

**C63™**

[www.C63.org](http://www.C63.org)

**Accredited Standards Committee C63™  
Electromagnetic Compatibility**

Accredited by the American National Standards Institute, Inc.  
Secretariat: Institute of Electrical and Electronics Engineers, Inc.

# NEWSLETTER

Issue # 23: April 2007

Warren Kesselman, Editor

## CONTENT

- \*WE ARE OFF TO A GREAT START!
- \*NEW ORGANIZATIONAL MEMBERS
- \*OCTOBER 2007 MEETING SERIES
- \*SUBCOMMITTEE 1 – TECHNIQUES AND DEVELOPMENT
- \*SUBCOMMITTEE 2 – E3 TERMS AND DEFINITIONS
- \*SUBCOMMITTEE 3 – INTERNATIONAL STANDARDIZATION
- \*SUBCOMMITTEE 5 - IMMUNITY TESTING AND LIMITS
- \*SUBCOMMITTEE 6 – LABORATORY ACCREDITATION
- \*SUBCOMMITTEE 7 – UNLICENSED PERSONAL COMMUNICATIONS SERVICES DEVICES
- \*SUBCOMMITTEE 8 – EMC AND MEDICAL DEVICES
- \*STANDARDS STATUS MATRIX
- \*NEW Revised Antenna Calibration Standard (ANSI C63.5- 2006) Workshop, July 6 2007, Hawaii
- \*2007 OFFICERS' DIRECTORY

\*\*\*\*\*

## WE ARE OFF TO A GREAT START!

Don Heirman, Chair ASC C63

Our first meeting of the New Year was met with a packed house at our host location at the IEEE headquarters in Piscataway, NJ. We acknowledged two new members—Motorola and Research in Motion (RIM) which now brings the membership close to 30 organizational members along with four individual members and three member emeritus. Bob Hofmann –a long time active member of C63™ and its subcommittee 1 was voted in as a new member emeritus. We also applauded Bob Pritchard who was leaving as the secretary for his many contributions in the administering of our committee activity especially our balloting processes. The new secretary is Matt Ceglia who is on the IEEE staff. Matt was welcomed along with the secretariat agreeing to do our balloting using the IEEE Balloting Center and its automatic procedures.

The next agenda items included a review of our web site by our web master—John Lichtig. The site is coming along with updates being added on a regular basis. I indicated to the committee that the web site will have all our definitive business and activity so that any question on such matters as the status of our standards to when we will be giving our next workshop can be answered by going directly to [www.c63.org](http://www.c63.org).

I then presented our financial status which is quite healthy as we have in reserve enough to cover up to two years of expenses. Our contract with the IEEE covers the cost for the secretarial services as well as the publication costs which is well over 90 percent of our annual expenses. There was also a report from our attorney that we are in the final stages of having our C63™ trademark elevated to full registration.

Next the status of our many standards projects was reviewed to see their status. At the present time we have 14 standards that are in various stages of their existence from being up to date to an amendment being developed. The status of our most active standard work is highlighted elsewhere in the various subcommittee chair reports in this Newsletter. This information will also be posted on our web site in the "C63™ Main Committee" button and then under "Standards Status Matrix". Another highlight of our meetings is an update by our FCC member of activities that the FCC feels may be helpful to our members as they conduct committee business.

Finally as required by our operating procedures, the subcommittee chairs presented their membership for 2007 for approval by the parent committee. All of the presented members were approved. This list will appear on the web site under each subcommittee listing.

The 7 hour meeting ended with an announcement of the next C63.5 (antenna calibration) workshop which is advertised elsewhere in this Newsletter and which will be held in Honolulu, Hawaii in early July. The next meeting will be held in Gaithersburg, Maryland, in October. The venue will be Washington Labs with our host being Mike Violette who is the primary committee representative for ACIL.

So ended an excellent meeting and week with most of the subcommittees also meeting and making progress. We look forward to an outstanding year with a great send off with our March meeting.

\*\*\*\*\*

## **NEW ORGANIZATIONAL MEMBERS**

### **Research In Motion (RIM)**

(Paul Cardinal Primary Representative, Masud Attayi Alternate Representative)

RIM is a leading designer, manufacturer and marketer of innovative wireless solutions for the worldwide mobile communications market. Through the development of integrated hardware, software and services that support multiple wireless network standards, RIM provides platforms and solutions for seamless access to time-sensitive information including email, phone, SMS messaging, Internet and intranet-based applications. RIM technology also enables a broad array of third party developers and

manufacturers to enhance their products and services with wireless connectivity to data.

