



Accredited Standards Committee C63®

Electromagnetic Compatibility

Subcommittee 4: Wireless and ISM Equipment

Chair: Bob Delisi

Vice Chair: Dave Case

Secretary: Jerry Ramie

June 2, 2020; 2:00 PM – 4:00 PM - EDT

Webinar

Approved Minutes

1. **Call to Order: Chair** - The Chair called the meeting to order at 2:00PM-EDT
 - 1.1 **Announcements: Chair's remarks** - Thank you for attending!
 - 1.2 **Meeting logistics announcements: Host** - Raise your hand if you want to speak!
 - 1.3 **Introductions: Secretary – roll call** (record attending members with their affiliations and guests separately below) **Report any roster errors to the ASC-C63® Secretary** ([SC4 membership roster](#) from the website is shown below) **Grayed-out names** did not attend.

Subcommittee 4 Membership Roster

Name	Role in SC	Affiliation
Abbondante, Nicholas	Member	Intertek
Antola, Mike	Member	Resideo
Case, David	Vice Chair	Cisco Systems
Chamberlain, David	Member	Innovation, Science & Economic Development Canada
Chen, Zhong	Member	ETS-Lindgren
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	Bay Area Compliance Laboratories Corp.
Hoolihan, Dan	Member	Hoolihan EMC Consulting
Jones, Steve	Member	FCC Laboratory
Kiemel, Greg	Member	Apple Inc.
Klinger, Jeff	Member	Compatible Electronics
Kramer, Doug	Member	ETS-Lindgren
Lee, Edmund	Member	Apple Inc.
Mahn, Terry	Member	Fish & Richardson P.C.
Mansergh, Dan	Member	Apple Inc.
Mendoza, Ernesto	Member	Signify
Molaei, Nima	Member	PCTEST Engineering Laboratory
Nixon, Jason	Member	Innovation, Science and Economic Development Canada
Pino, Dan	Member	PCTEST Engineering Laboratory
Sigouin, Dan	Member	DHS-EMC
Skoglund, Kenth	Member	Ericsson AB
Terrien, Mark	Member	Keysight Technologies
Ward, Dennis	Member	PCTEST Engineering Laboratory
Zimmerman, Dave	Member	Spectrum EMC, LLC

Guests and Observers: (non-voting) Horia Popovici, Jeff Wu, Allen Crumm

1.4 Quorum: (50% of roster) constitutes a quorum. (rounding up) (27 roster members / 2 = 13.5 >> 14 (therefore 14 people are required for a quorum) **Was quorum achieved? (Yes)**

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 - [20191120](#) Approved 4/10/20

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?

SC4 Roster:	20160511	20161109	20170510	20171108	20180502	20181128	20190501	20191120
Abbondante, Nick								
Antola, Mike				x	x	x	x	
Case, David	x			x	x	x	x	x
Chamberlain, David					x	x	x	x
Chen, Zhong		x	x	x			x	x
DeLisi, Bob	x	x	x	x	x	x	x	x
Elliott, William (Mac)	x	x	x	x		x	x	x
Friden, Jonas							x	
Graff, William					x	x	x	x
Hodes, Harry	x	x	x		x			x
Hoolihan, Dan	x	x	x	x	x	x	x	x
Jones, Steve	x	x	x	x	x	x	x	x
Kiemel, Greg				x	x			x
Klinger, Jeff		x	x	x	x		x	x
Kramer, Doug				x	x	x	x	x
Lee, Edmund							x	x
Mahn, Terry								
Mansergh, Dan							x	
Mendoza, Ernesto					a	x		
Molaei, Nima								x
Nixon, Jason	x	x	x	x	x	x	x	x
Pino, Dan					p		x	
Sigouin, Dan	x	x	x	x	x	x		x
Skoglund, Kenth					x	x	x	x
Terrien, Mark						x	x	x
Ward, Dennis	x			x	x	x	x	x
Zimmerman, Dave	x			x	x			x

Any members at risk? These members are at risk: None are at risk.

