Chapter Chatter

Todd Robinson, Associate Editor

It's Always the Rookie's Fault . . .

Many thanks go out to Bill Kimmel of Kimmel-Gerke Associates for this issue's "EMC Tale." After reading his story, I am not sure if engineering imitates life or if life imitates engineering, but I am sure that Murphy is intimately involved in both! As usual, the story is told from the teller's perspective:

"This story goes back to the middle sixties, when I was a brand new engineer working radiation effects on this brand new technology known as 'integrated circuits' memory chips; microprocessors and A/D converters were still in the future.

I was working an R&D project where we were trying to record fast transient events (effects from gamma burst). Briefly, the task was to sample the signal in one-nanosecond intervals and store the analog level in thin film magnetic elements (one element per sample). The signals were to be read back, amplified, multiplexed, and sent to an X-Y plotter. At the time, the only way to multiplex low-level analog signals was with relays. The signal was amplified to the milivolt level needed by the plotter.

The problem was, the signal amplitude as plotted was considerably lower than expected and, further, was not linear with respect to plotter scale settings. I was tasked to fix the problem. The old-timers warned me to be careful about amplifier design and layout, as it was very sensitive and prone to oscillation. Investigation revealed the problem - the input impedance of the plotter was a function of the sensitivity setting, being lowest on the most sensitive scale. So the plotter was loading the input signal.

The simplest approach was to tack on an emitter follower stage to the existing amplifiers. When I installed the new output stage and powered up, I was appalled to find that the plotter chattered like crazy, with a half dozen witnesses observing the proceedings. I had been warned about oscillation, but this was beyond belief.

I traced the problem to a relay. As it turned out, there was a solder bridge between the relay coil contact (switching at 28 v) and the signal contact. Basically, the plotter was looking for a milivolt signal and was receiving 28 volts of noise, switching at about 100 Hz. The mechanical arm couldn't track this frequency, but it tried, thus causing the 'chatter.' I hadn't touched the relay circuits - the solder bridge had picked that time to actually make contact. Murphy's law was applied to electrical engineering.

I took a lot of ribbing before I found the problem, and even some after that.

Central New England

John Clarke, Secretary for the Central New England (CNE) Chapter, reports that their Chapter held a meeting on Wednesday September 27, 2006. The speaker was David P. Johns, PhD, Vice President of Electromagnetic Engineering, Flomerics, Inc. Dr. Johns' presentation covered a recently developed interface between the EMSCAN Corporation PCB Electromagnetic Scanning Device and the Flomerics Inc.'s FLO/EMC Analysis Program. This interface will permit the users to electromagnetically scan their PCB boards emission characteristics and then port this data over to the FLO/EMC Program to be stored and processed. It is expected that multiple PCB board emissions can then be "predicted" with FLO/EMC by building groups of PCB boards within FLO/EMC. Attendance at CNE's September meeting was good with 11 IEEE members and 17 guests. *Chapter Chatter would also like to include some overlooked Central New England chatter. Unbelievably, these reports slipped by the ever vigilant, eagle-eyed E-mail monitoring of the Chapter Chatter Associate Editor. Seriously, our apologies for the oversight John . . .* The CNE Chapter held a meeting on Wednesday, April 26, 2006. The invited speaker was Dr. David Pommerenke, Associate Professor of Electrical Engineering, Electromagnetic Compatibility Laboratory, Department of Electrical Engineering, University of Missouri-Rolla. Dr. Pommerenke is also currently a Distinguished Lecturer of IEEE EMC Society. His excellent presentation dealt with Advanced ESD and EMI Analysis Methods. "There is no single method that provides identification of all reasons for EMI and ESD problems. One needs to be aware of and have experience in a variety of methods and hopefully employ the most suitable method." His talk presented the following methods for EMI and ESD analysis: PCB level scanning to identify ESD sensitive areas, explanation of how (and when) the PCB results relate to IC level test results. For EMI: Using transfer impedances and port impedances to quantify coupling paths. The presentation used spectral, time domain and joint time frequency analysis methods to shed understanding on complex system-level EMI. The CNE April meeting was attended by eight IEEE members and six guests. The CNE EMC Chapter also held a meeting on Wednesday, May 24, 2006. The speaker was David Hockanson, PhD of Sun Microsystems, Menlo Park, CA. Dr. Hockanson is also a Distinguished Lecturer of the IEEE EMC Society. His topic was "0.1 Horsepower and 0 to 5 GHz in 50 Picoseconds: The Challenges in Delivering Power to Tomorrow's Microelectronics." The continued increase in power and speed requirements of microprocessors and other ASICs presents 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

