FutureHorizons

The Global Semiconductor Industry Analysts

Future Horizons Newsletter

August & September 2014

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Industry News By Company

Shift From 3G To 4G Devices Hits Arm Royalties

Arm‘s royalties grew only 2 per cent in the second quarter in dollar terms, as the Cambridge-based chip designer blamed sluggish demand for smartphones on mobile operators moving to sell off older 3G handsets before they push new 4G devices.

The company on Tuesday reported rising revenues and profits, helping it meet analysts’ expectations, despite a continued slowdown in the high-end smartphone market that has driven its success.

CSR And Maestro Wireless Solutions Launch High Performance, Low Power And Small Form Factor GNSS Module

Hong Kong based Maestro Wireless Solutions, a leading manufacturer of location receivers, and CSR plc (LSE: CSR; NASDAQ: CSRE), a global provider of innovative silicon and software solutions for location-aware applications, announce the immediate availability of the A5100-A, a next-generation SiRFstarV™ Global Navigation Satellite Systems (GNSS) positioning module that combines high performance GPS and GLONASS receiver technology in a small 10 x 15 mm package. The A5100-A is ideal for a wide range of applications including wearable devices, cameras and automotive trackers.

The A5100-A is the first release within Maestro’s new line of GNSS receivers. It achieves unprecedented accuracy with quad-constellation support, up to 30 per cent faster Time-To-First-Fix (TTFF), and up to 20 per cent lower power consumption using CSR’s TricklePowerTM and Push-to-Fix (PtF) modes. The module also accelerates customer time to market and reduces development risks by integrating a number of features including, TCXO, SAW filter, RTC, antenna control mechanism, and flash memory for future-proof upgrades, as well as, offering a drop-in replacement capability for Maestro’s previous SiRFstar4 generation modules. The castellated edge form factor also enables simpler manufacturing and reduces assembly cost.

Dialog Semiconductor And Energous Collaborate On Wire-Free Charging Technology

Dialog Semiconductor plc. (DLGNF.PK,DLGS: Quote), a German manufacturer of semiconductor-based products, announced that it has agreed to a joint collaboration with Energous Corp. (WATT: Quote), the developer of WattUp, a disruptive wire-free charging technology for electronic devices that provides power at a distance with complete mobility under full software control.

Dialog and Energous will develop reference designs to engage customers and further evaluate the market for wire-free power.

Freescale Announces New Industrial Accelerometer As Company Ships Its Two-Billionth Sensor

Freescale Semiconductor (NYSE: FSL) today celebrated the recent shipment of its two-billionth sensor by launching a new, high-bandwidth 3-axis analog accelerometer engineered to detect ultra-high frequency motion and vibration in industrial motors and equipment. Building on its longtime strength in automotive sensors, Freescale has experienced strong market acceptance across the breadth of its sensors portfolio, including its increasingly popular devices for the growing industrial and medical markets. Customers have incorporated Freescale sensors in more than 150 unique sensing applications each year for the last five years.

Freescale's new FXLN83xxQ accelerometer underscores the company's industrial sensing momentum. Designed to capture acceleration information often missed by less accurate sensors commonly deployed in consumer products such as smartphones and exercise activity monitors, the new device enables intelligent algorithms to better perform fault prognostication for predictive maintenance and condition monitoring applications.

Fujitsu Semiconductor And ON Semiconductor Announce Strategic Partnership

YOKOHAMA, Japan & PHOENIX, Jul 31, 2014 (BUSINESS WIRE) -- Fujitsu Semiconductor Limited and ON Semiconductor (Nasdaq: ONNN) today announced that they have entered into a foundry services agreement. Under the terms of this agreement, Fujitsu will manufacture wafers for ON Semiconductor at its 8-inch front-end semiconductor wafer fabrication facility located in Aizu-Wakamatsu, Japan. Initial production of wafers is expected to begin within a year from today, and ON Semiconductor will have the opportunity to access additional capacity in the Aizu-Wakamatsu fab in the future.

To build a stronger partnership, the two companies have also entered into a definitive agreement under which ON Semiconductor will obtain a 10 percent ownership interest in a newly formed subsidiary of Fujitsu Semiconductor that will include Fujitsu's 8-inch Aizu-Wakamatsu fab. The consideration to be paid by ON Semiconductor for this minority interest will be ¥700 million (approximately $7 million). The transaction is expected to close during the fourth quarter of 2014 or in early 2015, subject to certain regulatory approvals and other closing conditions.

