

C63®

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Accredited Standards Committee C63®

Electromagnetic Compatibility

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Secretariat: Institute of Electrical and Electronics Engineers, Inc.

NEWSLETTER

Issue 37 July 2014

MESSAGE FROM THE CHAIR

Daniel D. Hoolihan, Chairman ANSI-ASC C63®

The latest series of meetings for the American National Standards Institute Accredited Standards Committee C63® on Electromagnetic Compatibility were held the week of April 28 – May 2nd. The meetings were hosted by ETS-Lindgren at their facility in Cedar Park, Texas (a suburb of Austin).

The weather was warm and the hospitality of ETS-Lindgren was even warmer. The meeting rooms were excellent and the lunches and break- refreshments (overseen by the vigilant and ever-pleasant Ramona Wilson) were outstanding. My thanks also go out to ETS-Lindgren employees Roger Hatch, Zhong Chen, Janet O’Neil, and Doug Kramer for their hosting-support of the four days of meetings!

Once again, the meetings were well-attended starting with the Working Groups on Monday and Tuesday and continuing with the Subcommittee meetings on Tuesday and Wednesday and the Main Committee Meeting on Thursday (May 1st). My thanks to those who attended the meetings and to all other individuals who participate in the activities of our standards development organization.



C63® Main Committee meeting May 1, 2014, hosted by ETS-Lindgren at their facility in Cedar Park, Texas. Chairman Dan Hoolihan presiding.

There were no C63® standards released since the last meeting of the Committee in November of 2013. However, several standards are rapidly approaching publication including C63.4, C63.9, C63.14 and C63.18. Details on the status of those standards can be found in other sections of this newsletter. *Editor’s note: subsequent to these remarks, C63.4 and C63.18 have been published.*

Our next series of meetings will be held in Chandler, Arizona – a suburb of Phoenix – from November 10th – 13th. Our host organization will be Compliance Testing, LLC, an EMC and Wireless Testing Laboratory. The meetings will follow our usual format of Working Groups on Monday and Tuesday, followed by Subcommittee Meetings on Tuesday and Wednesday, and the Main Committee meeting on Thursday, November 13th.

I hope to see all of you at the Fall-meetings.

NEW STANDARDS PUBLISHED on 20 June 2014!

Congratulations to Don Heirman and his working group on the successful publication of C63.4-2014 - *American National Standard for Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.*

Congratulations to Jeff Silberberg and his working group on the successful publication of C63.18-2014 - *American National Standard - Recommended Practice for an On-Site, Ad Hoc Test Method for Estimating Electromagnetic Immunity of Medical Devices to Radiated Radio Frequency (RF) Emissions from RF Transmitters.*

NEWSLETTER EDITOR RECOGNIZED

Don Heirman, Immediate past C63[®] chairman

For the past 15 years since the first edition of the C63[®] Newsletter, the newsletter has been filled with information on the activities of C63[®] and its several subcommittees. In addition, there has been news of C63[®] educational opportunities, other EMC standards meetings of note, and even remembrance of its leaders—most notably Dr. Ralph Showers. Ralph was the second chairman of C63[®] and served for close to 40 years before he stepped down and Don Heirman succeeded him for 6 years and then Dan Hoolihan stepped into that seat and is the present chairman.



Newsletter Editor Warren Kesselman - Taken at the October 2011 meeting

All of this news and history has been captured by our newsletter editor—Warren Kesselman. Warren retired some years ago from the US Army Communications-Electronics Command at Fort Monmouth, New Jersey. He was very active in the IEEE New Jersey Coast Section and its EMC Chapter. Warren extended his professional life with contributions to the International Special Committee on Radio Interference (CISPR) and fondly recalls his role in accommodating the international delegates attending the 1973 CISPR meeting at Monmouth College (now university) a few miles from his home near the New Jersey shore. He also was active on the planning committee for the 1969 IEEE EMC symposium in Asbury Park, NJ. In 1991, he was the treasurer of the EMC symposium held in Cherry Hill, NJ where he and Don Heirman, chairman of the symposium, worked closely to return a modest surplus. Through these years and even up to now, Warren also was a member of C63[®]. In recent years, he was named an emeritus member as it was getting more difficult for him to travel and remain active. For more information on Warren's career visit: [http://www.ieeeighn.org/wiki/index.php/Oral-History:Warren A. Kesselman](http://www.ieeeighn.org/wiki/index.php/Oral-History:Warren_A._Kesselman)