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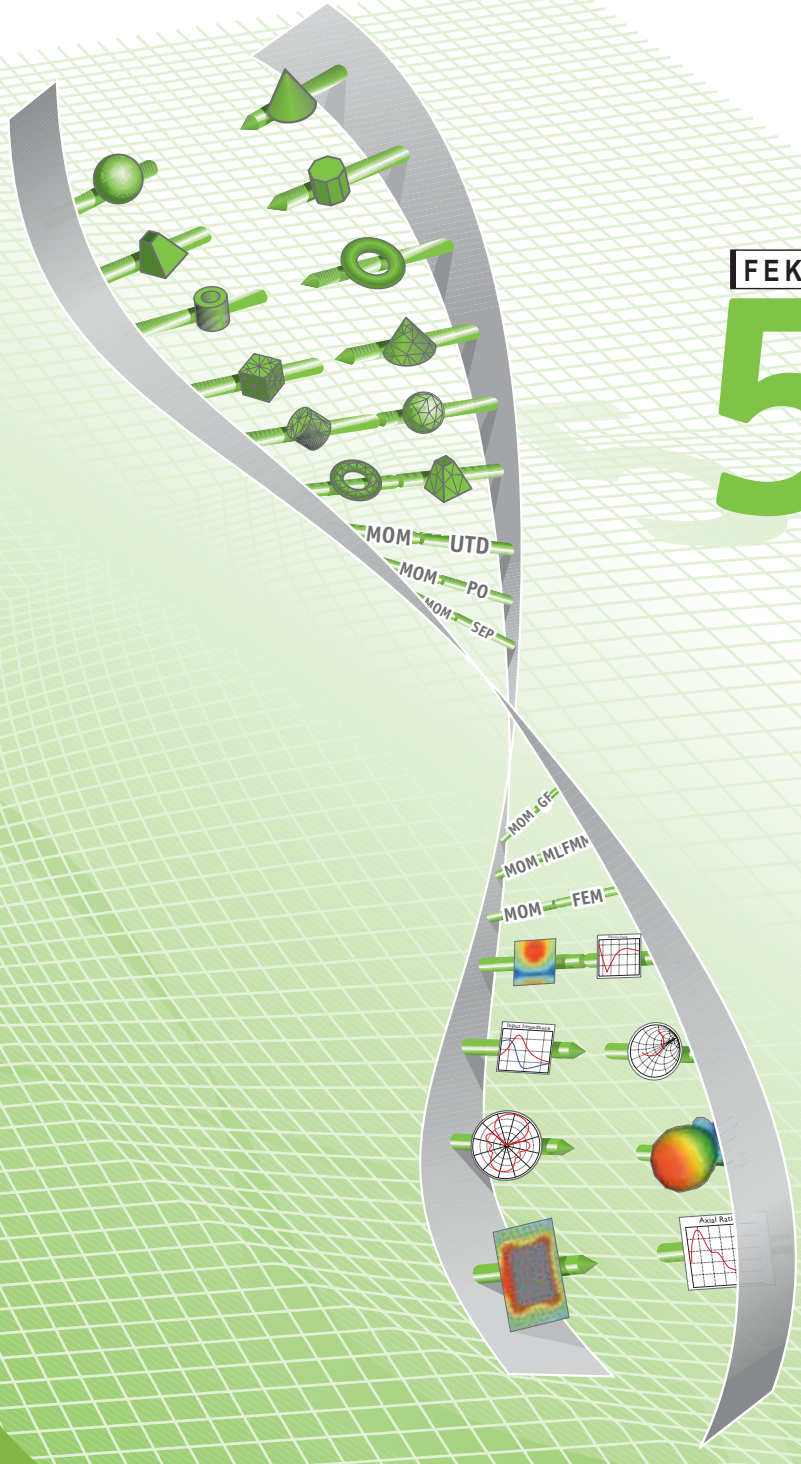

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from various locations in the PDS, resulting in the need not only for choosing the values of decoupling capacitors, but also for judiciously placing the capacitors so they can be effective. This presentation described the various parts of the PDS, and how decisions are made to ensure the smooth operation of power delivery. After the complete power distribution system was discussed, a brief discussion followed on how various components may play a role in EMI. Ten IEEE members and five guests attended the May CNE meeting.

