FutureHorizons

The Global Semiconductor Industry Analysts

Future Horizons Newsletter

February 2013

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Industry News By Company

Arm Profits From Spread Of Home Devices

Arm Holdings, the designer of chips for leading smartphones, beat analyst expectations with full-year profits up 20 per cent as it benefited from the growing number of devices – from water pipes to energy meters – connected to the internet.

A presentation to investors by chief executive Warren East was dominated by talk of the 'post-PC' era, in which the market for internet-enabled devices will spread into areas such as security and healthcare.

ARM Holdings Poses Threat To Intel In Semiconductor Market

ARM Holdings Plc, which has sprinted ahead of Intel Corp. in the market for mobile chips, poses a threat to its rival in another burgeoning business: semiconductors for machines ranging from cars to cutlery.

So-called embedded processing is ARM's fastest-growing market, surging 25 percent in 2012. ARM got more than half of its sales from products other than mobile phones for the first time in the third quarter, and last month ARM chief executive Warren East said the percentage will continue to rise.

High Performance And Advanced Connectivity For Industrial Applications

The Atmel® SAM4E series of Flash microcontrollers (MCUs) is based on the high-performance 32-bit ARM® Cortex™-M4 RISC processor with floating point unit (FPU). It operates at a maximum speed of 120MHz and features up to 1024KB of Flash, 2KB of cache memory and up to 128KB of SRAM.

The SAM4E series offers a rich set of advanced connectivity peripherals including 10/100Mbps Ethernet MAC supporting IEEE 1588 and dual CAN. With a single-precision FPU, advanced analog features as well as a full set of timing and control functions, SAM4E MCUs are ideal for industrial automation and building control applications.

Cadence Acquires Indian IP Firm Cosmic Circuits

EDA company Cadence Design Systems has announced an agreement to acquire Bangalore-based IP provider Cosmic Circuits Private Limited for an undisclosed amount.Founded in 2005, Cosmic Circuits has been profitable from its first year of operation and has more than 75 customers worldwide. The company offers IP solutions in connectivity and advanced mixed-signal technologies in the 40nm and 28nm process nodes, with 20nm and FinFET development well underway. Top tier customer base has shipped more than 5 crore ICs containing Cosmic Circuits IP in 2012

India's Dreamchip Plans Tablet SoCs

Dreamchip Electronics, India-based semiconductor start-up, has announced plans for launching SoCs for tablet computers. The SoCs will be available in three variants—Siddhi, Vani, and Sandesh.

Dreamchip will use a proprietary multi-core 32bit RISC and DSP processor architecture and an optimised direct connect architecture for powering these SoCs, the company said.

Ericsson Shows Signs Of Recovery

An unexpected rise in sales at Ericsson's core network business has helped to reassure investors that the Swedish telecoms equipment maker is faring better than feared even though market conditions remain tough.

Shares in the group rose to an 18-month high after it reported fourth-quarter sales that beat expectations, helped by a year of buoyant demand in North America.

Hans Vestberg, chief executive, said sales in Ericsson's network division, which builds mobile networks for telecom operators, would fall back into "a similar pattern" of decline in the first half of this year, but he expected an improvement in the final six months of 2013.

Strong Demand For 4G Buoys Filtronic

Shares in Filtronic jumped up to a fifth on Monday after strong demand for fourth-generation or "4G" products boosted the telecoms equipment maker's revenues and triggered earnings upgrades.

Sales in Filtronic's wireless division more than doubled year-on-year to £11.9m for the six months to 30 November because of widespread adoption of 4G services , which provide faster internet access to mobile users.

The wireless division swung into the black, posting a £1.8m operating profit compared to a £0.4m loss in the corresponding period last year. Wireless now accounts for 80 per cent of the group's turnover.

Infineon's New XMC1000 Industrial Microcontroller Family Delivers 32-Bit Performance At 8-Bit Prices

Neubiberg, Germany – January 17, 2013 – Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) today presented its new 32-bit microcontroller family XMC1000, which uses the ARM® Cortex™-M0 processor. With the XMC1000, Infineon is the first semiconductor provider to offer 32-bit microcontrollers at 8-bit prices that are supported with an advanced, 32-bit peripheral set.

The breakthrough price/performance of the device family is achieved by using state-of-the-art 65nm embedded flash production technology on 300mm wafers and combining an

ARM® 32-bit processor with advanced peripheral functions designed for target application requirements – specifically low-end 8-bit industrial applications. The applications addressed by XMC1000 include sensor and actuator applications, LED lighting, digital power conversion, such as uninterruptible power supplies, and simple motor drives, such as those used in household appliances, pumps, fans and e-bikes.

