



Future Horizons Monthly Newsletter

January 2012

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Industry Overview

October's results were an enigma in that they follow the normal quarterly pattern (units up and ASP down versus) but units were also down versus last year – reflecting the ongoing inventory liquidation, whilst ASPs were up – reflecting the underlying market strength. We believe this is an industry time bomb waiting to explode. Unit shipments equals demand minus inventory reduction; once the inventory has gone overnight unit shipments will flip to demand plus inventory ... just as with post Lehman. It will not be able to respond. By Q2-2012 our prediction is shortages and extended lead-times; we have so beautifully set the stage. And with a 3-4 month production cycle, there is nothing anyone can do about it ... the bed has been made; time soon to lie on it.

A full market summary and industry capacity round up can be found each month in our [Semiconductor Monthly report](#).

Industry News By Company

[Altair Semiconductor And Ecrio Partner On Cost Efficient LTE IMS Mobile Device Platform](#)

CUPERTINO, California and HOD HASHERON, Israel, January 10, 2012 /PRNewswire via COMTEX/ -- Altair Semiconductor (<http://www.altair-semi.com>), a leading developer of ultra-low power, small footprint and high performance 4G LTE chipsets, and Ecrio, the leading provider of All IP Communications Client Software for Next Generation 4G and IMS Networks, today announced the availability of an IP Multimedia Subsystem ("IMS") compliant LTE reference platform based on Altair's FourGee™ LTE chipset and Ecrio's Mobile Communications Client Suite.

A key functionality of signaling and messaging over LTE, IMS is now being used by Mobile Operators in the US to enable commercial LTE services.

[China Mobile Pays A Price For Being First](#)

China Mobile (CHL) is the largest cellular operator in the world, with 644 million subscribers and two-thirds of the Chinese mobile market. The state-owned giant's market capitalization of \$196 billion makes it the most valuable telecom company globally. But in the fastest-growing part of China's cellular industry, China Mobile is much less of a force. Competitors China Unicom (CHU) and China Telecom (CHA) each control about 30 percent of the market for fast 3G connections, which has more than doubled in size since the end of 2010, to about 118 million subscribers at the end of November. China Mobile has 40 percent of the market, but many of its 3G customers use fixed-line handsets instead of mobile phones to access the network, making them less valuable because they don't use data. When it comes to 3G, "only China Unicom and China Telecom are benefiting," says Andy Poon, an analyst with Kim Eng Securities in Hong Kong. China Mobile's stock price was down 1.7 percent in 2011, compared with a 47 percent jump for China Unicom and an 8.6 percent rise for China Telecom. All three declined to comment.

[Freescale Introduces New Kinetis K70 Family With ARM Cortex-M4 Core](#)

Drives LCD panels at 8-bit QVGA resolution without cost and complexity of adding external program and frame buffer memory

Freescale Semiconductor has introduced an ARM Cortex-M4 core based microcontroller (MCU) family, which the company says is designed for single-chip, graphics LCD applications.

The high-performance Kinetis K70 family targets applications that require a graphics LCD user interface, and advanced connectivity and security functionality, all without the increased cost and power consumption associated with multi-chip designs.

[Freescale Develops Single Chip Solution To Capacitive And Resistive Touch Sensing](#)

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An innovative, first-of-its-kind solution, the platform brings together gesture recognition with 5- and 4-wire resistive screen controller technology as well as capacitive touch sensors in a single IC (integrated circuit), making it ideal for applications that require human machine interface, control panels, keyboard replacement, signature capture devices, point of sale terminals and kiosks.

The latest addition to the Ready Play range, the Xtrinsic touch sensing, resistive and capacitive platform enables gesture recognition for resistive screens for situations where capacitive screens are not an option. Since resistive touch screens are a cost effective solution, it can be used to enhance the end-user experience in several applications. It can easily detect gestures such as slide, touch rotate and pinch zoom-in zoom-out. Resistive touch screens can also be used in situations where gloves are warranted due to security, weather or medical reasons.