Chicago

Jerry Meyerhoff reports that the Chicago Chapter held their fall 'kick off' meeting September 20, 2006 at DLS Electric Systems in Wheeling, IL. Don Sweeney from the IEEE EMC Society Board of Directors presented the 2006 Chapter of the Year Award to Jack Black, Chicago Chapter Chairman. Don also presented Certificate of Appreciation Awards to awards the following individuals: Jack Prawica, Jerry Meyerhoff, Roy Leventhal, Jack Black, Frank Krozel, Ray Klouda, and Roger Swanberg. John Landowski, Chairman of the IEEE Chicago Section, gave a brief presentation about the services and programs offered by the Chicago Section. The Section is looking to become connected to the local area Society Chapters. Jerry Meyerhoff was introduced as the new Chicago Chapter Secretary, replacing long time Secretary Carla Robinson. As keynote speaker, Jerry gave a summary presentation of the IEEE 2006 Symposium in Portland, OR. Jerry reviewed all aspects of the symposium, including technical sessions, committee meeting, technical papers and presentations, and outside activities. Bob Hofmann presented his take on the technical sessions and presentations. Jack Black reviewed exhibitor issues and venue related functions. Jack Black presented a detailed review of the upcoming 50th Year Anniversary IEEE EMC Symposium in Honolulu, Hawaii, including a video presentation. Jack presented information relating to the new networking opportunities, the global educational aspects, and the upcoming new technologies that will be the highlights of the Symposium. Jack also presented recommendations for attendees to present to their employers to assist in allowing them to attend this event. Brochures were handed out to all attendees, and special posters were presented to Continental Automotive Systems, GE Medical, and Motorola for distribution at their companies. Additionally, on September 21, an award banquet was held to honor Carla Robinson, long time Chicago Chapter Secretary for her long and meritorious service to the EMC Society and the Chicago Chapter. In addition to her secretarial responsibilities, Carla has held the position of Technical Papers Chairman for the 2005 International Symposium on EMC, Technical Services Chairman for the Chicago Chapter

Bob Hoffman, Jerry Meyerhoff, Don Sweeney, Jack Black, Tom Braxton, Ray Klouda, and Frank Krozel (from left) receiving 2005 Symposium certificates.

Jack Black (far right) promotes EMC 2007 Hawaii to a rapt audience.

Carla Robinson admires her Chicago Chapter Recognition Award.

Ida Krozel, Holiday Party Event coordinator, pins a ('required') identification badge on Tom Braxton, with Frank Krozel and Brandon Krozel looking on (from left).

Jack Black, Chapter Chairman, presents Ida Krozel, the Holiday Party Event Coordinator, with a thank you gift.

Hong Kong EMC Chapter officer presents a souvenir to the Chairman of the IEEE Hong Kong section after his keynote address to the Chapter.

Dr. Patrick Wong, Vice Chairman of the EMC Hong Kong Chapter, presenting one of the technical talks at the Chapter's inaugural meeting.

A large audience enjoys Dr. Peter Leung's presentation during the Hong Kong's inaugural meeting.

EMC Mini Symposium, Chapter Liaison to DeVry Institute of Technology, and Chairman for Extra Curricular Activates for the Chicago Chapter. Carla has accepted another position outside the Chicago area, and we wish her well in her future endeavors.

Hong Kong

The Hong Kong Chapter held a successful inaugural meeting on December 2. Over 90 attendees were on hand for three excellent EMC technical presentations. The three papers covered EMC subjects of keen interest in Hong Kong, including: "Frequently Asked EMC Design Questions and Answers," "Overview of Radio Spectrum Management in Hong Kong," and "Trends and Developments for Global EMC Standards and Regulatory Approval for Consumer Electronic Products." The first EMC Hong Kong Chapter Committee Meeting was held prior to the inaugural Chapter meeting. The Chapter officers were confirmed; including Dr. Peter Leung as the Chairman, Dr. Patrick Wong as Vice-Chairman, Mr. Michael Chu as Treasurer, and Dr. Duncan Fung as Secretary. Free first year EMC-S membership was also offered at the Chapter meeting to the IEEE members present. This special offer received a good response for EMC Society membership recruitment in Hong Kong. A promotional presentation for the 2007 IEEE International Symposium on EMC in Hawaii was also made to those in attendance.