3.2 Consideration of new members? [Application for C63® Subcommittee Membership](#)

3.3 Approval of Membership roster - The Membership Roster was approved 11- 0.

3.4 Approval of Scope & Duties - The **Scope** and **Duties** were approved by acclamation. (unchanged)

Scope

Subcommittee 4 is responsible for writing and maintaining existing and proposed C63® standards for wireless and ISM devices (e.g. lighting, wireless power transfer, Industrial and dielectric heaters, and similar equipment), as assigned by the Main Committee ASC-C63®.

Duties - our duties are to maintain the Standards shown below.

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.

4.1 C63.10 – Unlicensed transmitters - Nixon ([WG report](#))

4.11 Status Matrix Review (Spring meeting only) Verify accuracy of document [status matrix](#) content and report any errors to the ASC-C63® Secretary. **Is this information correct? (Yes)** (repeat this verification for all Standards covered by this Subcommittee)

C63.10-2013 Learn more	Procedures for compliance testing of unlicensed wireless devices	SC 4	Nixon, Jason	C63.10 PINS	Currently in balloting
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C63.10: C63.10-2013 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: Currently in balloting.

Purchase: [IEEE Store](#). To purchase individual standards, go to the IEEE store and search on the standard number. Draft revisions are not yet available for sale.

4.2 C63.26 – Licensed transmitters - Jones ([WG report](#)) **AI-28:** Jerry to remove Werner Schaefer and Art Wall from the C63.26 web roster.

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

C63.26-2015 Learn more	Procedures for compliance testing of licensed transmitters	SC 4	Jones, Steve	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: [Jones, Steve](#) (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: [IEEE Store](#). To purchase individual standards, go to the IEEE store and search on the standard number.

4.3 C63.29 – Lighting equipment - Mendoza ([WG report](#))

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

C63.29-draft Learn more	Lighting products	SC 4	Mendoza, Ernesto	C63.29 PINS	New standard. Draft being written.
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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 being written.

Purchase: Not yet available for sale.

4.4 C63.30 – Wireless Power Transfer equipment - Thul ([WG report](#)) Horia Popovici reported for Mr. Thul. The web roster was correct. **AI-29:** Bob DeLisi will contact SC2 with definitions for C63.30

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

C63.30-draft Learn more	Wireless Power Transfer Products	SC 4	Thul, Travis	C63.30 PINS	New standard. Draft being written.
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C63.30-draft: 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: New standard. Draft being written.

Purchase: Not yet available for sale.

4.5 C63.31 – ISM equipment - Abbondante (insert link to [WG report](#))

4.51 Status Matrix Review (Spring meeting only) Verify accuracy of document [status matrix](#) content and report any errors to the ASC-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.

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 can 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](#)

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 Far field – Near field measurements for Massive MiMo. Dave Case (report)
[PINS-C request](#) needed, a first draft was shown:

The image shows two screenshots of a PINS-C FORM from the Accredited Standards Committee C63 - Electromagnetic Compatibility. The left screenshot displays the title and introduction of a project study. The right screenshot shows the project intent and contact information.

Left Screenshot:

Accredited Standards Committee C63 - Electromagnetic Compatibility
 Accredited by the American National Standards Institute, Inc.
 Secretariat: Institute of Electrical and Electronics Engineers, Inc.

Chair: Dan Hodžian Vice Chair: Dan Sigurdson Secretary: Jerry Rantze
 PINS-C FORM¹
 (Project Initiation Notification System-Committee Level)

Determination of test methods for massive MIMO where test sites are not large enough to test based on minimum wavelength

Massive MIMO test distance
 Dave Case

[C63(R) Approval Date]
 [Project Completion Date]

INTRODUCTION

This task group will study how to address measurements when the required separation distance is larger than available due to the minimum wavelength determined based on the antenna design.

PROJECT STUDY ITEMS

To determine how to address the near / far field separation distance for determining compliance for systems using beam forming. Massive MIMO antennas with mmW systems when that distance is larger than available test distance available. The issue is due to the minimum wavelength determined based on the antenna beam forming design and impact on near / far field effects. The output of this study will be used to supplement the information that is currently in the C 63.26 standard.

Right Screenshot:

Accredited Standards Committee C63 - Electromagnetic Compatibility
 Accredited by the American National Standards Institute, Inc.
 Secretariat: Institute of Electrical and Electronics Engineers, Inc.

