THE LOG PERIODIC

www.scvemc.org Santa Clara Valley Chapter of IEEE Electromagnetic Compatibility Society

IEEE/EMC Society Meeting: Tuesday, December 8, 2009

Time: Social 5:30 p.m. Presentation 6:30 p.m.

Place: Applied Materials Bowers Cafeteria
3090 Bowers Ave., Santa Clara, CA 95051-0804

Subject: Near Field Scanning Techniques: Nice Pictures, So What?"

Speaker: Dr. David Pommerenke, Professor, University Missouri Rolla

Abstract:

In the near field of PCBs and modules, a few types of EMC analysis have been done:

- near field emission scan, determines the EM field close to an IC, module or product
- near field radiated immunity scan, identifies areas locally sensitive to RF fields
- near field ESD pulse immunity scan, identifies areas locally sensitive to ESD
- resonance analysis, determines the location, resonant frequency and Q-factor of resonating structures on PCB and it systems.
- ESD current spread analysis, identifies how the current spreads on a PCB and how resonances are excited for different ESD test points

They all produce nice pictures, so what? What can we learn from them? How can we use these tools? The talk will briefly introduce the scanning methods. Then it will be shown how each method can help to solve (debugging), avoid (module qualification) and understand system level problems, and illustrate limits of the methods. This includes pointing out often met misunderstandings about the meaning of those colorful plots created by scan systems.

Speaker Bio:

Dr. David Pommerenke approaches EMC from the measurement side. His research interests are system level ESD, numerical simulations, EMC measurement methods and instrumentations. He received the Ph.D. from the Technical University Berlin, Germany in 1996. After working at Hewlett Packard for 5 years he joined the Electromagnetic Compatibility Laboratory at the University Missouri Rolla in 2001 where he is a tenured professor now. He has published more than 100 papers and is inventor on 10 patents. Besides other professional activities, he is the US representative of the ESD standard setting group within the IEC TC77b. He has been a distinguished lecturer for the IEEE EMC Society in 06/07.

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$$\nabla \times \vec{E} = -\frac{\partial \vec{B}}{\partial t}$$

$$\nabla \times \vec{H} = \frac{\partial \vec{D}}{\partial t} + \vec{J}$$

$$\nabla \cdot \vec{D} = \rho$$

$$\nabla \cdot \vec{B} = 0$$

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