This background brings us to his service as Newsletter editor starting with the first Newsletter in January 1999. Warren made it a long term commitment to publish within 60 days of each of two annual face to face meetings of C63[®] and all of its subcommittees and most of its working groups. In the past three years, Warren has included photos of meeting highlights. The photos were taken during the 4 days of meetings. Early on they were taken by Don Heirman and more recently by Jerry Ramie who is the C63[®] secretary. Another accomplishment of Warren was expanding the distribution list of the newsletter beyond just C63[®] members. To accommodate this expansion, Warren suggested that articles in the Newsletter may be reproduced in whole or in part provided the source—ANSI ASC C63[®] Newsletter with the edition and date mentioned in full. This copying enabling stance is at the end of each Newsletter since at least 2001.

But earlier this year, Warren said it was time to relinquish the role of editor. Warren is shown in the above photo which was taken by Jerry Ramie at a break in the C63[®] meetings held in Thompson Park, Lincroft NJ in October 2011. The meeting facility was close by to his home and hence he was able to join us.

But we move on and now are happy to introduce you to the new editor—Dave Zimmerman.



Dave has been active in C63[®] for several years serving as secretary of both subcommittee 8 (Medical EMC) and subcommittee 6 (Accreditation/Conformity Assessment) now an individual member of C63[®] itself representing his consulting firm--Spectrum EMC Consulting, LLC. His coordinates are on the last page of the newsletter. If you have a C63[®] story to share with him, please do.



MEETING PHOTOGRAPHS

All photos below were provided by Jerry Ramie



Art Wall celebrates a birthday during the C63® meeting. Janet O'Neil shown at right, and Ramona Wilson shown at left



Mike Howard shown with various devices that produce RF energy.



ETS-Lindgren's facility in Cedar Park, Texas.

Subcommittee 1 Techniques and Development

Zhong Chen, Chair



April meeting

SC1 welcomes a new member at the April 2014 meeting - Mr. Michael O'Dwyer from Apple Inc. We look forward to working with him in SC1.

Below is the status of the current working groups. Any interested parties wishing to join a working group are encouraged to contact the SC1 chair or the appropriate working group chair as shown below.

Project C63.2 EM Noise & Field Strength Instrumentation

Chair: Werner Schaefer

Working group met during the week, and provided updates at the subcommittee meeting. Suggested changes were introduced in October 2012 at the ANSI C63 SC1 meeting, and PINS were prepared and approved by the main committee during that meeting. The PINS was submitted to IEEE on May 8, 2013. It is planned that a draft content of revised document is to be completed by August 2014. The major changes in C63.2 include establishing CISPR 16-1-1 as the relevant document for measuring equipment in the frequency range of 9 kHz to 18 GHz, and establishing key specifications for the frequency range of 18 GHz to 40 GHz using the same approach as in CISPR.

Project on Emissions Measurements, C63.4

Chair: Don Heirman

The C63.4 standards went through ANSI Public Review, and comments were fully resolved. BSR-9 was forwarded to ANSI for release for publication. Publication is pending in mid-June 2014 (update: C63.4 officially published in mid-June). It is recommended by SC1 for the FCC to reference 2014 edition, and drop referencing 2003 and 2009 editions. Working group met during the meeting in Cedar Park to prioritize what should be investigated for inclusion in the next edition. Working group output will be entered into PINS-C for approval by C63 once C63.4 is published.

