital devices for motivating his/her behaviour towards the goals or for reminding medication. What is unique about the technology is the way it makes use of information on the actions and processes of several people in a single situation to guide the operation and functions of device interfaces.

New Transmitter Significantly Boosts Optical Fibre Capacity

A team of researchers at Ecole Polytechnique Federale de Lausanne, Switzerland (EPFL) has discovered a way to increase fibre optic capacity in existing networks by 10 times just by switching to a new kind of transmitter. Using sinc-shaped Nyquist pulses, information can be encoded on pulses that overlap in the time domain and use a minimum of spectral bandwidth, thus maximizing optical capacity.

Other groups have tried to produce Nyquist sinc pulses to minimize inter-symbol interference, but had to resort to complex signal generators. Camille Bres and Luc Thevenaz claim their spectral synthesis technique works better, plus is the only one that will be easy to implement for commercial optical transmitters.

Brussels Paves Way For Ukraine Gas Deal With Slovakia

The EU has unblocked a long-stalled gas deal to help Ukraine cut its dependence on Russia as Brussels mounts a last-ditch effort to persuade Kiev to sign a pact that would cement closer ties with Europe.

The deal would allow Ukraine to receive gas shipments from neighbouring Slovakia, potentially easing its reliance on Russia, the country's dominant supplier. It was poised for completion after the European Commission, the EU's executive arm, intervened to persuade Slovakia to drop longstanding objections, according to EU officials.

"In terms of content we have found a compromise, we struck a deal…which should be officially signed between Ukraine and Slovakia in the next few days," said a commission spokesperson in Brussels.

YotaPhone Will Be Sold Internationally Before The End Of December

According to TechCrunch, International sales of Russia's first smart phone YotaPhone are to commence before the end of December. Because of this, customers will be able to purchase the phone as a Christmas or New Years present.

The company presented Yotaphone in 2012. The device is equipped with two screens: one traditional screen with a resolution of 1280X720 pixels and a diagonal of 4.3 inches, and another black and white screen based on electronic paper technology. It consumes only a fraction of the phone's energy and keeps the image on the screen.

Siberian Innovator Develops Brand New Technology To Create Special Materials

Vortex Technologies Center (VTC), a Novosibirsk-based company in Siberia, has developed a vortex reactor which is said to be able to mix liquids in weightlessness, Russian news agency ITAR-TASS reported, citing a statement by VTC CEO Yuri Ramazanov.

In the state of weightlessness with its microgravity, any liquid takes the shape of a ball with a bubble inside, and no existing method enables its mixing. Applying vortex technology makes it possible, the developer said.

"We have 'tamed' the tornado and can now create one of any given power to mix materials," Mr. Ramazanov explained.

According to the CEO, the new invention not only opens new horizons in long-range space missions but also paves the way for the development of new materials with unique properties.

Russo-Finnish Thin-Film Technology Lab Opened In St. Petersburg

A joint lab between Finland's Beneq Oy, co-owned by Russia's Rusnano, and the LETI St. Petersburg State University of Electrical Engineering opened last Friday in St. Petersburg, Spbit.su reported.

The lab will reportedly focus on research on and testing of industrial applications of what is known as the atomic layer deposition (ALD) technology. The overall goal is the nationwide introduction of thin-film technologies in Russian industry.

ALD is said to be an advanced nanotechnology widely applicable across sectors, including new coatings, glass-making for 'smart' residential buildings and spacecraft windows, flexible electronic components, or 'smart clothing.'

The setup of the laboratory is expected to help dramatically increase the Russian potential to develop new domestic products and industrial solutions, and also commercialize them into international markets.

Russian Phone Maker Yota Bets on Two Screens

MOSCOW—If Russian phone maker Yota Devices has its way, the mobile revolution will be televised—on two screens at once.

The startup is launching a dual-screen smartphone Wednesday at an event in Moscow's Gorky Park with the hope that it will change the way people view mobile technology by allowing information streaming without the usual constraints of limited battery life.

Called the YotaPhone, the device pairs a traditional LCD color touch-screen on one side with a black-and-white, electronic-paper display on the other, allowing users to continuously view data in real time without having to constantly wake up their phones and drain their batteries.

Mail.ru Set To take On Yahoo And Google

American email service providers Google, Microsoft, and Yahoo will soon face competition from Russia, as Mail.Ru Group sets its sights on cracking the international market.

The new service, My.com, will offer several applications for communication and entertainment. This spinoff of mail.ru will be headquartered in Silicon Valley, where they are preparing to launch three products: myMail, myChat and myGames.

The first product is a mail application with an intuitive interface for iOS and Android to support all popular services, including Gmail, Yahoo, and others services The application also gives the user the flexibility to customize push-notifications for those email services that are not supported by the technology.

World Economic Round Up

According to the Organization for Economic Cooperation and Development economic growth is set to pick up in the euro zone, China and the U.K., while remaining sluggish in India, Brazil and Russia. The organization's leading indicators suggest that global economic growth is likely to pick up in the months to come, easing concerns that a continued slowdown in China and other developing economies could offset modest pickups in developed economies

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 2014

Future Horizons Events

- Silicon Chip Industry Training Seminar – London – 17th March 2014
- Industry Forecast Briefing, London – 21st January 2014
- International Electronics Forum – 8-10th October

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

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Industry Events

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MARK YOUR CALENDER FOR THE NEXT
INDUSTRY FORECAST BRIEFING
TUESDAY 21st January 2014
AND
SILICON CHIP INDUSTRY WORKSHOP
MONDAY 17th March 2014
BOTH BEING HELD AT
NH HARRINGTON HALL HOTEL, LONDON
AND
INTERNATIONAL ELECTRONICS FORUM
8-10th OCTOBER 2014
Venue TBA

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