



Accredited Standards Committee C63®
Electromagnetic Compatibility
Subcommittee 5: Immunity Testing and Measurements

Chair: [Ed Hare](#)

Vice Chair: [Ross Carlton](#)

Secretary: [Jerry Ramie](#)

December 9, 2020; 3:00 PM – 5:00 PM - EST
Webinar

Approved Minutes

1. **Call to Order: Chair** - The Chair called the meeting to order at 3:01PM-EST.
 - 1.1 **Announcements: Chair's remarks** - Thanks for attending again!
 - 1.2 **Meeting logistics announcements: Host**
 - 1.3 **Introductions: Secretary** – roll call (record attending members with their affiliations and guests separately below) ([SC5 membership roster](#) from the website is shown below) (grayed-out Members were not present)

Subcommittee 5 Membership Roster Report any roster errors to the ASC-C63® Secretary

Name	Role within SC	Affiliation
Carlton, Ross	Vice Chair	ETS - Lindgren
Fanning, Craig	Member	Elite Electronic Engineering
Griffin, Andy	Member	Cisco Systems
Hare, Ed	Chair	ARRL
Hoolihan, Dan	Member	Hoolihan EMC Consulting
Lombardi, Rick	Member	Visteon Corporation
Long, Randy	Member	ANSI National Accreditation Board (ANAB)
Ramie, Jerry	Secretary	ARC Technical Resources, Inc.
Schaefer, Dave	Member	Element Materials Technology
Silberberg, Jeffrey L	Member	FDA Center for Devices & Radiological Health
Zimmerman, Dave	Member	Spectrum EMC, LLC

Guests and Observers: (non-voting) Pao Thao

- 1.4 **Quorum: (50% of roster) constitutes a quorum.** (rounding up) (11 roster members / 2 = 5.5>> (therefore 6 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)

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

- 2.1 **Approval of the previous Minutes** - [20200916](#) The previous Minutes were shown in a line-by-line manner and [approved](#) by acclamation.

- 2.2 **Review of the [patent slides](#)** - The patent slides were reviewed and all agreed to abide by the policies shown.

3. **Review of [Subcommittee Membership](#): Secretary** - Report any errors in Item 1.3 above to the ASC-C63® Secretary

- 3.1 **Review of Membership Guidelines – any members at risk?**

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.

Working Groups:

For an individual to remain a member of a Working Group, active participation is required. Should a member fail to attend at least one of three consecutive scheduled meetings (in person or via web conference (when used)) their membership in that Working Group may be at risk. Individual Working Groups may establish additional participation criteria and/or modify this requirement.

Member Attendance Log:

May 2016	Nov-16	May-17	Nov-17	2018Jan	20180306	20180502	20181128	20190501	20191119	20200521	20200916	SC5 Members
						x	x	x	x	x	x	Ross Carlton
	x		x	x	a					x	x	Craig Fanning
x	x				a	x	x			x	x	Andy Griffin
x	x	x	x	x		x	x	x	x	x	x	Ed Hare
x	x		x			x	x	x		x	a	Dan Hoolihan
x	x	x	x		x	x	x	x			x	Rick Lombardi
x	x		x			x	x	x		x	x	Randy Long
x	x	x	x	x	x	x	x	x	x	x	x	Jerry Ramie
	x				x	x		x	x	x		David Schaefer
x	x	x	x	x	x	x	x	x	x	x	x	Jeff Silberberg
x	x	x	x	x	x		x		x	x	x	Dave Zimmerman

Members at risk? None are at risk:

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

3.3 Approval of Membership (Spring meeting only)

4. Approval of [Scope and Duties](#): Chair – (Spring meeting only) (Report approval or any changes to the Main Committee)

~~4.1 Scope~~

~~Subcommittee 5 is responsible for developing and maintaining new and existing standards for immunity testing techniques and associated instrumentation as requested by the Main Committee ANSI ASC C63®.~~

