Before the Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Parts 0, 1, 2, and 15 of the Commission's Rules regarding Authorization of Radiofrequency Equipment	)	
	)	ET Docket No. 13-44
Amendment of Part 68 regarding Approval of Terminal Equipment by Telecommunications Certification Bodies	)	RM-11652

REPLY COMMENTS

The American National Standards Institute Accredited Standards Committee C63® ("ASC C63") submits these additional reply comments in response to the comments submitted in the above-captioned Federal Communications Commission ("Commission") proceeding.[1] ASC C63 is very encouraged by the support shown to update the references to C63.4-2009 and C63.10-2009, as expressed by Aerospace & Flight Test Radio Coordinating Council (AFTRCC), Cisco Systems Inc. (Cisco), Sirius XM Radio, Inc., Telecommunications Industry Association (TIA) and the Telecommunication Certification Body (TCB) Council.

[1] In the Matter of Amendment of Parts 0,1, 2, and 15 of the Commission's Rules regarding Authorization of Radiofrequency Equipment and Amendment of Part 68 regarding Approval of Terminal Equipment by Telecommunications Certification Bodies, ET Docket No. 13-44, RM-11652, *Notice of Proposed Rulemaking* (rel. February 15, 2013) ("NPRM").

ASC C63's Comments submitted in response to the NPRM generally address the issues raised by various commenters on the following subjects:

1. **Hybrid antenna issues** (raised by Teradata Corporation (Teradata), Hewlett-Packard Company (HP), Information Technology Industry Council (ITIC), International Business Machines Corporation (IBM), and American Council of Independent Laboratories (ACIL));

2. **2 dB rule** (raised by Teradata, HP, ITIC, and IBM);

3. **Transitional arrangements** (raised by Teradata, HP, ITIC, IBM, ACIL, and Cisco); and

4. **Dated references of standards** (raised by HP, ITIC, and IBM).

However, below are some specific issues which merit further discussion.

Specific Issue: Test site validation above 1GHz

dB Technology's Comments state:

> *"One issue is that the current wording of section 5.5 of ANSI C63.4:2009 states that a test site for measurements above 1GHz "must be suitable for measurements below 1 GHz". This is not technically justified if a test site fully meets the calibration characteristics of CISPR 16 above 1GHz. There are good technical and logistic reasons why a test lab may opt to commission one facility for testing below 1GHz and a different facility for testing above 1GHz. Are the FCC really insisting that a facility intended just for testing above 1GHz must be of a suitable size and have additional*

(expensive and compromised) absorber just to show that it "could" be used for testing below 1GHz?"[2]

ASC C63 Response

ASC C63 generally agrees with the concerns raised by dB Technology regarding section 5.5 of ANSI C63.4-2009. Specifically, for radiated emission measurements above 1 GHz, if a chamber satisfies the verification requirements defined in CISPR 16-1-4:2007, then the performance below 1 GHz is not relevant. But, in this specific case, C63.4-2009 requires that the chamber satisfy both the "below 1 GHz" and "above 1 GHz" requirements. The basis for this requirement was the belief that one test facility would be used throughout the full 30 MHz to 18 GHz range. This issue has been corrected in the latest draft of C63.4 which ASC C63 anticipates adopting later this year.

However, ASC C63 does not understand dB Technology's comment on the need for an absorber below 1 GHz when, in fact, a test facility requires a conducting ground plane to compare site validation with that of the formulas cited for normalized site attenuation based on a perfectly reflecting ground plane theory.

Until the latest draft of C63.4 is adopted and incorporated into the Commission's rule, ASC C63 recommends that the Commission should assert that if the facility satisfies the above 1GHz site verification requirements defined in CISPR 16-1-4:2007, then it is suitable for measuring radiated emissions above 1GHz regardless of whether it is suitable

[2] dB Technology Comments at p. 4

for measurements below 1GHz. However, when using the alternative measurement method set forth in C63.4 (*i.e.*, just requiring additional absorber on the ground plane), the chamber/site must still satisfy the below 1GHz site verification requirements as given in C63.4. By way of background, this alternative measurement method was introduced in the 2009 edition as an inexpensive way to extend a test facility to making measurements above 1 GHz. It was also introduced because the CISPR test validation technique for use above 1 GHz, at that time, was not well used or accepted. Even though this view of the CISPR test validation technique has changed since 2009, there was no consensus support for eliminating the absorber patch alternate method in the 2013 draft of C63.4.

Specific Issue: Normalized Site Attenuation ("NSA") using Hybrids

Teradata's Comments state:

> *"If the restrictions on hybrid antennas in ANSI C63.4-2009 are adopted Teradata requests that the use of hybrid antennas is allowed for NSA and final measurements when testing products to show compliance with the FCC Rules when testing at any facility, or alternatively, at an [Open Area Test Site] OATS."*[3]

If hybrid antennas are allowed to be used for radiated emission measurements, Teradata believes that such antennas should also be allowed for site validation below 1 GHz (which is currently not allow by C63.4-2009) .

[3] Teradata Comments at p. 2.

ASC C63 Response

ASC C63 is in general agreement with Teradata's request, and has been working on a solution to this issue. Specifically, this requirement has already been included in the latest drafts of ANSI C63.4 and ANSI C63.5.[4] It should be noted that the use of hybrid antennas for radiated emission measurements was previously discussed in our Comments in this proceeding.[5] Considering that the latest edition of C63.4 will be completed in the near future, ASC C63 recommends that the restriction on using hybrid antennas for NSA measurements should remain until such time that this edition is approved.

