



Future Horizons Newsletter

September/October 2012

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## Industry News By Company

### [Apple iPhone 5 'Tsunami' To Impact Chip Suppliers](#)

The launch of Apple's (AAPL) iPhone 5 handset is going to be a huge event not only for Apple, but for a host of semiconductor companies.

Apple's sixth-generation iPhone could be a "tsunami" that floods the coffers of companies such as Qualcomm (QCOM) and Fairchild Semiconductor (FCS), FBR analysts said in a research report Wednesday. FBR expects Apple to announce the iPhone 5 in early to mid-September (reports have said Sept. 12) and launch it a couple of weeks later.

### [Arm Braces For Chip Slowdown](#)

Warren East, chief executive of Arm Holdings, said the chipmaker was holding back on some of its recruitment plans in 2012 amid fears of a slowdown in sales in the second half of the year.

Chip sales are usually strongest in the third and fourth quarters of the year as consumers buy tablets and smartphones for Christmas. A number of new products are also to be launched over the next month, including Samsung's Galaxy Note tablet and Apple's iPhone 5, which may help boost sales.

### [Fairchild Semiconductor Upgrades PowerTrench MOSFET Family](#)

Fairchild Semiconductor said that power density and light-load efficiency improvement are key issues for server, telecom and AC-DC power designers.

Additionally, according to a release, the synchronous rectification in these switch-mode power supplies (SMPS) designs require cost-effective power supply solutions that minimize board space while increasing efficiency and reducing power dissipation. Fairchild Semiconductor helps designers meet these power design challenges with the expansion of the PowerTrench MOSFET family.

Part of the mid-voltage power MOSFET portfolio, the company noted, these devices are optimized power switches that combine a small gate charge (QG), a small reverse recovery charge (Qrr) and a soft-reverse recovery body diode, allowing for fast switching speeds. Available in a 40V, 60V and 80V rating, these devices require less power dissipation in the snubber circuitry due to an optimized soft-body diode that reduces voltage spikes by up to 15 percent.

### [Globalfoundries, ARM To Collaborate](#)

Computer chip-maker GlobalFoundries and chip designer ARM are collaborating on next-generation chips, the Inquirer is reporting.

ARM had worked closely in the past with TSMC, the largest foundry in the world. Foundries like GlobalFoundries, build chips for chip designers such as ARM and Advanced Micro Devices.

### **GlobalFoundries To Extend Fab 8 New York Plant**

GLOBALFOUNDRIES is moving forward with the final construction for the extension of Module 1 at its Fab 8 campus in New York.

The project will add 90,000 square feet of manufacturing capacity, bringing the total capacity for Fab 8 Module 1 to 300,000 square feet. Construction activities are scheduled to begin in August and work is expected to be completed in December 2013.

“During the construction of Fab 8, we extended the shell of the Module 1 building with the expectation that our business would continue to grow. Today we see increasingly strong demand from our customers, especially at the 28nm node, and we are excited to be moving forward with this next phase in the development of the Fab 8 campus,” said Eric Choh, vice president and general manager, Fab 8, GLOBALFOUNDRIES.

### **LG Unveils Smartphone Fightback**

High quality global journalism requires investment.

LG Electronics has unveiled a flagship smartphone as it moves to regain ground lost in the competitive market to rivals including Samsung Electronics and Apple.

The Optimus G will go on sale next week in the South Korean mobile phone maker’s home market for Won1m (\$900) before being rolled out in Japan in October and other foreign markets in November.

### **Quad-Core Smartphones To Reach \$100 In China In 2013**

Rival semiconductor giants Mediatek and Qualcomm may force down the entry price of quad-core system-on-chip smartphones to \$150 (around £90) by the second half of 2013, and to \$100 (around £70) by the end of next year, according to a report published by Taiwanese website, Digitimes.

The report cites fierce competition to explain why the drive for cheaper smartphones sporting even more powerful system-on-chips will accelerate in 2013.

Mediatek’s new MT6588 and Qualcomm’s just announced MSM8x25Q SoC will certainly be the two biggest players in that market range, with the US-based Qualcomm betting on its QRD (Qualcomm Reference Designs) to allow its customers to bring products to market faster than the competition.

### **Samsung To Spend \$4 Billion To Boost Texas Chip Output**

Samsung Electronics Co. (005930), the world’s largest maker of memory chips, said it will invest about \$4 billion in its Texas factory to boost output of processors increasingly used in smartphones and tablet computers.

