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American National Standards

Committee C63[®]

Electromagnetic Compatibility

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NEWSLETTER

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MESSAGE FROM THE CHAIR

Daniel D. Hoolihan, Chairman ANSC C63[®]

The Main Committee met in a Hybrid Fashion in Cedar Park Texas on Thursday, May 19th, 2022. There were approximately 20 people in-person and 20 more people on-line for the May meeting. The Subcommittees of C63 (SC-1 – SC-8) had met earlier in the week as well as the C63 Steering Committee.

The Chairman reported that C63.27 – *American National Standard for Evaluation of Wireless Coexistence* was published on May 17, 2022. He also reported that Standards published in 2021 included: C63.10 – *American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices*; C63.24 – *American National Standard – Recommended Practice for In Situ RF Immunity Evaluation of Electronic Devices and Systems*, and C63.30 – *American National Standard for Methods of Measurements of Radio-Frequency Emissions from Wireless Power Transfer Equipment*.

FCC Updates – A Notice of Proposed Rulemaking (NPRM) was released by the FCC on 25 January 2022 on ET Docket Nos 21-363 and 19-48; FCC 22-3; FR ID 75329. The NPRM was officially published in the Federal Register on March 17, 2022; the Comments Due Date was April 18, 2022. Reply Comments were due May 18th. Five Comments were received from industry; they were mostly favorable. The C63

Committee submitted Reply Comments to the four comments from Industry that were technically related.

A Petition for Rulemaking was sent to the FCC by C63 on 14 September 2021 asking the FCC to adopt the latest version of C63.30 (2021) and implement it into their Rules. The FCC is studying this request and will issue a separate NPRM on it in the future.

All 8 Subcommittees of C63 met during the week of May 16-20 in Hybrid Fashion (some people in person and others on-line in a video-conferencing format). Working Groups of the Subcommittees continue to meet as needed in the video-conferencing format as they develop and/or revise the approximately 20 active standards in the C63 portfolio of EMC standards.

The next Main Committee meeting of C63 will be held at Keysight Technologies in Santa Rosa, California the week of November 7-11, 2022. It will be a Face-to-Face meeting and new officers of the Main Committee are scheduled to be elected.

Subcommittee 1 Techniques and Development

Zhong Chen (ETS-Lindgren), Chair.

Subcommittee 1

Subcommittee 1 met on March 18, 2022, in a WebEx meeting and again in Cedar Park, Texas in a Hybrid Meeting on May 18th.

Working Group reports were reviewed in detail at the May meeting.

The Working Group on C63.2 Field Strength Measuring Instrumentation – 9 kHz to 40 GHz reported that they have basically finished the changes on ANSI C63.2:2016 and it passed the C63 Main Committee ballot. A form that compares C63.2 in a new draft to CISPR 16 1 1:2019 has been sent to SC3 for review. The Final Draft C63.2 (Rev7) has been sent to IEEE, and Jennifer Santulli has started the BSR8 process with ANSI.

Andy Griffin reported on C63.4: Emissions Measurements.

The draft was considerably revised in late 2020 with the latest draft circulated to SC 1 in mid-2021. Publication timing will be dependent upon publication of C63.25.2 to make sure these documents are harmonized. The working group has continued to meet monthly to rectify technical issues including site antenna calibration and turn-table requirements.

The chair for the WG on C63.5: Antenna Calibration, Doug Kramer, apprised the membership that no real action occurred nor will occur until C63.25.2 is ready. There was one interpretation request that the task group had responded to in a high-quality manner. Mr. Kramer said there were some great technical discussions and research done to create the response.

It was reported that Amendment 2 of CISPR 16-1-6 Ed.1.0 was published on March 3, 2022. It includes content on loop antennas and discusses site validation. It adds four additional calibration methods for loop antennas: Three Antenna Method (TAM), Current Probe Method (CPM), Standard Antenna Method (SAM) and Two Antenna Method (TWOAM). TWOAM to be used for the site validation procedure (NSA). It was advised that some of the loop calibration methods in the recently published CISPR 16-1-6 are associated with the new NSIL Normalized Site Insertion Loss site validation measurement method being developed in the latest version of CISPR 16-1-4, which is at the FDIS stage and therefore can only have editorial changes before its publication sometime this

year. So not only should C63.5 consider this, but SC1 also needs to consider adopting the NSIL method once it is published.

