February 2007

Rock River Valley Section

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Event Sense

The Institute of Electrical and Electronic Engineers, Inc.

0.1 Horsepower and 0 to 5 GHz in 50 Picoseconds: The Challenges in Delivering Power to Tomorrow's Microelectronics

Plus EIGERlab Tour (6:00-6:30pm)

WHEN Thursday, February 22, 2007

WHERE

EIGERlab, (605 Fulton Avenue, Rockford, IL, 61103, phone: 815-965-3522) — From I-90 take Business 20, (East State St. exit), proceed west to Perryville Road, north on Perryville to Springcreek, west on Springcreek across river to Cumberland (Springcreek becomes Auburn west of the Rock River), north on Cumberland (first light past river) to Fulton, west on Fulton to Douglas, north on Douglas and follow signs...http://www.eigerlab.org/contact.htm

AGENDA

6:00 PM	Networking/Tour
6:30 PM	Dinner
7:30 PM	Presentation

PROGRAM

The continued increase in power and speed requirements of microprocessors and other ASICs present new challenges for delivering power. While power integrity often brings images to mind of in-depth decoupling schemes, resistance and inductance also play an increasingly significant role. Besides the concern of efficiency in the power distribution system (PDS), resistance must be controlled to ensure the compensation circuitry of the voltage regulator can adequately maintain the voltage within specified limits. Parasitic inductance limits the ability to draw current from various locations in the PDS, resulting in the need not only for choosing the values of decoupling capacitors, but also for judiciously placing the capacitors so they can be effective. This presentation will facilitate a discussion of the various parts of the PDS, and how decisions can be made to ensure the smooth operation of power delivery. After the complete power distribution system is discussed, a brief discussion on how various parts may play a role in EMI will follow.

SPEAKER

David Hockanson, Ph.D., is a Senior Staff Engineer with the EMC Design group of Sun Microsystems, Inc., and Distinguished Lecturer, IEEE EMC Society. He is responsible for developing novel solutions to electromagnetic compatibility (EMC) issues that can be implemented confidently in early design stages to ensure compliance to worldwide EMC regulations without costly late-stage system changes. He also serves as a troubleshooter for Sun and OEM designs should EMC issues arise.

David received his Ph.D. in Electrical Engineering from the University of Missouri-Rolla. He was a National Science Foundation Fellow during his tenure as a graduate student, and came to Sun as a Member of Technical Staff after completing his doctoral program in 1997. Early responsibilities were centered around ensuring that Sun's products met the requirements set by worldwide regulatory agencies. In 2003, he began focusing on determining more effective means of complying through physics-based design techniques employed on chips, boards, and chassis.

MEAL INFORMATION

Dinner menu: Buffet featuring vegetables and chicken. The costs are: member and student non-members: $5, non-member: $10, and student members: $2. Please make your **dinner reservations** by **call**ing **Ginger at 815-394-5696 or sending her an email (ginger.spinasanta@hs.utc.com) by Monday, February 19, at 5pm**. Please include the following information: your name, phone number, email address, IEEE member number, and choice of dinner entrée. Unemployed members may call one of the officers for special arrangements.

NOTE

The meeting is open to the general public. You need not be an IEEE member. Guests are welcome. Please call Ginger at 815-394-5696 for questions.