The investment will help convert the production of memory chips to logic products, including processors that power mobile devices, at the Austin, Texas, plant, Samsung said in a statement today. The Suwon, South Korea-based company plans to complete the conversion and start mass production in the second half of 2013.

### **Samsung Partners Swiss Semiconductor Firm**

South Korean electronics giant Samsung hopes to promote its foundry business by partnering Swiss semiconductor manufacturer STMicroelectronics.

Yonhap News Agency reported Friday Samsung will develop 32- and 28-nano chip technology as part of the cooperation with Geneva-based STMicroelectronics, which is the seventh-largest chipmaker in the world. The partnership will help Samsung expand its foundry business.

### **STMicroelectronics Obtains IP For Pico-Projectors »**

STMicroelectronics has taken another step in its positioning in the emerging video-sharing market for smartphones and other portable consumer devices. The firm has acquired IP and talent from projection-technology innovator, bTendo.

Following a successful joint development effort with start-up bTendo, ST has acquired the intellectual property and has hired most of the staff of the Israeli company to accelerate the propagation of the technology.

### **STMicroelectronics Perfects Advanced Process Technology for New Generation of Sensor Electronics**

Geneva, October 01, 2012 - STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronic applications, has revealed a new generation of ICs using an advanced manufacturing process that helps save energy, improve accuracy and simplify the design of sensors for applications from automotive electronics to smart buildings and industrial controls.

The new ICs are miniature amplifiers (op-amps) used to condition very small sensor signals. Benefiting from the advanced 16V CMOS manufacturing process, developed in-house, ST's new op-amps deliver better accuracy than existing devices, with greater long-term stability. Moreover, the process enables tiny die sizes permitting ultra-small surface-mount packages. Extremely low power consumption makes the op-amps ideal for battery or solar-powered equipment.

### **Taiwan Semiconductor To Invest £875m In ASML**

The world's largest contract chip manufacturer has agreed to make a 1.1 billion euro (£875 million) investment in one of its component suppliers in a sustained bid to cut costs.

Taiwan Semiconductor Manufacturing Company (TSMC) has said it will fork over 838 million euros (£667 million) for a five per cent stake in Veldhoven, Netherlands-based ASML, and will invest another 276 million euros (£220 million) in the company to further research and development of smaller, more cost-effective chip technology.

In July, Intel announced a similar \$4.1 billion (£2.6 million) agreement with ASML, which builds machines that are used to print circuit patterns onto computer chips.

### **TI Abandons OMAP Platform For Smartphones**

Texas Instruments announced that it will shift its wireless investment focus from products like smartphones and tablets due to increased competition in the market, according to a report from Reuters.

TI has already kicked off efforts to expand sales of its OMAP wireless application chips beyond smartphone and tablets to its embedded chip business, which include industrial customers such as carmakers, where it is hoping for a more profitable and stable business, said the report.

### **Toyota 'Insect': A smart concept car**

Toyota unveiled its "Smart Insect" concept electric vehicle at CEATEC Japan 2012.

Described as "the next-generation communications-linked concept model," Smart Insect is a single-seater electric vehicle equipped with technologies such as motion sensors, voice recognition and behaviour prediction.

The Insect features gull-wing doors and is trapped in a body similar to Toyota's single-seater EV named COMS. With a top speed of 60km per hour, COMS can travel 50km on a five-hour charge.

### **TSMC: 18 Inch Wafer Production To Start In 2018**

TSMC has announced that it will begin volume production of chips using 18 inch (450mm) wafers in 2018.

J.K. Wang, vice president for operations at the mega foundry, said at a conference held by industry body SEMI in Taipei that the company is expecting to complete specification settings for 18 inch wafers in 2014 or 2015, with a view to setting up pilot lines in 2016 or 2017, according to The Taipei Times.

### **UMC Shuts Japan Subsidiary**

Taiwan's United Microelectronics Corporation has decided to close its 200-mm fab in Japan due to weak market demand. "Owing to macroeconomic conditions, the industry's fast-changing environment, customer demand decline and continued unstable energy supply caused by Japan's 2011 earthquake, semiconductor vendors upstream and downstream have either reduced or eliminated capacity in Japan to save costs," UMC (Hsinchu, Taiwan) said in a regulatory filing with the Taiwan Stock Exchange.