Huntsville

Glenn Shelby, Chapter Chair, reports that the Huntsville Chapter held two meetings and elected 2007 officers prior

Dr. Peter Leung, Chairman of the EMC Hong Kong Chapter, starting off the inaugural meeting.

Huntsville Chapter members and guests enjoy a delicious buffet meal before the September Chapter meeting.

Mike Wheeler gives a brief overview of UL capabilities before the Huntsville Chapter presentation.

Huntsville Chapter members Woody Williams (left) and Jeff Whitmire discuss EMC before the presentation.

EMC Society Distinguished Lecturer Dr. Hockanson gave a very educational and entertaining presentation to the Huntsville Chapter titled "CSI: Compliance System Investigation."

Huntsville Chapter Chair Glenn Shelby (right) presents Dr. Hockanson with locally made cane syrup as a small thank you for his excellent presentation.

to its winter break in November/December. The Chapter met at ADTRAN on September 21 to hear EMC Society Distinguished Lecturer Dr. David Hockanson present "CSI: Compliance System Investigation." The talk was well attended with 56 Chapter members and guests present. Underwriters Laboratories and the Chapter sponsored the delicious buffet meal. Dr. Hockanson's talk focused on methods and tools for reducing exceeded levels of radiated emissions encountered during EMI testing. Both chassis- and board-level tools and techniques were presented, along with many real-world examples to bring home the points. Dr. Hockanson is a very engaging and entertaining speaker and the Chapter is grateful for his taking the time to visit Huntsville. The annual Chapter business meeting was held at ADTRAN on October 26. The main topics of discussion were the 2007 meeting schedule and officer nominations/elections. 2006 was a successful year with three monthly technical meetings, a one-day technical symposium and tabletop show, and the Distinguished Lecturer presentation. The average attendance at the monthly meetings was 35. The Chapter is indebted to ADTRAN for hosting the monthly meetings in their spacious and comfortable facilities since December 2003. Without ADTRAN support, the Chapter would not have been able to educate the large Huntsville technical community about EMC. The 2007 Chapter schedule has technical meetings in January, February, March, and August. Two EMC Society Distinguished Lecturer presentations are planned for April and September, respectively. The year will close out with the annual business meeting in October. The 2007 Chapter officer election results were tabulated on November 21. The election results for 2007 officers are as follows: Glenn Shelby from NASA will be the Chair, Tom Perry from Jacobs Engineering will be the Vice-Chair, Jim Stone from Underwriters Laboratories will be the Treasurer, and Tim Travis from ERC Inc. will be the Secretary. The officers look forward to serving the Chapter in 2007. Remember to check out Huntsville EMC Chapter happenings at the Chapter website: http://ewh.ieee.org/r3/huntsville/emc/.

Milwaukee

Jim Blaha reports that the Milwaukee EMC Chapter held two meetings this fall with great attendance. The first was a dinner presentation by Mr. Gary Fenical of Laird Technologies. This dinner meeting was also open to the other Societies within the Milwaukee Section. In attendance were members from the Medicine and Biology Society, Power Society, Computers Society and WIE - Women in Engineering. Prior to the dinner presentation, the EMC Chapter held a private round table discussion with Mr. Fenical. The discussion exposed the fact that many companies are not aware of the new EMC Directive. Key discussion topics included: New Directive Becomes Law on July 20, 2007. Also, fixed installations are addressed and defined along with the need for detailed documentation focused in on installation, use and maintenance. The second meeting was a Holiday Din-

Tom Arnold of Johnson Controls, Inc. (left) and Jim Blaha of LS Research enjoying a romp in the snow during the Chapter's annual holiday party.

Ms. Teresa White of LS Research and Jim Blaha have teamed up for five years of EMC Seminars in Milwaukee.

The plaque presented by the Milwaukee Chapter to Teresa White of LS Research for organizing five years of outstanding EMC seminars.

Everyone, including the rhinos, where in a festive spirit at the Milwaukee Chapter's holiday party (held at the Milwaukee Zoo).

Gary Fenical leads the round table discussion on the New EMC Directive.

Gary Fenical and Jim Blaha are shown in front of the original Val Blatz Brewery Headquarters.

Gary Fenical's dinner presentation ... "In the beginning there were 15 countries..."