IBM Builds Network Of Neurons, Synapses Into 28nm Chip

IBM has built a chip that integrates brain-like circuitry composed of 1 million artificial neurons (brain-like cells) and 256 million synapses (storage cells) for the Defense Advanced Research Project Agency's (DARPA's) Systems of Neuromorphic Adaptive Plastic Scalable Electronics (SyNAPSE) program.

"When the SyNAPSE project was launched six years ago, many people thought it was impossible," Dharmendra Modha, an IBM fellow and chief scientist of brain-inspired Computing at IBM Research, told EE Times. "But today we have proven that it is possible, and we are working towards making it a commercial reality in the future."

Microchip Partners With CSR To Offer Easy Access To Bluetooth® Smart Technology

CSR plc (LSE: CSR; NASDAQ: CSRE) today announces that Microchip Technology Inc. has launched its new Bluetooth® Smart module based on the CSR1012™ solution. Microchip is a leading provider of microcontroller, mixed-signal, analog and Flash-IP solutions and has developed the BLE RN4020 module, an easy and complete turnkey solution, which takes CSR's industry proven and highly flexible Bluetooth Smart ICs to a wider range of customers.

The FCC and ETSI compliant module gives developers access to CSR's market-leading Bluetooth Smart technology. The module is supported by Microchip's MPLAB® X Integrated Development Environment, which provides developers with access to a large library of example Bluetooth Smart development code. This eases and accelerates prototype production and enables developers to get their products to market quicker.

Microchip chose CSR as a Bluetooth Smart chip supplier due to CSR's strong reputation for Bluetooth technology and because the two companies share an established history of supporting customers through to the end of a product's lifecycle.

ON Semiconductor Completes Acquisition Of Aptina Imaging

ON Semiconductor today announced the completion of its acquisition of Aptina Imaging. The total consideration of approximately $400 million in cash for the acquisition of Aptina Imaging was funded by cash on the balance sheet and ON Semiconductor's existing revolving line of credit.

"With a broad portfolio of products and industry-leading technological capabilities, ON Semiconductor is well positioned to provide the most competitive imaging solutions for a broad range of applications," said Keith Jackson, president and CEO of ON Semiconductor. "The acquisition of Aptina Imaging is a step towards our stated strategic goal of expanding our presence in the automotive, industrial and smartphone end-markets. I am pleased to welcome the employees of Aptina Imaging to ON Semiconductor and I look forward to the opportunities that this transaction creates for our customers, investors and employees."

Panasonic Offers Pure Wireless Sound With Launch Of Aptx® Enabled Tvs

CSR plc (LSE: CSR; NASDAQ: CSRE) today announces that its aptX® audio codec has been chosen by Panasonic to be integrated into a number of products in its Viera digital TV range. The technology will allow consumers to stream music wirelessly, using Bluetooth®, from their TVs to speakers or soundbars, while still achieving CD-like audio quality.

Panasonic is one of the first manufacturers to launch digital televisions with aptX integrated. Adoption of the aptX technology continues to grow rapidly with more than 250 manufacturers now using aptX in a diverse range of products including smartphones, tablets, automotive infotainment systems, headphones, speakers and soundbars.

Imagination Delivers Tiny GPU For Iot, Android Wear

Imagination Technologies recently unveiled a new Android-compatible graphics core for wearable devices and the Internet of Things, the PowerVR Series5XE GX5300. The company said it is the tiniest chip in the industry with a size of 0.55mm2, making it ideal for low-cost, area-constrained applications.

"There have been several issues facing wide adoption of IoT and wearables devices," Alexandru Voica wrote in a company blog post. "This is because most of these devices are currently powered by sub-optimal solutions derived from smartphone chips which cause power consumption problems."

INSIDE Secure And Gemalto Sign A New Single-Wire-Protocol (SWP) License Agreement

Aix-en-Provence, France, July 29, 2014 – INSIDE Secure (Euronext: INSD), a leader in embedded security solutions for mobile and connected devices, today announced a new Single Wire Protocol (SWP) license agreement with Gemalto. The agreement is an extension of the 2008 SWP and HCI (Host Controller Interface) cross-license agreement and provides a standard interface for the INSIDE VaultSEcure Secure Element product line. This new license reinforces GEMALTO SWP as the de facto standard for Secure Element connection to Smartphone application processors.

INSIDE Secure and GEMALTO have been instrumental in standardizing both SWP and HCI for Near Field Commutations (NFC) technology, which was at the center of the original agreement between the two companies.

“This renewal of our agreement with INSIDE Secure will continue to support the momentum of growing NFC ecosystems to benefit service providers and consumers alike,” said Frédéric Vasnier, Executive Vice President Embedded Software & Productsat Gemalto.

