Meeting Announcement

The IEEE EMC Boston Chapter is Pleased to Announce a Meeting / Technical Presentation with Special Guests and Speakers from ANSC C63®

History and Future of Measurement Methods in ANSC C63.4

Hosted at:

TÜV Rheinland North America, Technology and Innovation Center

Co-Sponsored by:

ETS-LINDGREN An ESCO Technologies Company

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Date: **Monday, May 5, 2025**

Time:

5:00 pm	Registration/check-in, complimentary dinner and refreshments
6:00 pm	Welcome from TÜV Rheinland North America and IEEE EMC Boston Chapter
6:10 pm	"The History of ANSI C63.4" by Art Wall, former FCC Representative to ANSC C63
6:30 pm	"Addressing Under-Testing in EMC Emissions Measurements: A Comparative Analysis of Boresighting and Linear Scanning Methods" by Zhong Chen, ETS-Lindgren
7:00 pm	"Don't Get Tilted" By Nicholas Abbondante, Intertek, Boxborough, MA
7:30 pm	Live Demonstrations of Boresight and Linear Scan Methods in 10m Chamber by Bob Mitchell, TÜV Rheinland
8:15 pm	Reconvene in meeting room – Q&A – Closing Comments
8:30 pm	Adjourn

See presentation abstracts and speaker bios below.

Location: TÜV Rheinland North America, Technology and Innovation Center,
400 Beaver Brook Road, Boxborough, MA

Parking: Complimentary parking is available

Register: There is NO CHARGE to attend, but you must register in advance. All IEEE members and guests are welcome to attend. Click here to register

Please register no later than April 30 in order to ensure adequate seating and catering.

TECHNICAL PRESENTATIONS

History of ANSI C63.4
By Art Wall, former FCC Representative to ANSC C63.4, Columbia, MD

Art Wall was one of the primary authors of the Federal Communications Commission (FCC) document MP-4 "FCC Procedure for Measuring RF Emissions from Computing Devices" – the document which heavily influenced the first edition of ANSI C63.4. This presentation will discuss the history of the measurement techniques specified in C63.4 and provide some context behind the procedures called out in the standard.

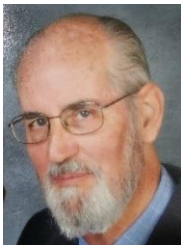
Addressing Under-Testing in EMC Emissions Measurements: A Comparative Analysis of Boresighting and Linear Scanning Methods
By Zhong Chen, ETS-Lindgren, Cedar Park, TX

This presentation examines the critical differences between antenna boresighting and linear scanning techniques during height scans in emissions measurements for frequencies above 1 GHz. At higher frequencies, emissions from typical equipment under test (EUT) exhibit complex radiation patterns. Capturing the true peak radiation becomes a statistical challenge. This presentation explores both experimental and simulation studies conducted by researchers to analyze these phenomena. Additionally, simulations are performed to illustrate and corroborate the findings. By addressing the technical limitations of linear scanning and emphasizing the advantages of boresighting, this discussion seeks to contribute to standards development and enhance the accuracy and reliability of EMC emissions measurements.

Don't Get Tilted
By Nicholas Abbondante, Intertek, Boxborough, MA
This presentation will review the rationale and concepts behind the antenna tilting changes in the C63.4 draft standard. Currently, test labs that are making measurements using both US and international standards need to be aware of and capable of supporting multiple different methods of testing above 1 GHz. After over a decade of testing using antenna tilting in C63 measurement standards, lessons have been learned about the pros and cons related to the use of tilting, which will be discussed in this presentation.

LIVE Demonstration
By Bob Mitchell, TÜV Rheinland
As technology has evolved over the past decades, the equipment and methods that are used to test this technology is continuously evaluated to ensure that the best methods are being used. This demonstration will compare the Linear Scanning and Boresight Scanning methods when used at a 3m test distance with a 1m height reference. Identical antennas, identical measurement receivers, identical model of test cables, and identical masts will be utilized during this demonstration. The TÜV Rheinland Chamber was designed to run dual axis measurements as part of the 2025 automation program TÜV is implementing. Thus, the use of the TÜV Rheinland chamber has the exact capability to provide the comparison that is needed for this demonstration. One test sample will be set up on the 0.8m high foam table, using two identical horn antennas taking measurements from 1 to 18 GHz at the same time and scanning from 1-4m in height. Given the specific parameters of the test, this demonstration is designed to show the similarities and differences of Linear and Boresight scanning methods. The goal is to provide additional insights on how best test methods can be developed as technology changes.

