



The IEEE Electromagnetic Compatibility Society Singapore and PSB Corp.
presents 2 talks on

Concerns Related to Signal Integrity on Printed Circuit Boards and Analysis on the Effectiveness of the 20-H Rule

Mark Montrose

Principal Consultant of Montrose Compliance Services, Inc.,
Member of the Board of Directors IEEE EMC Society, Senior Member of IEEE,
Former Distinguished Lecturer for the IEEE EMC Society
Author of "Printed Circuit Board Design Techniques for EMC Compliance" and
"EMC and the Printed Circuit Board - Design, Theory and Layout Made Simple"

Location: The "Theatrte",
PSB Corporation Pte Ltd, 1
Science Park, S118221.

Date: Tuesday September 3, 2002

Time: 6:00 to 8:00 pm

Admission: Free of Charge,

Please fill in the registration form. Limited seats are available.

Pre Registration Form to Tim Foo , fax : 64671730

or email the contents below to (fwj@np.edu.sg) by 30 August 2002

Please print/write clearly in black for fax transmission

1 Mr/Ms/ _____ (EMCS / IEEE / others) E-mail _____

2 Mr/Ms/ _____ (EMCS / IEEE / others) E-mail _____

3 Mr/Ms/ _____ (EMCS / IEEE / others) E-mail _____

Company: _____

Address: _____

Contact-Person: Mr./Ms. _____ Fax _____ E-mail _____

Chapter meeting of the IEEE EMC Society, Singapore

The Singapore IEEE EMC Society, in conjunction with PSB Corp., is presenting a chapter meeting with Mark Montrose. He will speak on the subject of signal integrity and the effectiveness of the 20-H rule (a PCB layout technique). The first topic presents concerns dealing with signal propagation on a printed circuit board and their impact on EMC. The second talk presents analysis and results related to a controversial PCB design rule. This is from a paper (to be) presented to the IEEE International Symposium on EMC in Minneapolis, USA (19-23 August 2002), and is an opportunity for chapter members to meet and get together.

Outline:

Concerns Related to Signal Integrity on Printed Circuit Boards

This is a presentation on the basics of signal integrity and how it relates to the transference of electromagnetic fields within a transmission line. Once a field propagates in a transmission line, various aspects of transmission theory must be taken into consideration. During propagation, passive and active components, in addition to dielectric losses can change the characteristics of a propagated signal. This alteration may cause the desired waveform to degrade to unacceptable levels, or cause an EMI event.

Analysis on the Effectiveness of the 20-H Rule

This talk is based on research performed in cooperation with IHPC (Institute of High Performance Computing, Singapore), which was (to be) presented at the IEEE 2002 International EMC Symposium in Minneapolis, Minnesota, USA (two weeks prior to this meeting). The 20-H Rule is explained and demystified as to whether this rule-of-thumb is fact or fiction. The 20-H Rule is a printed circuit board layout technique to minimize or reduce radiated emissions from the edges of the PCB by making the power plane physically smaller than the return plane by 20 times the distance spacing between both planes.

About the speaker:

Mark Montrose is principal consultant of Montrose Compliance Services, Inc., a full service regulatory compliance firm specializing in Electromagnetic Compatibility and Product Safety, located in Santa Clara, California, USA. He is a member of the Board of Directors of the IEEE Electromagnetic Compatibility (EMC) Society and a Senior Member of the Institute of Electrical and Electronic Engineers (IEEE). In addition, he was a distinguished lecturer for the IEEE EMC Society, a director of TC-8 (Product Safety Technical Committee of the IEEE EMC Society), creator of TC-10 (Signal Integrity), co-founder of the new Product Safety Society steering committee of the IEEE, plus a member of the dB Society.

Mark has authored several best selling reference/textbook published by Wiley/IEEE Press, *Printed Circuit Board Design Techniques for EMC Compliance* (1996/2000) and *EMC and the Printed Circuit Board - Design, Theory and Layout Made Simple* (2000).

Personal profile: http://www.montrosecompliance.com/biographical_sketch.html

Books by Mark Montrose: <http://www.montrosecompliance.com/publications.html>