"In line with this trend, [UMC Japan] will be shut down to enable UMC to integrate business, improve resource use efficiency and lower operating costs as UMCJ was unable to effectively reduce costs and reach performance targets."

## Industry News & Trends

### [A Battery That Folds!](#)

Are you excited to carry a foldable iPhone? Korean scientists have developed a super-thin flexible all-solid-state battery that could one day lead to phones and gadgets that can be folded.

We've got flexible displays, printed circuits, memory, LED etc., but not flexible batteries. Until now, batteries were rigid and inflexible letting phones and other devices to remain in a basic rectangle shape.

But, this "breakthrough" opens up the possibility of foldable smartphones and tablets.

### [A Battery That Can Be Worn As Bracelet!](#)

LG Chem, the chemical division of LG, has invented a thin, flexible lithium-ion battery that could be placed anywhere and in any shape. Interestingly, this cable-type battery is so flexible that it can be tied in knots, worn as a bracelet, or incorporated into clothing, according to Phys.org.

Flexible batteries have been created before but made in flat sheets and have not stored much energy. But, the LG battery paves way for new and exciting smartphones and tablets designs in the future, currently dominated by rectangular designs.

### [Graphene Paper Batteries For Electric Cars?](#)

Rensselaer Polytechnic Institute researchers develop an easy-to-make, quick-charging, high power density lithium-ion battery made out of a sheet of paper from the world's thinnest material, graphene.

The researchers zapped the graphene paper with a laser or camera flash to blemish it with countless cracks, pores, and other imperfections that resulted in a graphene anode material that can be charged or discharged 10 times faster than conventional graphite anodes used in today's Lithium-ion batteries.

### [Samsung Brings Copiers With iPhone's Power to Beat Japan: Tech](#)

Samsung Electronics Co. is out to end yet another Japanese dominance.

After beating household names such as Sony Corp. and Panasonic Corp. in televisions, memory chips and mobile phones in the past decade, South Korea's biggest company is targeting rivals including Canon Inc. in the \$32-billion-a-year market for copiers. Its weapon: chips as powerful as those running Apple Inc.'s iPhone.

### [Semiconductors Grown On Graphene...](#)

Researchers at the Norwegian University of Science and Technology have patented and are commercializing GaAs nanowires grown on graphene.

According to the researchers, semiconductors grown on graphene are expected to become the basis for new types of device systems, and could "fundamentally change the semiconductor industry."

### [Hype and Hope: Test Driving Google's New Glasses](#)

Google's glasses are escaping from the laboratory. But they aren't ready for the real world yet.

Actress Sarah Jessica Parker tries on Google Glass, assisted by fashion designer Diane von Furstenberg.

I had the opportunity to test-drive the eyewear on Monday with Google Inc. GOOG - 1.22% co-founder Sergey Brin at the company's New York office. The glasses are one of the projects Mr. Brin is overseeing as the head of Google X, a research lab for the Internet search giant.

Weighing a few ounces, the sleek electronic device has a tiny embedded camera. The glasses also deploy what's known as a "heads-up display," in which data are projected into the user's field of vision on a small screen above the right eye. A battery is built into one of the frame's arms

### [Wearable Camera Automatically Captures Your Whole Day](#)

The Autographer is a small camera with a wide angle lens that you can wear on a lanyard or clip to your clothing. What makes it clever is a combination of software and sensors that enable it to decide when to take a picture. It recognizes changes in color, direction, motion and temperature to decide something interesting is happening. Then it takes a snap.

### [Electronics That Dissolve In The Body!](#)

Researchers from Tufts University and the University of Illinois have developed a small electronic device that can dissolve inside the body. Ultra-thin electronics could be used for medical purposes.

Dubbed "transient electronics," the new class of silk-silicon devices promises a generation of medical implants that never need surgical removal, as well as environmental monitors and consumer electronics that can become compost rather than trash.

### [Imec, Panasonic Demo Wireless EEG Headset](#)

Imec, Holst Centre, and Panasonic have developed a new prototype of a wireless EEG (electroencephalogram) headset.

The system offers continuous impedance monitoring and the use of active electrodes increases the quality of EEG signal recording compared to former versions of the system, claimed Imec.

The data are transmitted in real-time to a receiver located up to 10m from the system. "The realisation of this prototype is a next step towards reliable high-quality wearable EEG monitoring systems."



