Radar Scope

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However, a mass-market for mobile broadband data services requires a radio infrastructure with much higher spectral efficiency and much lower cost-per-bit compared to mobile telephony networks. As such, today's mobile base stations are inefficient, wasting power and space.

Ubidyne is developing RF technology that enables optimized on-site solutions for mobile and fixed wireless infrastructure with a substantial gain in cost/performance ratio. The company's pure digital transmission technology and architecture increases efficiency and bandwidth utilization while eliminating the need for bulky equipment rooms required by today's systems. Network Operators will benefit from significant improvements in coverage, capacity, equipment size and energy consumption compared to today's base stations and antennas.

The technology has its roots in the Common Public Radio Interface (CPRI) Initiative, which was formed in 2003 by Ericsson, Huawei, NEC, Nortel and Siemens to define a specification for the radio interface between the RF and baseband controller blocks. Today, the baseband controller and RF are located in an equipment room or box, with bulky coax cables rising up the cell tower to the antenna array.

By splitting the RF and baseband controller, optical fiber can be used to connect the two subsystems, allowing a remote radio head to be deployed. However, Ubidyne argues that today's solutions are still too heavy to be placed close to the antennas in the tower. This brings us back to bulky and expensive coax, negating many of the benefits of the CPRI initiative.

Ubidyne's solution, comprised of a digital controller and RF transmitter/receiver chips, will be integrated directly onto antenna arrays, forming a true remote radio head. This will allow just a lightweight optical fiber and power to connect the antennas with the baseband controller. It will be protocol agnostic, lightweight, and will have fairly wide bandwidth.

Customer samples are anticipated in mid-2008 with volume production by the end of 2008.

Ken Hawk, CEO (previously CEO of NemeriX, founder & CEO of iGo, which completed an IPO and was later sold to Mobility Electronics)

Dr. Clemens Rheinfelder, CTO & Co-Founder (previously VP Engineering at Siemens Communications)

Beat Mueller, Treasurer, COO & Co-Founder (previously Head of the Telematic Division within Burkhalter Group and CEO of Burkhalter Net Works in Switzerland)

Dr. Lothar Schmidt, VP of Engineering (previously Senior Systems Engineer at TI)

Hermann Möhring, VP of Product Design (previously Managing Director of Siemens Communication Group)

Enrique Cuellar, Ph.D., VP of Marketing & Business Development (previously held marketing, international sales and business development positions at LGC Wireless)

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Startup Profiles

Active-Semi

Active-Semi was founded in late 2003 to develop power management ICs. The company achieved first revenue in 2004 and closed Series A funding in 2005. In Q4'06, the company raised roughly $4 million from Selby Venture Partners, U.S. Venture Partners, and others. The company has more than 100 employees in Asia and the U.S.

Active-Semi currently offers five power management product lives: AC/DC, portable DC/DC converters, high power DC/DC converters, backlight products and battery charger ICs. To date, the company has introduced nearly 40 products.

Products range from the NanoStandby family of essentially zero supply current portable regulator products, to the cost efficient ActiveSwitcher line of primary feedback AC/DC controllers that exceed the California Energy Commission (CEC), European Union Blue Angel, and U.S. Energy Star standards. The company also offers the ActiveLED family for LED back-lighting applications and is an adopter of technologies such as the PMBus standard for power systems.

The ActiveSwitcher family of offline primary and secondary feedback power supply controllers are medium-voltage pulse frequency and width modulation ICs that drive an external low-cost transistor for safe high voltage switching.

The portable DC-DC product line encompasses a broad line of high performance linear and switching regulators that offer low input voltage startup capability, switching frequen-

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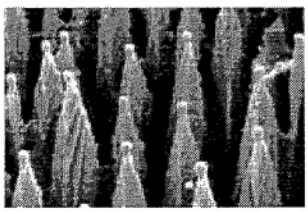
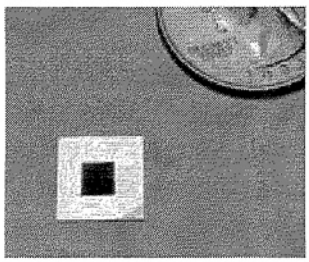
SiOnyx

Sionyx was founded in 2006 as a spinout of Harvard University to develop silicon-based optoelectronic products enabled by its proprietary, "Black Silicon." The technology was developed within the Mazur Group at Harvard University, run by Eric Mazur, Ph.D., a Harvard College Professor, Gordon McKay Professor of Applied Physics, and Professor of Physics. In June 2006, the company secured $750,000 in seed financing from Harris & Harris Group. To date, the company has raised roughly $2 million from Harris & Harris Group, RedShift Investors and individuals.

The flat, mirror-like surface of a silicon wafer reflects a substantial amount of visible light, and infrared and ultraviolet light are transmitted through silicon or reflected with very little absorption. In contrast, spiked silicon surfaces absorb nearly all light at wavelengths ranging from ultraviolet to infrared, which can be very useful in improving the performance of silicon devices, such as detectors and photovoltaics.





Spiked silicon is made by shining a series of very short, very intense laser pulses at a silicon surface in a chamber filled with a gas such as sulfur hexafluoride or chlorine. In the presence of the laser light, the gas reacts with the silicon surface etching away some of it and leaving a pattern of conical spikes behind. The spikes are tens of micrometers tall and have tip sizes on the order of hundreds of nanometers. The structured surface is strongly light absorbing. In addition to near-unity absorption in the visible spectrum, the irradiated surface absorbs over 80% of infrared light for wavelengths as long as 2500nm.

Photodiodes with remarkable responsivity in both the visible and infrared can be made using this microstructuring process. A partnership between the Mazur Group and Radiation Monitoring Devices produced avalanche photodiodes that have 50% higher quantum efficiency than devices based on ordinary silicon. The extended absorption range can make silicon solar cells more efficient as well.

James Carey, Chief Science Officer

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Shocking Technologies

Shocking Technologies was founded in 2006 to develop advanced voltage switchable dielectric materials for the semiconductor and electronics industries. The company recently secured $7 million in first round financing co-led by ARCH Venture Partners and ATA Ventures with participation by several industry luminaries. Applications include electrostatic discharge protection of semiconductor chips, printed circuit boards and metal patterning of small features on dielectric for many electronic applications.

Lex Kosowsky, President and CEO
(previously President & CEO positions at DMS Technologies and Leading Technologies, and led National's Dyna-Craft subsidiary)

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Ubidyne

Ubidyne was founded in Fall 2005 to develop "disruptive radio technology for the wireless and mobile communications infrastructure market." Its goal is "to enable the evolution from today's voice centric services on 2nd generation networks to ubiquitous broadband data services for mobile multi-media applications on 3rd generation networks and beyond."

Before forming the company, the co-founders incubated the technology for a year and a half inside Siemens, now a minor stakeholder. Ubidyne's team has completed more than 213 chip designs and 75 patents prior to joining the company. The company has received funding from TVM Capital and Accel Partners and will seek additional capital in the future. Ubidyne has 40 employees and is growing. Headquarters in located in German and the company has a design center in Temp Arizona.

Mobile phones have become ubiquitous with more than 2 billion subscribers worldwide and still growing at an annual rate of 200 million new users.