FutureHorizons
The Global Semiconductor Industry Analysts

Future Horizons Newsletter

June 2015

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Industry News By Company

ARM CEO Calls On Engineers To Touch Developing Markets

The world is calling out for change, especially in developing markets. And engineers are adequately equipped to make an appropriate response. This is what the CEO of ARM believes. More than being masterful in the art of problem solving, engineers are also humans.

It is inspiring to see today's companies deliver immense benefits with their technologies, building a more efficient digital economy that connects people in highly imaginative ways. Now it's time to take these technological foundations and apply them to more basic services such as health, education and safety. Today's technology building blocks can enable new products and services in parts of the world which have not yet been able to fully capitalize on the power of the silicon chip.

Chipmaker Avago To Buy Broadcom In $37bn Deal

A wave of consolidation sweeping across the chip industry has produced the biggest acquisition seen in the technology world since the late-1990s dotcom bubble, as Singapore-based Avago agreed on Thursday to pay $37bn in cash and stock for US rival Broadcom.

The combination is the most dramatic evidence yet of the pressures building up in large parts of the tech sector as once high-growth companies have been forced to face the realities of a maturing industry. The rise of companies such as Apple and Samsung has also put a squeeze on many parts of the tech supply chain, forcing component makers to race for greater scale to survive.

Avago has already emerged as one of the sector's most acquisitive companies, striking three deals in the past year alone. It said it would pay $17bn in cash and about $20bn in stock to acquire California-based Broadcom, which makes communication chips used in data centres as well as in mobile devices made by companies including Apple and Samsung

Avago Technologies Adds Automotive-Grade Dual-Channel Optocouplers For Bi-Directional Digital Communications

Avago Technologies (NASDAQ: AVGO), a leading supplier of analog interface components for wireless, wireline, storage and industrial applications, today announced a new family of dual-channel R2Coupler® optocoupler devices, the ACFL-521xT and ACFL-621xT, designed for automotive applications with AEC-Q100 Grade 1 qualification. The ACFL-521xT is optimized for low power systems supporting data rates up to 1 MBd, and the ACFL-621xT is optimized for high speed systems supporting data rates up to 15 MBd.

Expanding upon previous generation R2Coupler ACPL-KxxT devices, the ACFL-521xT and ACFL-621xT devices have two optocoupler channels internally aligned 180 degrees of each other, thereby providing optimum chip pin-out configuration for bi-directional Tx/Rx data communication design and board layout. Furthermore, the two channels are

electrically independent and galvanically isolated, providing an ideal isolated bi-directional low power communication interface.

IBM Bares EDA Tools For Rent

IBM has moved its electronic design automation (EDA) suite of chip-designing tools to the cloud, making its proprietary EDA tools accessible to chip designers for half the price of licensing tools compared with other providers.

Using its own SoftLayer cloud infrastructure to securely store its tools, IBM is now offering its EDA toolkit through the SiCAD Inc. (Cupertino, Calif.) portal, a silicon design platform provider of cloud-based EDA design flows.

Infineon Launches New High-Power, Light-Triggered Thyristor With Industry's First Integrated Protection Features

Munich, Germany – May 19, 2015 – Infineon Technologies Bipolar GmbH & Co. KG has further extended its family of bipolar semiconductors with an optically triggered thyristor that can improve the reliability, lower the system cost and simplify the design of ultra-high-power applications. Infineon's new 6-inch thyristor incorporates reliable optical triggering, eliminating the requirement for an external electrical trigger circuit. In addition, on-board safety features such as overvoltage protection, dv/dt protection and protection against forward voltage transients during recovery time further reduce component count and design complexity.

Thyristors are the technology of choice for controlling ultra-high currents and voltages because they deliver better performance than IGBT-based voltage source converters (VSCs) in terms of on-state losses and symmetric blocking capability. The introduction of a highly integrated light-triggered thyristor that, for the first time, integrates FRP (forward recovery protection) is in line with the Infineon strategy to deliver system solutions that minimize design overheads, improve reliability and drive down bill of material (BoM) costs.

