

C63[®] American National Standards Committee C63[®]

Electromagnetic Compatibility Subcommittee 4: Wireless and ISM Equipment

Chair: Bob Delisi

Vice Chair: Dave Case

Secretary: Jerry Ramie

Nov 8, 2022
3:00 PM – 5:00 PM - PST
Keysight Technologies, Santa Rosa, CA / Webinar

Approved Minutes

1. **Call to Order: Chair** - The Chair called the meeting to order at 3:09PM-PST
 - 1.1 **Announcements: Chair's remarks** - Thanks for attending. Thanks to Nate Potts for his company's hospitality.
 - 1.2 **Meeting logistics announcements: Host** - N/A
 - 1.3 **Introductions: Secretary – roll call** (record attending members with their affiliations and guests separately below) **Report any roster errors to the C63[®] Secretary** ([SC4 membership roster](#) from the website is shown below) Note **absences**, **excused absences** and **errors** below.

Subcommittee 4 Membership Roster

Name	Role in SC	Affiliation
Abbondante, Nicholas	Member	Intertek
Antola, Michael	Member	UL LLC
Case, David	Vice Chair	Consultant
Chamberlain, David	Member	Innovation, Science & Economic Development Canada
Chen, Zhong	Member	ETS-Lindgren
Coder, Jason	Member	NIST
DeLisi, Bob	Chair	UL LLC
Elliott, William (Mac)	Member	TÜV SÜD America, Inc.
Friden, Jonas	Member	Ericsson AB
Graff, William	Member	TÜV Rheinland of North America
Hodes, Harry	Member	Consultant
Hoolihan, Dan	Member	Hoolihan EMC Consulting
House, Jody	Member	Element Materials Technology
Jones, Steve	Member	FCC Laboratory
Kiemel, Greg	Member	Apple Inc.
Klinger, Jeff	Member	Cetecom, Inc.
Kramer, Doug	Member	ETS-Lindgren Apple Inc.
Lee, Edmund	Member	Apple Inc.
Mahn, Terry	Member	Fish & Richardson P.C.
Mendoza, Ernesto	Member	Signify
Molaei, Nima	Member	Element Materials Technology Washington DC LLC
Nixon, Jason	Member	Innovation, Science and Economic Development Canada
Pino, Dan	Member	Element Materials Technology Washington DC LLC
Royer, Tim	Member	TIMCO ENGINEERING, INC. Industrial Inspection Analysis
Salem, Pelin	Member	Cisco Systems, Inc. (Technical Expert)

Sigouin, Dan	Member	TIMCO ENGINEERING, INC. Industrial Inspection Analysis
Skoglund, Kenth	Member	Ericsson AB
Zimmerman, Dave	Member	Spectrum EMC, LLC

Guests and Observers: (non-voting) Jerry Ramie, Ken Gjerde, Jeremy Cline, Janet O'Neil, Steve Anderson, Nate Potts, Khairul Zainal,

1.4 Quorum: (50% of roster) constitutes a quorum. (rounding up) (28 roster members / 2 = 14 >> therefore **14 people** are required for a quorum. **Was quorum achieved? (Yes)** If not, any actions taken are subject to confirmation by electronic ballot or at a future meeting. (Quorum is not required for Working Group meetings)

1.5 Review of the [patent slides](#) - Secretary - The patent slides were shown and no potentially essential patents or I.P. issues were declared.

2. Approval of the Agenda: Secretary - The [Agenda](#) was approved by acclamation.

2.1 Approval of the previous Minutes - [20210517](#) The previous Minutes were reviewed in a line-by-line manner and [approved](#) by acclamation.

3. Review of [Subcommittee Membership](#): Secretary - Report any errors to the ASC-C63® Secretary

3.1 Review of Membership Guidelines – Subcommittees:

For an individual to remain a voting member of a Subcommittee, active participation in Subcommittee meetings and regular responses to Subcommittee email votes is required. Should a member fail to attend at least one of three consecutive scheduled meetings (in person or remotely via web conference (when used)) or respond to at least one of every two consecutive Subcommittee email votes, their membership in that Subcommittee may be at risk.