Project on Antenna Calibration, C63.5

Chair: Dennis Camell

The PINS is an active document from October 2012. Working group meeting was held on April 29, 2014. Sixteen people were present during the meeting, with 1 on WebEx. C63.5 failed the first ballot ended in November 2013. The comments were compiled into matrix. Forty five out of 173 comments were classified “technical” by commenters. 35 accepted comments are left to include into draft. The working group disagreed with 11 of the comments. It is planned that the comments resolution be completed and updates of the next draft by June 2014.

Project Test Site Construction, C63.7

Chair: Don Heirman



April meeting

The current C63.7 was published in 2005, and covered only OATS under 1 GHz. The current project extended the frequency to above 1 GHz. A first draft was circulated to the subcommittee 1 for initial comments the week before the April meeting in Cedar Park. The general approach used include adding above 1 GHz clauses, and also reconstructing the document such that each existing clause contains two parts, i.e., below 1 GHz and above 1 GHz. Added material includes:

- OATS and covered OATS
- Semi-anechoic chamber
- Fully anechoic chamber
- Test site grounding
- Expanded bibliography/references
- Introduced URLs to find more information
- Cited use of “test sites” in C63.4, C63.5, C63.10, and C63.17

The working group plans on sending the “final” draft to SC1 by July for email ballot to send to C63 to form ballot group. It is planned that the ballot group be formed by September, and ballot comments be resolved by October, with a publication date by late 2014 or early 2015. A motion was approved in the main committee meeting to change the title in

the new PINS from “ANS Guide for Construction of Open Area Test Sites for Performing Radiated Emission Measurements” to “ANS Guide for Construction of Test Sites for Performing Radiated Emission Measurements”.

Project on Validation Methods for EMC Radiated Emissions Test Sites, C63.25

Chair: Dennis Camell

New Chair: Dan Sigouin



April meeting

A working group meeting was held during the week of C63 meetings in Cedar Park with active participations from 16 members and 1 on phone/WebEx. Dennis resigned from the current chair position, and Dan Sigouin of Industry Canada was elected. The working group and SC1 wish to thank Dennis for his invaluable contributions to the working group. As of the meeting in Cedar Park, 8 facilities have been measured, which established the correlation between the TD sVSWR and the CISPR sVSWR methods. The working group plan to develop an outline for the new draft based on the results from the measurement campaign.

Project on Standard for Testing Wireless Devices, C63.10/26
Chair: Art Wall



April meeting

The working group met on April 28-29, 2014 in Cedar Park, with 34 attendees (7 via WebEx), in addition 9 observers were present. A draft of C63.26-201x was circulated in April 2014 to SC1 and the working group, and 9 comments were received from the working group members. Major issues discussed during the meeting included: scope, definitions, instrumentation, conducted and radiated emissions, RF power, and booster amplifier procedures. A new draft is expected to be circulated in August 2014.

New Business

Richard Kautz from Ford presented “Low Frequency (<30MHz) Radiated Emission Measurement: Investigations Regarding Current and Potential New FCC & ANSI Procedures” to the subcommittee. His technical presentation included

- Wireless power transfer and inductive charging of vehicles
- Measurement issues from near field extrapolation
- Chamber effects

It is planned that Richard will provide input to generate a new PIN to study the issues and solutions presented by Ford.



Subcommittee 2 Definitions

Marcus Shellman, Chair.



April meeting

The ASC C63[®] Committee on EMC approved a motion to submit draft ANSI C63.14-201X to the IEEE Secretariat for review and to form a balloting group. New IEEE Policy required written permission to use copyrighted definitions which was enforced by the IEEE editor. To this end, SC2 Working Group 1, with assistance from Ms. Pat Roder, successfully obtained permission from CISPR, ESDA, IEC, ISO, and ITU. Currently, the draft is under review by the IEEE editor after which it will be released for balloting by the main committee. The revised standard is on schedule for the Fall of 2014. In addition, ASC C63[®] approved a PINS for SC2 to develop ANSI C63.28, "American National Standard, Guide for Best Practices for EMC Compliance."