Plessey Expands Its Distribution Network In Europe With Solid State

Supplies partnership for the UK and Ireland

Plymouth, ENGLAND 18th August, 2014 – Plessey announced today that it has entered into a distribution agreement with Solid State Supplies Ltd., an electronics distributor and provider of advanced complete solutions headquartered in Redditch, UK, to expand its European network with coverage in the UK and Ireland market for itsGaN-on-Si LED products.

John Macmichael, Managing Director of Solid State Supplies said; “Plessey’s GaN-on-Si technology looks set to cause major disruption in the LED lighting market. Our in-house lighting division is already geared up to supportlighting and luminaire designers with these new LEDs. We look forward to a very bright future in partnership with Plessey.”

ST, NIF Team Up To Raise Innovation In Rural India

STMicroelectronics collaborated with India's National Innovation Foundation (NIF) under the aegis of the Department of Science and Technology to support technological innovation in remote areas of the country and create a marketplace for the result of that innovation.

The close relationship with ST will help NIF and other network members convert technological inventions conceived within the "Honey Bee" network of like-minded individuals, innovators, farmers, scholars, academicians, policy makers, entrepreneurs, and NGOs, into the mainstream business. Honey Bee collects ideas from all over India through a drive called ShodhYatra (search trip) and brings rural innovation to light to help mankind, besides mobilising ideas of technology students from hundreds of colleges across India through techpedia.in.

TSMC Patent Published On Compound Device With GaN Structures

Solves control issues surrounding plural enhanced mode or depletion mode transistors.

Taiwanese semiconductor foundry TSMC has just published a new patent for making a compound semiconductor device with GaN structures. It is listed under United States Patent application 20140203288.

GaN is used to form various integrated circuit devices including high power FETs, MISFETs, high frequency transistors, and HEMTs. In a conventional semiconductor device, gate structures are formed using fluoride-based plasma treatment techniques; however, such techniques suffer control issues for a device having plural enhanced mode (E-mode) or depletion mode (D-mode) transistors or devices on the respective circuit. Therefore, a compound semiconductor gate structure and method of forming such a gate structure are needed

XMOS Adds Bosch, Huawei And Xilinx As Strategic Investors To Complete $26M Investment Round

Bristol, 21 July 2014 – XMOS Ltd. the fabless semiconductor company and leader in intelligent multicore microcontrollers, has today announced the completion of a $26.2m Series-D investment round, adding Robert Bosch Venture Capital GmbH of Germany, Huawei Technologies, a leading global information and communications technology (ICT) solutions provider and Xilinx Inc. from the USA as strategic investors in the company, alongside existing financial investors that include: Amadeus Capital Partners, DFJ Esprit, and Foundation Capital. XMOS will use the new funding to extend its market leadership in multicore technology for embedded applications by expanding customer support and accelerating new product development.

“This funding from major industry players alongside leading technology investors represents a resounding validation for our multicore technology and highlights the growing strength and importance of our business,” said Nigel Toon, CEO at XMOS. “Each of these important new partners will bring major strategic value alongside their

significant financial investment in the business. This will help us in our mission to build XMOS into a major fabless semiconductor company."

Hi-Tech Boost For Swindon's UTC As Dialog Semiconductor Pledges £80,000

Integrated circuit pioneer Dialog Semiconductor has donated £80,000 to UTC Swindon as the college gears up to welcome its first students in September.

Dialog, which has an engineering support office on Swindon's Delta office park, is splitting its donation equally between investment in specialist equipment for the UTC and funding to support its first academic year.

The firm is the latest in a line of local businesses supporting the UTC (University Technical College), which will have 600 students aged 14 to 19 who aspire to a career in engineering. The college will teach skills across all parts of the engineering industries, providing Swindon firms with a pool of skilled labour at a time when many struggle to fill vacancies.

Touchscreen To Feature Display With Texture

Electronic devices may soon introduce touchscreens with texture, allowing the creation of Braille reading for the visually impaired.

Researchers from Japanese touchscreen maker NLT Technologies disclosed how they were able to use a variant of electrovibration on a 4.1in wide touchscreen prototype to create localised friction (at multiple touch-points) and thus cause the perception of texture.

Based on what the researchers call a beat phenomenon of voltage waveforms, the company demonstrated regional electrostatic stimulation by using a matrix of transparent Indium Tin Oxide (ITO) electrodes over the display's glass substrate, covered by an acrylic insulator layer.

Smartwatch Companies Taking Aim At Younger Set

NEW YORK – With smartwatches drawing lukewarm interest from most consumers, some technology companies are trying a fresh approach: market them to kids.