Note: Abstentions shall be treated the same as a “yes” or “no” vote regarding the requirement to respond to email votes.

Member Attendance Log: Any errors in the log?

20181128	20190501	20191120	20200602	20200924	20210225	20210527	20210909	20220215	20220517	SC4 Roster:
			x	x	x	x	x	x	x	Abbondante, Nicholas
					x	x	x	x	x	Antola, Michael
x	x	x	x	x	x	x	x	x	x	Case, David
x	x	x	x	x	x	x	x	x		Chamberlain, David
	x	x			x	x	x	x	x	Chen, Zhong
					x	x	x	x	x	Coder, Jason
x	x	x	x	x	x	x	x	x	x	DeLisi, Bob
x	x	x	x	x	x	x	x	x	x	Elliott, William (Mac)
	x		x				x			Friden, Jonas
x	x	x			x		x	x	x	Graff, William
									x	Hodes, Harry
x	x	x	x	x	x	x		a	x	Hoolihan, Dan
								x	x	House, Jody
x	x	x	x	x	x	x		x	x	Jones, Steve
		x	x	x	x	x	x		x	Kiemel, Greg
	x	x	x		x	x	x	x	x	Klinger, Jeff
x	x	x	x	x			x	x	x	Kramer, Doug
	x	x		x	x	x		x	x	Lee, Edmund
			x			x				Mahn, Terry
x			x	x	x	x	x	x	x	Mendoza, Ernesto
		x	x	x	x	x	x	x		Molaei, Nima
x	x	x	x	x	a		x	x	x	Nixon, Jason
	x				x					Pino, Dan
										Royer, Tim
								x	x	Salem, Pelin
x		x		x		x	a			Sigouin, Dan
x	x	x	x	x		x	x	x		Skoglund, Kenth
		x	x		x	x	x			Zimmerman, Dave

Any members at risk? [Terry Mahn](#) & [Dan Pino](#) are at risk. Dan Pino attended and is no longer at risk. Terry Mahn was granted an excused absence.

3.2 Consideration of new SC4 members? - none [Application for C63® Subcommittee Membership](#)

4. Working Group reviews - Chair - [More information about each standard](#) is available on the Standards Status Matrix page of the [C63® web site](#). This information will be reviewed for accuracy at each Spring Subcommittee meeting. The WG reports shall be made using either the [C63 PowerPoint template](#) or the [C63 PowerPoint template wide](#).

4.1 C63.10 Unlicensed transmitters - Chair

4.11 Status Matrix Review Verify accuracy of document [status matrix](#) content and report any errors to the ANSC-C63® Secretary. **Is this information correct? (Yes)**

C63.10-2020 Learn more	Procedures for compliance testing of unlicensed wireless devices	SC 4	Nixon, Jason	C63.10 PINS	Published 1/29/2021. No further work scheduled on the document. WG disbanded.
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C63.10: C63.10-2020 American National Standard for Testing Unlicensed Wireless Devices

Contact: [Nixon, Jason](#) (Working Group Chair)

Scope: This standard is intended to cover procedures for testing the compliance of a wide variety of unlicensed wireless devices (also called unlicensed intentional radiators) including but not limited to: remote control and security unlicensed wireless devices, frequency hopping and direct sequence spread spectrum devices, anti-pilferage devices, cordless telephones, wireless medical unlicensed wireless devices, Unlicensed National Information Infrastructure devices, intrusion detectors, unlicensed wireless devices operating on frequencies below 30 MHz, automatic vehicle identification systems, and other unlicensed wireless devices authorized by a radio regulatory authority.

Status: Published 1/29/2021. No further work scheduled on the document. WG disbanded.