Chair: Dan Hodžian Vice Chair: Dan Sigurdson Secretary: Jerry Rantze
 PINS-C FORM¹
 (Project Initiation Notification System-Committee Level)

KEYWORDS

Separation Distance

PROJECT INTENT

New Revise [Standard Number]
 Reaffirm [Standard Number] Withdraw [Standard Number]
 Adopt [Standard Number] Discontinue [Standard Number]

Study for possible impact on existing standards C63.26

COMMITTEE CONTACT FOR PROJECT

Name: Dave Case
 Company: CISCO
 Address: [Address]
 E-mail: [E-mail Address]

The text of the title was changed to read:

SECRETARIAT, INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Chair
Dan Hoolahan

Vice Chair
Dan Sigoun

Secretary
Jerry Ramie

PINS-C FORM¹
(Project Initiation Notification System-Committee Level)

Determination of test methods for massive MIMO where test sites are not large enough to test based on minimum distance

Massive MiMo test distance
Dave Case

[C63(R) Approval Date]
[Project Completion Date]

INTRODUCTION

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To determine how to address the near / far field separation distance for determining compliance for systems using beam forming Massive MiMo antennas with mmW systems when that distance is larger than available test distance available. The issue is due to the minimum wavelength determined based on the antenna beam forming design and impact on near / far field effects. The output of this study will be used to supplement the information that is currently in the C 63.2nd standard.

The [Massive MiMo PINS-C](#) (above) was approved with the title as modified above.
Abstentions: Dennis Ward, Dave Zimmerman.

6.2 C63.30 NPRM response – Chair - We circulated the NPRM on RF Exposure and distances, which was approved. Bob DeLisi will be submitting the document to the FCC by the end of this week.

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: Both Action Items were shown and all agreed that they understood their meaning.

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 11/20/19 Meeting of SC4

Action Item #	Subject	Responsible Person(s)	Status	Delivery Date	Comments
AI-21:	Jerry to remove Mr. Dicton and Mr. Waitt from the SC4 roster page & WebEx list	Jerry Ramie	Closed	Next meeting	Removed 1/27/20
AI-22:	Jerry to add Nima Molaei to the SC4 roster and WebEx list	Jerry Ramie	Closed	Next meeting	Added 1/27/20

AI-23:	Jerry to notify Mr. Mahn of his acceptance in SC4 and C63.26 and place his name on their rosters and WebEx lists	Jerry Ramie	Closed	Next meeting	Added 1/27/20 notified 1/27
AI-24:	Jerry to notify Mr. Abbondante of his acceptance in SC4 and place his name on the SC4 roster & WebEx list	Jerry Ramie	Closed	Next meeting	Added 1/27/20 notified 1/27
AI-25:	Jerry to correct status matrix & Learn more text for C63.10 as shown	Jerry Ramie	Closed	Next meeting	Corrected 1/27
AI-26:	DeLisi to discuss measurement uncertainty for LLAS method at the next C63.30 WG meeting	Bob DeLisi	Closed	Next meeting	
AI-27:	Jerry to correct status matrix & Learn more text for C63.31 as shown	Jerry Ramie	Closed	Next meeting	Corrected 1/27

9. Time and place of next meeting: Chair - September 24 @ 2:00PM-EDT (2 hours) (webinar) - Recirculation of C63.10 starts tomorrow. We're trying to have our SC meetings done by the end of June. We will try to have each SC meet by webinar in the third quarter, as our meetings at IEEE in October are at COVID-19 risk. The Steering Committee will meet in July to see if any issues still need addressing.

10. Closing remarks and Adjournment: Chair - The Chair thanked the members for their attendance and adjourned at 3:51PM-EDT.

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

Consolidated Action Items from 6/2/20 Meeting of SC4

Action Item #	Subject	Responsible Person(s)	Status	Delivery Date	Comments
AI-28:	Jerry to remove Werner Schaefer and Art Wall from the C63.26 web roster	Jerry Ramie	Closed	Next meeting	Removed 6/3
AI-29:	Bob DeLisi will contact SC2 with definitions for C63.30	Bob DeLisi	Open	Next meeting	