Specific Issue: Above 1GHz radiated emission test method

ACIL and dB Technology both raise issues with regard to the test method above 1GHz. Specifically, dB Technology states:

> *"The ANSI standard (and interpretation documents) and FCC measurement guides recognize that height scanning to 4m whilst ensuring the "cone" of radiation is within the 3dB bandwidth of the receiving antenna is not always practical and other methods such as rotating the EUT can be considered. Can the FCC confirm that rotating the axis of the EUT is sufficient to meet their requirements and any new facilities commissioned to meet the proposed requirements above 1GHz do not necessarily have to provide the ability to height scan to 4m (with "bore site" maintaining antenna support)."*[6]

ACIL states:

> *"All laboratories surveyed that are currently accredited to ANSI C63.4:2003 indicated that the hybrid antenna replacement, Test Site Validation above 1 GHz and Bore Siting technical issues have deterred them from pursuing accreditation to the 2009 version of the standard."*[7]

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[4] ANSI C63.5 is a general antenna calibration procedure for various antennas, some of which are included in the 2009 edition of C63.4.
[5] ASC C63 Comments at pp. 6, 7, 10, 12, and 13
[6] dB Technology Comments at p. 4.
[7] ACIL Comments at p. 5.

ASC C63 Response

ASC C63 understands that the above 1 GHz test method needs further development, and it intends to review this method in a future revision of C63.4 (though it is not changed in the 2013 version of C63.4 because there is a need for more study before changing the process). Further studies regarding the above 1 GHz test method may or may not lead to the possibility of restricting the receiving antenna height scanning (as raised by dB Technology).

With respect to ACIL's claim that 'bore siting' is a reason why some laboratories are not pursing accreditation to C64-3-2009, it is important to highlight that the wording of the above 1GHz radiated emission test method (e.g., pointing the antenna at the source of the emissions (staying in the cone of radiation) or bore-sighting) is *unchanged* between C63.4-2003 and C63.4-2009. Therefore, ASC C63 does not understand why there is a concern with using the relevant, unchanged test requirement in C63.4-2009.

Specific Issue: Increase of bandwidth during the occupied bandwidth test, relating to the adoption of C63.10-2009.

Inovonics states that the radios that it currently manufactures may be assessed pursuant to the requirements of ANSI C63.4. However, the NPRM proposes to require these radios to be assessed pursuant to ANSI C63.10. Inovonics claims that this will directly impact the performance of specific radios and opposes this proposal. Inovonics states:

"Under the current standard, devices may comply with the Section 15.247(a)(1)(i) frequency hopping requirements for unlicensed devices by hopping across 25 channels using a bandwidth of 250 kHz or greater. The 2009 standard, however, provides for a different method of setting the resolution bandwidth when measuring occupied bandwidth. The 2003 standard instructs the test body to set the measuring instrument's resolution bandwidth to a value greater than 5% of the occupied bandwidth requirement, while the 2009 standard instructs the test body to set this value within or approximately 1-5% of the occupied bandwidth. With this smaller resolution bandwidth setting allowed by the 2009 standard, at least some unlicensed devices would be unable to meet the minimum 250 kHz occupied bandwidth threshold required by Section 15.247 for systems employing 25 channels (at 0.25 watt peak output power). As a result, should the Commission adopt the 2009 standard, in order to obtain equipment certification for new products, manufacturers would need to make a significant design change for future products. Doing so would require consumers to replace all transmitters and repeaters on a site in order to change or modify a system, for example to add new mobile devices or, in the alarm industry, sensors. And doing so would result in less efficient use of the spectrum and greater battery drain. Inovonics systems, for example, would need to employ a new communications protocol that would require doubling of the number of channels on which these products would hop, from 25 to 50. This would double the on-air transmit time for alarms and status changes, requiring more energy use and significantly reducing battery life. And, using 50 channels would make for less efficient use of the spectrum, as additional data bursts would be required to perform the same functions."[8]

ASC C63 Response

The procedures in C63.10-2009 related to the bandwidth setting for the occupied bandwidth measurements -- which Inovonics questions -- were developed based on guidance from the Commission's lab based on changes to technology. In contrast, the procedures referenced in C63.4-2009 have not been updated to reflect this change and hence do not reflect procedures used by the industry to test products for compliance per the Part 15.247 rules or in accordance with additional Commission guidance set forth in the Knowledge Database ("KDB"). Although Inovonic's states that the procedure in C63.10-2009 would be problematic for its system, ASC C63 is aware of at least one of Inovonic's products that may have been tested using this procedure for compliance.[9]

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[8] Inovonic Comments at p. 4.

[9] See Test Report associated with FCC ID 3B6OT9HPT at Section 8.1 filed on January 18, 2013 ("Unless otherwise stated no deviations were made from ANSI C63.10 and FCC Public Notice DA 00-705 … .") (https://apps.fcc.gov/eas/GetApplicationAttachment.html?id=1882307).

Since the C63.10-2009 standard was published, the Commission and the industry have refined the test procedures for devices like those of Inovonics. For example, the Commission's Authorization and Evaluation Branch has just published revision 3 of KDB 558074 which addresses testing of devices under Part 15.247. This revision has been discussed extensively with industry. Indeed, the next version of C63.10 (which will likely be published in 2013) incorporates these changes (as set forth in the current revision of KDB 558074).

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We thank the Commission for this opportunity to share our comments on these reply comments.

Respectfully submitted,

American National Standards Institute
Accredited Standards Committee C63®

/s/ Mr. Daniel Hoolihan

Chairman,
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