

OBJECTIVE

Provide exceptional EMC\EMI consulting services with attention to quality and technical completeness.

EDUCATION

CORNELL UNIVERSITY, Ithaca, NY, Master of Engineering in Electrical Engineering, Student Fellowship

NORTHEASTERN UNIVERSITY, Boston, MA, Bachelors of Science in Electrical Engineering
Honors: Tau Beta Pi, Eta Kappa Nu

CAPABILITIES

- **Design and construction of EMI/EMC Testing facilities**
- **National and International Standards Expertise**
- **EMI Shielding and Mitigation**
- **Product EMI Technical Analysis (Test Plans, Witnessing, Risk Assessment)**
- **Recognized EMI Expert Witness**
- **Consultation and Training**

PROFESSIONAL EXPERIENCE

Lichtig EMC Consulting, LLC
Bridgewater, New Jersey

1999 - Present

Principal

Deliver electromagnetic interference\compatibility (EMI\EMC) consulting services with strong concentration in the telecommunications industry. Consulting services include: EMC test plan development and test witnessing for Telcordia GR-1089 criteria [GR-1089 contains the EMC requirements for products to be installed in the US telecommunications network; the EMI criteria is based on FCC, MIL-STD-461, domestic and international standards, and additional criteria to address the needs of the network], product test report review and deployment risk assessment, EMI site surveys, EMI shielding and mitigation plans, EMC standards comparison and EMC training.

- Oversaw successful EMI test program, on behalf of NASA, performed by Orbital Sciences Corporation on the NASA Glory mission spacecraft. Implemented electric field-limiting safeties to the EMI test setup to reduce/limit possible overstress to the spacecraft. (4Q2009)
- Oversaw successful EMI test program, on behalf of NASA, performed by Raytheon on the NASA Glory mission aerosol polarimetry sensor (APS) instrument. Responded to short-notice assignment and was able to quickly and seamlessly integrate with Raytheon subject matter experts and NASA project team. Was able to avert potentially adverse impacts to the instrument, therefore protecting the instrument from overstress; also ensured no under testing during the EMI test program. (4Q2008)
- Mentored EMC Testing Facilities Manager of a major international EMC testing company to quickly assume responsibilities in new position.

- Trained Equipment Vendor staff on EMI testing to support launch of new China test facility to test products to criteria of GR-1089 destined for US market.
- Performed root cause analysis on products throughout lifecycle to reduce time to market, mitigate current/future problems within telecommunications, aerospace, and automotive Markets.
- Mitigated source of radio interference impacting local government public safety organizations' radio communications. Coordinated analysis with US federal government agency to corroborate public broadcasting source.
- Expert witness for various EMI projects including EMI testing of large telecommunications product to prepare for US market and installation of new telecom system to address public concerns of radio signals.

Telcordia Technologies, Inc. (formerly Bellcore)

1984 - 1999

Morristown, New Jersey

Sr. Consultant - Electromagnetic Interference Engineer

Responsible for EMI systems designs, particularly EMI suppression, and establishment of EMI immunity and emission criteria for telecommunication facilities. Provide technical standards interpretation and consulting to the Regional Bell Operating Companies (RBOCs), general industry and Telcordia, on EMI matters.

Accomplishments

- Performed EMI aspects of information technology equipment (ITE) Technical Analyses (developed test plans, directed testing, issued test results) on major telecommunication switching and transmission systems.
- Designed and engineered EMI laboratories, including the construction of an open area test site (OATS) for emission tests, state-of-the-art anechoic chamber facilities for immunity and pre-scan emission tests, and automation of the laboratories to gain efficiencies and comply with ISO 9000 requirements. Laboratory capabilities range from 60 Hz to 10 GHz.
- Solely responsible for developing/maintaining EMI generic requirements used by the RBOCs for their telecommunications networks.
- Developed measurement procedure for national survey of conducted RF signals on balanced telecommunication cables.
- As chair of an IEC/CISPR/G Ad Hoc group, performed an expedited survey of conducted emissions from widely-deployed ITE. The findings focused international attention on widely-deployed telecommunication equipment and high-bit-rate services that violate proposed CISPR standards but did not presently cause interference to radio services.
- Developed an impedance stabilization network (ISN) to measure conducted emissions (common-mode and differential-mode simultaneously) on balanced telecommunication pairs using unbalanced measurement equipment in the frequency range 10 kHz to 30 MHz.
- Investigated electronic eavesdropping of digital services utilizing remotely located antennas to determine the security of ISDN service.