Intel Agrees To Buy Altera For $16.7 Billion

Intel Corp. agreed to buy Altera Corp. for roughly $16.7 billion in cash, a long-discussed deal seen helping Intel defend a crucial business.

Altera stockholders would receive about $54 a share, around the price the company rejected in April during an earlier round of talks.

The price is roughly 56% higher than the one at which Altera traded before The Wall Street Journal first reported talks between the companies on March 27. Altera's shares closed Friday at $48.85.

In premarket trading, Intel shares added 0.6% to $34.68, while Altera rose 4.8% to $51.20.

NXP Sells RF Power Unit To China Firm

In a bid to secure approval for its acquisition of Freescale Semiconductor Ltd, NXP Semiconductors N.V. announced the sale of its RF Power business to Chinese state-owned investment company Jianguang Asset Management Co. Ltd (JAC Capital) for $1.8 billion.

The NXP RF Power business is one of the market leaders in high performance RF power amplifiers primarily focused on the cellular base station market, but with potential future growth applications in the areas of industrial lighting, next generation cooking and automotive electronic ignition systems.

RF Industries Acquires Rel-Tech Electronics, Inc.

SAN DIEGO, June 5, 2015 /PRNewswire/ -- RF INDUSTRIES, LTD. RFIL, +2.01% announced today that it has completed the acquisition of Rel-Tech Electronics, Inc. (Rel-Tech), a Milford, Connecticut-based manufacturer of custom cable assemblies and wiring harnesses, for a total purchase price of up to $3,100,000. The acquisition of all outstanding shares of Rel-Tech consists of $2,100,000 in cash, 50,467 shares of RFI's common stock valued at $200,000 and, if certain financial targets are met over a three-year period, cash earn-out payments of up to $800,000. Privately-owned Rel-Tech had revenues of approximately $7.7 million for the calendar year 2014.

One of the two original founders, Ralph Palumbo, will remain as President of Rel-Tech while Wilfred LeBlanc has agreed to a three-year consulting agreement with Rel-Tech. Rel-Tech has also entered into employment agreements to retain the five key managers.

Silicon Labs Introduces Industry's Most Flexible Dual-Mode Bluetooth Module Solution

AUSTIN, Texas, Jun 08, 2015 (BUSINESS WIRE) -- Silicon Labs SLAB, -1.77% a leading provider of wireless connectivity solutions for the Internet of Things (IoT), today unveiled a dual-mode Bluetooth® Smart Ready module solution that gives embedded developers unparalleled flexibility to integrate both Bluetooth Smart and Bluetooth Basic Rate/Enhanced Data Rate (BR/EDR) wireless technologies while minimizing design time, cost and complexity. The new Bluetooth Smart Ready BT121 module from Bluegiga, a Silicon Labs company, provides a pre-certified, fully integrated, high-performance solution that includes the Bluetooth radio, microcontroller (MCU) and on-board Bluetooth software stack supported by Silicon Labs' complimentary Bluetooth Smart Ready software development kit (SDK) and easy-to-use BGScript™ scripting language.

Taiwan Semiconductor Confirms Release Of 7nm Processors By 2017

Amid the hustle and bustle of winning chip orders for Apple Inc.'s (NASDAQ:AAPL) upcoming A9 process, chip giant Taiwan Semiconductor Mfg. Co. Ltd. (ADR) (NYSE:TSM) has revealed it will begin production of its thinner 7nm process technology in 2017. The news was first spotted by Patently Apple, which stated that the first customer to use TSMC's integrated circuits will be US-based Xilinx.

The company has reportedly prepared most of the key elements for the new manufacturing process after introducing its 7nm fabrication technology early last year. In that time, the chip maker has collaborated with numerous major customers that helps ensure its fabrications are client-centric.

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Industry News & Trends

Electronics Manufacturing Moves To The Cloud

"We focus on what we can offer that nobody else can," explains Firstronic CEO John Sammut. "Our differentiators have become better shop floor controls, advanced technology, speed-to-market and flexibility."