300-Millimeter Thin-Wafer Production By Infineon Completes Qualification; First Coolmos™ Family Chips Now Being Shipped Worldwide

Neubiberg, Germany – February 19, 2013 – Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) has achieved a major breakthrough in the manufacturing of power semiconductors on 300-millimeter thin wafers. In February, the company received the first customer go-aheads for products of the CoolMOS™ family produced by the 300-millimeter line at the Villach (Austria) site. The production process based on the new technology has completed qualification from start to finish and customers have given the go-ahead.

"Infineon put its faith in this manufacturing technology very early on and continued to invest even in economically difficult times. We think and act with foresight and are now reaping the benefits: The qualification of our entire 300-millimeter line represents a veritable leap ahead of the competition," says Dr. Reinhard Ploss, CEO of Infineon Technologies AG. "300-millimeter thin-wafer manufacturing for power semiconductors will enable us, with the corresponding demand, to seize the opportunities that the market offers."

Intel To Stop Making PC Motherboards

Intel Corp. has decided to shut down its desktop motherboard business in the next three years. The company has been in PC motherboards business for more than 20 years.

The company said it will not develop motherboards after the launch of its fourth-generation Core processor 'Haswell' in 2013.

"As Intel gradually ramps down its motherboard business we are ramping up critical areas of the desktop space including integration of innovative solutions for the PC ecosystem such as reference design development, NUC and other areas to be discussed later," a spokesman for the company said in an emailed statement.

The company said it would continue to support all products sold through the warranty period included with the specific product.

NXP – Next-Generation Power Mosfets For Hot-Swap Applications

Latest from NXP Semiconductors is the Nextpower Live portfolio, a new family of linear mode Power MOSFETs designed specifically for use in ‘hot-swap’ environments. The NextPower Live family offers both excellent linear mode performance and a very low RDS(on) value, a unique combination demonstrating NXP’s expertise in this area, says the company.

Much of the infrastructure that runs our 24/7 online world, from cloud computing and mobile telephony to ATMs and traffic management, is made up of rack-based systems

that are permanently live (switched on). As such, the boards and components that drive these systems must be able to be ‘hot-swapped’ to allow for upgrades and maintenance without ever needing to power down the equipment. NXP NextPower Live MOSFETs are designed to deliver optimum performance within such systems.

Blackberry To Launch In U.S. In Mid-March

Research In Motion Ltd. RIM.T -5.60% unveiled two new BlackBerry phones on Wednesday crucial to the company's turnaround, but the first of the those devices won't be available in the crucial U.S. market until mid-March.

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In an interview ahead of a BlackBerry 10 launch event in New York, RIM Chief Executive Thorsten Heins said the first of two phones—a touch-screen-only device called the Z10—will be available in the U.K. later this week, and in Canada and the United Arab Emirates next week.

Both of those markets are important for RIM, but are small compared with the U.S., which has many more potential customers and typically bigger profit margins

LTE Smartphone Chip Boasts 50% Less Power Usage

ST-Ericsson unveils a multi-mode LTE-enabled integrated smartphone platform called the NovaThor L8580 ModAp that includes a full connectivity suite and features an eQuad-powered application processor running at up to 2.5GHz.

The chip integrates an eQuad 2.5GHz processor based on ARM Cortex-A9, a powerful Imagination PowerVR SGX544 GPU running at 600MHz and an advanced multi-mode LTE modem on a single 28nm FD-SOI die. Some of the benefits include CPUs that run 35 per cent faster while GPU and multimedia accelerators run 20 per cent faster, and cooler operation when delivering high performance, consuming 25 per cent less power than rival architectures, according to the manufacturer. The low power mode can deliver up to 5000DMIPS at 0.6V. This low power mode consumes 50 per cent less power to deliver the same performance compared with alternative solutions in bulk CMOS, says ST-Ericsson.

Philips Exits Shrinking Home Entertainment Business

The Dutch group had already hived off its troubled television business by setting up a joint venture with Hong Kong-based TPV (0903.HK) last year, after struggling for years to compete with lower-cost Asian makers of consumer electronics.

With consumers going online for music, films and games rather than buying CDs and DVDs, Philips decided to get out of home entertainment even though it was profitable last year, Chief Executive Frans van Houten said, adding that the business was shrinking and "margin dilutive

Samsung Overtakes Apple As Top Chip Buyer

Samsung has surpassed Apple as the world's biggest buyer of semiconductors in 2012. According to Gartner, Samsung's chip purchases rose 28.9 per cent to Rs.1.31 lakh crore ($23.9 billion) in 2012, while Apple's semiconductor spending rose 13.6 per cent to Rs.1.17 lakh crore ($21.4 billion).