Committee Members

- Marcus Shellman SC2 Chair, DISA/Joint Spectrum Center
- Janet O’Neil SC2 Vice-Chair, ETS-Lindgren
- Michael Duncanson SC2 Secretary, URS
- Chris Dilay SC2 Web Coordinator, SPAWAR SYSCEN
- Dan Hoolihan C63[®] Chair, Hoolihan EMC Consulting
- Don Heirman C63[®] Member, Don Heirman Consultants
- Ed Hare C63[®] Web Master, ARRL
- Zhong Chen SC1 Chair, NIST
- Poul Andersen SC3 Chair, Poul Andersen Consulting
- Steve Whitesell SC5 Chair, TIA
- Victor Kuczynski SC6 Chair, VICAN Electronics
- Stephen Berger SC7 Chair, TEM Consulting
- Bob DeLisi SC8 Chair, Underwriters Laboratory
- Bob Hofmann Member, Consultant
- Dave Southworth Member, URS/SPAWAR SYSCEN



Subcommittee 3 International Standardization

Poul Andersen, Chair



April meeting

The C63(R) Subcommittee 3 met on May 29th in preparation for the June 1st Main Committee meeting. The Subcommittee Scope, Duties and Membership were reviewed and recommended to be presented to the Main Committee without change. Most of the C63[®] documents in the que are awaiting publication before being analyzed for potential international harmonization. The good news is that progress is being made on those documents and we should be able to review them before long.

Progress is being made in the Subcommittee 3 Working Group 1 activity in updating the C63.12 (American National Standard Recommended Practice for Electromagnetic Compatibility Limits and Test Levels) document. Several WebEx and face-to-face meetings have been held to date. After the next WebEx scheduled for June 18th, it is anticipated that the draft will be completed and ready for Subcommittee 3 formal review.

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Subcommittee 5 Immunity Testing

Steve Whitesell, Chair

Subcommittee 5 met on April 29th with 11 of its 14 members in attendance along with 5 observers. The meeting was led by Vice Chair Ed Hare since Chair Steve Whitesell was not able to attend in person. He did participate via WebEx.

Recommendations for the SC5 membership going forward were submitted to the Main Committee for approval. Former members Bob Hofmann and Werner Schaefer have decided not to continue their SC5 membership, but were thanked for their previous service

Since several comments were received on last year's reaffirmation ballot for the C63.9 standard on immunity of audio office equipment, a recirculation ballot was held. The document will go forward with reaffirmation, but some typos and a broken link will be fixed. The commenter has been invited to submit his substantive comments to SC5 with a recommendation for revising the document.

The C63.15 recommended practice on immunity of electrical and electronic equipment is due for its five-year review in 2015. Don Heirman has agreed to head up this effort as WG Chair and will submit a PINS-C to suggest ways in which we may move forward in revising the document.

Work on revising the C63.16 ESD testing guide is making good progress. Several unique new test methods have been added, but the furniture ESD simulation tests will not be retained. Regular meetings are being held via WebEx every three to four weeks, with the intent of being able to submit the document for ballot prior to the fall meeting. A revised PINS needs to be prepared.

An attempt is being made to incorporate extensive comments provided by Dave Schaeffer on the initial draft of the C63.24 standard for in situ EMC immunity evaluation. The project has not progressed as rapidly as desired, and an attempt is being made to pick up the pace.

Jerry Ramie reported that the C12.1 standard for testing electric meters has been reaffirmed with several poorly written tests in it. The National Electrical Manufacturers Association (NEMA) is its secretariat. A writing group has been assigned the task of fixing the bad tests by October 2014.