Based in Grand Rapids, Michigan, Firstronic makes electronic components for automotive, industrial and medical industry customers. From the LED lighting in your car to automated utility meters, the company develops solutions for dozens of OEMs. Building a company designed to compete on speed and customer collaboration, rather than purely on cost, required a different approach to automation.

The Cloud as a Catalyst for Growth

Catalyzed by the need to shift off a legacy SAP solution, and preparing the company for faster growth, Firstronic looked to the cloud as an option both for shop floor automation and ERP. "Our value proposition for customers centers on quality, collaboration and our ability to respond quickly," Sammut continued. "We wanted technology that could support our business priorities."

Bosch Unveils Video Camera-Based Emergency Brake System

Bosch has developed an emergency brake assistant that gets all necessary data exclusively from a stereo video camera. The system doesn't require the use of radar or lidar signals to support the findings of the systems' algorithms. Normally, such systems are based either on radar/lidar signals or a combination of radar and video input.

A solution that achieves a comparably high reliability than available multi-signal systems will make several driver assistance functions affordable for all vehicle classes, the company stated. For the system that meets safety level ASIL B in the ISO 26262 ranking, Bosch uses its latest model stereo video camera that according to the company is the smallest implementation of such a device in the market. The system is available; Land Rover offers the camera-based emergency assistance system in its latest Discovery Sport as standard. For the development, both companies worked closely together.

Stretchable Generator Harvests Mechanical Energy

A team of Korean researchers, led by Professor Keon Jae Lee of the Department of Materials Science and Engineering at the Korea Advanced Institute of Science and Technology (KASIT), has developed a nanogenerator, a hyper-stretchable, elastic-composite, energy-harvesting device.

Flexible electronics have come into the market and are enabling new technologies like flexible displays in mobile phone, wearable electronics and the Internet of Things (IoT). However, is the degree of flexibility enough for most applications? For many flexible devices, elasticity is a very important issue. For example, wearable/biomedical devices and electronic skins (e-skins) should stretch to conform to arbitrarily curved surfaces and

moving body parts such as joints, diaphragms and tendons. They must be able to withstand the repeated and prolonged mechanical stresses of stretching.

Wales' Goal Of Creating The World's First Compound Semiconductor Cluster Boosted With Recruit Of Leading US Academic

THE aim of turning Cardiff into a world-leading cluster for compound semiconductor technology (CS) has been boosted with the recruitment of an expert in the sector.

Professor Diana Huffaker, currently at the University of California, Los Angeles (UCLA) has been appointed Chair in Advanced Engineering and Materials to lead a new research laboratory at Cardiff University.

Her recruitment has been secured through the Welsh Government's £50m Sêr Cymru programme, which provides finance to bring world leading research with commercial potential and research teams to Wales.

Mercedes-Benz Offers Seamless Navigation Using Apple Watch

Daimler has announced the MB Companion App that promises an intelligent integration between Apple Watch and Mercedes-Benz vehicles. The app enables Mercedes-Benz costumers to search for directions on the Apple Watch or on iPhone.

The app provides walking directions to the car on the Apple Watch, driving directions on the vehicle navigation system and again walking directions on the wrist watch (as long as it is from Apple) from the car to the final destination.

The destination that the driver selects on Apple Watch is passed to Mercedes-Benz COMAND Online infotainment system as soon as the driver starts the vehicle. He then receives driving directions to his selected destination from Mercedes-Benz navigation; the company said it applies the rules for non-distracting applications. When the driver parks and leaves his car, Apple Watch gives him walking directions to the final destination making it the perfect guide for Last Mile Navigation.

Germans Develop Smart Garage For Self-Driving Cars

The key legal obstacles to self-driving cars are the dangers they present to passengers— even if a driver is ready to take over in the case of emergency. Researchers in Germany, however, have found usage cases where that legal hurdle can be surmounted and expect to be doing so by 2016.

That's how long it will take to equip one deck of a downtown parking garage with standardised electric charge outlets, and to finish the algorithms that can be burned into flash of drive-by-wire electric vehicles already on the road.

