

October 2018

Event

Rock River Valley Section
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Sense

The Institute of Electrical and Electronic Engineers, Inc.

IEEE RRV Section, EMC and IAS Chapter Section Meeting
SERVING IEEE MEMBERS OF NORTH CENTRAL ILLINOIS AND SOUTH CENTRAL WISCONSIN

WHEN Thursday, October 25, 2018

WHERE

NTS
3761 S. Central Ave.
Rockford, IL 61102

AGENDA

5:30 PM Tour of NTS
6:30 PM Dinner
7:15 PM Presentation



Radiated Emissions: Understanding Product and Measurement Antenna Behavior

Colin E. Brench

Principal Engineer at Amphenol High Speed Interconnects

Antenna behavior is complex in an environment that does not approach that of free space, and is particularly so if the antenna is incidental to a device or system. There are numerous, unintended antennas that are present in every electronic device. With the high data rates in use today, even small structures can be effective, unwanted antennas. The impact of how a device is mounted into a chassis or how a chassis is mounted into a rack can be unexpected. Every conductor with a radio frequency current on it is an antenna to some degree, and understanding how these unintended antennas are created and driven is a powerful tool in controlling radiated emissions.

This presentation will first explore the behavior of both measurement antennas and unintended antennas. Secondly, various sized systems will be discussed, from the very small devices up through full sized racks of systems. Finally, animations of field propagation will be used to help visualize how the RF energy travels and is radiated. Important details such as the addition of a ferrite core filter on a cable and cable shield bonding will also be shown.

This meeting will also feature a tour of NTS Rockford's testing facility.

Colin E. Brench (M'80-SM'04) is currently a Principal Engineer at Amphenol High Speed Interconnects, in Nashua, New Hampshire, where he is responsible for the EMC aspects of high data rate (10 to 56 Gbps) interconnect schemes. He received his B.Sc. (Hons) in Electronic Engineering at The City University, London, in 1975, and has been particularly active in the areas of EMC, antennas, and shielding behavior since the early 1970's. Colin has presented numerous EMC workshops and training classes that embrace a broad range of topics including microprocessor packaging, printed circuit module issues, system design, and shielding. He is a co-author of the book, EMI/EMC Computational Modeling Handbook (Springer, 2nd Edition 2001), has authored over 20 technical papers and articles, and holds 12 patents for various methods of EMI control.

Colin is a Senior Member of the IEEE, member of the EMC Society since 1980, and an iNARTE certified EMC Master Design Engineer. He was appointed a Distinguished Lecturer for the IEEE EMC Society for 2001 and 2002, and has given several seminars for various IEEE chapters and sections. In 2002 he was awarded the Certificate of Technical Achievement by the IEEE EMC Society for his contributions to the development of EMC modeling directed to understanding EMI shielding and antenna behavior. Colin has also been active in IEEE EMC-S standards, IEEE EMC-S Technical Committee 9 (TC-9), ANSI ASC63, and served 11 years on the IEEE EMC-S Board of Directors. Colin received the EMC Society Honored Member Award in May 2018, recognizing a lifetime of dedicated service to the Society.

MEAL INFORMATION

Dinner entrée will feature your choice of Vegetarian or Non-Vegetarian meals.

Members & Student Members: FREE,
Non-members: \$10,
Student non-members: \$5
Presentation only: FREE

Please register online at

<https://events.vtools.ieee.org/m/177461>

or by emailing Diane Sennebogen at diane.brock@utas.utc.com by Thursday, Oct 25 at 1 pm. Please include the following: name, phone number, email address, and IEEE member number. The meeting is open to the general public.

IEEE Rock River Valley Section 2018 Calendar of Events

January 22: IEEE Chicago/Rockford Consultants' Network Meeting

January 25: RRVVS Section Meeting

February 22: RRVVS Section Meeting, Engineer's Week

February 24: [Discover Engineering at Discovery Center Museum](#)

March 29: RRVVS Section Meeting

April 20 NIU Student Branch Networking Social at Northern Illinois University

April 26: RRVVS Section Meeting,

May 31: RRVVS Section Meeting with Chicago-Rockford Consultants' Network

June 12: EMC Seminar.

June 28: RRVVS Section Meeting, Annual Picnic and Officer Elections at Hamilton Sundstrand Park

August 30: RRVVS Section Meeting

September 27: RRVVS Section Meeting

October 25: RRVVS Section Meeting

November 15: RRVVS Section Meeting at NIU

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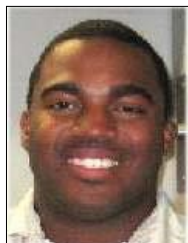
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Rock River Valley Section Chapters

Industry Applications Society Chapter
Established 1992

Joint Computer/Control Systems Society Chapter
Established 1995

Power Electronics Society Chapter
Established 1996

Electromagnetic Compatibility Society Chapter
Established 2007

The Rock River Valley Section gratefully acknowledges the following companies and colleges for supporting Section Officers:

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