Sample of original art work displayed in the Milwaukee School of Engineering Blatz Conference Center entitled "Goering Works – Austria."

ner and Awards Party at the Milwaukee Zoo. A major snowstorm of 13 inches only enhanced this seasonal get together! Section awards were distributed. One recipient, Ms. Teresa White, was totally caught off guard by receiving a special recognition plaque from the EMC Chapter. Her five-year commitment to the Chapter's annual Spring EMC Seminar Series has significantly contributed to its on going success. Next for the Milwaukee EMC Chapter is the 2007 EMC Seminar scheduled for March 27, 2007. Dr. Tom Jerse is slated lecturer. Please visit the Milwaukee EMC Chapter Website at http://www.ewh.ieee.org/r4/milwaukee/ for more information.

Seattle

For the Seattle Chapter's October meeting, Chair Pat André reports that Dr. Clifton Skouby gave a fascinating presentation titled, "Lightning Effects on Aircraft," with commentary specifically related to composite airframes. As the speaker recently retired from the Boeing Company, and with the Boeing 787 scheduled to have its first flight in August 2007, this talk was very well attended! The audience would often stop the discussion to ask questions or to comment from their personal experi-

Seattle EMC Chapter members gather for the October meeting held at CKC Labs in Bothell, Washington.

Seattle EMC Chapter Chair, Pat André of André Consulting, rallies the crowd with arms raised prior to the start of the October meeting.

ences. Dr. Skouby's presentation featured a large amount of historical evidence and information, including a number of lessons learned and personal experiences that helped to make the evening more enjoyable. He reviewed the basic mechanisms of lightning physics including the various phases of lightning strikes, the currents produced, and the types of lightning interactions of concern to mankind. The most significant effects of lightning on modern aircraft were presented with a special focus on the various forms of direct strike damage. Dr. Skouby closed the presentation by sharing techniques, which may be employed in order to protect aircraft from damage, which could jeopardize aircraft safety. The Chapter appreciated Dr. Skouby traveling to Seattle for this special visit. It's not often that a speaker who hails from the famed University of Missouri-Rolla (he received his BS, MS and PhD degrees from UMR), hails from the largest local employer in the area (Boeing), and has a son that is quite active in the IEEE EMC Society (Derick Skouby, Chair of the Oregon and SW Washington EMC Chapter) presents at a Seattle EMC Chapter meeting! The Chapter appreciated Dr. Skouby's considerable expertise from his years with Boeing St. Louis (the former McDonnell Douglas) as part of the Phantom Works group where he had responsibility for the development of antennas and Electro-Magnetic (EM) apertures for military aircraft applications in the New Aircraft and Missile Products (NAMP) division of McDonnell Aircraft Company. The focus of his work was research and development of designs for advanced low observable aircraft under development by McDonnell Douglas. For more information on Seattle Chapter activity, please contact Chair Pat Andre at pat@andreconsulting.com. Everyone is welcome to attend a meeting!

Sendai, Japan

The Sendai Chapter held a meeting on December 4, 2006 as its 2006 Second IEEE EMC-S Sendai Chapter Colloquium. This was a joint meeting with the Japan (Tokyo) Chapter and Tohoku University. The Colloquium featured a number of lectures covering cutting edge EMC topics presented by Zenichiro Kawasaki, Osamu Hashimoto, and Hiroshi Kurihara. The presentations covered such topics as observation of thunder and development and application of radio wave absorber. More than 50 attendees were present at the collo-

Speaker Cliff Skouby fielded many questions during his presentation to the Seattle EMC Chapter in October.

Professor Zen-ichiro Kawasaki delivers a lecture entitled "Seeking Thunders in the World" to the Sendai, Japan Chapter.

Professor Osamu Hashimoto during his talk to the Sendai Chapter titled "Design and Application of Radio Wave Absorber."

Mr. Hiroshi Kurihara speaks to the Sendai, Japan Chapter about "Radio Wave Absorber for Radio Wave Anechoic Chambers."

Pictured are the speakers and Sendai, Japan Chapter board members (from left) Akira Sugiura (Chapter Chair), Hideaki Sone (Chapter Secretary), Hiroshi Kurihara, Zen-ichiro Kawasaki, Osamu Hashimoto, and Tasuku Takagi (Chapter Past-Chair).

The participants at the evening technical seminar "Grounding Concept Revisited" on 28 September 2006 in Singapore.

quium and the evening social event. The Chair of the Chapter for 2007 is Hiroshi Echigo, former Vice-Chair, replacing the former Chair, Akira Sugiura, who will leave Sendai this spring. The new Vice-Chair is Hiroshi Inoue of Akia University.