The work is being done at Forschungszentrum Informatik (FZI, Karlsruhe), a research institute where 22 engineers have been working towards what they call the "cognitive car" (CoCar) for several years. In fact, they entered the Defense Advanced Project Agency's (DARPA's) self-driving vehicle contest and made it to the finals, but their concentration since then has been on usage cases where no passengers need be present in the car as a stepping stone to fully autonomous vehicles.

Researchers Create Semiconductor Chip From Wood

The U.S. Department of Agriculture Forest Products Laboratory (FPL) in collaboration with researchers from the University of Wisconsin-Madison have created a semiconductor chip made almost entirely of wood. This paves the way for the development of a completely biodegradable chip in the future.

The researchers wanted to focus on alleviating the environmental burden of electronic devices. Makes sense since Globally in 2012, consumers threw away 48.9 million tons of electrical and electronic goods and that's expected to rise by a third by 2017. The top four countries disposing the most electrical waste are China, United States, United Kingdom and Qatar.

The new semiconductor chip is wood-substrate with the silicon substrate parts replaced with an environmentally friendly cellulose nanofibril (CNF), a flexible, biodegradable material made from wood. Because CNF is a bio-based material, it makes the chip more sustainable, bio-compatible and biodegradable. Currently most other polymers are petroleum-based polymers.

Xiaomi, China's New Phone Giant, Takes Aim At World

NEW DELHI—When Xiaomi Corp. launched a new smartphone here in April, there was an air of chaos. Employees were still stuffing gift bags that morning, and a few staffers from Beijing headquarters, pressed for time, arrived on tourist rather than business visas.

After Xiaomi Chief Executive Officer Lei Jun stepped onstage, his first time speaking publicly in English, he veered off script. His odd phrasing went viral in online videos of him repeatedly asking the crowd, "Are you OK?"

No matter. The Chinese smartphone seller's online offering of 40,000 phones sold out in 15 seconds. Hundreds lined up outside the launch venue, including 17-year-old Raghav Goyal, who drove seven hours to attend and said the Xiaomi phone was a much better value than its big-name rivals.

New Tools To Support Novice Developers Of Wireless Sensors

A new breed of developers with no background in MCU development or in wireless protocols is trying to strike a deal with semiconductor companies that supply the hardware/software building blocks for embedded wireless M2M and IoT apps. These developers are clear in their desire to take part in the design process for the Internet of Things and get their ideas to market immediately. Some of the companies running into this new breed include Silicon Labs, Texas Instruments and Freescale Semiconductor.

Inexperienced developers have always been there, demanding tools that are easier to use, Texas Instruments System Applications Manager Jarle Boe told EE Times. But recently, as the excitement about IoT and wireless sensors has grown, they have increased in number. "At TI-sponsored events on such topics in the past we would get 50 to 100 or so developers on average. Now, depending on the venue, we are seeing very many more than that. And many of the newcomers are inexperienced with hardware development on MCUs and want simpler and quicker ways to develop code."

Infineon Heads Three Electromobility Research Projects To Facilitate More Electric Vehicles On Europe's Roads

Munich, Germany and Brussels, Belgium – June 9, 2015 – The European Commission is launching three new research projects aimed at making electromobility cheaper, more efficient and more reliable in order to facilitate more environmentally-friendly vehicles on Europe's roads. Europe will be the site for the continued development and production of electric vehicles under these projects, which will run until 2018 and are headed by Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY). An international event will be held on June 9th and 10th in Brussels to kick-off the three research initiatives, with total funding of about Euro 67 million. 70 partners with a total of 120 researchers from 15 countries, and representatives of ECSEL Joint Undertaking, the European Union, the European Commission and the German Federal Ministry of Education and Research will participate.

East European News & Trends

New Technology For Bank Card Protection: Breakthrough Or Scheme Of The Century?