IBM Creates Smallest Memory Using 12 Atoms

IBM researchers have developed the world's smallest magnetic memory bit using only 12 atoms. "Scientists from IBM have successfully demonstrated the ability to store information in as few as 12 magnetic atoms," the company said.

Currently, it takes about one million atoms to store a single bit of information on a hard disk drive. "The ability to manipulate matter by its most basic components – atom by atom – could lead to the vital understanding necessary to build smaller, faster and more energy-efficient devices."

A New Power-Sipping Shake-Up For Mobile Chipmakers

Intel has been pouring resources into the smartphone arena in an effort to topple low-power ARM Holdings processors from their dominant position, thus far to limited effect. ARM still reigns supreme, with 95% of the smartphone market using its designs. However, a new chip making technique could pose major challenges to Intel's progress, but might also threaten to upend ARM from its smartphone throne.

Crossing the channel

The big idea comes from SuVolta, a semiconductor design start-up that tackles excess chip power consumption. If you've ever scowled in frustration at your suddenly dead cell phone, you know how important power consumption is. This has been ARM's specialty, but Intel's upcoming Ivy Bridge chips should limit power consumption pretty heavily in their own right. However, SuVolta's PowerShrink chip platform and its Deeply Depleted Channel design could blow right past Intel and ARM.

Intel Merges Divisions To Form 'Mobile' Unit

In a move to intensify its rivalry with ARM in the smartphone space, Intel is planning to merge its four divisions into one large unit. Despite of being leader in the PC market, the company is still struggling to gain success in the fastest growing smartphone and tablets market.

Thus, in order to tighten its mobile technology focus, Intel is merging four business units to create a new 'mobile and communications group'. The new group combines Intel's mobile communications, netbook/tablet, mobile wireless and ultra-mobility business units.

[Intel Backs Plessey, Transfers Tuner Products](#)

LONDON – U.K. chip maker Plessey Semiconductors Ltd., a once-famous semiconductor name reborn as a management-owned buy-out, has licensed the right to manufacture, sell and support certain products from the digital tuner portfolio of Intel Corp. At the same time Plessey has made a warrant agreement giving Intel's venture capital arm the option to buy an unspecified number of shares in Plessey's holding company.

Derek Rye, group marketing manager at Plessey (Plymouth, England), said that the products include RF tuner ICs and demodulator ICs for satellite, terrestrial and cable televisions and set-top boxes that are implemented in a variety of processes including high-performance bipolar, silicon-germanium and RF CMOS. The products are mature and were originally developed in the consumer electronics business of Zarlink which was acquired by Intel in 2005.

[Lantiq Announces Industry First VDSL2 Vectoring Chip Enabling Full System-Level Crosstalk Noise Cancellation](#)

Munich/Neubiberg, Germany – January 9, 2012 – Lantiq, a leading supplier of broadband access and home networking technologies, today announced first customer shipments of its VINAX™ IVE1000 System-Level Vectoring Engine chip. Noise cancellation technologies – standardized in G.vector – eliminate crosstalk, but only system-level vectoring solutions, like the new Lantiq vectoring engine device, more than double data rates and reach to meet operators' next generation needs. Lantiq's new VINAX IVE1000 demonstrates a breakthrough in full system-level vectoring capability, scalability and expandability up to 384 ports, considered to be ideal for delivery of triple-play broadband services, including multiple streams of HD-quality TV, Internet and voice.

[Magnachip Supplies AMOLED Display Driver For Smartphone](#)

MagnaChip Semiconductor says it will begin supplying display driver ICs to be used in the active matrix OLED display panels for smartphones.

The South Korea-based analogue and mixed-signal semiconductor supplier said the display driver will be used in AMOLED panels that support WVGA (480X800) level resolution and 16M (24bit) colours in Microsoft Windows-based smartphones.

[Mindspeed Acquires Picochip For \\$51.8 Million](#)

Mindspeed Technologies Inc., a Newport Beach-based tech company that specializes in semiconductor solutions for network applications, has acquired Picochip Limited, a U.K.-based supplier of system-on-chip (SOC) for small cell base stations. The agreed purchase price is approximately \$51.8 million, plus up to \$25 million in earnout payments in the first quarter of 2013.