Based on analysis of the design total available market (TAM), Samsung and Apple together consumed Rs.2.48 lakh crore ($45.3 billion) of semiconductors in 2012, an increase of Rs.43,169.40 crore ($7.9 billion) from 2011, to represent 15 per cent of total semiconductor demand, while the total semiconductor market decreased by 3 per cent overall, said Gartner.

Texas – High-Performance Wireless Connectivity For Automotive Infotainment Systems

Wireless connectivity is becoming a key feature in automobiles for sharing and viewing content from smartphones and tablets to in-car systems, easy pairing of devices, navigation and replacement of expensive cables for in-car communication. To satisfy this need, Texas Instruments (TI) has introduced the WiLink 8Q family of wireless automotive connectivity solutions.

With its multi-radio technology, the WiLink 8Q family reaches new levels of cross platform scalability and delivers advanced features including in-car multimedia streaming video in-parallel with Bluetooth hands-free calling and advanced audio distribution profile (A2DP) stereo sound. Additionally, with near field communications (NFC) for easy Wi-Fi and Bluetooth pairing, WiLink 8Q solutions enable an easy connection between a smartphone or tablet and the automobile, providing a seamless user experience.

World's First Bendable Battery Unveiled!

Scientists have developed world's first imprintable and bendable lithium-ion battery, paving way for flexible smarphones.

A research team from South Korea's Ulsan National Institute of Science and Technology claim they have developed a "fluid-like" polymer electrolyte that are used for lithium-ion batteries.

"This could help speed up the production of smartphones with flexible displays, such as Samsung's Youm flexible OLED display." At the CES 2013, Samsung showed off a prototype for a flexible smartphone, which it calls 'Youm'

Memristive Microchips To Debut As Early As 2013

Electrical engineer Leon Chua detailed a "missing link" in circuit theory in his seminal 1971 paper "Memristor—the Missing Circuit Element" (IEEE Transactions on Circuit Theory).

By mathematical necessity, according to Chua, a fourth passive electronics component—after resistors, capacitors and inductors—must exist.

His argument was reminiscent of the inventor of the periodic table, Russian chemist Dmitri Mendeleev, who claimed that by mathematical necessity there were missing elements in the periodic table that must exist. Both were right. Mendeleev's missing elements were eventually discovered, and in 2006 Hewlett Packard Senior Fellow Stan Williams likewise discovered Chua's missing-memristor in a common semiconductor material.

LEDS For Broadband Communications?

British scientists are working on tiny LED lights that could deliver Wi-Fi-like internet communications, while simultaneously displaying information. At the same time, the technology will also provide illumination for homes, offices and a whole host of other locations.

Over the next four years, with Engineering and Physical Sciences Research Council (EPSRC) funding, a consortium of UK universities led by the University of Strathclyde will be developing this innovative technology to help unleash the full potential of 'Li-Fi'—the transmission of internet communications using visible light rather than the radio waves and microwaves currently in use.

Research Aims At Integrated Car2x Design System

A research project involving Volkswagen, the University Duisburg-Essen, automotive design tool vendor dSpace GmbH and RF engineering company IMST aims at the development of an integrated design environment for car2x systems.

The project managed by dSpace aims at developing a software environment that enables the validation of driver assistance applications based on car2x schemes. One of the goals is to enable virtual but realistic car2x scenarios for hardware-in-the-loop simulations of test drives. The focus of the project is the development of appropriate data models of vehicles, environments and RF channel behaviours for real-time simulations as well as automatic generation of test scenarios. By means of this simulation and test environment, car designers can create more detailed tests and increase the degree of maturity of driver assistance systems. In addition, it will boost the productivity of design and verification processes.

Mitsubishi Electric Develops Multi-Wire Electrical Discharge Process For SiC Ingot Slicing

Tokyo-based Mitsubishi Electric Corp says that it has developed a prototype multi-wire electrical discharge processing technology to cut very hard 4-inch polycrystalline silicon carbide (SiC) ingots into 40 pieces simultaneously.

Up to now, because SiC is the third hardest compound on earth, sliced wafers have been produced by using multi-wire saws with diamond particles. However, this method requires lengthy machining time and large kerf widths.

The new parallel multi-wire electrical discharge machining method uses Mitsubishi Electric's proven electrical discharge technology for difficult-to-cut material, and employs a dedicated power supply specially developed for SiC. The technology is expected to improve both the productivity of SiC slicing and the effective use of SiC material.