~~4.2 Election of Officers~~ (as required) Ed Hare's second term ends 12/31/22

5. Working Group reports - 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.

5.1 C63.9 – Office Equipment Immunity - Evans ([WG report](#))

5.1.1 Status Matrix Review: 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)

C63.9-2014 Learn more	Laboratory immunity testing of office equipment exposed to RF sources	SC 5	Evans, Jeff	C63.9 PINS	New PINS approved 4/29/20, edits accepted 7/14/20, draft is being written.
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C63.9: C63.9-2014 American National Standard for laboratory Immunity testing of Office Equipment exposed to RF sources

Contact: [Evans, Jeff](#)

Scope: This standard provides recommended test methods and limits for assuring the RF immunity of office equipment to a wide variety of common and ubiquitous RF sources from mobile phones to licensed transmitters.

Status: Reaffirmed in 2014. Revision currently underway to update references, add coverage for interference threats from newer technologies such as LTE, consider latest test instrumentation and techniques, and clarify alternative test methods.

Purchase: [IEEE Store](#). To purchase individual standards, go to the IEEE store and search on the standard number.

5.2 C63.15 – Immunity Measurement & Instrumentation - Heirman

5.2.1 Status Matrix Review: Verify accuracy of document [status matrix](#) content and report any errors to the ASC-C63[®] Secretary. **Is this information correct? (No)** **AI-90:** Jerry to implement changes shown for the Status Matrix & "Learn more" text for C63.15

C63.15-2017 Learn more	Immunity Measurement & Instrumentation	SC 5	None	No active PINS	Published 2017 Working group disbanded
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C63.15: C63.15-2017 American National Standard Recommended Practice for the Immunity Measurement of Electrical and Electronic Equipment

Contact: **None** (Working Group Chair)

Scope: This immunity measurement and measurement instrumentation recommended practice document complements the emission measurement procedures specified in ANSI C63.4 noting that C63.15 is a recommendation while C63.4 is a standard. The immunity methods are of use to manufacturers who want to produce a reliable product working in the customer location RF environment to reduce customer complaints. This document generally covers the frequency range of 30 Hz to 10 GHz. The test instrumentation needed to replicate the RF environment is also identified that will support the immunity testing.

Status: Published in 2017. Working group disbanded.

Purchase: [IEEE Store](#). To purchase individual standards, go to the IEEE store and search on the standard number.

5.3 C63.16 – ESD Test Methodology - Crumm

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

C63.16-2016 Learn more	ESD Test Methodology	SC 5	Crumm, Allen	No active PINS	Current. (published 5/10/16) Working group disbanded
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C63.16: C63.16-2016 American National Standard Guide for Electrostatic Discharge Test Methodologies and Criteria for Electronic Equipment

Contact: [Crumm, Allen](#) (Working Group Contributor)

Scope: This guide provides electrostatic discharge (ESD) test considerations that a manufacturer should use in assessing the expected ESD effects on products in a wide range of environments and customer use. The focus is well beyond that used to simply show that a product complies with a local, regional, or international standard or regulation. The guide includes unique new material on testing of charged peripherals being connected to a system and system components being placed in a docking station. It also includes information on the use of preliminary investigatory testing to identify test points, methods for visually documenting the location of those test points, and the use of a stepped approach in ratcheting up the test voltage to determine failure thresholds. The annexes include test plan and data sheet examples along with more background on air and contact discharge for those who want to further understand the differences in these methods.

Status: Current. Guide was published 10 May 2016. Working group disbanded.

Purchase: [IEEE Store](#). To purchase individual standards, go to the IEEE store and search on the standard number.

Dan H. moved to re-affirm C63.16; minor changes to Bibliography are OK. Ross seconded, discussion ensued. None opposed, no abstentions, the motion carried. **AI-91:** Jerry to write a note to Allen, Ross & Jennifer to start reaffirmation of C63.16.

5.4 C63.24 – In-Situ RF Immunity Evaluation of Electronic Devices and Systems -

Heirman Consensus ballot of C63.24/D-2.6 at the Main Committee closed 11/7/19.