Regarding the working group on C63.7: Construction of Test Sites, Nick Abbondante noted C63.25.3 will involve different test sites such as CATRs, reverberation chambers, etc. Zhong Chen suggested this discussion and wording on test sites for C63.25.3 could be moved to C63.7 at some point. The committee supported the idea of keeping C63.7 as a separate standalone document.

The group on C63.23-2012: Guide for Computations and Treatment of Measurement Uncertainty reported that SC1 wants to see this standard get updated. Bob DeLisi suggested that new SC1 members be required to actively participate on a working group. It was noted that activity on measurement uncertainty (MU) is picking up in CISPR. The Subcommittee Chair noted that C63.23 needed to address this work. Bob DeLisi noted that he would like to have a revision made of this document to address wireless measurements.

Zhong Chen reported on C63.25. There are new drafts being written which address the family of C63.25 standards:

- C63.25.1 (1 GHz to 18 GHz) TDR – Published Dec 2018 – WG Chair: Dan Sigouin
- C63.25.2 (30 MHz to 1000 MHz) NSA – Work began in January 2019 – WG Chair: Dan Sigouin
- C63.25.3 (Above 18 GHz) – Future plan to address NSA above 18 GHz – WG Chair: Nick Abbondante

On C63.25.3, WG Chair Nick Abbondante presented his report. Current site validation methods only extend up to 18 GHz; however, testing is being performed at frequencies as high as 231 GHz. This standard will develop a list of acceptable types of test sites and their corresponding site validation methods and recommended criteria for frequencies from 18-40 GHz. Existing site validation methods will be leveraged where possible. Regarding SAC, OATS, and FAR test sites, the committee is exploring use of sVSWR, Time

Domain sVSWR, and Mode Filtered sVSWR techniques. Compact Antenna Test Range (CATR) and Reverberation Chamber are also being explored. Task group reports were received on SAC/OATS/FAR/FSOATS from Martin Wiles, CATRs from Nicholas Abbondante, and Reverberation Chambers from Phil Miller. The SAC group has performed some preliminary measurements and is developing the basis for a round robin. Results so far indicate that a validation method may be relevant rather than assuming the site is acceptable to 40 GHz if it is validated to 18 GHz.

On the reverberation chamber task group, Garth d'Abreu of ETS Lindgren has volunteered to draft some text for this test site type. On the CATR task group, Asad Bajwa from Keysight has volunteered to draft some CATR validation text. In summary, Nick Abbondante advised Draft 0.3 is developed and several task groups are currently developing text.

SC-1 reviewed interpretation requests for:

C63.4 (2014) Clause 8.3.2.2 Measurement Distance from David Waitt, request dated July 26, 2021.

C63.5 (2017) Clause M.4 Uncertainty Contributors from Jeong Hwan Kim, request dated Dec 21, 2021. Votes were subsequently taken and responses sent.

Subcommittee 2 **Definitions**

Marcus Shellman, Jr., Chair.

During the Subcommittee meeting 2 on Definitions, Mike Duncanson the working group chair for C63.14, reported its status. The ballot was completed in April 2022 with an 88% response rate and 100% approval with a significant number of editorial comments received. Another draft will be recirculated once all edits are completed, and final publication be deferred to accommodate C63.4-20XX for additional new and modified definitions. The standards that are reviewed and definitions included in the current update:

- C63.4-20XX, C63.4a-2017, C63.5-2017, C63.7-2015, C63.8-20XX,

- C63.15-2017, C63.16-2016, C63.26-2015, C63.19-2019, C63.24-2021,
- C63.25.1-2019, C63.25.2-20XX, C63.27-2017, C63.29-20XX, C63.30-2021

Anticipated standards for review during 2022 include: C63.25.2, C63.31, C63.33, and C63.34.

C63.28 is currently in development phase without a WG chair. Periodic WebEx meetings on the standard have been held since May 2018. The draft continues to show movement with a current revision 1.38 that coordinates with SC 3 standards. In new business, SC2 had significant discussion on the disposition of ANSI C63.12, "Recommended Practice for Electromagnetic Compatibility Limits."

Subcommittee 3 **International Harmonization**

Ross Carlton, Chair

At the most recent meeting, SC 3 reconfirmed Scope & Duties with new ones coming. Their next meeting is after the August EMC Symposium where they will discuss C63.12 transferring to SC2 as they do not feel it is ready for the main committee's attention and note the importance of time in finishing this task. They continue working on process flow charts and guidance to SCs and WGs as well as on improving connections with USNC technical experts and other potential liaisons.