ABOUT THE SPEAKERS



Art Wall retired from the Federal Communications Commission in 2005 as Deputy Chief of the FCC Laboratory with over thirty-five years of experience in radio regulatory issues, Electro-Magnetic Compatibility (EMC), standards, and conformity assessment. Art was also a consultant for the government and industry for an additional 14 years in the same field. He authored and participated in the development of numerous mandatory and voluntary standards for intentional and unintentional radiators for controlling radio interference. He was active in ANSI C63 for over 40 years and was international Secretary and Chairman of Subcommittee A (dealing with measurements and instrumentation) of the International Special Committee for Radio Interference (CISPR) for over 20 years. He also participated in developing and implementing the US-EU MRA and the APEC MRA for telecommunication equipment. Mr. Wall is a Life Fellow of the Institute of Electrical and Electronic Engineers (IEEE) and Life member of the IEEE EMC Society. He has a BSEE from the University of Maryland and an MSEE from George Washington University. He may be reached at artwall43@gmail.com.

Zhong Chen is Chief Engineer at ETS-Lindgren, located in Cedar Park, Texas. He has over 25 years of experience in RF testing, anechoic chamber design, as well as EMC antenna and field probe design and measurements. He is an active member of the ANSC C63® committee currently serving as Vice-Chair and is the immediate past Chair of Subcommittee 1 which is responsible for the antenna calibration (ANSI C63.5) and chamber/test site validation standards (ANSI C63.4 and the ANSI C63.25 series). Mr. Chen is chair of the IEEE Standard 1309 committee responsible for developing calibration standards for field probes, and IEEE Standard 1128 for absorber evaluation. Currently he is a member of the IEEE EMC Society Board of Directors and a former member of the Antenna Measurement Techniques Association (AMTA) Board of Directors. He is a past Distinguished Lecturer for the EMC Society and is recognized as an AMTA Fellow. His research interests include measurement uncertainty, time domain measurements for site validation and antenna calibration, and development of novel RF absorber materials. Several papers authored and co-authored by Mr. Chen have received best paper recognition at global conferences. Zhong Chen received his M.S.E.E. degree in Electromagnetics from the Ohio State University at Columbus. He may be reached at zhong.chen@ets-lindgren.com.

Nicholas Abbondante has served as Intertek's Chief EMC Engineer since 2013, responsible for technical support of Intertek's global network of 24 EMC labs. In his 22+ years with the company, he has been involved in testing a wide range of radio and electronic equipment to EMC requirements for regulatory domains around the world, specializing in transmitters and medical devices. He is the Technical Manager of Intertek's TCB program and is TCB Council Board Vice Chair, and serves as the CISPR/A Secretariat. An active participant in many ANSC C63 standards projects, he is chair of both C63.31 for ISM device measurement and C63.25.3 for 18-40 GHz test site validation, and was recently elected as the incoming chair of Subcommittee 4 for wireless and ISM equipment measurements. He is also a working group member of C63.10 and C63.26 for radio testing, C63.4 Emissions, C63.16 ESD, C63.33 EAS immunity and the recently completed C63.2 Receiver, C63.29 Lighting and C63.30 Wireless Power Transfer standards. Nick has a Bachelor's degree in physics from the Worcester Polytechnic Institute (WPI) in Massachusetts, USA. He may be reached at nicholas.abbondante@intertek.com.

Bob Mitchell is the Director of Laboratory Technology and Innovation at TÜV Rheinland, based in Boxborough, MA. Bob also holds the role of EMC technical manager for TÜV Rheinland of North America. Along with the roles and tasks Bob does for TÜV Rheinland, Bob is one of the USNC member experts for the ISO, CISPR D, SAE, ANSC C63®, and 5GAA committees. Bob is also an active member of the Advisory Committee for Electromagnetic Compatibility for the IEC representing TC125, TC47 and the US National Committee. Over the course of his career, Bob has presented many workshops at the IEEE EMC+SIPI Symposiums, authored technical papers, and has supported technical data for development of many new EMC standards across the organizations. In the role of Director of Laboratory Technology and Innovation for TÜV Rheinland North America, Bob has the responsibility for developing and expanding test capabilities, opportunities, and test facilities in the various markets for TÜV Rheinland. He may be reached at rmitchell@us.tuv.com.

In case of questions regarding location, please contact:

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