## East European News & Trends

### **St. Pete Company RFID Tags Rare Library Volumes For Safety**

St. Petersburg company RST-Invent has unveiled the development of an improved RFID-based technique to take stock of and preserve valuable and rare library volumes.

RST-Invent is one of the project companies set up by Russian nanotech giant Rusnano; it focuses on RFID tag and RFID equipment production.

The new project aims to enhance the registration and preservation of unique library literature of significant cultural and historical value, including originals of archived documents, the inaugural editions of world-known books, manuscripts, monographs, history editions, etc. Many of those exist in one copy.

### **45nm Chips Outside Kaliningrad; Rollout Slated For Late Fall**

Russia's first large-scale production of microelectronics components made to 45-nanometer and smaller design rule is coming on-line outside Kaliningrad by the end of this fall, news agency RIA Novosti reports.

GS Nanotech Center, located in the town of Gusev, will require a reported \$130m in investment and is expected to manufacture more than 10 million microchips a year.

In this project, the Center partners with Portugal's Nanium, a leading European memory chip maker, said Alexei Yartsev, a Center manager.

GS Nanotech Center will be part of GS Technopolis, an innovation cluster that has been developing in Gusev since 2008. Technopolis incorporates five hi-tech production sites, an R&D center, and a residential area. General Satellite (GS), its strategic investor and a sizable Russian supplier of pay TV equipment, reportedly has plans to invest a total of \$770m in this project.

### **Sitronics Launches New 90nm Design Rule Based Chips**

Russian company Sitronics Microelectronics, the largest maker and exporter of microelectronics in Russia and the CIS, has announced the launch of across-the-board sales of its new microchips made to 90-nanometer design rule.

The chip is reportedly designed for use in computer systems components. The immediate market are Russian companies developing equipment for aerospace engineering, including the I.S. Bruk Institute of Electronic Control Machines, Ostek, Submikron and some others.

### **New Software Lab To Open In South Russia; Angstrom Leads Effort**

Angstrom, one of Russia's largest microelectronics and digital telecommunications systems makers, and South Federal University based in Rostov-on-Don, South Russia, have inked an agreement that paves the way for setting up a joint software development and production lab on the university premises, nanotechnology portal NanoNewsNet reports.

The future lab will reportedly focus on R&D in and testing of software for navigation equipment; on the development of high accuracy positioning systems to be used in mobile devices, including tablet PCs; on the integration of mobile and telecommunications technologies; and on the development of up-to-date algorithms of crypto-protection for telecom technologies.

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### **\$1.5bn Car-Making Smart City Planned Outside Kaliningrad**

4 Sep '12 The Kaliningrad region is looking forward to having a new 50,000 population city as a result of the development of a car-making cluster in this Russia's westernmost enclave, news agency Tatar-Info reports citing a source in the Kaliningrad regional administration.

It is part of the broader Smart City program, a project that auto-making Avtotor Holding is going to realize in the area, the source said.

The auto cluster project reportedly calls for the development of 21 factories, of which five will be making cars and 16 will focus on auto components. According to an agreement inked between Avtotor and the Kaliningrad region in June 2012, 20% of the cars made there will be exported.

## World Economic Round Up

European leaders increased pressure on Greece and new reports in Europe, the US and China all pointed to global weakening. This was reminder of the fragility in the global market. In the US new jobless figures were disappointing and a report on manufacturing in China showed the biggest drop in nine months for the world's second largest economy. In Europe it was suggested that in August, business activity across the continent continued a recent contraction. Spain is still seen at risk of needing a bailout and in the coming weeks, Greece has to convince European authorities to give the struggling country its next tranche of aid. The US Federal Reserve is widely expected to announce a third round of quantitative easing during September. Brazil has launched a stimulus package to spur investment in the country's creaking infrastructure and shore up ailing investor confidence.

***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 2012

### Future Horizons Events

- [Silicon Chip Industry Training Seminar](#) – London – 19<sup>th</sup> November
- [Industry Forecast Briefing](#), London – 22<sup>nd</sup> January 2013

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

**Telephone: +44 1732 740440**

**Email: [mail@futurehorizons.com](mailto:mail@futurehorizons.com)**

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

### Industry Events

[9 - 11<sup>th</sup> October- Semicon Europa 2012](#)

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SILICON CHIP WORKSHOP  
19<sup>TH</sup> NOVEMBER 2012  
NH HARRINGTON HALL HOTEL, KENSINGTON,  
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