

ANSI ASC C63™ NEWSLETTER

*Accredited Standards Committee C63™ Electromagnetic
Compatibility*

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MARCH MAIN COMMITTEE MEETING HIGHLIGHTS

Operating Procedures: The 15 March '06 Main Committee meeting included a "State of the Committee" review (e.g. scope, membership, relationships with IEEE Standards Association and US EMC Standards Corp., ANSI audit, and Standards Development) that culminated in the approval of a revised C63™ Operating Procedures document. That document is in compliance with ANSI revised requirements governing Organization, Responsibilities, Membership, Operations and Standards Approval. A Time Sensitive Task Table was also adopted that summarized the various responsibilities for accomplishing the actions required by the approved Procedures. Discussions on the Procedures also highlighted the need to establish Committee record archiving processes. Bob Hofmann and John Lichtig accepted the task to upgrade C63™'s website to include a records archiving capability.

Trademark Registration: Application to trademark "C63" has been made and it is anticipated that registration will be completed later this year. Legal advice was to add the TM to

C63 right now to protect it during the time before final registration approval is received. After it is registered, an "R" in a circle after TM will be added and the trademark will be fully protected.

OCTOBER 2006 MEETING SERIES

The next ANSI ASC C63™ meeting series is scheduled to be held on 24/25/26 October 2006, at ARRL Labs. in Newington, CT. The tentative schedule is:

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

(Please refer to C63™ website for announcement/details.)

ANSI C63.5-2006 RECENTLY RELEASED FOR SALE

This issue updates the 2004 edition for the following reasons contained in the introduction to the standard. In 2005, the C63™ committee received a request for an interpretation of clause 5.1 and an apparent conflict with the associated flowchart in Annex G (Figure G2). The issue revolved around the apparent confusion of the process for antenna factor calibration for product testing versus the calibration process when making test site attenuation measurements and how it was shown in Figure G2. The clarification and correct application of the calibrations are contained in the revised

clause 5.1 and the revised Figure G2. To order your copy, visit the IEEE Standards Association web site on <http://shop.ieee.org/ieeestore/>. Type in C63.5 in the search window. The price appears to be \$90 list including the IEEE Discount. This version of the standard will be used for the C63.5 workshop the Saturday before the IEEE EMC Symposium in Portland.

Those attending the August Workshop (see next article) will receive a copy as part of their registration

2006 WORKSHOP

NEW Revised Antenna Calibration Standard (ANSI C63.5-2004) 12 August 2006, Portland, Oregon: The workshop will lead the user through the new document, highlighting which technique 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. Don Heirman, Dennis Camell and Mike Windler are the expert instructors. (Contact Janet O'Neil for registration information, Email: j.n.oneil@ieee.org)

SUBCOMMITTEE ACTIVITY SUMMARIES

SC-1 Techniques and Development

Mike Windler Chair (Report to ASC C63 on 13 March 2006)

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

This project has been completed in SC1 and the draft Guide has been balloted in C63. The ballot closed March 22 with comments but approved. The comments will be addressed in the editing committee and proceed to ANSI ballot.

Project 1-8.1 C63.22 Guide for Automated EMI Measurements:

This document was published in December 2004. Since that time, the working group is working on adding text to address radiated and conducted immunity measurements, in accordance with IEC 61000-4-3 and IEC 61000-4-6, respectively. The target date for completion is December 2006. The WG is asking test labs to become involved in this committee's work. SC1 is requesting members of C63, such as ACIL or SAE, to participate in this effort. Volunteers to help on this working group are requested by May 31.

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

This document has been administratively withdrawn by ANSI due to a 10 year renewal requirement. ASC C63™ will address future activity.

Project 1-13.2 C63.4 Site Acceptability above 1 GHz:

Previous work focused on a frequency domain method that required a special calibration of horn antennas (antenna pattern calibration). The Working Group then pursued a pattern comparison method using signal generators and spectrum analyzers or vector network analyzers, but many users in the EMC community found this to be a difficult method. The Working Group thus continues to pursue the time domain method. The time domain method provides good diagnostic information on areas of a site that are not meeting the conventional performance specified using the VSWR method. A new PINS C will be issued. Research demonstrates excellent reproducibility (<2 dB) using the time domain method. The method also seems to be faster than the current site VSWR method.

