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Today's Table Of Contents:

1. News Focus
 - *Low-Power Transceiver Links Medical Implants With Basestation
2. News From The Editors
 - *TV Tuner Chip Targets Handhelds
 - *ETX Module Supports Pentium M
 - *Photo ICs Offer High Speed In A Small Package
3. TechView Scope
 - *White LEDs Illuminate The Third World's Future
4. Upcoming Industry Events
 - *Intl Symposium on Low Power Electronics
 - *LinuxWorld Conference and Expo
 - *2005 Digital Power Forum

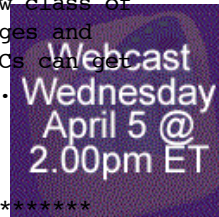
5. Book Review

*"Stuff You Don't Learn In Engineering School: Skills for Success in the Real World"

TOP 20 ARTICLES

- 1) [Researchers Close In On Hydrogen Fuel-Cell Success](#) 1194
- 2) [Build A Smart Battery Charger Using A Single-Transistor Circuit](#) 918
- 3) [To What Degree—MSEE Or MBA?](#) 860
- 4) [Monitor Your PC's CPU Core Temperature](#) 705
- 5) [DC-AC inverter targets electroluminescent applications](#) 614

[ALL TOP 20 >>](#)



Electronic Design UPDATE edited by Lisa Maliniak, eMedia Editor
 mailto:lmaliniak@penton.com

Need To Go Green? We Can Help!

The European Union, as well as Japan and China, are about to restrict the use of environmentally hazardous materials in electronic components and systems through the Restrictions on Hazardous Substances (RoHS) directive. Electronic Design's RoHS Reference Center has the information you need to make the shift to green designs. The second chapter of our eBook, "Electronic Design's Guide To New International Environmental Laws," is now available for download. And don't miss our comprehensive list of industry and government Web sites and contacts.

<http://nls.planetee.com/t?ctl=DC86:1001CD>

1. News Focus

Low-Power Transceiver Links Medical Implants With Basestation

The ZL70100 transceiver chip from Zarlink merges RF and ultra-low-power technology to create a device designed exclusively for wireless communication systems that link implanted medical devices and basestations. Applications for this new transceiver include implanted pacemakers, defibrillators, neurostimulators, and blood-glucose sensors.

The transceiver operates in the Medical Implant Communication Service (MICS) band at 402 to 405 MHz and the ISM band at 433 to 434 MHz. The chip fully complies with the complete MICS standard defined by the FCC and European Telecommunications Standards Institute (ETSI).

Zarlink's RF technology allows high-speed 500-kbit/s data transmission over a typical two-meter range. In comparison, many previous implanted communication systems relied on magnetic coupling between coils in an in-body device and a basestation. This previous approach operated up to a 10-cm range with data transmission rates of less than 100 kbits/s.

The ZL70100 supports transmission rates of 800 kbits/s for raw data and 500 kbits/s for usable data, while consuming less than 5 mA of supply current when active. With the ability to aggressively duty-cycle the radio transceiver, the ZL70100 lets implanted devices quickly transmit large amounts of patient health and device performance data with minimum impact on the battery life of the implanted device.

Average "sleep" current is a key design factor in implanted medical devices because most do not require constant communication and instead transmit data on a scheduled or as-required basis. The ZL70100 radio transceiver contains an ultra-low-power wakeup system with an average current demand of just 200 nA. In addition, high integration means that the ZL70100 chip requires just two external components excluding antenna matching, enabling manufacturers to use substrate space savings

to increase battery size and support advanced functionality while also lowering bill-of-materials costs.

The industrial-grade ZL70100 transceiver chip for basestations is the first device available in this product line. It is available now in a 48-pin QFN package or as bare die. The device is supported by an evaluation board and reference design. Qualification of the same transceiver chip for implantable applications is currently under way. The implantable device will be available later this year.

Zarlink Semiconductor ==>
<http://nls.planetee.com/t?ctl=DC81:1001CD>

2. News -- From The Editors

***TV Tuner Chip Targets Handhelds

The MT2260 single-chip tuner supports U.S. and European mobile TV broadcast networks. Targeted for cell phones and other handheld systems, it operates across the European UHF (470 to 890 MHz) and U.S. L-band (1670 to 1675 MHz), the spectra currently allocated for DVB-H broadcast TV services. The chip, based on a patent-pending architecture, will let mobile-device users view real-time broadcast TV with full-motion, high-quality video and CD-quality sound. Implemented in a silicon-germanium process, the tuner chip comes in a 6- by 6-mm, 40-contact QFN package. It consumes as little as 20 mW in viewing mode when operating from a 2.7-V supply. Power-down and sleep modes are both incorporated to further conserve battery power. An integrated pre-amp filter trims system cost and helps reduce interference from a mobile phone transmitter. The MT2260 is sampling now and costs \$5 apiece in lots of 10,000 units.

Microtune Inc. ==> <http://nls.planetee.com/t?ctl=DC8A:1001CD>

***ETX Module Supports Pentium M

The ETX-IM333, based on Intel's 855GME chip set, supports the 2-GHz Pentium M and 1.3-GHz Celeron processors. The module includes interfaces for CRT/LVDS displays with resolutions up to 1280 by 1024 pixels. It also features 10/100 Ethernet, Ultra ATA EIDE, four USB 2.0 ports, AC'97 Audio, serial and parallel ports, and PS/2 keyboard and mouse ports. The ETX module costs \$975.