RIM's portfolio of products, services and embedded technologies are used by thousands of organizations around the world and include the BlackBerry® wireless platform, the RIM ® Wireless Handheld™ product line, software development tools, radio-modems and software/hardware licensing agreements. Founded in 1984 and based in Waterloo, Ontario, Canada, RIM operates offices in North America, Europe and Asia Pacific. For more information, visit [www.rim.com](http://www.rim.com) or [www.blackberry.com](http://www.blackberry.com).

## **Motorola**

(Joe Morrissey Primary Representative, Jag Nadakuduti Alternate Representative)

Motorola is known around the world for innovation and leadership in wireless and broadband communications. Inspired by the vision of Seamless Mobility, Motorola is committed to designing products, powerful networks and a full complement of support services for simple and seamless access to communications, information, and entertainment systems. Classic products such as the MicroTac and StarTac, as well as stylish new products such as the RAZR, SLVR, KRZR, and ROKR with diverse functionality have maintained Motorola brand recognition and competitive market share in the personal communications market. Motorola is a Fortune 100 company with global presence and impact. For more information about the company, its people and innovations, visit <http://www.Motorola.com>.

\*\*\*\*\*

## **OCTOBER 2007 MEETING SERIES**

The next ANSI ASC C63™ meeting series is scheduled to be held 22-25 October at Washington Laboratories, Gaithersburg, MD. The tentative schedule is:

- Monday – Working Groups
- Tuesday -- SC1 & SC2
- Wednesday -- SC3, SC5, SC6 & SC8
- Thursday -- C63™ Main Committee

**(See C63™ website for announcement and details.)**

\*\*\*\*\*

## **Subcommittee 1 – Techniques and Development**

Mike Windler Chair

### **PROJECT STATUS SUMMARY**

#### **Project 1-1.1 C63.15 Immunity Measurements and Project 1-1.3 C63.15 Immunity Instrumentation (combined with Project 1-1.1)**

and

#### **Project 1-8.3 C63.2 to Include CISPR 16-1-1 with US Foreword**

These projects have been completed in SC1 and the draft Guides were moved to C63™ for balloting.

#### **Project 1-13.2 C63.4 Site Acceptability Above 1 GHz**

A power point presentation was given on the time domain reflectometry (TDR) test recently conducted at the 3-meter chamber at a US manufacturing facility. This work addresses ANSI C63.4 Draft Annex O. The conclusion is two-fold: 1) The time domain method offers a powerful tool for evaluating a test facility and 2) work remains for determining a standard against which the facility is to be evaluated. It was noted of the related work underway in CISPR/A and the reluctance to accept the time domain reflectometry method in Europe. The CISPR VSWR for site validation > 1 GHz method is published in CISPR Pub 16-1-4, second edition (2007) clause 8. Currently there needs to be solution to accept both the TDR method and the VSWR method for Europe and consequently the USA. The target completion date for committee vote is December 2007.

#### **Project 1-15.5 C63.23 Measurement Uncertainty**

A significant re-write of the guide has taken place, both to match IEEE formatting and in content. The committee agreed that only the following documents should have an uncertainty component included: C63.4, C63.5, C63.10, C63.14 (definitions), C63.15, C63.16, C63.17, C63.18, C63.19, and C63.22. The target date for the completion of this document is December 2007.

#### **Project 1-15.6 C63.5 Antenna Calibration**

A review of the “Detail of Dipole Calibrations” concerns (reference VCCI “Antenna Calibration Guidelines” document issued in 2006) was provided to the committee. It was noted that the interaction between VCCI and the C63.5 WG has improved recently and is more collaborative. One early problem was that the VCCI evaluated an older version of C63.5 and thus did not give it good reviews as a standard in their “Antenna Calibration Guidelines” document. Mr. Camell noted that the related CISPR activity is on hold for at least one year as a second CD is to be drafted sometime this year, but there are comments by national committees which request opposing approaches. CISPR is working to resolve

this issue. An invitation was issued to the working group to hold a meeting at ETS-Lindgren in Cedar Park, Texas if this would help the committee to work in real time using an OATS calibration site. The target completion date for SC1 committee vote is September 2008.