Singapore

During the last quarter of 2006, the Singapore Chapter organized several technical events and one social gathering. Regarding technical events, on the evening of 28 September 2006, the Chapter and the IET (Institution of Engineering & Technology) organized a seminar on "Grounding Concept Revisited" at Singapore Polytechnic. The speaker was Professor See Kye Yak from the Nanyang Technological University. Using many practical case studies, he disproved many grounding misconceptions from as low as 50 Hz to as high as several GHz. The seminar was well attended by more than 100 participants. With the effort of the Chapter Committee, a one-day EMC Colloquium was organized on 8 November 2006. Speakers from Japan, Thailand and Singapore were invited to speak on the following topics:

- "High Speed Electronic EMC and Signal Integrity" by Dr Liu En-Xiao, Institute of High Performance Computing, Singapore
- "Progress of VCCI's Industry Self-Regulation in Japan and a Look to the Future" by Mr. Akihisa Sakurai, VCCI, Japan
- "PCB Layout and its Impact on Product's EMI Compliance" by Professor See Kye Yak, Nanyang Technological University, Singapore
- "EMC Status in Thailand: Regulation, Standard, Research and Education" by Professor Werachet Khan-ngern, King Mongkut's Institute of Technology Ladkrabang, Thailand.
- "EMC Testing for Europe Market, New EMC Directive and e-Mark Certification" by Mr. Deng Junhong, TÜV SÜD PSB Corporation, Singapore
- "Small Ultra-Wideband Antenna" by Prof Ooi Ban Leong, National University of Singapore, Singapore
- "Substrate Integrated Circuits and Devices" by Dr. Albert Lu, Singapore Institute of Manufacturing Technology, Singapore

The Colloquium venue was at capacity with 120 participants! Many of the attendees participated actively in the question and answer session at the end of the presentations. The Chapter Committee would like to acknowledge TÜV SÜD PSB Corporation for sponsoring the venue for the colloquium. On 6 December 2006, the EMC Singapore Chapter organized a half-

Professor See Kye Yak (right) received a souvenir from Dr. Ong Jin Teong (Chairman of IET Singapore) after the seminar.

The Singapore EMC Chapter held a well-attended one-day EMC Colloquium on 8 November 2006.

day seminar on RFID and its packaging at the Institute of High Performance Computing. Three speakers from the Korea Advanced Institute of Science and Technology presented their recent research work on design and analysis of RFID modules and RFID system in package. A total of 24 participants attended this seminar. Regarding social gatherings, the Singapore Chapter Committee organized a social gathering on 25 November 2006, from 6:30 to 10:00 pm. The event took place at The Plaza Market Cafe, Raffle Plaza, Singapore. The event was also opened for all its more than 30 members and their immediate family members. Nearly 40 participants attended the event. They all enjoyed the wonderful food and a joyful night. Such a gathering provided a good opportunity for all the Chapter members to network with each other and to strengthen the 'family' ties of the IEEE EMC Singapore Chapter. All the participants are looking forward to another social event in 2007. In closing, the new Chapter committee for the IEEE EMC Singapore Chapter was elected on 16 November 2006 during the Annual General Meeting of IEEE Singapore Section. The new committee consists of members from both academia and industry. Professor See Kye Yak (Nanyang Technological University) was elected Chair of the IEEE EMC Singapore Chapter, Dr. Li ErPing (Institute of High Performance Computing) was elected Deputy Chair, Mr. Deng Junhong (TUV SUD PSB Corporation Pte. Ltd) was elect-

Speakers at the Singapore EMC Colloquium included (from left) Dr. Albert Lu, Dr. Liu En-Xiao, Professor See Kye Yak, Professor Werachet Khan-ngern, Professor Ooi Ban Leong, Mr. Akihisa Sakurai and Mr. Deng Junhong.

Chapter members and their families enjoy an informal and relaxing evening on 25 November 2006 at the Raffle Plaza, Singapore.

ed Treasurer and Dr. Liu En-Xiao (Institute of High Performance Computing) was elected Secretary. Other committee members were Professor Ooi Ban Leong (National University of Singapore), Mr. Yang Seow Chiang (Temasek Polytechnic) and Mr. Timothy Foo Wan-Juang (Ngee Ann Polytechnic).

