

# Spectral Lines

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

May 2001 issue

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## SCV EMC Society Meeting

### "Parallel Traces are Just the Beginning: A Primer on Four Printed Circuit Board Mechanisms" Tuesday, May 8, 2001

The May meeting of the Santa Clara Valley EMC Society will be held at SGI in Mountain View, 1600 Amphitheatre Pkwy., building 40, in the Presentation Center above the lobby. The social gathering will start at 5:30 PM, and food and drinks will be available. **The technical presentation will start at 7:00 PM.** A map with the location of the SGI campus is available in this newsletter.

As high speed digital clocks, timing, and data signals cross over into the GHz frequency range, the traditional lumped element L-C (inductive-capacitive) crosstalk model is not sufficient to explain all the coupling mechanisms occurring between conductors on a printed circuit board. At higher frequencies, other printed circuit board structures cause EMC and signal integrity engineers grief. These include vias, routing traces across breaks in ground and power planes, and reflections from PCB edges. The presentation will briefly review the L-C crosstalk mechanism, and then explore how the other three structures can also create coupling paths between PCB conductors. The presentation will also cover practical examples of mitigation techniques that can be used to minimize all four coupling mechanisms.

Dr. Zorica Pantic-Tanner is Director of the SFSU School of Engineering, and Director of the SFSU Center for Applied Electromagnetics, a research facility that provides resources for theoretical and experimental studies in applied electromagnetics. She received her B.S., M.S., and Ph.D. degrees in Electrical Engineering from the University of Nish in 1975, 1978, and 1982, respectively. In 1984 she was awarded a Fulbright Scholarship for postdoctoral research in the area of Applied Electromagnetics-Champaign. Dr. Pantic-Tanner's research and teaching interests are in the areas of Electromagnetic Field Theory, Applied Electromagnetics and Electromagnetic Compatibility (EMC). She has published over 50 conference and journal papers in these areas. Dr. Pantic-Tanner is a member of the IEEE EMC Society Education Committee and Vice-Chair of the IEEE EMC Society Technical Committee TC-9 on Computational Electromagnetics. Under the IEEE EMC Society sponsorship, she has also developed and taught several EMC courses.

Franz Gisin is EMC/Signal Integrity Design Manager at Sanmina Corporation. He received his B.S. degree in electrical engineering from the University of Idaho in 1972, and his M.S. degree in Applied Mathematics from the University of Santa Clara in 1986. Franz has been active in the EMC community for over 27 years, and has published numerous papers. He is a past EMC Society Distinguished Lecturer and a past member of the EMC Society Board of Directors. Currently he is steering committee chair of the 2004 IEEE International Symposium on Electromagnetic Compatibility. He also teaches electromagnetics at SFSU.

Anyone interested in presenting an outline of EMC-related topics should contact Tom Cokenias (trephonc@macconnect.com) at 650-726-1263.

For more information about the newsletter and its distribution, please contact the editor Neven Pischl (npischl@cisco.com) at 408-527-7874.

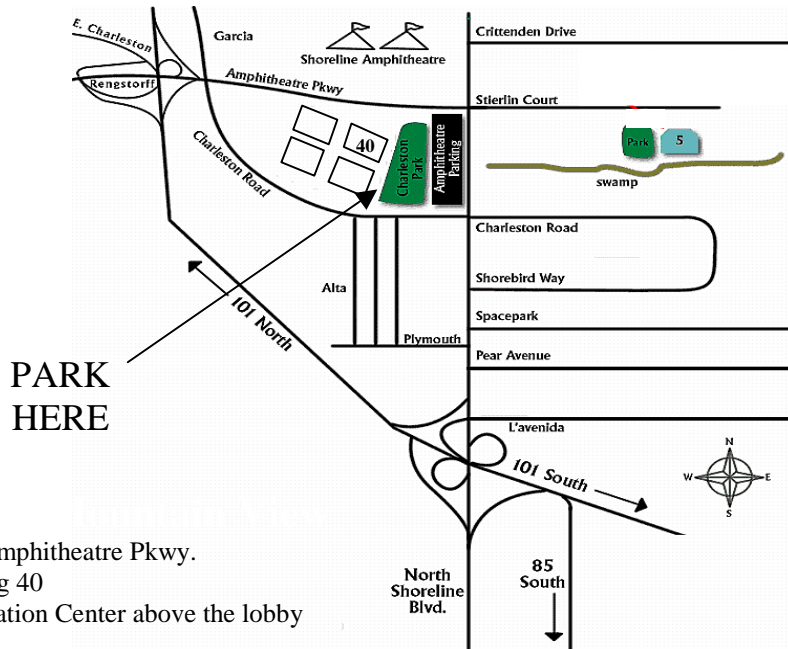
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$$\nabla \times \vec{H} = \frac{\partial \vec{D}}{\partial t} + \vec{J}$$

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

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

# SCV-CHAPTER OF THE IEEE EMC SOCIETY MEETING, 8 MAY 2001



Dated Material - Meeting Notice  
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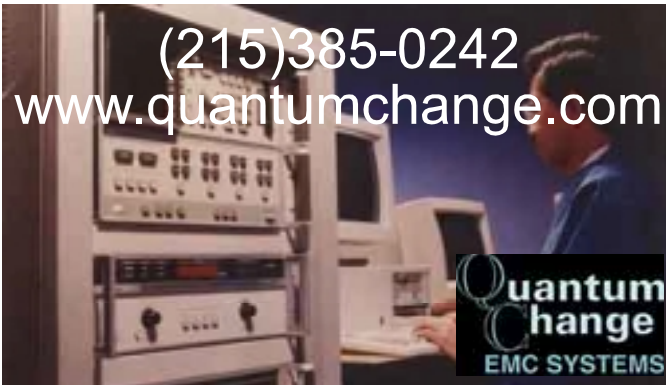
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