



American National Standard for Specifications of Electromagnetic Interference and Field Strength Measuring Instrumentation in the Frequency Range 9 kHz t 40 GHz

C63[®]

USEMCSC C63[®] Committee on Electromagnetic Compatibility –
an ANSI-Accredited Standards Developer

Accredited by the
American National Standards Institute

ANSI/USEMCSC C63.2-2023
(Revision of ANSI C63.2-2016)

STANDARDS

American National Standard for Specifications of Electromagnetic Interference and Field Strength Measuring Instrumentation in the Frequency Range 9 kHz to 40 GHz

USEMCSC C63® Committee on Electromagnetic Compatibility

Accredited by the

American National Standards Institute

Secretariat

Institute of Electrical and Electronics Engineers, Inc.

Approved 24 May 2023

American National Standards Institute

C63®

Abstract: Requirements for measuring instruments used for electromagnetic interference (EMI) measurements are provided, involving quasi-peak, peak, and average detection in the frequency range 9 kHz to 40 GHz.

Keywords: ANSI C63.2, average detection, electromagnetic compatibility, electromagnetic interference, EMI receiver, field strength measurement instrumentation, peak detection, quasi-peak detection

United States EMC Standards Corporation
5702 368th Avenue, PO Box 598, Burlington, WI 53105, USA

The Institute of Electrical and Electronics Engineers, Inc.
3 Park Avenue, New York, NY 10016-5997, USA

Copyright © 2023 by The Institute of Electrical and Electronics Engineers, Inc.
All rights reserved. Published 18 October 2023. Printed in the United States of America.

C63 is a registered trademark in the U.S. Patent & Trademark Office, owned by the USEMCSC C63 Committee on Electromagnetic Compatibility.

IEEE is a registered trademark in the U.S. Patent & Trademark Office, owned by The Institute of Electrical and Electronics Engineers, Incorporated.

PDF: ISBN 979-8-8557-0120-3 STD26473
Print: ISBN 979-8-8557-0121-0 STDPD26473

IEEE prohibits discrimination, harassment, and bullying.

For more information, visit <http://www.ieee.org/web/aboutus/whatis/policies/p9-26.html>.

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the publisher.

Important Notices and Disclaimers Concerning USEMCSC Standards Documents

USEMCSC standards documents are made available for use subject to important notices and legal disclaimers.

Notice and Disclaimer of Liability Concerning the Use of USEMCSC Standards Documents

USEMCSC develops its standards through an accredited consensus development process, which brings together volunteers representing varied viewpoints and interests to achieve the final product. USEMCSC standards are documents developed by volunteers with scientific, academic, and industry-based expertise in technical working groups. Volunteers are not necessarily members of USEMCSC, and participate without compensation from USEMCSC. While USEMCSC administers the process and establishes rules to promote fairness in the consensus development process, USEMCSC does not independently evaluate, test, or verify the accuracy of any of the information or the soundness of any judgments contained in its standards.

USEMCSC makes no warranties or representations concerning its standards, and expressly disclaims all warranties, express or implied, concerning this standard, including but not limited to the warranties of merchantability, fitness for a particular purpose and non-infringement. In addition, USEMCSC does not warrant or represent that the use of the material contained in its standards is free from patent infringement. USEMCSC standards documents are supplied “AS IS” and “WITH ALL FAULTS.”

Use of a USEMCSC standard is wholly voluntary. The existence of a USEMCSC standard does not imply that there are no other ways to produce, test, measure, purchase, market, or provide other goods and services related to the scope of the USEMCSC standard. Furthermore, the viewpoint expressed at the time a standard is approved and issued is subject to change brought about through developments in the state of the art and comments received from users of the standard.

In publishing and making its standards available, USEMCSC is not suggesting or rendering professional or other services for, or on behalf of, any person or entity, nor is USEMCSC undertaking to perform any duty owed by any other person or entity to another. Any person utilizing any USEMCSC standards document, should rely upon his or her own independent judgment in the exercise of reasonable care in any given circumstances or, as appropriate, seek the advice of a competent professional in determining the appropriateness of a given USEMCSC standard.

IN NO EVENT SHALL USEMCSC OR IEEE BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO: THE NEED TO PROCURE SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE PUBLICATION, USE OF, OR RELIANCE UPON ANY STANDARD, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE AND REGARDLESS OF WHETHER SUCH DAMAGE WAS FORESEEABLE.

Translations

The USEMCSC consensus development process involves the review of documents in English only. In the event that a USEMCSC standard is translated, only the English version published by IEEE is the approved USEMCSC standard.