Purchase: [Search IEEE Standards](#) - Enter C63 Standard number then Search (Enter) - Click on the version you want - Click on Purchase

4.2 C63.10 – draft Corrigendum v1 - Nixon (no [WG report](#))

4.21 Status Matrix Review Verify accuracy of document [status matrix](#) content and report any errors to the ANSC-C63[®] Secretary. **Is this information correct? (No)** (corrected 11/18)

C63.10 Corr1-202X Learn more	Procedures for compliance testing of unlicensed wireless devices	SC 4	Nixon, Jason	C63.10 Corr1 PINS	Corrigendum to fix errors in the standard. Draft with IEEE for final recirculation ballot.
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C63.10: C63.10 CORR-1 202X American National Standard for Testing Unlicensed Wireless Devices

Contact: [Nixon, Jason](#) (Working Group Chair)

Scope: This corrigendum of C63.10:2020 Standard for American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices, will correct an error in the UWB -10 dB bandwidth, correct an error in the pulsed desensitization formula, clarify for WPT devices are tested to ASC C63.30 for the WPT functions and harmonize clause 6.2.2 related to the use of an extension cord between the EUT and the LISN.

Status: New Corrigendum. Draft with IEEE for **final recirculation** ballot.

Purchase: This **standard corrigendum** is not yet complete and not available for purchase

4.3 C63.10 – draft Amendment v1 - TBD

4.31 Status Matrix Review Verify accuracy of document [status matrix](#) content and report any errors to the ANSC-C63[®] Secretary. **Is this information correct? (No)** (corrected 11/18)

C63.10- 202X Amend 1 Learn more	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	SC 4	TBD	C63.10 Amend 1 PINS	Amendment to address NFC OBW measurements, guidance for absorber use for UWB ground penetrating radar, other items as deemed necessary
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C63.10: C63.10 AMD-1 202X American National Standard for Testing Unlicensed Wireless Devices

Contact: TBD

Scope: This amendment of C63.10:2020 Standard for American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices, will add bandwidth (Relative and Occupied) measurement procedures for device that exhibit fundamental emissions above the modulation signals. It will also address guidance for use of absorber material, in lieu of sand, as a load for ground penetrating radar and will update NII procedures for newly introduced emission mask requirements based on updated FCC and ISED rules.

Status: New. Draft to be developed.

Purchase: This **standard** Amendment is not yet complete and not available for purchase

AI-54: Jason Nixon and David Chamberlain wish to be added to the C63.10 Amend. roster

4.4 C63.26 – Licensed transmitters - Elliott ([WG report](#))

4.31 Status Matrix Review Verify accuracy of document [status matrix](#) content and report any errors to the ANSC-C63[®] Secretary. **Is this information correct? (Yes)**

C63.26- 2015 Learn more	Procedures for compliance testing of licensed transmitters	SC 4	Elliott, William	C63.26 PINS	2015 edition under revision
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C63.26-2015: American National Standard of procedures for compliance testing of transmitters used in licensed radio services

Contact: [Elliott, William](#) (Working Group Chair)

Scope: This standard covers the procedures for testing a wide variety of licensed transmitters; including but not limited to transmitters operating under Parts 22, 24, 25, 27, 90, 95 and 101 of the FCC Rules, transmitters subject to the general procedures in Part 2 of the FCC Rules and procedures for transmitters not covered in the FCC Rules. The standard also addresses specific topics; e.g., ERP/EIRP, average power measurements and instrumentation requirements.

Status: New Standard published 1/15/16. New work is pending.

Purchase: [Search IEEE Standards](#) - Enter C63 Standard number then Search (Enter) - Click on the version you want - Click on Purchase

4.5 C63.29 – Lighting equipment - Mendoza (insert link to [WG report](#))

4.41 Status Matrix Review Verify accuracy of document [status matrix](#) content and report any errors to the ANSC-C63® Secretary. **Is this information correct? (No)** (corrected 11/18)

C63.29-draft Learn more	Lighting products	SC 4	Mendoza, Ernesto	C63.29 PINS	New standard. Draft under final review. Sent to IEEE for publication.
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C63.29-draft: American National Standard of procedures for compliance testing of lighting products

Contact: [Mendoza, Ernesto](#) (Working Group Chair)

Scope: This standard is intended to include procedures for compliance testing of general illumination lighting products with applicable radio regulatory requirements. This standard encompasses various technologies, from traditional lighting like fluorescent or HID, as well as novel technologies like LED and others. Related national and international standards (e.g., CISPR 15, ANSI C63.4) will be reviewed and used to the extent possible.