LG Electronics, VTech Holdings and Filip Technologies have all developed high-tech watches for children, undaunted by the slow progress the industry has made in pitching the devices to adults. They're betting that kids may be the ideal market for the gadgets, which can either keep tykes entertained or track their whereabouts. The watches can even teach a more old-fashioned skill: how to tell time.

While only about one in five grown-ups has interest in buying a smartwatch, kids' models might be an easier sell, said Benjamin Arnold, an analyst at NPD Group Inc. They're typically cheaper, for one. And versions that can track children have obvious appeal to parents, who live in fear of losing small kids at a park or shopping mall. At the same time, the technology has drawn criticism for adding yet another electronic distraction.

India Prepares For 'Big Bang' In Smartphone Use

John Sculley knows a thing or two about the mobile industry, having launched a string of wireless ventures since stepping down as Apple's chief executive in 1993. In his view, the sector's next big thing is clear: smartphones, in India."I've been in and around mobile for many years, and this is the most exciting opportunity globally," he says. "India is growing incredibly rapidly with smartphones…it is going to be huge."

In April, Mr Sculley's newest business, Obi Mobiles, joined a rush of handset manufacturers either launching or rapidly expanding their operations in Asia's third-largest economy, hoping to capitalise on a market that analysts expect will double in size this year.

Self-Cooling Solar Cell Lasts Longer

Scientists have recently discovered how to keep solar cells cool even in the heat of the noonday sun, making these devices highly efficient and longer lasting.

By adding a specially patterned layer of silica glass to the surface of ordinary solar cells, a team of researchers led by Shanhui Fan, an electrical engineering professor at Stanford University in California, has found a way to let solar cells cool themselves by shepherding away unwanted thermal radiation. The researchers describe their innovative design in the premiere issue of The Optical Society's (OSA) new open-access journal Optica.

Imec Demonstrates 28gb/S Photonics Platform

Imec has reached some key development milestones for its silicon photonics platform (iSiPP25G) by extending the performance towards 28Gb/s and beyond.

At wafer-scale, it has demonstrated a ring-based wavelength division multiplexing (WDM) filter with a thermo-optic tuning efficiency better than 1nm/mW per channel; a thermally tunable 28Gb/s ring modulator with an efficiency of 260pm/mW; and a high-speed germanium photodetector achieving an average responsitivity of 0.85A/W, and opto-electrical bandwidth of 50GHz with dark currents at -1.0V below 50nA.

Silicon photonics holds the promise of converging electronics and photonics, but a key component still missing within such a platform is a low-cost high-performance laser. IMEC is considering adding III-V lasers to the platform in the future by hybrid approaches such as flip-chip bonding. It is also exploring adding monolithically integrated lasers using InP-nanowires lasers and colloidal quantum dots.

Sheets Of Stapled Semiconductors Could Make Ultra Thin Solar Cells

Researchers at the Vienna University of Technology have managed to create a semiconductor structure consisting of two ultra-thin layers, which appears to be suited for photovoltaic energy conversion.

Several months ago, Marco Furchi, Thomas Mueller, and Andreas Pospischil produced an ultra-thin layer of the photoactive crystal tungsten diselenide. Now, they have combined this semiconductor with another layer made of molybdenum disulphide,

creating a material that shows potential for a new kind of solar cell technology, they say, that is extremely thin, semi-transparent, and flexible.

Tungsten diselenide is a semiconductor which consists of three atomic layers. One layer of tungsten is sandwiched between two layers of selenium atoms.

Screen Corrects Vision Like Reading Glasses

A computer screen that corrects itself to aid visually impaired users may soon become a reality. Computer and vision scientists at UC Berkeley are keen on making this technology available to consumers.

The researchers are developing computer algorithms to compensate for an individual's visual impairment, and creating vision-correcting displays that enable users to see text and images clearly without wearing eyeglasses or contact lenses. The technology could potentially help hundreds of millions of people who currently need corrective lenses to use their smartphones, tablets, and computers. One common problem, for example, is presbyopia, a type of farsightedness in which the ability to focus on nearby objects is gradually diminished as the ageing eyes' lenses lose elasticity

BMW App Connects Smartwatch To The Car

BMW has recently unveiled a connectivity solution for the car that allows drivers to control their smart home from the car and a smartwatch app that connects the driver to the vehicle, offering a number of remote control functions. The app is called iRemote and runs on a Samsung Gear S smartwatch.