Steve Whitesell (SC5 Chair) and Poul Andersen (SC3 Chair) have served as an ad hoc committee making a recommendation to the Steering Committee that failure to participate in three consecutive meetings of a Subcommittee or Working Group should result in loss of membership in that body. However, the chair should have the ability to exercise judgment in granting excused absences that do not count toward the three-in-a-row criteria.

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Subcommittee 6 Laboratory Accreditation/Conformity Assessment

Adam Gouker, Chair



The Subcommittee met on 30 April 2014

ANSI ASC C63[®] Subcommittee 6 (SC6) on “Accreditation/Conformity Assessment” met on the morning of Wednesday, April 30, 2014 from 8:00 am to 10:00am, at ETS Lindgren in Cedar Park, TX. The meeting was led by SC6 Vice-Chair, Mr. Randy Long.

As required annually by C63[®] operating procedures, SC6 reviewed its current Scope of activities and approved it to be sent to the C63[®] Main Committee for re-approval later in the week. Likewise, the current SC6 Membership Roster was reviewed and approved to be sent to C63[®] Main for re-approval. There were no additions to the roster prior to, or during the meeting; however one new request for membership on SC6 was received from Mr. Michael Howard of Liberty Labs, Inc. following the meeting. He has since been approved as a new member by SC6 following an electronic balloting process. SC6 welcomes Mr. Howard and looks forward to working with him in this capacity.

Presentations (both verbal and visual) during the meeting were provided by accreditation body (AB) members NVLAP and ACLASS regarding the current status of their respective conformity assessment programs related to the electrical testing field.

The status of working groups 3 and 4 was also presented by the respective working group chairmen. These working groups are responsible for the development of draft publications addressing Inter-laboratory Comparison of EMC testing (ANSI C63.11) and Guidance for the Calibration of EMC Test Equipment (ANSI C63.8) respectively. The working group chairmen have each taken an action item from the meeting to provide a draft of these standards by June 2014.

The next SC6 meeting is tentatively scheduled for Wednesday, November 12, 2014, to be held at Compliance Testing, Mesa, AZ.

Subcommittee 7 Spectrum Etiquette

Stephen Berger, Chair



April 2014 - C63.27 – Wireless Coexistence Working Group

Subcommittee 7 develops standards addressing spectrum etiquettes, wireless coexistence and related standards to provide new or amended measurement techniques, protocols or methods and associated instrumentation and operational constraints supporting more efficient spectrum utilization, including dynamic spectrum access. The Subcommittee met in April during the course of the series of C63[®] meetings. The most active project in this subcommittee remains C63.27 – *Wireless Coexistence*. The working group has been having telecons approximately monthly. Since the May 2013 meeting the draft has moved from revision 0.6 to 0.13. This standard provides an evaluation procedure and supporting test methods for wireless coexistence and evaluation of key performance indicators (KPI). The standard will provide evaluation procedures, test methods and other guidance necessary for performing the evaluation.

The C63.17 working group has begun a study project, approved by SC7 on April 29, 2014, to explore the following:

- The need to revise test methods to support DECT ULE devices.
- Examine whether additional guidance is needed for testing laboratories for testing DECT ULE devices.
- Seek quantitative data on the baseline reliability of the UPCS band etiquette and the potential impact of various proposed changes to the etiquette or the supporting test methods.

Collection of Spectrum Data

A study project to standardized data record format so that data from multiple spectrum studies can be analyzed to understand spectrum utilization, with an emphasis on gathering data from diverse instrumentation was approved by SC7 on April 29, 2014. Jason Coder of NIST will chair the effort.