Status: New standard. **Draft under final review. Sent to IEEE for publication.**

Purchase: Not yet available for sale.

4.6 C63.30 – Wireless Power Transfer equipment - Thul (insert link to [WG report](#))

4.51 Status Matrix Review Verify accuracy of document [status matrix](#) content and report any errors to the ANSC-C63® Secretary. **Is this information correct? (Yes)**

C63.30-2021 Learn more	Wireless Power Transfer Products	SC 4	Thul, Travis	C63.30 PINS	Published. WG disbanded.
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C63.30-2021: American National Standard of procedures for compliance testing of Wireless Power Transfer products

Contact: [Thul, Travis](#) (Working Group Chair)

Scope: This standard is intended to include procedures for compliance testing of several different types of Wireless Power Transfer (WPT) products with applicable electromagnetic compatibility (EMC) and radio regulatory requirements. Test procedures will focus on radiated field and conducted measurements and may reference established standards. WPT RF exposure compliance procedures will not be included, although standards pertaining to laboratory EMF safety may be referenced. WPT testing methods may consider, but are not limited to, large in-situ installations, charging systems for electric vehicles (including impact of host on electromagnetic fields), house-hold appliances, and desktop chargers. Consideration will also be given to appropriate testing distances and test locations (such as Semi-Anechoic Chambers, Open Area Test Sites, ground plane, and earth sites). Related national and international standards (e.g., CISPR, SAE, etc.) will be reviewed and used to the extent possible.

Status: Balloting complete – document passed. WG disbanded.

Purchase: [Search IEEE Standards](#) - Enter C63 Standard number then Search (Enter) - Click on the version you want - Click on Purchase

4.7 C63.31 – ISM equipment - Abbondante ([WG report](#))

4.61 Status Matrix Review Verify accuracy of document [status matrix](#) content and report any errors to the ANSC-C63® Secretary. **Is this information correct? (Yes)**

C63.31-draft Learn more	ISM equipment (MP-5)	SC 4	Abbondante, Nicholas	C63.31 PINS	New standard. Draft being written.
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C63.31-draft: American National Standard for compliance testing of Industrial, Scientific and Medical (ISM) Equipment

Contact: [Abbondante, Nicholas](#) (Working Group Chair)

Scope: This standard is intended to include procedures for compliance testing of traditional ISM equipment (industrial heaters, dielectric heaters, food tempering equipment, microwave ovens, medical diathermy equipment, etc.) with applicable EMC and radio regulatory requirements. Related national (FCC/OET MP-5) and international standards (e.g., CISPR, IEEE) will be reviewed and used to the extent possible.

Status: New standard. Draft being written.
Purchase: Not yet available for sale.

4.8 C63.xx - Massive MIMO - PINS-C Project - Case ([TG Report](#))

4.71 Status Matrix Review Verify accuracy of document [status matrix](#) content and report any errors to the ANSC-C63[®] Secretary. **Is this information correct? (Yes)**

C63.xx (pending) Learn more	Massive MIMO Test Distance Study	SC 4	Case, David	C63.xx PINS-C*	Develop a White paper on testing issues to consider in regards to Near / Far field issues when measuring active antennas
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C63.xx-pending: Massive MIMO Test Distance Study

Contact: [Case, David](#) (Working Group Chair)

Scope: This working group will study how to provide guidance in measurements when the required separation distance is larger than that available due to the minimum wavelength as determined by the antenna design.

Status: Study project

Purchase: Not yet available for sale.