Subcommittee 4 Wireless and ISM **Equipment Measurements**

Bob DeLisi (UL), Chair

During the most recent meeting for SC4 a notice of Proposed Rulemaking on ET Docket Nos. 21-363 and 19-48 which includes C63.10:2020 was addressed. C63 submitted reply comments on Friday May 13, 2022, and there is a corrigendum out for formal ballot which closed on May 29, 2022.

The working group on C63.26: Procedures for Compliance Testing of Transmitters Used in Licensed

Radio Services consolidated all task group work into the main working draft document. The draft circulated to a small task group and comments received are being addressed. They planned to have a draft out by the end of May with the full draft to be circulated to the full working group for comment by the end of the year.

The working group on C63.29 has been addressing procedures for compliance testing of lighting products. They have reported that a ballot group had been formed and a draft was awaiting editing after MEC review. The draft was to be sent to IEEE Secretariat for formal ballot by end of May. Regarding C63.31 Compliance testing of Industrial, Scientific, and Medical (ISM) Equipment, the working group reported that it remains active, meeting monthly. Common requirements from C63.29, C63.30, and C63.4 were compared, and appropriate text was added to C63.31 for topics not covered in C63.4. Loading for Microwaves and Medical Diathermy equipment has been harmonized with CISPR 11 and made as backwards compatible as possible with OET MP-5. The section is nearly completed with only two clauses left to review.

There was a decision made to allow 5 uH LISN use from C63.29 for high power branch circuits >16A. Significant progress has been made on the C63.31 draft and working through the many philosophical and practical questions associated with writing text for non-standard test sites. The document is likely to be completed in late 2022 or early 2023, to be followed by the voting and commenting process. SC4 also reported on a massive MIMO Working Group Special Project Developing a Paper on Test Distance for Active Antennas. During their meeting in May at ETS-Lindgren, they also had a presentation by Ericsson on Reverberation Chamber use for Total Radiated Power measurements (mmWave). The summary, method has promise as an alternative method to measurements in a SAC or FAR.

Subcommittee 5 Immunity Testing

Ed Hare (ARRL), Chair

Subcommittee 5 voted to recommend to the Main Committee that the existing Scope, Duties and

membership Roster be approved. Jeff Evans provided a PowerPoint presentation on the work and status of C63.9. Work is progressing on schedule, and he reported that about 80% of the document is stable. A SC5 discussion ensued about whether C63.9 should be a Standard or a Recommended Practice. Mr. Hare asked the C63.9 Working Group to consider this matter and bring back a recommendation to SC5. People that have thoughts or comments can bring them to the WG and be part of its deliberation. Mr. Ramie provided a verbal report on C63.16 with work progressing on target. Working Groups for C63.15 and C63.24 reported that they are current and there is no ongoing work.

Subcommittee 6 Laboratory Accreditation/ Conformity Assessment

Doug Kramer (ETS Lindgren) Chair

Subcommittee 6 reported minor changes in Scope regarding TCBs. Due to term limits, a new chair was needed, and Doug Kramer was elected as the new Chair. Megan McConnel will continue as Vice Chair and Randy Long will be serving as Secretary. A group on C63.34 has restarted work, and they are resolving comments. Randy will become the chair of the C63.34 WG as they progress through the comments. Harry Hodes presented a report on inter-lab comparison testing on EMC Labs for emissions. Results were found to be worse than the last results from several years ago. The SC6 secretary was to schedule a meeting in June to resolve the comments from the last WG draft circulation.

Subcommittee 7 Spectrum Etiquette

Jason Coder, Chair

The latest revision of C63.27 has been published. The subcommittee discussed comparisons to other ETSI and IEC standards that are commonly confused with coexistence testing, and the possibility of moving C63.27 content up for harmonization through SC3. The subcommittee decided to begin a list of educational resources on the SC7 webpage, and new content such

as EMC magazine articles and on-demand video to answer common coexistence questions. The subcommittee also discussed the future direction of SC7 and the possibility of a C63.27 maintenance team. C63.17 is currently being reviewed by ETSI and DECT.

Subcommittee 8 Medical Equipment Testing

Stephen Berger (TEM Consulting, LP), Chair

At its latest meeting, SC 8 reaffirmed its scope, duties, and roster. Steve Berger will remain as Chair. C63.33 is active and needs a new chair and vice chair. AdvaMed communications are on-going with their concerns about the topics in C63.33

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