Subcommittee 8 Medical Equipment Testing

Bob DeLisi, Chair



The Subcommittee met on 30 April 2014

SC8 membership was reconfirmed at the Main Committee meeting. SC8 membership stands at 22 members. Membership is shown below:

Andersen, Poul	Poul Andersen Consulting / SAE
Attayi, Masud	Blackberry Corporation
Berger, Stephen	TEM Consulting
Case, David	CISCO
Coston, Steve	PCTEST Engineering Laboratory, Inc.
DeLisi, Bob	Underwriters Laboratory
Griffin, Andy	CISCO Systems
Hare, Ed	ARRL
Hazem, Refai	University of Oklahoma
Heirman, Don	Don HEIRMAN Consultants
Hofmann, HR (Bob)	Hofmann EMC Engineering
Hoolihan, Dan	Hoolihan EMC Consulting
Hurst, Bill	FCC
Knipple, Tom	Motorola Mobility
Kuczynski, Victor	Vican Electronics
Liu, Steve	PCTEST Engineering Laboratory, Inc.
Moongilan, Dheena	Alcatel-Lucent Technologies
Silberberg, Jeffrey	FDA Center for Devices & Radiological Health
Stumpf, Bill	DLS Electronics / ACIL
Whitesell, Steve	Whitesell Consulting / TIA
Witters, Don	FDA Center for Devices & Radiological Health
Zimmerman, Dave	Spectrum EMC Consulting

The Scope of SC8 has not changed and is stated as follows:
“Subcommittee 8 is responsible for writing and maintaining existing and proposed C63® standards for medical devices, as assigned by the Main Committee ASC 63@.”

C63.18 On-site immunity testing of medical equipment – the guidance document went through a recirculation ballot which was opened 4/8/2014 and Closed 4/29/2014. There were 14 voters in the pool with no negative votes. The document has passed and any comments are being addressed by the working group chair. Once comments are addressed the document will be sent to IEEE for BSR9 processing.

WG-2 C63.19 Hearing Aid compatibility – WG-2 Chair reported that the leading consumer group, Hearing Loss Association of America, HLAA, has conducted an annual survey on HAC satisfaction. Results identified that hearing aid users are mostly dissatisfied with the compatibility. The HLAA is looking into the causes of the unsatisfactory results of the survey. The HAC community is looking at is use of LTE into the 5 GHz band and 60 GHz Wi-Fi which may be issues for hearing aids which is currently only tested to 2.4GHz. This work might require C63.19 to address these higher potential interfering bands to users.

Liaison Reports to Subcommittee 8

FDA Reports

The FDA continues to participate in many C63® working groups. Currently the FDA representatives are participating on the following working groups; C63.18, C63.12, C63.16 and C63.27.

The FDA continues to see a significant increase in EMC reviews including medical devices with wireless capability.

The FDA continues to work with the Association for Automatic Identification and Mobility (AIM Global) RFID Experts Group (REG) to draft and validate protocols for testing immunity of medical devices to RFID systems. This work is nearing completion.

The FDA is working towards recognition of IEC 60601-1-2:2014 (4th edition) by mid-2014. There will be a transition from IEC 60601-1-2:2007 (3rd Edition) to IEC 60601-1-2:2014 by mid-2017. As of right now, FDA will adopt the standard in full except Table 8, 61000-4-6 row, exemption of I/O cables < 3 m long.

The FDA is in the process of developing a Guidance document for Design Considerations for Devices Intended for Home Use. This guide will be harmonized with IEC 60601-1-11. The final version is under development.

IEC SC62A MT 23

The IEC SC62A MT 23 liaison report indicated the 4th edition of IEC 60601-1-2 was published on February 25, 2014. Amendment 1 is already in progress and Annex J, which was removed from the 4th edition and will become a Technical Report with respect to Electromagnetic Compatibility (EMC Performance)

AAMI; Association for the Advancement of Medical Instrumentation

Annual symposium scheduled for the first week of June. An award will be given to the AAMI EMC committee for work on IEC 60601-1-2 (4th edition).

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ANSI ASC C63[®] ELECTROMAGNETIC COMPATIBILITY, NEWSLETTER is published approximately forty-five days after Committee meetings and is available on the web site www.c63.org. That site also contains much information about ANSI ASC C63[®] and its Subcommittees.

Any questions about the Newsletter should be addressed to: David Zimmerman, Editor (d.j.zimmerman@ieee.org)

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