#### **Project 1-15.9 Maintenance of Revision to C63.4-2003**

Text is still being prepared to insert into the latest draft C63.4 for review by SC1 by early 2007 for the following issues:

- a) Site validation and measurement procedures > 1 GHz
- b) GTEM validation and measurement procedures for intentional radiators and for frequencies >1 GHz and harmonization with IEC 61000-4-20 and related TIA standards
- c) Video display issues
- d) Define cable loss as a function of temperature
- e) LISN calibration procedures
- f) Figure 2 (LISN impedance) equation
- g) TV signal peak-to-peak voltage reading for measurements
- h) Harmonize where possible test setups with 5<sup>th</sup> edition of CISPR 22
- i) Cite latest C63.5 to replace 1988/1998 version
- j) Add requirement for taking into account pulse desensitization when making pulse measurements

#### **Project 1-15.10 C63.2 and C63.4 Use of Spectrum Analyzers for Emissions Testing**

It was noted that work is moving forward on this topic within CISPR. A draft CD was prepared and circulated within the ad hoc group for review on March 20. The approval of all NCs of ALL CISPR subcommittees was very high (with comments though); thus, CISPR/A decided to move forward with the project. It was also noted, in reference to CISPR/A, that the project in C63™ SC1, related to spectrum analyzers has a different content. The CISPR draft allows the conditional use of a spectrum analyzer; this is already permissible per C63.4. A draft from the working group showed the suggested wording to add to C63.4 for the use of spectrum analyzers in emissions testing. The subcommittee voted to include this text into the next draft of C63.4 for review. No work has been done for any text in C63.2.

#### **Project 1-15.11 Measurement of Broadband Emissions Associated with Digital Technology**

It was noted that the request for removal of PINS-C for project 1-15.11 was not presented at the C63™ October 2006 committee meeting. It will be presented at the March 29, 2007 parent committee.

## **Project 1-10.1 C63.10 Standard for Testing Wireless Devices**

The working group provided a draft of the first edition to SC1 for review. The current abstract of the draft document is:

Abstract: This standard is intended to cover the procedures for testing the compliance of a wide variety of unlicensed wireless devices; including but not limited to: remote control and security transmitters, Frequency Hopping and Digital Communication Spread Spectrum devices, anti-pilferage devices, cordless telephones, wireless medical transmitters, Unlicensed National Information Infrastructure Devices, Intrusion Detectors, unlicensed devices below 30 MHz, Automatic Vehicle Identification Systems and other devices authorized under Part 15 of the FCC Rules and Regulations. The test procedures for new technology wireless devices will be added to this standard as soon as soon as practical after there is agreement on the compliance testing of the new devices.

\*\*\*\*\*

## **Subcommittee 2 – E3 Terms and Definitions**

Dave Southworth, Chair

This subcommittee continues to move forward with the update to the ANSI C63.14 document, cited in MIL-STD-461E and MIL-STD-464A which are the E3 performance standards for equipment and systems, respectively, by recommending several additions and some deletions. The proposed changes are currently being reviewed by the chairs of the other subcommittees.

\*\*\*\*\*

## **Subcommittee 3 – International Standardization**

John Lichtig, Chair

Important issues discussed at the March meeting that impact C63™ are:

\*The membership list from 2006 was reviewed and several changes were identified. The topic was tabled to later in the meeting to discuss the scope and membership criteria. Time did not allow discussion at the meeting. An additional meeting will be scheduled in the May time frame to discuss the SC3 membership criteria and scope.

\*In general, participation at the CISPR Sydney meetings will be adequate.

\*Don Heirman will be (after confirmation at the CISPR Plenary meeting) the new Chairman of CISPR and Martin

Wright will be the new Vice-Chairman of CISPR (also after confirmation at the CISPR Plenary meeting).

\*The chairmanship for CISPR SC A chairman has two candidates, Manfred Stecher from Germany and Werner Schaefer from the USA. More may occur as the deadline for additional nominations is 20 April 2007.

\*A letter of invitation from the TA of CISPR SC A Technical Advisory Group (TAG)--Clark Vitek-- to join the SCA TAG was reviewed and encouraged to enable cross participation between IEC and C63™ activities.

\*TC77/SC77A - US concerns about the European push for tighter harmonic emissions content are now less. Excessive tightening of requirements appears to be under control now that more industry reps are on 77A. It was reported that a new LISN (2 kHz – 9 kHz) has been developed. If adopted, it will require new Harmonic Analyzers be purchased for the test.

\*\*\*\*\*

## **Subcommittee 5 - Immunity Testing and Measurements**

Ed Hare, Chair

Subcommittee 5, met on Wednesday, March 28, 2007. There are two good news items to report. First, Steve Whitesell, of VTech, was elected by the C63 parent committee to serve as the SC5 Vice Chairman. C63 extends its congratulations and thanks to Steve for agreeing to take on this responsibility.

The SC5 Working Group developing C63.9, a draft standard on immunity levels and testing for office equipment, has completed its work on the draft. The C63 parent committee is in the process of forming a balloting group to vote on this standard.