Oxford Instruments Awarded Patent For High Density Plasma Assisted Thin Film Deposition

UK-based etch and deposition system maker Oxford Instruments Plasma Technology (OIPT), a division of Oxford Instruments, has been granted European patent EP1889946B1 in relation to high-density plasma-assisted thin film deposition. The patent cites Thomas, Griffiths and Cooke as inventors, and discloses a method of optimising uniformity over larger areas using a plasma transmission plate. This technique has been used in more than 25 tools shipped by the firm since the patent application was filed.

"The grant of this patent covering high density plasma assisted thin film deposition is part of a broad platform of intellectual property rights which continue to be developed by our company. Oxford Instruments now has multiple patents, and we believe that this intellectual property reinforces our influential position in the plasma technology field," said Oxford Instruments Plasma Technology's CTO Dr Mike Cooke.

Ikon Semiconductor Reveals New Chip Breakthrough For LED Lighting Market

Emerging Irish fabless semiconductor technology company Ikon Semiconductor this week revealed a new integrated circuit (IC) design that could prove vital to the growing global LED lighting industry.

Ikon’s new IC was unveiled at the Strategies in Light conference in Silicon Valley this week.

The new IKS2053 IC is designed to meet cost and performance standards for today’s LED lighting OEMs and bulb manufacturers.

Charge Your Phone With Coffee, Beer

Engineers at Epiphany Labs have developed a new device that can charge your cell phone with a hot cup of coffee or a cold beer mug.

Epiphany onE Puck uses a 'stirling engine' powered solely by heat disparities, such as a hot or cold drink, a candle, ice, etc. "These heat sources will provide enough power to the stirling engine to fully charge your cell phone battery," the company claimed in a Kickstarter page.

Stirling engines were invented in the early 1800s, but its use was limited to low-power applications for a long time.

Researchers Create 'Nano-Shish-Kebab'

Researchers at North Carolina State University have developed a new type of nanoscale structure that resembles a "nano-shish-kebab," consisting of multiple two-dimensional nanosheets that appear to be impaled upon a one-dimensional nanowire.

However, the nanowire and nanosheets are actually a single, three-dimensional structure consisting of a seamless series of germanium sulfide (GeS) crystals

Note:
"ST Microelectronics has advised us that Mikron-ST JV announcement referred to in last month's newsletter was incorrectly reported. Please contact ST's Corporate Communication Organisation for further details."

Russia, Belarus And Kazakhstan Set Up Intergovernmental Innovation Center

The three former USSR neighbors and now CIS partners in what is known as Customs Union—Russia, Belarus and Kazakhstan—are setting up an intergovernmental entity called "The Eurasian Economic Community Innovation Technology Center Venture Company," (Innovation Technology Center for short), the Russian Venture Company (RVC) website reports.

In the deal, Russia is represented by the RVC InfraFund, a fund established by Russian Venture Company—the main national funder of innovation—to support infrastructure innovation.

The Eurasian Economic Community (or EvrAzES in Russian transliteration) consists of Russia, Kazakhstan, Belarus, Tajikistan and Kyrgyzstan. Three more former Soviet Union states, Armenia, Moldova and Ukraine, hold observer status.

Siberian-Japanese Robots Can Shop And Deliver Lectures

A group of 15 students representing Siberia's Tomsk State University of Control Systems and Radio Electronics (TUSUR) and Ritsumeikan University in West Japan has developed robots that can go shopping and deliver lectures instead of human beings, news agency RIA Novosti reports citing Yevgeny Shandarov, head of TUSUR's Robotics and Artificial Intelligence Lab.

The presentation they made followed a 15-week interuniversity training course, Global Software Engineering, in which Tomsk participated for the first time. The training course, developed at Ritsumeikan University for its Master's level Graduate School of Information Science and Engineering, aims to coach students in collaborating in joint projects led by experts stationed in various areas of the planet, speaking different languages, and using different programming languages as well.

Cisco Invests In Russian IT Developer Parallels

Parallels, a sizable Russian IT company, has secured an equity investment from Cisco to support joint go-to-market activities, East-West Digital News, the international resource on Russian digital industries, reported yesterday. The companies intend to strengthen collaboration towards accelerating customer adoption of Parallels cloud service delivery products with Cisco cloud and data center infrastructure solutions.

The amount of the investment has not been disclosed, but Parallels press service confirmed to East-West Digital News that the US giant had acquired a stake of approximately 1%.