“Mindspeed is the ideal acquirer for us,” said Nigel Toon, CEO and president of Picochip. “Our combined resources create one of the largest SoC development groups in the wireless infrastructure sector with complementary intellectual property scale and expertise to deliver the solutions that this fast-moving market demands.”

MonolithIC 3D Inc. Announces Ultra-Scale Integration Scheme

MonolithIC 3D Inc., a leading 3D-IC company, announced its Ultra-Scale Integration scheme last week. The technology promises to improve the integration level of chips by more than 100x, thereby providing breakthrough performance improvements for supercomputers, servers and many other applications.

Ultra-Scale Integration has been a goal of the semiconductor industry since the 1970s. Gene Amdahl notably attempted to develop Wafer-Scale Integration (WSI) as a method of making a supercomputer, starting Trilogy Systems in 1980 and garnering investments totaling \$230 million. After burning through about 1/3 of the capital without finding a path to WSI, Amdahl eventually declared the idea would only work with a 99.99% yield, which wouldn't happen for 100 years. MonolithIC 3D Inc.'s scheme could enable Wafer Scale Integration in the near term.

Wi-Fi, Bluetooth, FM Combo IC Cuts Power Usage

RDA Microelectronics debuts the RDA5990, a combination chipset that combines Wi-Fi, Bluetooth and FM functionality touted with higher integration, improved power consumption, and lower board space and cost for the global smartphone market.

The RDA5990 has a complete IEEE 802.11 b/g system with Bluetooth 2.1 + EDR and FM radio receiver and transmitter. Combining several proven wireless technologies onto a single silicon die allows the components to work simultaneously and independently, while consuming less power. The design uses 55nm CMOS process in a compact 6 x 6mm 48-pin QFN package. According to the company, manufacturers can quickly integrate the RDA5990 on platforms to enable rapid time to market.

Setsquared Company Blu Wireless Wins Cambridge Start-Up Prize

Blu Wireless Technology, based at SETsquared's Business Acceleration Centre in Bristol, is one of five new technology businesses to win the Cambridge Wireless Discovering Start-Ups 2011 competition. The company was recognised for its low power 60GHz semiconductor technology.

The company was selected from 20 start-ups invited to pitch their innovative wireless technologies and business plans to 25 leading venture capitalists, angels and industry investors. Senior representatives from companies including Microsoft, RIM, Nokia, Qualcomm Ventures, Innovacom, Broadcom, Orange, O2 Telefonica and ARM were there to judge the finalists and provide expert advice.

MEMS Module Designed For Sleek, Portable Electronics

STMicroelectronics has released a new inertial module that integrates three-axis sensing of linear and angular motion in a miniature 3x5.5x1mm package. Reducing size by almost 20 percent, the company's newest iNEMO module with six degrees of freedom

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(DoF) delivers advanced motion-sensing capabilities in space-constrained consumer applications such as smart phones, tablets and other portable electronic devices.

SuVolta Gets \$17 Million For Powershrink Chip Platform

SuVolta, a Silicon Valley startup whose PowerShrink platform is designed to drastically reduce the power consumption in microchips, is getting another \$17.6 million in financing in a tight investment environment for semiconductor technologies.

Company officials announced Jan. 5 that the latest round of funding is coming from current investors that include Kleiner Perkins Caufield & Byers, August Capital, New Enterprise Associates (NEA), Northgate Capital and DAG Ventures, as well as new investor Bright Capital. The added funding, at a time when investment dollars are hard to come by, is an indication that SuVolta is on the right track with its focus on reducing power consumption, according to President and CEO Bruce McWilliams.