"A Russian scientist made a breakthrough": this is how many global media outlets have described the new quantum key protection technology for bank cards developed by Viktor Petrik. The scientist seemingly proposed a brilliant solution for the problem of data leakage. According to Petrik, the magnetic strip and the electronic chips are the weakest link in the bank card security chain. That's why he thinks it's necessary to get rid of these information carriers.

"We created a fundamentally new, absolutely safe kind of bank card," says Viktor Petrik, squeezing a small piece of white plastic in his hands. "In this object there are no magnetic strips or microchips and this card is absolutely fraud-proof." According to Petrik, the card cannot be hacked into or compromised "using easily accessible electronic means." However, some Russian scientists have expressed their doubts about the validity and resourcefulness of Petrik's invention.

Russian Developer Offers Global Firms Possibility To Spy On Their Employees

Software developer Infomaximum is going global with its employee-monitoring program CrocoTime. Already quite popular in Russia, CrocoTime is designed for big companies and is capable of monitoring up to 10,000 users simultaneously.

With 20,000 employees already under its watchful eye, CrocoTime is quite popular with some of Russia's biggest companies, including global energy giant Gazprom, leading financer Tinkoff Bank, as well as the local branch of Danish shoe retailer Ecco. But what is so special about the program?

CrocoTime is installed on the client company's server and comes with so-called "monitoring agents" that access employees' computers. The software tracks websites that are visited and programs that are used, and sorts all activity into three categories: productive, unproductive and incidental. It is, of course, up to the client to decide what is good or bad for their employees.

Russian And French Developers Pool Efforts In Composite-Focused R&D

TechChem-Prom, a Russian hi-tech firm, and France's Porcher Industries, a world leader in composite-based fabrics and other such products, have agreed to do joint R&D, the Skolkovo Foundation website announced. The agreement was reached on June 2 at the Skolkovo-hosted Startup Village conference for innovative start-ups just outside Moscow.

As an objective for the joint effort, the two companies are said to have plans to develop samples of products made from a combination of Porcher's composite fabrics and TechChem-Prom's proprietary thermoplastic nanomodified binders.

When and if the expected results are corroborated, the partners want to set up a joint R&D center at the Skolkovo innovation hub to fine-tune their technology for commercial-scale production. Longer-term plans include the commercialization of a new

family of composite materials and high-end solutions which the companies hope will be "superior" to existing international analogs.

New Chip-Antenna For Mobile Gadgets Developed In Voronezh

Researchers at the Voronezh State University (VSU) in Central Russia have teamed up with their colleagues from the Moscow-based Kotelnikov Institute of Radio Engineering and Electronics and China's Jinan University, based in the city of Guangzhou, to develop next gen fractal chip-antennas for various frequency ranges, the VSU website announced.

Russia Hopes To Create Robots With Artificial Intelligence Within 7-To-10 Years

Russia will have its own robots driven by advanced artificial intelligence within the next seven-to-ten years, the Russian news agency RIA Novosti reported, citing Sergei Garbuk, the deputy CEO of Russia's Advanced Research Fund (ARF).

"…We are setting the stage for the development of a man-made operator capable of solving intelligence-intensive problems and replacing man in unraveling those problems," Mr. Garbuk said.

According to the top manager, an operator like this could "control combat engineering or identify terrorists in a crowd of people; it could also function as a flight control staff at airports, and do other things."

World Economic Round Up

Brazil's central bank has lifted interest rates to the highest level in six years to tackle inflation that has climbed above 8 percent. Brazilian families have cut spending on a yearly basis for the first time in more than a decade as a toxic combination of high inflation and rising unemployment begins to hit at the heart of Brazil's economy. Household consumption fell 0.9 percent in the first quarter from the same period of 2014, the first annual decline since the third quarter of 2003, according to the recent Gross Domestic Product (GDP) figures from Brazil's national statistics office (IBGE). It was the worst quarter-on-quarter decline since the depths of the global financial crisis in 2008. Hungary's central bank reduced its benchmark interest rate to a record to end eight months of deflation and lift consumer price growth back to its target.

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:

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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 21th September 2015

BOTH BEING HELD AT

HOLIDAY INN KENSINGTON FORUM, LONDON

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