5. Old Business: Chair

5.1 Written reports - Written reports of this Subcommittee meeting shall be presented by the Subcommittee Chair at the Main Committee meeting. These reports shall be made using either the [C63 PowerPoint template](#) or the [C63 PowerPoint template wide](#). Prior to the Main Committee meeting, the [SC report](#) and [approved previous SC meeting minutes](#) shall be provided to the projectionist for showing on the screen at the Main meeting. The Presentation and any written report shall also be sent by the Subcommittee Chair to the ASC-C63[®] [Newsletter editor](#)

[C63.10](#) - no report

[C63.26](#) - report was shown

[C63.29](#) - no report - waiting for IEEE

[C63.30](#) - no report

[C63.31](#) - report was shown

[Massive MIMO Distance Study](#) - report was shown

5.2 Coordination with SC2 for definitions - Before any Working Group draft can be submitted to Subcommittee for approval, the document must be provided to the SC2 Chair for evaluation and coordination of the definitions used.

5.3 Coordination with SC3 for harmonization - Before any Working Group draft can be submitted to the to Subcommittee for approval, the document must be provided to the SC3 Chair for evaluation and coordination of any harmonization effort.

6. New Business: Chair

6.1 – C63.30 FCC Petition – ([Petition for Rulemaking ASC C63.30-2021 9-14-2021 \(fcc.gov\)](#)) [ECFS Confirmation](#) - We submitted a petition on 9/14/21 to FCC to adopt C63.30. It is being looked at by the Commission and may go to the Commissioners by the end of this year.

6.2 - Notice of Proposed Rulemaking, ET Docket Nos. 21-363 and 19-48 (C63.10:2020) and update on C63.30 progress with FCC - Jones - In January of 2022, the Commission put out notice asking for comments on whether the FCC should adopt C63.25.1 and C63.10 (2020). Because of adverse comments from industry, C63.4a is delaying the completion of the NPRM.

6.3 – C63.10 Amendment Status - The working group is formed, with two new additions today.

7. [C63.org](#) website use and updates: Secretary - We normally post documents to the [SC4 protected area](#). If any SC or WG needs help with this posting, a Technical Secretary is available to assist.

8. Review of the Action Items: Secretary

8.1 Review of Action Items from this meeting: The Action Items from this meeting were reviewed and understood by those involved.

8.2 Review of Action Items from previous meeting: Consolidated Action Item table from the previous meeting Minutes is shown below:

Consolidated Action Items from 5/17/22 Meeting of SC4

Action Item #	Subject	Responsible Person(s)	Status	Delivery Date	Comments
AI-42:	Bob & Travis to provide a comparison report on C63.30 to SC3.	Bob DeLisi Travis Thul Horia Popovici	Open	Next meeting	Horia will do the comparison
AI-50:	Jerry to send out new letter to Dan regarding attendance.	Jerry Ramie	Closed	Next meeting	Sent 5/17
AI-51:	Jerry to add Harry to the SC4 roster	Jerry Ramie	Closed	Next meeting	Added 5/17
AI-52:	Jerry to correct C63.10 corr. matrix and "Learn more" text as shown	Jerry Ramie	Closed	Next meeting	Corrected 5/17
AI-53:	Bob to find a WG Chair for the C63.10 Amendment WG	Bob DeLisi	Open	Next meeting	

9. Time and place of next meeting: Chair - TBD

10. Closing remarks and Adjournment: Chair - The Chair thanked the group and adjourned the meeting at 4:17PM-PST.

***** End of Meeting *****

Consolidated Action Items from 11/8/22 Meeting of SC4

Action Item #	Subject	Responsible Person(s)	Status	Delivery Date	Comments
AI-42:	Bob & Travis to provide a comparison report on C63.30 to SC3.	Bob DeLisi Travis Thul Horia Popovici	Open	Next meeting	Horia will do the comparison
AI-53:	Bob to find a WG Chair for the C63.10 Amendment WG	Bob DeLisi	Closed	Next meeting	Nima Molaei
AI-54:	Jason Nixon and David Chamberlain wish to be added to the C63.10 Amend. roster	Jerry Ramie	Closed	Next meeting	Chamberlain added 11/18