Project 1-15.5 C63.23 Measurement Uncertainty:

This work is in C63™. A significant re-write of the guide is underway. This group will address the comments received through the balloting process, which were mainly editorial in nature, by the end of end of May.

Project 1-15.6 C63.5 Antenna Calibration:

Working group chair noted that as a result of two requests for interpretations, there have been changes suggested for the next amendment. The document is available for public purchase and has been for a year or so.

Project 1-15.7 C63.4 Fully Absorber Lined Room (FAR):

The effort of this work is to assess the impact of using FARs instead of test facilities with a reflecting ground plane. There is a tremendous interest in Europe in FARs as an environment for radiated emissions compliance testing. A test artifact (rack mounted router system) was made available to assess the impact of using FARs instead of test facilities with a reflecting ground plane. Kodak and UL have performed this testing using the artifact. The WG chair invited others to participate in the testing as well

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

Text is being prepared to insert into C63.4-2003 in the first half of 2006 for the following issues:

*Site validation and measurement procedures > 1 GHz

- *GTEM validation and measurement procedures for intentional radiators and for frequencies >1 GHz and harmonization with IEC 61000-4-20 and related TIA standards
- *Video display issues
- *Define cable loss as a function of temperature
- *LISN calibration procedures
- *Figure 2 (LISN impedance) equation
- *TV signal peak-to-peak voltage reading for measurements
- *Harmonize where possible test setups with 5th edition of CISPR 22
- *Cite C63.5-2004 to replace 1988/1998
- *Add requirement for taking into account pulse desensitization when making pulse measurements

The existing standard is also being formatted into the new ANSI format.

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

This effort will develop a procedure to be included in ANSI C63.4 and instrument requirements for C63.2.

SC-3 International Standardization

John Lichtig, Chair

SC 3 is responsible to serve as the US technical advisory group (TAG) for the CISPR plenary. As such, it reviews CISPR policy and technical issues that affect US EMC standards interests. Typically the meeting agenda is to review key issues and progress in all the CISPR subcommittees as they might affect the US and to come to some agreement on the US position in the CISPR plenary. Discussion of the work of IEC TC77 and its subcommittees is also covered. The possible contributions of the work of C63 is also considered as it might be input to both CISPR and TC-77.

Concern was expressed at the last meeting in that all of the relevant standards activities are not represented in SC-3. Concerns were also expressed that we are missing opportunities to develop unified positions between the TAGs and C63TM standards activities. A letter will be sent out by the SC to encourage TAs that are not presently participating to get involved.

SC-5 Immunity Testing and Developments

Ed Hare, Chair

SC-5 is responsible for providing technical expertise and resources necessary for writing, updating, or changing existing and proposed C63-approved standards for new or existing immunity testing techniques and associated instrumentation, test methods, test levels and limits development as requested

by the parent committee ASC C63TM. SC5 is chaired by Ed Hare, ARRL. Joe Morrissey, Motorola, serves as its Secretary. The position of Vice Chair is vacant. SC-5 has three working groups. WG1 is chaired by Steve Berger. It is developing a standard, Office Equipment Immunity, C63.9. A PINS for this project was approved at the parent committee meeting, to be forwarded to ANSI. WG2 is chaired by Dr. Morrissey. This group is working on revisions to C63.24, Ad-Hoc Immunity Testing of Non-Medical Equipment. WG3 is chaired by Werner Shaefer. It will assume responsibility for the maintenance and revision to C63.15, Immunity Measurements and Instrumentation.

SC-6 Accreditation/Conformity Assessment

Dan Hoolihan, Chair

A meeting of Subcommittee 6 was held at the IEEE Headquarters on March 14 – 2006. The meeting was run as per the published agenda and there were approximately 20 people in attendance.

The membership of SC6 was reviewed and approved for 2006.

Under Working Group 1, the latest version of the EMC Immunity checklists was discussed. The checklists address the IEC Immunity Basic tests as denoted by IEC 61000-4-x where x = 2,3,4,5,6,8 and 11. Several comments were received at the meeting for improvements to the checklists. It is hoped to go to publication of the checklists by the end of this year.