Official statements

A statement, written or oral, that is not processed in accordance with C63[®] Standards Committee policies and procedures shall not be considered or inferred to be the official position of USEMCSC or any of its committees and shall not be considered to be, nor be relied upon as, a formal position of USEMCSC. At lectures, symposia, seminars, or educational courses, an individual presenting information on USEMCSC standards shall make it clear that the presenter's views should be considered the personal views of that individual rather than the formal position of USEMCSC, IEEE, the C63 Standards Committee or any C63 Working Group.

Interpretations

Current interpretations are essential to the understanding of all C63 standards. To assist in the meanings of requirements, informative interpretations are available at the following URL: https://www.c63.org/documents/misc/posting/new_interpretations.htm. Users are cautioned that, although interpretations do not and cannot change the requirements of a standard, they serve to clarify the meanings of requirements. All interpretations are informative rather than normative, until such time as the standard is revised (consistent with C63[®] ANSI-accredited operating procedures) to incorporate the interpretation as a normative requirement.

Comments on standards

Comments for revision of USEMCSC standards documents are welcome from any interested party, regardless of membership affiliation with USEMCSC.

Suggestions for changes in documents should be in the form of a proposed change of text, together with appropriate supporting comments. Since USEMCSC standards represent a consensus of concerned interests, it is important that any responses to comments and questions also receive the concurrence of a balance of interests. For this reason, USEMCSC is not able to provide an instant response to comments or questions, except in those cases where the matter has previously been addressed. Any person who would like to participate in evaluating comments or in revisions to a USEMCSC standard is welcome to join the relevant USEMCSC C63 Standards Committee working group. You can indicate interest in a working group by sending a request to sasecretariat@ieee.org.

Comments on standards should be submitted using the [Contact Us](#) form.¹

Laws and regulations

Users of USEMCSC standards documents should consult all applicable laws and regulations. Compliance with the provisions of any USEMCSC standards document does not constitute compliance to any applicable regulatory requirements. Implementers of the standard are responsible for observing or referring to the applicable regulatory requirements. USEMCSC does not, by the publication of its standards, intend to urge action that is not in compliance with applicable laws, and these documents may not be construed as doing so.

Data privacy

Users of USEMCSC Standards documents should evaluate the standards for considerations of data privacy and data ownership in the context of assessing and using the standards in compliance with applicable laws and regulations.

¹ Available at: <https://standards.ieee.org/content/ieee-standards/en/about/contact/index.html>.

Copyrights

USEMCSC draft and approved standards are copyrighted by USEMCSC and IEEE under US and international copyright laws. They are made available by USEMCSC and IEEE, and are adopted for a wide variety of both public and private uses. These include both use, by reference, in laws and regulations, and use in private self-regulation, standardization, and the promotion of engineering practices and methods. By making these documents available for use and adoption by public authorities and private users, USEMCSC and IEEE do not waive any rights in copyright to the documents.

Photocopies

Subject to payment of the appropriate licensing fees, IEEE will grant users a limited, non-exclusive license to photocopy portions of any individual standard for company or organizational internal use or individual, non-commercial use only. To arrange for payment of licensing fees, please contact Copyright Clearance Center, Customer Service, 222 Rosewood Drive, Danvers, MA 01923 USA; +1 978 750 8400; <https://www.copyright.com/>. Permission to photocopy portions of any individual standard for educational classroom use can also be obtained through the Copyright Clearance Center.

Updating of USEMCSC standards documents

Users of USEMCSC standards documents should be aware that these documents may be superseded at any time by the issuance of new editions or may be amended from time to time through the issuance of amendments, corrigenda, or errata. An official USEMCSC document at any point in time consists of the current edition of the document together with any amendments, corrigenda, or errata then in effect.

Every USEMCSC standard is subjected to review at least every 5 years. When a document is more than 5 years old and has not undergone a revision process, it is reasonable to conclude that its contents, although still of some value, do not wholly reflect the present state of the art. Users are cautioned to check to determine that they have the latest edition of any USEMCSC standard.

In order to determine whether a given document is the current edition and whether it has been amended through the issuance of amendments, corrigenda, or errata, visit [IEEE Xplore](#)² or [contact IEEE](#).³ For more information about the USEMCSC's standards development process, visit the [USEMCSC Website](#).⁴

Errata

Users are encouraged to check the IEEE Errata URL (<https://standards.ieee.org/findstds/errata/index.html>), and the one for ANSC C63® at https://www.c63.org/explanations_interpretations_request.htm, for errata periodically.

Patents

USEMCSC standards are developed in compliance with the [ANSI Essential Requirements](#).⁵

NOTE—The user's attention is called to the possibility that compliance with this standard may require use of an invention covered by patent rights.

² Available at: <https://ieeexplore.ieee.org/browse/standards/collection/ieee>.

³ Available at: <https://standards.ieee.org/standard/index.html>.

⁴ Available at: <https://www.c63.org/>.

⁵ Available at: <https://www.ansi.org/american-national-standards/ans-introduction/essential-requirements>.