Arecibo Observatory, National Astronomy and Ionosphere Center
Cornell University, Arecibo, PR

1982-1983

Conducted study of the Intermediate Power Amplifier of a 2.5 MW 430 MHz transmitter to increase bandwidth. Designed circuitry to control two HP synthesizers via a Harris/6B computer and wrote test software for a new autocorrelator. Wrote a disassembler for a Nova computer. Investigated A/D sampling techniques for a 40 MHz autocorrelator as part of master's project.

NATIONAL AND INTERNATIONAL STANDARDS

Representative in ANSI Accredited Standards Committee C63. USA delegate (chief of the US delegation in 1999) to IEC/CISPR/G. USA Technical Expert to ITU-T (formerly CCITT) SG-V.

- ◇ IEC/CISPR/I/WG3 former chairman: ITE emissions and immunity
- ◇ ANSI ASC C63: S/C3 former chairman: International Standardization
- ◇ As a USA Technical Expert to ITU-T SG-V, provided technical comments on the ITU-T standard for measuring RF at ISDN interfaces and other ITE signal ports.
- ◇ ANSI ASC C63: S/C1 chair of ITE signal ports measurement with Impedance Stabilization Networks (ISNs) project, for inclusion in ANSI document C63.4. Addressed RBOCs' interests and maintained GR-1089 harmonization with national standards.

Chaired Ad Hoc groups in IEC/CISPR/I Working Groups to develop ITE signal ports emission criteria for CISPR Publication 22. Developed a new approach to perform non-invasive measurements of conducted emissions on cables. This work is now being further developed in national and international standards groups.

PUBLICATIONS

EMI Section of GR-1089-CORE, "Electromagnetic Compatibility and Electrical Safety Generic Criteria for Network Telecommunications Equipment."

TR-NWT-022559, "Field Survey of Radio Frequency Noise (10 kHz to 30 MHz) at the Bell Operating Company Network Interface" - Study of EMI impact on proposed Asymmetrical Digital Subscriber Line (ADSL) services.

TM-NWT-019887, "Equipment and Procedure for Measuring Radio Frequency Interference on Telecommunications Lines."

IL-90/12-055, "Use of Portable Communications Radios Near Telecommunications Equipment."

SR-3609, "European Union EMC Criteria: Impact on Telecommunication Products" - Addresses impact of developments in international standards on RBOCs.

SR-3597, "Physical and Electrical Protection Criteria for Information Technology Equipment" - Compares Bellcore's internal criteria with industry standards and propose cost effective EMC strategy for broadband deployment.

Co-authored paper published in IEEE Transactions on EMC on "Effects of Radio-Frequency Exposure (100-kHz to 500-kHz) on Very-High-Speed Digital Data Transmission Systems Using a Copper Loop."

Provided extensive consultation on FCC document FOB Bulletin No. 10, "Telephone Interference," which provides a basic explanation to the general public of the mechanism for which RF energy enters the telephone and causes interference.

PROFESSIONAL MEMBERSHIPS

IEEE, National Association of Radio and Telecommunications Engineers (NARTE) Certified EMC Engineer.

SKILLS AND PROFICIENCIES

Fully bilingual (Spanish/English), strong communications and presentation skills, practical knowledge of computer networks.

PERSONAL INTERESTS

Boy Scout Assistant Troop Leader, Martinsville Volunteer Fire Department (FF/ex-Captain), Amateur Radio, Sail Planes, and Scuba Diving.