

# Meeting Report of the IEEE EMCS Chapter, Pittsburgh Section, Region 2 4/17/07

A technical meeting of the Pittsburgh EMC Society Chapter was conducted on April 17, 2007 at the Westinghouse Energy Center in Monroeville PA. Michael Oliver, IEEE EMCS Chapter Chair, and Harry Godlewski, Vice Chair hosted the meeting with 16 people in attendance. We were fortunate to have 4 students attend the meeting from Geneva College; it is always important for our EMC Chapter to have Electrical Engineering students involved for continued growth in our field. The meeting started with a social prior to a technical presentation. We had the privilege of having Lee Hill as our technical speaker; Lee is a founding partner of Silent; an independent consulting firm that specializes in EMC and RF design, troubleshooting, and training services to commercial and industrial manufacturers.

Prior to discussions encompassing the up-coming technical presentation we made an announcement concerning job openings in our EMC field. For this meeting we presented two openings that a company named Garmin currently has to offer as follows:

“Garmin was founded by engineers, and is still led by engineers. Garmin has experienced consistent growth (73% in 2006) has created great opportunities for a **Senior Compliance Engineer** (10 years experience) and **Compliance Engineer** (3 years experience)”. See complete job descriptions and apply at <http://www.garmin.com/careers/jobs/>

Lead regulatory compliance activities for Garmin consumer products while ensuring the development teams’ success in meeting worldwide Safety, EMC, wireless, SRD, Design-for-Environment and/or hazardous substance regulations. Responsibilities include:

- Serve as consultant to product design teams.
- Generate compliance plan during high-level design phase.
- Act as issue leader for standards and directives in development

A contact for these positions is Doug Kealey (913) 440-5210, Compliance Engineering Team Leader, Garmin International Inc. <http://www.garmin.com>

Discussions then focused on the up-coming technical presentation agenda and an introduction of Mr. Lee Hill. The technical presentation by Lee Hill is titled “*Measuring Noise Current and How to Reduce it Using Ferrites*”. This presentation was based upon a mix of Lees’ other more in depth presentations that he regularly presents as courses offered through Silent. In May 15-17 of 2007 Lee will be offering a three-day Electronic Product Design & Retrofit for EMC Class at the Syria Shrine Center in Cheswick, PA. for more details see the following link: <http://www.silent-solutions.com/education.htm>

For the technical presentation Lee reviewed the use of low and high frequency noise filter inductors that are commonly referred to as ‘ferrites’. He provided the necessary background, the concepts of differential and common-mode current and demonstrations using a spectrum analyzer, a variety of current probes, and several ‘live’ noise sources. Discussions also included tips for choosing the right probe and ferrite to understand and solve noise problems and Lee’s

favorite current probes for the measurement of low and high frequency currents. This presentation was relevant to anyone involved in the control of electrical noise from 10 kHz to 10 GHz. Lee encouraged audience participation and welcomed questions throughout the presentation.

#### About the author:

Lee Hill is Founding Partner of Silent, an independent consulting firm that specializes in EMC and RF design, troubleshooting and training services to commercial and industrial manufacturers with global distribution in the consumer, computer, network and telecommunications, industrial, medical, scientific and automotive industries. Previously Lee was Principal EMC and Systems Engineer at Digital Equipment Corporation's Workstation Systems Engineering Group in Palo Alto, California. Lee received the Master of Science Degree in Electrical Engineering & Electromagnetics from the University of Missouri-Rolla, and the Bachelor of Science Degree in Electrical Engineering from the Rochester Institute of Technology.

Lee has twenty years of experience in the EMC design, troubleshooting, and retrofit of complex electronic systems. He has been teaching short courses on EMC design and troubleshooting for over ten years. Lee consults and teaches worldwide, and has presented classes in Taiwan, Singapore, Mexico, Norway, Canada, South Korea, and the United States. He is also a regular EMC course instructor for Oxford University (England), University of California-Berkeley Extension, General Motors University, and Freescale Technology. In previous years Lee was also an instructor for Agilent Technologies. He has completed a three-year term on the Editorial Review Board of Printed Circuit Design Magazine. Lee holds a US patent for EMI control in portable electronics, and provides expert witness services for patent litigation.

Lee is presently a member of the IEEE EMC Society's Board of Directors (2005-2007). He served as Chairman of the IEEE EMC Society's Distinguished Lecturer Program from 1999 through 2006, and currently is a member of Technical Committee TC-10 on Signal Integrity. He also served as Co-Technical Chair of the 2003 IEEE Symposium on EMC in Boston, Massachusetts. He is a past Vice-Chair of the Central New England Chapter of the IEEE EMC Society. In the past four years he has been a frequent featured speaker at IEEE EMC Society fundraising events in cities throughout the US including Seattle, Portland, Chicago, Dallas/Fort Worth, Milwaukee, and Detroit. He has also provided technical presentations to Society chapters in Los Angeles, San Diego, Central New England, Colorado, and Orange County, California. In 1999 Lee received a Certificate of Appreciation from the EMC Society for significant contributions to education through his annual participation in the Demonstrations and Experiments portion of annual IEEE EMC Symposia. Lee was a member of the original IEEE P1180 ad-hoc committee on low frequency magnetic field measurement for video display terminals.



**2007 IEEE EMCS Chapter, Pittsburgh Section, Technical Meeting  
April 17, 2007**



**Good Food**



**A Well Deserved Plaque Presented  
to Mr. Lee Hill**

**ON BEHALF OF ALL OF US IN PITTSBURGH PA,  
"THANK YOU LEE FOR YOUR CONTRIBUTION TO OUR EMCS  
PITTSBURGH CHAPTER"**