Adlink ==> <http://nls.planetee.com/t?ctl=DC89:1001CD>

***Photo ICs Offer High Speed In A Small Package

The S9684 series of photo ICs combines high sensitivity and high speed in a compact package. The ICs target laser-beam detection applications such as print start timers for laser printers, digital copiers, and fax machines. Each device achieves highly stable digital output--even when laser power or ambient temperature fluctuates--by comparing the two signals from its dual-element silicon PIN photodiode. Both photo ICs in the series have high sensitivity due to a current amplifier with two gain levels. The S9684 has 20-time gain, while the S9684-01 has six-time gain. Maximum rise and fall time is 5 ns, and maximum propagation delay time variation is +/-5 ns. The compact surface-mount package measures 3 by 1.3 by 4 mm. Pricing is \$2.91 in small quantities. Delivery is five to six weeks ARO.

Hamamatsu Corp. ==> <http://nls.planetee.com/t?ctl=DC88:1001CD>

3. TechView Scope

White LEDs Illuminate The Third World's Future

White LEDs can save the world--or at least a lot of money and oil, especially in developing countries. Evan Mills of Berkeley Lab's Environmental Energy Technologies Division believes that highly efficient, cost-effective white LEDs can replace the inefficient, polluting kerosene lamps commonly used for illumination in the third world. In turn, this would save 77 billion liters of fuel and \$38 billion each year.

More than 1.6 billion people in the world have no access to electricity and must rely on lamps that burn kerosene, diesel, propane, or biomass-based fuels for light. But these fuel-based lamps emit more than 100 kg of carbon dioxide into the atmosphere each year for an annual total of about 190 metric tons. They also generate 1/500th the illumination of electric light sources, with much lower energy efficiency.

White LED systems, on the other hand, are far superior. Solar-powered white LEDs could cost \$25 each without the need for subsidy. Annually, users would save up to a month's income by using them instead of fuel-based lamps. White-LED lamps also are rugged and portable. They use direct current, have long service lives, and could even run on widely available AA batteries.

"Efficiencies of only 5 lumens per watt in the mid-1990s are moving towards 100 lumens per watt (compared to 0.1 lumen per watt for a flame-based lantern)," Mills writes in the May 27, 2005 issue of Science. "Commercially available 1-W WLEDs require 80% less power than the smallest energy-efficient compact fluorescent lamps and can be run on rechargeable batteries charged by a solar array the size of a paperback novel."

There are several key steps before these inexpensive and efficient wonders could be distributed to the areas of the world that need them the most. Manufacturers would have to design and field-test affordable high-performance systems for different applications like reading, cottage industries, schools, and public areas. Pilot programs would need to be mounted. And, viable business models for reaching the target markets would have to be developed.

"As they modernize, developing countries can select better technologies, and in so doing surpass levels of efficiency typical of industrialized nations," Mills writes. In fact, such LEDs could deliver more light than 100-W light bulbs.

Lawrence Berkeley National Laboratory ==> <http://nls.planetee.com/t?ctl=DC8B:1001CD>

4. Upcoming Industry Events

August 8-10, International Symposium on Low Power Electronics and Design (ISLPED) 2005
San Diego, Calif.

<http://nls.planetee.com/t?ctl=DC82:1001CD>

August 8-11, LinuxWorld Conference and Expo
San Francisco, Calif.

<http://nls.planetee.com/t?ctl=DC87:1001CD>

September 12-14, 2005 Digital Power Forum (DPF)
Wakefield, Mass.

<http://nls.planetee.com/t?ctl=DC83:1001CD>

5. Book Review

"Stuff You Don't Learn In Engineering School: Skills for Success in the Real World"

By Carl Selinger

Let's face it, engineers are not known for their charismatic people skills. However, most engineers can't make it on technical skills alone. Other, more people-oriented skills are essential for a successful career. Engineers need to be able to promote their ideas, share them with others, and work with a wide variety of people. "Stuff You Don't Learn In Engineering School" is designed to teach these skills and thereby help its readers become effective and proficient in the corporate world...

Read the full book review at

<http://nls.planetee.com/t?ctl=DC7F:1001CD>

Embedded in Electronic Design (EiED) Online is your source for technical insight and hands-on reviews. Read Bill Wong's latest EiED Online column, "Getting On The Network: Fast." NetBurner's Coldfire-based MOD5270 development kit cuts initial development time down to hours, not days.

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- I design and build my station equipment
- I'm an avid kit builder
- I scratch-build gear from books or magazines
- I'm an appliance operator

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"Analog/Mixed-Signal Components For 21st Century Video," by Analog/Power Editor Don Tuite. Chapter 1 covers the basics, and the recently added Chapter 2 discusses interfacing video amps to digital-to-analog converters.

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CONTACTS: Electronic Design UPDATE e-NEWSLETTER
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Editorial: Mark David, Editor-in-Chief
<mailto:mdavid@penton.com>

Advertising/Sponsorship Opportunities: Bill Baumann, Publisher:
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Reader Comments

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Oh my Zeus ! Today is my birthday and I have spent the morning dealing with issues that can only be described as minor, irrelevant and excruciatingly annoying.

Then I read the Techview Scope article

GADS ! white LED lamps for ONLY \$25 for the worlds masses ? And it only takes ... (I quote the author)

"Manufacturers would have to design and field-test affordable high-performance systems for different applications like reading, cottage industries, schools, and public areas. Pilot programs would need to be mounted. And, viable business models for reaching the target markets would have to be developed. "

Instead, send all the politicians and bureaucrats to a Disney World created just for them, go down to the Harbor Freight store and buy "solar powered landscape lights" for \$5 each on sale. Who knows, if you buy a billion, there might be a rebate.

Anonymous -July 06, 2005

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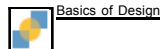
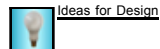
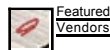
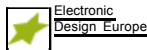
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