SC5 is also working on a recommended practice for ad-hoc, in-situ testing for non-medical equipment. This document will provide guidance on ways to determine in-situ that installed equipment will be immune to the field strength from transmitters that may be in use nearby. One stumbling block in the development of this standard has been the dearth of inexpensive methods that can be used to predict field strength from the transmitters used for the testing. Joe Morrissey gave a presentation on various methods that could be used. Work on the document is ongoing.

Information about Subcommittee 5 can be found on the C63 page at <http://www.c63.org>. People who would like to participate in this work should contact Ed Hare, the subcommittee Chair at [ehare@arrl.org](mailto:ehare@arrl.org).

\*\*\*\*\*

## Subcommittee 6 – Laboratory Accreditation

Kurt B. Fischer, Chair (Report on March 28, 2007 meeting)

A meeting of Subcommittee 6 was held on Wednesday, March 28th at IEEE Headquarters. Approximately 21 attendees were present at the meeting. The meeting was run as per the revised agenda on the web page. There were no changes to the membership. The membership list was approved by the parent committee the following day. The Minutes of the last meeting were reviewed and were approved.

A DRAFT checklist for the Basic IEC Immunity tests is presently with the Editorial Committee. An additional York generator has been donated to C63tm by NIST.

Reports were received from NIST/NVLAP and A2LA on the status of their accreditation programs in EMC, Telecom, and Calibration Labs with RF/Microwave capabilities. The NVLAP presentation is available on the C63 website.

A report was given by Don Heirman on the National Cooperation for Laboratory Accreditation (NACLA). Check the NACLA web site ([www.nacla.net](http://www.nacla.net)) for further details on other aspects of NACLA. The presentation is available on the C63 web site.

Kurt Fischer has requested volunteers for the Vice-Chairman and Secretary positions. Please contact him if interested in serving in either position at [kurt.fischer@nist.gov](mailto:kurt.fischer@nist.gov)

\*\*\*\*\*

## Subcommittee 7 Unlicensed Personal Communications Services Devices

Stephen Berger, Chair

No current activity

\*\*\*\*\*

## Subcommittee 8 – EMC and Medical Devices

Joseph Morrissey, Chair

Within WG 1, a solution for ad hoc medical device testing (C63.18) was proposed involving predicted field strength values for those (hospitals) without resources to obtain a field meter. Follow-on work is ongoing to determine how accurately these numerical values will predict actual mobile phones and radios in test mode. An important synergy of this effort with that of AAMI EMC committee (TIR 18) was identified. Within WG-3, the complexity of hearing aid compatibility (C63.19), the need to look at different hearing aid / hearing loss combinations, and the use of objective

measures was reinforced, and ongoing work was presented. Finally, we elected a new Vice Chair for SC8 (Bob DeLisi).

\*\*\*\*\*

## STANDARDS STATUS MATRIX

The current status of all active ASC C63™ Standards Projects may be found on C63™ 's web page. Click on "C63 Main Committee" and then on "Standards Status Matrix".

\*\*\*\*\*

## NEW Revised Antenna Calibration Standard (ANSI C63.5-2006) Workshop

In December 2004, ANSI ASC C63 published its long awaited antenna calibration standard that replaced the 1988 and 1998 versions. Late last year ASC C63 added to this standard an interpretation that clarified some text and a flow chart. The standard takes into account the errors that are introduced when using certain broadband antennas especially at frequencies below 200 MHz and provides correction factors when these antennas are used for site validation. The standard also introduces measurement techniques for determining antenna factors for other types of antennas. The workshop will lead the user through the new document, highlighting which calibration path should be used based on the type of antenna being calibrated. This is essential to ensure that the right antenna factor is used especially when validating semi-anechoic chambers. As time permits, attendees will get a chance to apply what they learned via problem solving and/or performing an antenna calibration in the lab at the meeting venue.

## WORKSHOP OVERVIEW

In this seminar, you will learn about:

- General calibration test conditions
- Appropriate measurement geometry
- Methods to determine antenna factors
- Application of standard site method
- Reference antenna method
- Equivalent capacitance substitution method
- Discrete and continuous frequency calibration considerations
- Rationale for geometry specific correction factors for biconicals
- Guidelines for measurement uncertainty
- Participate in hands-on calibration setup and calibration

### Support Material

- ANSI C63.5-2006
- A complete lecture notebook
- Handouts and references

### Who Should Attend

- Those responsible for using and calibrating antennas in making radiated emission compliance measurements and site validation
- Calibration technicians
- Calibration accreditation bodies
- Lab quality assessors
- Regulatory Compliance Managers
- Test Instrumentation and chamber manufacturers

### Date and Location

#### **Friday, July 6, 2007, Hawaii (site TBD)**

Transportation from the Hilton Hawaiian Village Hotel (headquarter hotel for the IEEE EMC symposium) on Waikiki Beach to the Workshop site will be provided.