In Working Group 2, laboratory comparison testing was discussed. This class of testing is specified in Clause 5.9 (Assuring the Quality of Test and Calibration Results) of *ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories*. The start of the proficiency testing program using a York Emission device was announced at the last meeting. The charge for labs will be \$750 for C63 members and \$1250 for non-members to participate in the program. The goal of the program will be to develop a document to describe how to run a proficiency testing program for EMC artifacts.

Bill Hurst from the FCC gave a report on FCC activities including Conformity Assessment Bodies, Mutual Recognition Agreements, and Telecom Certification Bodies. He also thanked the subcommittee for contributing to the FCC Checklist revision. He will be distributing the completed FCC list to the accreditation bodies in the near future and he will also send it to the chair of SC-6.

Don Heirman gave a short report on NACLA.

The next meeting of SC-6 will be Wednesday, October 25th, 2006.

SC-8 Medical Device EMC Test Methods

Dan Hoolihan, Chair (Report to the Main Committee
September 28, 2005
Subcommittee 8 – EMC and Medical Devices

A meeting of Subcommittee 8 was held at the IEEE Headquarters on March 14th, 2006. Approximately 25 people were in attendance including members and guests.

The membership of the committee was reviewed and approved for 2006.

Working Group 1 of SC6 is developing the Second Edition of C63.18. Jeff Silberberg, the working group chair, reported that progress continues at a slow rate. The Second Edition will use a field-strength meter as the principal instrument for measuring fields from cellular sources. The working group has requested information from appropriate vendors relative to peak and average power measurements with power probe sensors. It was pointed out that there is an excellent article on power probe sensors in the latest issue of *Evaluation Engineering*.

Bob DeLisi from UL is chairing the Second Working group which is looking at patient-connected medical devices and looking for new members. Bob gave a brief review of the history of the project.

The most active of the three SC8 working groups is chaired by Steve Berger and is responsible for C63.19, Hearing Aids and Cell Phone Interference. He reviewed the history of C63.19

and also reported on the recent progress of this working group. Two meetings of the Working Group were held in January and February of 2006. Both meetings were held at the FCC Lab in Columbia, Maryland and were attended by approximately 25 people.

The second Revision of the C63.19 Standard has completed the ANSI Public Review without comment and it should be available for publication shortly.

During the SC8 meeting, a protracted discussion took place about the proposed Draft Amendment of the revised standard. Concerns were expressed on some of the wording implemented in the latest proposed amendment. These concerns were resolved with some additional wording changes. A Motion to “Recommend to the Main C63 Committee to adopt the amendment including additional wording changes” was made, seconded, amended, reseconded, fully discussed and approved by the Subcommittee.

Joe Morrissey, Motorola, was elected Vice-Chair of the subcommittee.

The next meeting of the Subcommittee will be Wednesday, October 25th, 2006.

STANDARDS PROJECTS STATUS

The following table only reflects the status of ongoing standard projects. It is planned to include a complete detailed Standards spread sheet in the upgrade of C63TM's website. (Target date – 2nd quarter 2006)

PROJECT	ABBREVIATED TITLE	STATUS April 2006
C63.2	Instrumentation	Recirculation ballot will issue in April
C63.4 – R2	Measurement Methods	SC-1 working on amendments
C63.5	Antenna Calibration	2006 Revision just released
C63.7 - 1992	OATS, Construction of	ANSI approval on hold pending audit
C63.12 - 2000	EMC Limit Setting	C63 TM Re-evaluating
C63.14 - 1998	EMC Definitions	SC-2 developing new version
C63.15	Immunity Measurements & Instrumentation	Recirculation of ballot approved with comments
C63.16 - 1993	ESD Test Methodologies	New draft in preparation
C63.17 - 2005	Unlicensed Personal Comm. Serv. Devices	In ANSI Public Review
C63.18 - 1997	Medical Devices; Radiated Immunity Test	New draft in preparation
C63.19 - 2001	Hearing Aids and Wireless Comm Devices	Submitted to ANSI for approval
C63.22	Guide for Automated EMI Measurements	SC-1 working on amendment
C63.23	Measurement Uncertainty	New draft in preparation

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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.

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