Tomsk Researchers Improve Materials For LED Lamps And Electronics

Researchers from Tomsk Polytechnic University's high-tech physics lab, in Siberia, have developed a technology that enables nanoparticle synthesis in silicon's surface layer—a way of improving materials for LED lamps and power electronics, the Vesti TV website reports.

They built a machine that has helped them prove that creating silicon carbide nanoparticles and nanodiamonds in a material's surface layer is quite feasible. The Tomsk nanodiamonds are said to be as strong in structure as the conventional gems.

Russians From Arizona Develop Picosecond Lasers In Moscow

A Moscow-based site is hosting a project aimed at creating picosecond lasers for treatment of materials and marking of products like phones or laptops; the project is based on a technology developed by Russian researchers in Tucson, Arizona, the official Rusnano website reports.

The effort is being pushed at the Technospark nanotech center located in Troitsk, a Moscow City borough which is one of the world's most sizable laser tech centers. In addition to the nanotech center, the Ulyanovsk Nanotech Center from Ulyanovsk, in the mid-Volga area, also acts as a co-funder of the endeavor. That and other nanotech centers that Rusnano InfraFund (a special fund established by Russia's largest nanotech company, Rusnano) has set up across Russia are reportedly expected to invest in the Troitsk project an estimated $1.2m.

No Leadership For Russia Until R&D Spending Triples By 2030—Ministry Forecast

Russia can achieve a pole position in the world's leading economic sectors and R&D areas by 2030 only if the state triples spending on science and technology from today's 1.1% to 3% of the GDP, the Russian Ministry of Economic Development says in its long-term forecast of the country's social and economic growth.

The authors of the document show that in R&D spending, Russia with its 1.1% is far behind not only Europe but also Australia, New Zealand and some other countries. The United States is said to spend 2.8% on its R&D; China 1.7%; South Korea 3.4%; and Japan 3.3% of their respective GDPs.

Another Russian "Silicon Valley" Takes Shape Outside St. Pete; U.S. Reported As "Interested"

The North-West Nanotech Center, touted as another Russian analog of Silicon Valley, is being built in Gatchina, in the Leningrad region some 50 kilometers south-west of St. Petersburg, SmartNews reports. Of a total reported $40m price tag, Rusnano InfraFund, a fund set up by Russia's nanotech giant, Rusnano, to finance infrastructure projects, and the Leningrad region are said to have jointly co-invested the lion's share (about $35m).

The project with an estimated payback period of four-to-five years calls for construction of a complex that would include two technical buildings and an office building, covering an area of about 1,000 square meters next to the Gatchina-based Konstantinov St. Petersburg Institute of Nuclear Physics.

Cisco And New Grid Technologies Team Up To Smarten Up Russian Electrical Energy

Cisco Systems announced earlier this week that it has signed a memo of cooperation with New Grid Technologies, a Russian company, in developing joint intelligent control systems based projects for the Russian electrical energy sector.

According to Cisco, the partnership between the two companies will focus on pushing R&D efforts and putting together large-scale joint projects aimed at developing SmartGrid technologies and introducing those to Russia's electrical energy.

Three IT And Electronics Developers Join Zelenograd SEZ

Three new residents of the Zelenograd special economic zone outside Moscow, joining the SEZ with projects in IT and electronics, are expected to invest an estimated total of $28m, Zelenograd.ru reports.

World Economic Round Up

The International Monetary fund (IMF) downgraded its global forecast from 2013 and 2014 by 0.1 percentage points each year, with the majority of that reduction stemming from a weaker outlook for the euro zone. The world's growth continued to slow in the third quarter of 2012, based on 52 countries. Global growth fell by 0.4 percentage points from the previous quarter to 2.4 percent, its lowest level since the end of 2009. Emerging economies accounted for four-fifths of global GDP growth. Developed countries, weighed down by a slow recovery in America and the ongoing euro crisis, contributed little. The coming year is expected to be much the same.

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 2013

Future Horizons Events

- Silicon Chip Industry Training Seminar – London – 17th June 2013
- Industry Forecast Briefing, London – 23rd July 2013
- IEF 2-4 October 2013

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

Telephone: +44 1732 740440
Email: mail@futurehorizons.com

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Industry Events

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MARK YOUR CALENDER FOR THE NEXT
INDUSTRY FORECAST BRIEFING
TUESDAY 23rd JULY 2013
NH HARRINGTON HALL HOTEL, LONDON
AND
SILICON CHIP INDUSTRY WORKSHOP
MONDAY 17th JUNE 2013
NH HARRINGTON HALL HOTEL, LONDON

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