### **Agenda (approx.)**

Registration and Continental Breakfast: 8:00 am

Class: 8:30 am to 5:00 pm

### Registration Fee Includes

Complete lecture notebook, continental breakfast, lunch, and breaks, roundtrip local transportation between hotel in Waikiki and the university, as well as a copy of ANSI C63.5-2006.

### **Hotel**

The Hilton Hawaiian Village Hotel has rooms reserved for those attending the IEEE EMC Symposium, (headquarter hotel for symposium). Please visit the website [www.emc2007.org](http://www.emc2007.org) for complete hotel information and registration.

### Expert Instructors

Donald N. Heirman, Workshop Director, (Don HEIRMAN Consultants),

Dennis Camell (National Institute of Standards and Technology),

Michael J. Windler (Underwriters Laboratories)

### Registration Form

**Contact: Janet O'Neil**

**Telephone: 425-868-2558**

**Fax: 425-868-2558 (Call First)**

Ms./Mr./Dr. \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Zip \_\_\_\_\_

Daytime Phone \_\_\_\_\_ Fax \_\_\_\_\_

Email \_\_\_\_\_

Credit Card (check one): MC \_\_\_\_\_ Visa \_\_\_\_\_

Amex \_\_\_\_\_

Credit Card No: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

Signature: \_\_\_\_\_

### **C63.5 workshop— 6 July 2007**

By 1 June 2006 \*:

Attendees \$400 USD \_\_\_\_\_

C63™ & S/C Members \$350 USD \_\_\_\_\_

Add \$100 if after 1 June or at the door\*\* \$100 USD \_\_\_\_\_

Add'l copy of notebook\*\* \$100 USD \_\_\_\_\_

Total \$ \_\_\_\_\_ USD

\*Please do not mail after 1 June 2007.

\*\*With prior telephone or fax registration only.

### **Check or Credit Card Number must accompany registration.**

Make check payable to **U.S. EMC Standards Corporation** in U.S. dollars drawn on a U.S. bank. Mail to:

Janet O'Neil, ETS-Lindgren

22117 Northeast 10<sup>th</sup> Place

Sammamish, WA 98074

Email: [j.n.oneil@ieee.org](mailto:j.n.oneil@ieee.org)

NOTE: You are not registered until you receive confirmation

**Important:** The organizing committee may substitute speakers, modify the program (or lecture notes), restrict class size or cancel the workshop. No refunds will be made to individuals who cancel after 10 June 2007. Substitutions are allowed. Registration will be confirmed on a first come, first served basis. Workshop requires a minimum of 15 attendees; it will be cancelled if less than 15 sign up by 10 June 2007. Please do not wait to register and do not miss the 10 June 2007 absolute deadline. Registration fees will be returned if workshop is cancelled. Book refundable travel arrangements as appropriate if workshop is cancelled.

## **C63™ 2007 OFFICERS' DIRECTORY**

Donald N. Heirman, Chairman (d.heirman@ieee.org)

Daniel D. Hoolihan, Vice Chair (d.hoolihan@ieee.org)

Matthew J. Ceglia, Secretary (m.j.cegla@ieee.org)

Michael J. Windler, Chair SC-1 Techniques and Development (michael.j.windler@us.ul.com)

David Southworth, Chair SC-2 Terms and Definitions (d.southworth@ieee.org)

John Lichtig, Chair SC-3 International Standardization (JFL@LichtigEMC.com)

Edward F. Hare, Chair SC-5 Immunity Testing and Measurements (ehare@arrrl.org)

Kurt B. Fischer, Chair SC-6 Accreditation/Conformity Assessment (kurt.fischer@nist.gov)

Stephen Berger, Chair SC-7 Unlicensed Personal Communications Services Devices (stephen.berger@ieee.org)

Joseph Morrissey, Chair SC-8 Medical Device EMC Test Methods (EJM037@motorola.com)

**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](http://www.c63.org). That site also contains much information about ANSI ASC C63™ and its subcommittees.

© 2007 **ANSI ASC C63™**. Articles may be reproduced in whole or in part provided that the source "ANSI ASC C63™" and Newsletter edition and date are mentioned in full.