It enables drivers to access the most essential information about his vehicle in real-time. In the case of the BMW's e-car i3, the watch displays the remaining driving range, the charging status of the battery and, while charging, the remaining charging time until the battery is full. Sub menus provide data about the vehicle status: doors, windows, boot lid and the likes. Drivers also can pre-set the air conditioning, always a critical issue for electric cars, or access the navigation data. The app also supports intermodal route planning which means that in case of congested city traffic it suggests alternatives to using the car, including navigation with public transportation.

Heads Up! Russian Developers Invent 3D Display For Safe Driving

Two cousins have created a head-up navigation application called HUDWAY. The application, which can be downloaded to smartphones, projects the road ahead onto the windshield, improving road safety when visibility is poor.

HUDWAY is best used at night, in rain, fog or heavy snow. Source: Press Photo

A pair of Russian developers has created an application that projects navigation information onto the inside of a car windshield, improving road safety in conditions of poor visibility.

The application, called HUDWAY, was launched in Russia in August 2013, with its international version following two months later. It is already available in English, German, Polish, and Chinese.

The co-founder and CEO of the project is Ivan Klabukov, who is developing the startup together with his cousin, who three years ago became interested in professional car rallies.

Ukrainian Start-Up Secures Funding From Russian VC Fund

Life.SREDA, a Moscow-based venture capital firm focusing on mobile and online fintech start-ups, is to invest $1.5m in Settle, a mobile payment service developed by Kiev-based start-up Advice Wallet, reported East-West Digital News, the first all English-language online resource dedicated to Russian digital industries.

Combining mobile payments and a loyalty scheme in one app, Settle makes it possible to both order and then pay your bill at a restaurant or café through a smartphone. Users register via a social network and link their bank card to the app. The app displays the menu and allows clients to divide up a bill between friends, carry out P2P transactions and receive offers from establishments.

Establishments can join the program for free, receiving a special tablet with software that tracks the activity of clients and delivers their bill. Settle takes a commission on every bill.

Siberians Offer New IC Manufacturing Technology

OOO Termoplasty, a spin-out company of Tomsk State University of Control Systems and Radio Electronics (TUSUR) in Siberia, has teamed up with local industrial partners to develop a next gen approach to making multilayer integrated circuits (ICs), using polymer matrix and modified nanopowder based compositions, the TUSUR website announced.

The overall goal is to ensure the full substitution of currently imported materials for domestic products in IC manufacture, and also to improve the characteristics of the products by reducing electrical resistance and increasing heat conductivity, two of the parameters that are considered fundamental in microelectronics and optical engineering and a focus for scientific research all over the world.

New Technology Surrounds Students With Knowledge

EnterIdeas, a Novosibirsk-based start-up, wants to change the market for interactive educational technologies. The firm, which was a finalist in the 2014 Russian Startup Rating 2014, produces 3-D software that uses spherical image technology to project content around the user. The content is used on fulldome immersive dome-based video projection systems.

When EnterIdeas was founded in April 2013, there was only one company occupying Russia's fulldome market – SPACEGATE Nova, which produces content for planetariums. The kinds of films produced by SPACEGATE Nova and shown in planetariums can cost as much as $50,000. The films for the mass-consumer market segment targeted by EnterIdeas, however, can be made for as little as $10,000 and, thanks to compression technology, can be offered to end users for $7.

Long-Overdue Thin-Film Solar Site Launched In Chuvashia

The Hevel Solar thin-film solar module production site, the long-awaited joint project between Renova, a large group of Russian companies, and Rusnano, Russia’s nanotech giant, finally kicked off in Chuvashia, in the mid-Volga area, Regnum reported.

The partners are said to have invested more than $550m in this factory in the city of Novocheboksarsk. Rusnano owns 49% of Hevel Solar, while Renova holds 51%. The site has helped create more than 200 local jobs.

World Economic Round Up

The escalating U.S. sanctions battle against Russia appears to be taking a toll on trade with the country, with June data showing both sides of the ledger falling as Washington ratcheted up the financial pressure on Moscow. The Russian economy was stagnating before the Ukrainian crisis. But the conflict has exacerbated the country's problems and now led to the imposition of EU sector-wide sanctions in finance, defence equipment and oil-related technologies. Companies are still working out the impact, for example in establishing what dual-use machines are covered by the defence equipment ban. Economists are now forecasting Germany's GDP growth could be as low as 1.5 per cent for 2014, compared with estimates of 2 percent at the start of the year.

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 November 2014
- Industry Forecast Briefing, London – 20 January 2015

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

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Download Future Horizons Full Events Calendar Here

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MARK YOUR CALENDER FOR THE NEXT

SILICON CHIP INDUSTRY WORKSHOP
MONDAY 17th November 2014
AND
INDUSTRY FORECAST BRIEFING
TUESDAY 20th January 2015
Venue In London

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