Indian CE Market: Companies Focusing On Customized Products

In India, the consumer electronics market has been witnessing a stupendous growth for the last few years. According to new report, "Booming Consumer Electronics Market in India" by RNCOS, number of companies is offering customized or India-specific products to lure the domestic consumers. Besides, media influence, affordable pricing and shift in lifestyles have been instrumental in changing the consumer spending patterns. With these, the Indian consumer electronics industry is anticipated to grow at a CAGR of around 18% during 2011-2014.

The consumer electronics goods like refrigerators, televisions, air conditioners, and microwave ovens still have a low penetration rate in India, and thus, there exists a huge growth potential for future. According to the report, the demand for consumer electronics products like LCD TV, camera phones, and split AC will continue to increase in future. Keeping these facts in mind, some companies have set up research & development centers to study the Indian consumers' needs. Samsung, for example, has formed a five-member product innovation team at Delhi that will work on few segments to design and develop products for the Indian market.

Industry News & Trends

[Kinect Concept Coming To Smartphones?](#)

Microsoft's Kinect has been an interesting technology to experiment with for technocrats as well as scientists ever since its introduction. The latest one comes from MIT researchers, who have modified the Kinect's concept of visual mapping and developed a 3-D camera that provides more-accurate depth information than the Kinect, has a greater range and works under all lighting conditions.

"But, it is so small, cheap and power-efficient that it could be incorporated into a cellphone at very little extra cost."

"3-D acquisition has become a really hot topic," Vivek Goyal, professor of electrical engineering, MIT said. "In consumer electronics, people are very interested in 3-D for immersive communication, but then they're also interested in 3-D for human-computer interaction."

[Hydrogen Powered iPhone On The Way?](#)

iPhone maker Apple, this time, is ready to bring yet another change in its revolutionary products. According to patent applications filed by Apple and published by U.S. Patent and Trademark Office, the company is developing hydrogen fuel cell technology to power portable computing devices.

The patent application, entitled 'Fuel Cell System to Power a Portable Computing Device', says, "The disclosed embodiments relate to the design of a fuel cell system which is capable of both providing power to and receiving power from a rechargeable battery in a portable computing device. This eliminates the need for a bulky and heavy battery within the fuel cell system, which can significantly reduce the size, weight and cost of the fuel cell system."

[Mobile, Tablets And The Cloud To Dominate CES](#)

3DTV and connected TVs have been all the rage the past couple of years at the International Consumer Electronics Show (CES), but so far there's been little hype surrounding those topics leading up to the latest show, held Jan. 10 to 13 in Las Vegas.

Instead, everyone seems to be talking about mobile.

"Mobile and portable connected devices are driving growth in the CE industry and will be a major focus of the 2012 CES," said Karen Chupka, SVP of events and conferences for the Consumer Electronics Association (CEA). "The 2012 CES is the best place to see all the latest tablets and smartphones that bring broadband capability to wireless devices that fit the way consumers work, live and play."

[Smart TV Makers Lose The Remote Control](#)

Consumer electronics manufacturers have announced significant steps to make televisions easier to use, adding voice and motion control as TVs become more like computers.

Following the lead of Microsoft's Kinect motion controller on its Xbox 360 games console, leading brands such as Lenovo, LG and Samsung are launching voice, gesture and facial recognition for their internet-connected TV products at the Consumer Electronics Show in Las Vegas.

[Tiny Transmitter Sets Frequency Record: Revolutionary Terahertz Transmitter Developed](#)

ScienceDaily (Jan. 13, 2012) — A terahertz transmitter developed at the TU Darmstadt has generated the highest frequency ever attained by a microelectronic device. The innovative device is also minuscule and operates at room temperature, which could lead to it paving the way for new applications in, e.g., nondestructive testing or medical diagnostics.

Although terahertz (THz) electromagnetic radiation, which has wavelengths ranging from 0.1 mm and 1 mm, penetrates common materials, such as plastics, paper, fabrics, or ceramics, allows, e.g., nondestructively testing workpieces, analyzing processes occurring in engine combustion chambers while engines are running, inspecting packages and letters for hazardous biological substances without need for opening them, it has yet to establish a reputation for itself in scientific and engineering fields. One of the hindrances involved was that, until now, transmitters and receivers operating at THz frequencies were bulky and very expensive.