Report from David Schaefer: *The last recirculation was in November. No comments received. Going to press.. disbanding only after publication.*

5.4.1 Status Matrix Review: Verify accuracy of document [status matrix](#) content and report any errors to the ASC-C63® Secretary. **Is this information correct? (No)** Ed Hare appointed Dave Schaefer as C63.24 Chair. **AI-92:** Jerry to add Dave Schaefer as Chair in C63.24 roster & Status Matrix and remove Heirman.

C63.24-draft Learn more	In-Situ RF Immunity Evaluation of Electronic Devices and Systems	SC 5	Schaefer, Dave	C63.24 PINS	Approved. Draft is being sent to publication by IEEE
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C63.24-draft: American National Standard Recommended Practice for In-Situ RF Immunity Evaluation of Electronic Devices and Systems

Contact: Schaefer, Dave (Working Group Chair)

Scope: This recommended practice provides an in-situ EMC immunity qualification test for products, instrumentation, and control systems in their installed environment. The recommended practice **will** focuses on installation environments that require a high level of confidence that these products and systems have a high level of EMC immunity. This project **will** provides a generic method for evaluating the RF immunity of electronic products, instrumentation, and control systems, as and where installed or operated. A particular focus is on immunity to RF sources that **may** enter the environment, intentionally or unintentionally or **be** are integrated into the operating environment. The characteristics of RF sources in the environment **will be** are used to establish the levels and test methods.

Status: Approved. Draft is being sent to publication by IEEE

Purchase: Not yet available for sale.

6. Other Old Business: Chair

6.1 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](#).

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

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

7. New Business: Chair - none

8. C63.org website use and updates: Secretary - We normally post documents to the [SC5 protected area](#). If any WG needs help with this posting, a **Technical Secretary** is available to assist.

9. Review of the Action Items: Secretary

9.1 Review of Action Items from this meeting: The Action Items were shown to the Members, who agreed that they understood their meaning.

9.2 Review of Action Items from previous meeting: The consolidated Action Items table from the previous meeting Minutes are shown below:

Consolidated Action Items from 9/16/20 Meeting of SC5

Action Item #	Subject	Responsible Person(s)	Status	Delivery Date	Comments
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AI-82:	Ed Hare to inquire with previous C63.15 & C63.16 WG Chairs to see if re-affirmation is OK, or if more work is needed	Ed Hare Don Heirman Richard Worley Allen Crumm Jerry Ramie	Closed	12/9/20	C63.15 should include transients; Allen will Chair C63.16, update refs, review text.
AI-85:	Jerry to update the Officer's page to reflect a new end-of-term date for Mr. Hare. (12/31/2022)	Jerry Ramie	Closed	12/9/20	Updated 9/16
AI-86:	Jerry to inquire w/ Allen regarding replacing Mr. Worley to help with maintaining this document.	Jerry Ramie	Closed	12/9/20	Richard cannot attend but may review docs. Allen can Chair
AI-87:	David Schaefer to send draft C63.24 to SC2 Chair for coordination	David Schaefer	Closed	12/9/20	
AI-88:	David Schaefer to send draft C63.24 to SC3 Vice-Chair for harmonization	David Schaefer	Closed	12/9/20	
AI-89:	Jerry to run a Doodle Poll to determine our next meeting date this year	Jerry Ramie	Closed	12/9/20	Meeting set to 12/9/20 on 9/21

10. Time and place of next meeting: Chair - March 10, 2021 @ 3:00PM-EST (2 hours)

11. Closing remarks and Adjournment: Chair - The Chair thanked the group for attending! The meeting was adjourned at 3:45PM-EST.

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

Consolidated Action Items from 12/9/20 Meeting of SC5

Action Item #	Subject	Responsible Person(s)	Status	Delivery Date	Comments
AI-90:	Jerry to implement changes shown for the Status Matrix & "Learn more" text for C63.15	Jerry Ramie	Closed	3/10/21	Changes made 12/9
AI-91:	Jerry to write a note to Allen, Ross & Jennifer to start reaffirmation of C63.16	Jerry Ramie	Closed	3/10/21	Note sent 12/9
AI-92:	Jerry to add Dave Schaefer as Chair in C63.24 roster & Status Matrix and remove Heirman	Jerry Ramie	Closed	3/10/21	Changes made 12/9