Mohawk Valley

At the Mohawk Valley Chapter's 4 October 2006 meeting, guest speaker Dr. Michael C. Wicks of the US Air Force Research Laboratory, Sensors Directorate, Rome, NY and an IEEE Fellow gave a presentation on the subject of Waveform Diversity in Intelligent Sensor Systems. His talk focused on relevant system of systems EMC issues. Waveform diversity in distributed radio frequency (RF) sensor systems offers the potential for breakthrough performance enhancements in the detection and identification of natural and manmade objects. Dr. Wicks presented advances in relevant technology and emerging applications to radar. Issues concerning coherency among distributed sensors, EMC, and signal processing were also discussed. Dr. Wicks pointed out that advances in waveform diversity, coupled with other technology, are being exploited by many other users of the electromagnetic spectrum. For example, the telecommunications manufacturing industry has dominated advances in waveform technology in recent years due to increased public demand for mobile phones and other wireless devices. Research into expanded channel capacity, time-frequency coding, spatial modulation, and power efficiency has resulted in dramatic improvements in performance, while providing an

order of magnitude reduction in cost. Today, hundreds of wireless users operate in close proximity, and occupy a portion of the spectrum used by just one customer a decade ago. In the radar community, layered and distributed sensing is emerging as a plausible solution to the problems posed by the emergence of the asymmetric threat. Enemy combatants no longer follow well-established and time-honored rules of engagement, and use surprise in their strategic planning, operations and use of weapons. Furthermore, these same opponents may engage our armed forces in an urban environment, where restricted use of force is warranted. Our sensors must provide accurate and timely information concerning criminal actions as well as warfare. All of this must be accomplished in an environment where high technology is readily available to friend and foe alike. According to Dr. Wicks, placing the right sensor at the proper place and time will require advanced inferencing and control strategies. An autonomous sensing system is envisioned in the future that mimics human, animal, and insect behavior, and that builds to the right level of the engagement. These various aspects of the problem were presented. Dr. Wicks also mentioned that it is an important step forward for the Waveform Diversity community and EMC Society to join forces in addressing these issues in the future. At the Chapter's 2 November 2006 meeting, a presentation was given by guest speaker Andrew L. Drozd, President of the IEEE EMC Society and CEO of ANDRO Computational Solutions, LLC located in Rome, NY. He was accompanied by special guests Dr. John Norgard, Vice President of Technical Services and Barry Wallen, Vice President of Conference Services of the EMC Society. Mr. Drozd gave a President's State of the EMC Society Message, which provided an overview of the current state of the EMC Society in terms of membership, including various technical programs and new initiatives that are underway. Whereas most IEEE societies are experiencing a downturn in membership, some are actually experiencing a steady growth. The reasons for this were discussed. According to Mr. Drozd, as a median sized society, the EMC-S is doing relatively well in the technical, financial, and membership sense, and in terms of strategic plans for continued success. The EMC-S has also been quite successful in enacting new strategies for growing membership and new chapters worldwide, and in passing initiatives that will better align us with new technology trends in the future. These new technology fronts were addressed both by Mr. Drozd and Dr. Norgard. Also discussed were our key strong points as a Society such as providing high-quality technical publications, and new plans for sponsoring of symposia and conferences that facilitate networking with the experts. Upcoming symposia plans and activities were presented by Mr. Wallen who also gave a presentation on the EMC Society's 50th anniversary celebration in conjunction with our annual EMC Symposium in Hawaii scheduled for July 2007. The results of recent member satisfaction surveys centering on the Society's activities, products and services were also presented. EMC Chapter Chair Irina Kasperovich plans for several more talks next year aimed at exploring the role of EMC in new forefront technologies. EMC

Dr. Michael Wicks discusses the need to consider EMC in conjunction with assessing system of systems in Waveform Diversity applications at the Mohawk Valley Chapter meeting.

Andy Drozd, Dr. Michael Wicks, Irina Kasperovich (Mohawk Valley EMC Chapter Chair) and Dr. John Norgard (from left) attend Dr. Wicks' EMC Chapter talk in Rome, New York on the topic of Waveform Diversity and EMC.

President Andy Drozd gives a "State of the EMC Society" talk to the Mohawk Valley EMC Chapter focusing on the many advantages of joining the IEEE/EMC Society and forming new chapters globally.

Vice Presidents John Norgard (left) and Barry Wallen discuss future technical directions for the EMC Society and plans for expanding EMC Society sponsored symposia in Regions 7-10, including a nod to the Society's 50th anniversary in Hawaii in 2007 at a recent Mohawk Valley EMC Chapter meeting.