[Motorola To Introduce Smartphones Using Intel Atom Processors, Android Platform](#)

Semiconductor chip maker Intel and Motorola Mobility are entering into a multi-year, multi-device strategic relationship that includes smartphones which Motorola will begin shipping later this year using Intel Atom processors and the Android platform.

The collaboration also covers tablets and will combine Intel's leadership in silicon processor technology and computing innovation with Motorola's mobile device design expertise to deliver products that have high performance, long battery life and convenience necessary for increasingly mobile lifestyles.

[New Generation Mobile Phones Taking Off](#)

Convention has it that when a new mobile phone technology enters the market, it takes five or more years before it becomes mainstream. But in the case of the fourth generation technology called LTE (Long Term Evolution), it looks like that convention will be broken – at least in the US.

The Consumer Electronics Show in Las Vegas last week was awash with new smartphones from Samsung, LG, Motorola, Sony and Nokia designed to run on the new 4G mobile networks that the largest US mobile network operators including Verizon Wireless, AT&T Mobility and Sprint Nextel are in the process of rolling out.

East European News & Trends

Filming Excited State Structural Dynamics In Photosynthesis And Organic Semiconductors

Wish to record atomic movies of the structural quantum response in photoexcited chromophores.

The structure of molecules relaxes as a response to photoexcitation. Coherent atomic relocations are thought to be important in photosynthesis and they wire together distant electronic systems on conjugated polymer chains. The structural details of such atomic motions remain today elusive, because experimental techniques to visualize them are simply not available.

Pioneer femtosecond time-resolved X-ray scattering at state-of-the-art European synchrotrons and free electron lasers to directly visualize the atomic details of such motions.

Russia To Participate In European Program “Eureka”

The Skolkovo Fund and the Ministry of Industry and Trade of Russia have signed an agreement on cooperation on issues of Russia’s participation in the European science and technological program “Eureka”, innovation and venture news source UNOVA reports citing the Skolkovo Fund.

The program reportedly opens access to the largest European expert database and provides comprehensive support to projects in the sector of creation of innovation products, technologies and services.

Partnership between Skolkovo and the Ministry of Industry and Trade of the RF implies promotion of Russian organizations in the “Eureka” projects; organization of joint science and information events, such as meetings, conferences, seminars, exhibitions; experience and information exchange for simplified interaction with the program.

Optogan Will Develop Organic Light Emitting Diodes

The company Optogan has announced plans to set up the subsidiary “Optogan. Organic Light Solutions” – the first Russian company for development of solid state lighting based on organic light emitting diodes (OLED) and development of smart OLED lights management systems.

The new firm will at initial stage specialize in improvement of technological parameters of production of OLED in order to decrease their production costs.

World Economic Round Up

According to the Organisation for Economic Co-operation and Development (OECD) the world's largest economies will continue to slow, but at different rates. There are signs that some economies will perform better than others. Activity in Brazil, France, Germany, India, Italy, the UK, and the eurozone as a whole is set to be weaker than the long-term trend, while activity in Japan and Russia is likely to remain above their long term trends. Canada, China and the United states continue pointing to slowdowns in economic activity around long term trends but with only marginal declines compared to last month. Brazil's economy stalled in the third quarter of this year, which demonstrated the vulnerability of the worlds emerging market growth engines to the eurozone crisis and the slowdown in the developed world.

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 – 19th March
- [Industry Forecast Briefing](#), London – 12th July

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

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

Industry Events

- [LED/SEMICON Korea 2012](#) – 7th – 9th February
- [CS Europe 2012](#) – 12th – 13th March

**MARK YOUR CALENDER FOR
THE ANNUAL SEMICONDUCTOR INDUSTRY
FORECAST SEMINAR MT 2012**

12th July

NH Harrington Hall Hotel, London, SW7

INTERNATIONAL ELECTRONICS FORUM 2012

Marriott Hotel, Yerevan, Armenia

3rd – 5th October

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